

Environmental Impact Assessment Scoping Report

Howat's Hill Wind Farm

Document prepared by Envams Ltd for:



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1 INTRODUCTION

This Environmental Impact Assessment (EIA) Scoping Report (the Scoping Report) has been prepared by Envams Ltd on behalf of Renewco Power Ltd ('the Applicant'). The Applicant intends to apply to the Scottish Government for consent under Section 36 of the Electricity Act 1989¹ for the construction and operation of Howat's Hill Wind Farm ("the Development") located approximately 2 km north-west of Waterbeck Village in Dumfries and Galloway. The location of the Development is shown in Figure 1.1.

This Report constitutes the Applicant's request to the Scottish Government for a Scoping Opinion for the Development, under Regulation 12 of the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (the EIA Regulations).

1.1 THE APPLICANT

Renewco Power Ltd (the Applicant) is a UK-headquartered renewable energy developer dedicated to developing onshore wind, solar PV, battery storage and green hydrogen projects across the UK, Spain and Italy. With over 40 employees, Renewco is committed to driving the transition to clean energy and is on track to deliver 5 GW of ready-to-build projects by 2029, while continuing to build upon its 8 GW project pipeline across Renewco's core markets.

Renewco's founding team brings over 250 years of combined renewables expertise, having successfully developed more than 10 GW of renewable energy across 50+ countries. This track record includes raising over £2 billion in project financing and building multiple successful companies that deliver both community benefits and strong investor returns.

Renewco has experience of submitting highly detailed planning applications for hybrid projects within Scotland, particularly within the M74 corridor. Recent applications include the M74 West Renewable Energy Park, comprising approximately 295 MW of capacity from a combination of wind turbines, solar PV and BESS technologies.

The Applicant is committed to developing 1 GW of onshore wind by 2027, with Scotland identified as a region with significant potential to deliver onshore wind developments in line with Scottish Government renewable energy targets.

1.2 PURPOSE OF THE SCOPING REPORT

The Applicant is seeking confirmation from the Scottish Ministers and key consultees on the scope of assessments to be included in the EIA Report by requesting a Scoping Opinion under Regulation 12 of the EIA Regulations. This Scoping Report provides the following information to inform the EIA Scoping Opinion:

- A description of the location of the development, including a figure identifying the land and location (Figure 1.1);
- A brief description of Development, its purpose, and its potential significant effects on the environment; and
- A summary of the surveys and assessment methods proposed to be used in the EIA and reported in the EIA Report.

The aim of the scoping process is to identify key environmental issues at an early stage, ensuring that the scope of the EIA Report is sufficient to assess all elements which have the potential to cause significant environmental effects. The scoping process should also ensure that the EIA is proportionate and seeks to confirm the elements that can be scoped out of the EIA.

1.3 EIA (ENVIRONMENTAL IMPACT ASSESSMENT)

EIA is an iterative process of assessment and design, during which prediction and assessment of potential effects will inform the evolving design of the Development. The Development can then be refined in order to avoid or reduce potential environmental effects where predicted. During this process, effects arising during the construction, operation and decommissioning phases will be assessed and mitigation can be proposed if practicable.

¹ The Electricity Act 1989. Available at: https://www.legislation.gov.uk/ukpga/1989/29/pdfs/ukpga_19890029_en.pdf (Accessed 21/01/2025).

This includes all temporary construction facilities and other buildings or structures which will be on site for the duration of the Development operation, such as the control building or meteorological mast.

Schedule 1 of the EIA Regulations lists those developments for which EIA is mandatory, whilst Schedule 2 describes projects for which the need for EIA is judged by the Scottish Ministers on a case-by-case basis through a screening process. The Development is a Schedule 2 development:

“(1) a generating station, the construction of which (or the operation of which) will require a section 36 consent but which is not Schedule 1 development.”

If therefore it is likely to have significant environmental effects because of factors such as its nature, size or location, it is ‘EIA development’, and a formal EIA is required. The Applicant independently proposes that the Development be subject to EIA and will provide an EIA Report along with the application for consent.

1.4 STRUCTURE OF THE SCOPING REPORT

This Scoping Report includes sections set out in Table 1.1.

Table 1.1: Scoping Report Structure

Section Number	Section name
1	Introduction
2	Description of the Development
3	Environmental Impact Assessment (EIA)
4	Landscape and Visual
5	Cultural Heritage
6	Hydrology, Hydrogeology and Geology
7	Ecology
8	Ornithology
9	Noise Assessment
10	Transport and Access
11	Socio-economic, Land Use, Recreation and Tourism
12	Forestry
13	Climate Change and Carbon Balance
14	Other Issues
15	Interrelationships

1.5 COMMUNITY CONSULTATION

The Applicant considers consultation with the community to be an important part of the development design process and will engage with the local community throughout the application process. As this is a Section 36 application, there is no formal requirement to follow the pre-application consultation procedures for major developments under the Town and Country Planning (Scotland) Act 1997, as amended. However, the Development will follow the processes and standards set by relevant legislation and best practice guidance, including Planning Advice Note (PAN) 3/2010: Community Engagement. In addition, the Scottish Government has consulted on proposed reforms to the consenting process under the Electricity Act 1989, whereby public consultation may become a formal requirement. Accordingly, it is anticipated that a Pre-Application Consultation (PAC) Report will be submitted alongside the application.

In line with best practice, two rounds of public consultation are anticipated to be undertaken to provide members of the local community with an opportunity to learn about the Development and provide feedback. Consultation events will also allow local communities

and stakeholders to contribute to the iterative design process and help inform the evolution of the Development layout and associated infrastructure.

Liaison with key stakeholders, community representatives and local residents will be undertaken at appropriate stages throughout the EIA process. The consultation strategy is expected to incorporate a range of communication methods, including public exhibitions, face-to-face meetings, project updates, newsletters and online engagement.

The Applicant considers consultation with statutory and non-statutory consultees to be an integral part of the EIA process and recognises the benefits of early engagement with all relevant parties. Consultation will continue throughout the preparation of the EIA Report and application process.

1.6 ASSESSMENT METHODOLOGY

The Chapters of this Scoping Report provide sufficient detail to characterise the potential interactions between the Development and the environmental receptors identified. In presenting a rationale for the proposed scope of environmental assessment, this Scoping Report has taken the sensitivity of the current state of the environment into account, based on an understanding of the baseline conditions. The Scoping Report has also been prepared with reference to the potential magnitude of impacts, considering the typical construction and operational activities, physical characteristics and potential emissions / residues associated with the Development.

Where there is sufficient evidence to support scoping a topic out of the EIA process, this is presented.

Otherwise, where there is the potential for significant effects, the Scoping Report provides details of the proposed scope, including the approach to further baseline data collection and the proposed methodology for impact assessment which would be employed for each topic.

Further detail on the general approach to EIA is provided in Section 3 of this Scoping Report

2 DESCRIPTION OF THE DEVELOPMENT

2.1 THE SITE

The Site is located approximately 7.7 km south-east of Lockerbie and 2 km north-west of Waterbeck village in Dumfries and Galloway, as shown in Figure 1.1. Elevations across the Site range from approximately 144 m above ordnance datum (AOD) in the south of the Site near Gowkshaw Knowe to approximately 247 m in the north-east of the Site at Howat's Hill. The Site is located north of the A74(M), and directly north-west of the B725.

The operational Minsca Wind Farm lies adjacent, north east of the Site, and consists of 16 wind turbines of 120 m to tip height. A Section 42 (22/2401/S42) was submitted in December 2022 to Dumfries and Galloway Council ('DGC') for the erection of 17 wind turbines and associated infrastructure to extend the life of this wind farm until 2043. This application was granted permission in November 2025, subject to conditions and the conclusion of a Section 75 legal obligation.

2.2 THE DEVELOPMENT

The Development includes a wind farm consisting of 5 turbines (total capacity of c. 33.5 MW), with co-located solar (c. 25 MW) and a battery energy storage system (c. 10 MW) plus ancillary infrastructure. The ancillary infrastructure will likely include hardstanding areas, transformers/inverters, access tracks, underground cabling, a substation, an anemometry mast, borrow pits and a temporary construction compound. The ancillary infrastructure proposed may change as the Development design is developed through the iterative EIA process.

The Development layout will evolve based on the results of ongoing environmental assessments and consultation with key consultees, stakeholders and the local community, to reach a final design.

The Development is intended to generate and store electricity from solar and wind energy, in order to support the decarbonisation of the UK electricity supply. The BESS would store surplus electricity that would be fed back into the grid when required, helping to aid the balance of electricity supply and demand.

The Development would be temporary and reversible, with an operational timeframe of approximately 40 years.

The electrical connection to the grid will be at Chapelcross Substation, National Grid Reference (NGR): NY 21849 70435 (Figure 1.3). An indicative underground grid connection route between the Development and Chapelcross Substation has been identified and is shown on Figure 1.3. The Applicant has considered the requirements of the recent *Raeshaw Farms Ltd v Scottish Ministers* decision and the proposed approach to the grid connection is discussed further within Section 3.8.

The grid connection route will be included, or not, within the EIA in line with good practice and the level of certainty available over the route at the time of drafting the EIA Report. This is discussed further within Section 3.8.

2.3 WIND TURBINES

A summary of the proposed wind turbine details is set out below in Table 2.1 and Table 2.2, and an indicative turbine layout is shown on Figure 1.2.

Table 2.1 Summary of Proposed Turbines

Number of Wind Turbines	5
Height to hub	Approximately 118.5 m
Height to blade tip of turbines	Up to 200 m
Turbine Rotor Diameter	Approximately 163 m
Type of turbine	Three bladed, horizontal axis

Generating capacity (per turbine)	Approximately 6.7 MW
Total wind farm generation capacity	Approximately 33.5 MW

Each wind turbine would be of a typical horizontal axis design, comprising of three rotor blades, a hub and a nacelle. The tower would be tubular and tapered in design and finished in a light-grey, semi-matt colour. Turbines would be served by their own electrical transformer either within the turbine nacelle, within the base of the tower or in a small enclosure at the base of the turbine.

The proposed turbine coordinates are set out below in Table 2.2.

Table 2.2 Summary of Proposed Turbine Coordinates

Turbine Number	X Coordinate	Y Coordinate
1	322426	579292
2	321818	579291
3	321309	579475
4	320795	579645
5	322529	578725

2.4 SOLAR PV ARRAYS

The solar PV array areas would comprise strings or rows of solar panels, mounted on metal frames, likely to be screwed or driven into the ground to a depth of 1-2 m, depending on ground conditions. The lower edge of the panel would typically be 0.8 m from the ground and the highest point up to 3 m in height from the ground. The panels would either be fixed tilt or single axis tracker arrays, whichever is considered most suitable for the Site.

Inverters and transformers would be located in proximity to the solar panels, housed in enclosures or containers.

The solar panels would be contained within perimeter fencing and suitable security measures put in place to ensure the Development is secure during operation.

Indicative solar PV array development areas are shown on Figure 1.2.

2.5 BATTERY ENERGY STORAGE SYSTEM (BESS)

The battery energy storage system (BESS) will include containerised battery units, with separate housing for inverters and transformers, cabling and a control building located within a fenced compound. It will be located adjacent to the onsite substation. The maximum height of the BESS is likely to be 3 m in height, and the colours can respond to local environmental requirements but are typically grey or dark green.

The BESS compound would also contain internal access tracks to allow access to all BESS units during operation.

A Battery Safety Management Plan (BSMP) will be developed in consultation with the local fire and rescue service to ensure that risks associated with potential fire are minimised. The environmental assessments carried out for the wind turbines, solar PV and ancillary infrastructure will include consideration of the BESS.

An indicative location of the BESS is shown on Figure 1.2.

In addition to the preparation of a Battery Safety Management Plan (BSMP), the design and assessment of the BESS will consider fire prevention and response measures, including battery monitoring systems, thermal runaway protection, emergency response procedures and appropriate fire suppression measures. The assessment process will also consider the potential for pollution incidents associated with battery failure and will identify appropriate mitigation measures where required. Consultation with relevant stakeholders, including the Scottish Fire and Rescue Service and other regulatory bodies, where appropriate, will be undertaken as the design of the Development progresses.

2.6 ACCESS AND ACCESS TRACKS

For general construction traffic and staff movement, access to the Site is likely to be taken via the shortest route from the south-west. Abnormal loads will take a separate route, accessing the site via the north, utilising the existing access tracks for the operational Minsca windfarm. This is discussed further in Section 10.

New access tracks will be required to connect the Development infrastructure, as shown on Figure 1.2. The design and layout of these will follow good practice for wind, solar and battery development in upland environments.

2.7 ELECTRICAL INFRASTRUCTURE

Underground cabling will be laid, likely alongside the access tracks, where possible, and will link the wind turbine transformers, solar transformers and BESS to the onsite substation.

The onsite substation will take the form of a single storey building housing the electrical infrastructure, although certain elements may be located externally within a fenced compound.

An indicative location of the onsite substation is shown on Figure 1.2.

2.8 ANEMOMETRY MAST

An anemometry mast would be constructed alongside the wind turbines for provision of wind monitoring data during operation. Anemometry masts are typically of lattice tower or tubular guyed construction, or a combination of both, and would typically be of the same height as the wind turbine hub height (approximately 110 m).

2.9 BORROW PITS

If found to be viable following ground investigations, on-site borrow pits from excavations for other infrastructure as well as potential standalone borrow pits will be used to source aggregate for the construction of access tracks, structural fill beneath turbine foundations, construction compounds and turbine hardstanding. Through sourcing aggregate from within the Site, rather than off-site quarries, the number of deliveries required from heavy good vehicles (HGV) on public roads would be reduced.

2.10 TEMPORARY CONSTRUCTION COMPOUND

A temporary construction compound (TCC) will be required during the construction of the Development, which will form an area of hardstanding providing space for parking, temporary welfare facilities, lay down areas and potentially concrete batching.

3 ENVIRONMENTAL IMPACT ASSESSMENT (EIA)

3.1 EIA PROCESS AND METHODOLOGY

Each of the technical assessments within the EIA will follow a systematic approach, with the principal steps being:

- Description of baseline conditions;
- Prediction of potentially significant effects including cumulative effects (to include all likely significant effects);
- Assessment of potentially significant effects, to include all likely significant effects;
- Identification of appropriate mitigation measures, including design changes; and
- Assessment of residual (likely) effects.

The EIA assessment will be based on a number of related activities, as follows:

- Consultation with statutory and non-statutory consultees throughout the pre-application process;
- Consideration of relevant local, regional and national planning policies, guidelines and legislation relevant to EIA;
- Consideration of technical standards for the development of significance criteria;
- Review of secondary information, previous environmental studies and publicly available information and databases;
- Physical surveys and monitoring;
- Desk-top studies;
- Computer modelling;
- Reference to current legislation and guidance; and
- Expert opinion.

3.2 BASELINE DESCRIPTION

To evaluate the likely environmental effects (and therefore ensure that the likely significant effects are identified and assessed, as required by the EIA Regulations), information relating to the existing environmental conditions will be collected through field and desktop research, including consultation. These are known as the baseline conditions. The baseline also extends into the future (the future baseline), although predictions of this can involve potentially large uncertainties. As a result, in most cases, the future baseline is assumed to remain unchanged throughout the operation of the Development. Where this is not the case, this will be stated within the EIA Report technical chapter.

The baseline will be used to identify and assess the sensitivity of receptors on and near to the Development, what changes may take place during the construction, operation and decommissioning of the Development and the effects, if any, that these changes may have on these receptors.

Within each technical assessment, the methods of data collection will be discussed with the relevant consultees. Data will also be collected from public records and other archive sources and where appropriate, field surveys will be carried out (in some cases these surveys have already begun). The seasonal timing of the work (if appropriate) and the study areas proposed are outlined within each assessment section of this Scoping Report.

3.3 PREDICTION OF LIKELY EFFECTS

The prediction of likely effects, including all likely significant effects, covers the three phases of the Development: construction (including pre-construction), operation and decommissioning. During each phase different environmental effects are likely to arise. Each technical assessment of the EIA will cover (as appropriate):

- Direct and indirect effects;
- Short-, medium- and long-term effects;
- Permanent and reversible effects;
- Likelihood of an effect occurring (i.e., very likely, likely, or unlikely); and
- Cumulative effects.

Following identification of likely environmental effects, changes to baseline conditions will be predicted, allowing an assessment of the environmental effects of these changes and the identification and assessment of the likely significant effects.

3.4 ASSESSMENT OF LIKELY EFFECTS

The likely effect that the Development may have on each environmental receptor would be influenced by a combination of the sensitivity or importance of the receptor and the predicted magnitude of change from the baseline conditions (either beneficial or adverse).

The magnitude of change from the baseline state is defined as high, medium, low, negligible or no change and can be beneficial or adverse. The definition of magnitude varies by technical discipline as described in the technical sections of this Scoping Report.

Environmental sensitivity (or importance) may be categorised by a multitude of factors, for example: threat to rare or endangered species; transformation of natural landscapes; or changes to soil quality and land-use. The initial assessment, consultation and scoping phases identify these factors along with the implications of the predicted changes. Unless stated otherwise in each technical chapter, the sensitivity or importance of each identified receptor is defined as high, medium, low or negligible.

The overall significance of an environmental effect is determined by the interaction of the above two factors (i.e., sensitivity/importance and predicted magnitude of change from the baseline). In order to evaluate the likely environmental effects, the assessment criteria used are identified and justified within each technical chapter in line with the definitions described above, unless otherwise stated (e.g., the definition of what constitutes a receptor of 'high' sensitivity).

Table 3.1 summarises, in the form of a matrix, the generic format by which the significance of a likely effect is determined within each technical chapter. Effects that would be 'significant' in terms of the EIA Regulations are shaded in Table 3.1 and highlighted in bold.

Table 3.1: Generic matrix for determining the significance of likely effects

Sensitivity of receptor	Magnitude of change			
	High	Medium	Low	Negligible
High	Major	Major	Moderate	Negligible
Medium	Major	Moderate	Minor	Negligible
Low	Moderate	Minor	Minor	Negligible
Negligible	Negligible	Negligible	Negligible	Negligible

For the purposes of EIA, the significance of an effect is generally assessed as being either:

- Major – a fundamental change to a location, environment or species;
- Moderate – a material, but non-fundamental change to a location, environment or species;
- Minor – a detectable but non-material change to a location, environment or species; or
- Negligible – no detectable or material change to a location, environment or species.

Given this methodology, it follows that, regardless of a receptor's importance or sensitivity, there can be no significant effect when the magnitude of change is negligible. Similarly, there can be no significant effect where the importance or sensitivity of the receptor is negligible, regardless of the magnitude of change.

Some assessments may deviate from this methodology set out above, and where this is the case, the detailed methodology will be stated within the relevant section of this Scoping Report or within the EIA Report. It is also important that professional judgement can be applied in concluding on the significance of effects, to allow for receptors and effects which fall between definitions of magnitude and sensitivity, or do not fit well into a rigid matrix-based approach.

3.5 MITIGATION

Where applicable, each technical chapter will propose measures to avoid, prevent, reduce and/or offset any likely significant adverse effects that are identified. These are termed mitigation measures. Such measures may include the consideration of alternatives; physical design evolution such as movement or reduction in scale; and operational and/or management measures.

This strategy of avoidance, prevention, reduction and offsetting is a hierarchical one which seeks:

- First to avoid likely effects;
- Then to reduce those which remain; and
- Lastly, where no other measures are possible, to propose compensatory measures to offset the predicted effect.

3.5.1 Embedded Mitigation

Where possible, mitigation measures will be embedded into the overall design rather than “added on” to the proposals. By being flexible with the design, the project design will respond to the findings of consultation and EIA work, and mitigate accordingly, as the Development design progresses.

Embedded mitigation measures include features that are a clear part of the Development proposals. Generally, these are features that are shown on layout plans of the Development, but they can also include management and control documents where it is not reasonably conceivable that such a development could proceed without them, such as a Construction Environmental Management Plan (CEMP). Where such documentation is treated as embedded mitigation, this will be made clear in the EIA Report, and the outline document will be included in the EIA Report, typically as an appendix to the Project Description chapter.

3.6 RESIDUAL EFFECTS

The assessment process will conclude with an examination of residual effects after mitigation has been applied, i.e., the overall predicted (likely) effects of the Development.

3.7 CUMULATIVE EFFECTS ASSESSMENT

In accordance with the EIA Regulations, the EIA Report will also identify and assess 'cumulative effects', where these have the potential to be significant. By definition, these are effects that result from incremental changes caused by past, present or reasonably foreseeable future actions together with the Development. For the cumulative assessment, two types of effect will be considered, as set out below.

3.7.1 Cumulative Developments

The combined effects of several developments that may on an individual basis be insignificant but, cumulatively, have a significant effect on a receptor, such as landscape and visual effects of many solar developments, will be dealt with within each technical chapter. The intended scope of each cumulative assessment is set out in the relevant technical sections of this Scoping Report.

Unless otherwise agreed with statutory consultees, developments whose applications for consent have not yet been submitted at the time of finalising the EIA Report are unlikely to be included in the cumulative assessments given the large degree of uncertainty over the likelihood of an application being submitted and its final design.

The range of potential cumulative effects will be defined in the technical chapters of the EIA Report and will cover a study area within which receptors could potentially be subject to cumulative effects for that technical discipline (only). Usually this is no more than twice the range of assessment for the Development in isolation alone.

It is proposed that there will be a cut-off deadline for the collation of cumulative development information to be included within the EIA Report and that this will be three months prior to the submission of the application.

3.7.2 Interrelationships

The combined effect of individual effects, for example noise, airborne dust or traffic on a single receptor will be included in a separate EIA Report chapter: Interrelationships (see section 15 of this Scoping Report).

3.8 GRID CONNECTION

The proposed grid connection would connect the on-site substation to Chapelcross Substation via an underground cable. An indicative connection route has been identified and is shown on Figure 1.3 (hereafter referred to as 'the proposed grid connection route'). The proposed grid connection route shown on Figure 1.3 has been identified by SPEN and while this is not a finalised route, it represents the most up to date information on the likely connection route available at time of preparation of this report.

On 17 February 2026, the Court of Session issued its judgment in *Raeshaw Farms Limited v Scottish Ministers and Energiekontor* [2026] CSIH 10. The Court confirmed that decisionmakers must evaluate whether a wind farm and its grid connection form a single project for EIA purposes. This is a decision for decision-makers to arrive at.

In light of the recent *Raeshaw Farms Ltd v Scottish Ministers* decision, the Applicant has considered whether the grid connection should be assessed as part of the Development for EIA purposes.

Based on the indicative route provided by the network operator, the proposed grid connection route is entirely within the boundary of the Chapelcross Substation and the public roads B725 and B722. It is anticipated that the proposed grid connection would be delivered as an underground cable.

The proposed grid connection route is indicative and will not be confirmed until the project has progressed through the Gate 2 (NESO Grid Reform) process. The suggested route passes through a Scheduled Ancient Monument (SM666, Birrans Roman Fort). While it should be noted that the West Coast main rail line, the Middlebie to Eaglesfield Public Road, residential properties and an overhead line have previously been developed within this designation, there is the potential for significant effects which should be considered.

There is potential for impacts on the listed Mein Bridge, the Birrens Scheduled Monument (SM666) and the Roman Road (NRHE ID: 71596); features which are shown on Figure 1.3. Unless use of the existing grid connection infrastructure (such as existing ducting) means impacts can be avoided, then impacts on these identified features will be assessed within the EIA Report. For all other potential impacts from the grid connection, it is anticipated that these are capable of being mitigated by appropriate design, archaeological surveys and standard construction environmental management measures.

It is envisaged that the EIA will be submitted based on the indicative route provided by the network operator. If the final grid connection route changes significantly from the indicative route presented in Figure 1.3 and/or the connection changes to be above-ground, then the potential environmental effects will be re-considered and reported as appropriate in an addendum to the EIA Report.

3.9 QUESTIONS TO CONSULTEES

- The proposed grid connection would comprise an underground cable connection between the on-site substation and Chapelcross Substation, following the public roads B725 and B722. The currently proposed grid connection route is shown within Figure 1.3. It is proposed that impacts on the identified features within Figure 1.3 will be assessed within the EIA Report, unless use of the existing grid connection infrastructure (such as existing ducting) means impacts can be avoided. For all other potential impacts from the grid connection, it is anticipated that these are capable of being mitigated by appropriate design, archaeological surveys and standard construction environmental management measures. Do consultees agree with this proposed approach?

4 LANDSCAPE AND VISUAL

4.1 INTRODUCTION

This Chapter of the Scoping Report provides an overview of the potential effects of the Development on landscape and visual amenity. The Chapter sets out the approach to the Landscape and Visual Impact Assessment (LVIA) as part of the EIA Report, including consultation, methodology, assessment of cumulative effects and the evaluation of the potential significant effects.

The LVIA Chapter of the EIA Report will be undertaken by Chartered Members of the Landscape Institute (CMLI) from MVGLA and be based on professional experience and judgement.

This Chapter includes the following elements:

- Consultation to date;
- Assessment Methodology;
- Preliminary Baseline Conditions;
- Potential Significant Effects;
- Matters and Aspects to be Scoped Out; and
- Questions to Consultees.

This Chapter of the Scoping Report is supported by the following figures:

- Figure 4.1: 45 km Zone of Theoretical Visibility;
- Figure 4.2: 45 km Zone of Theoretical Visibility at A1 Size;
- Figure 4.3: Cumulative Wind Farms.
- Figure 4.4: Landscape Character Types;
- Figure 4.5: ZTV and Proposed Viewpoints; and
- Figure 4.6: Designated Landscapes

4.2 CONSULTATION TO DATE

Due to the availability of information and existing knowledge of the area within the MVGLA consultancy team, no consultation on landscape and visual matters has been undertaken with Dumfries and Galloway Council (DGC) or with NatureScot prior to submission of this Scoping Report.

As part of the on-going work to inform the LVIA Chapter of the EIAR it is envisaged that a consultation exercise to obtain additional data and the views of statutory consultees will be undertaken following receipt of the Scoping Opinion. Consultation correspondence on landscape and visual matters will be included in the LVIA chapter of the EIAR.

4.3 ASSESSMENT METHODOLOGY

The most widely visible elements of the Development will be the wind turbines. Much of the LVIA Chapter of the EIAR will therefore primarily consider the visibility and effects of the turbines. However, the assessment of effects will consider all other elements of the Development throughout.

The LVIA Chapter will identify potential significant effects of the Development on the landscape resource and visual amenity, in accordance with the principles set out in the '*Guidelines for Landscape and Visual Impact Assessment*' (GLVIA3)². Other sources of guidance and references used in the LVIA chapter of the EIAR include:

² Landscape Institute., Institute of Environmental Management and Assessment. (2013) *Guidelines for Landscape and Visual Impact Assessment*, Third Edition. London. Routledge.

- Technical Guidance Note LITGN-2024-01 – Notes and Clarifications on Aspects of Guidelines for Landscape and Visual Impact Assessment Third edition (GLVIA3) (Landscape Institute, 2024)³;
- Siting and Designing of Windfarms in the Landscape: Version 3a (SNH, 2017)⁴;
- Visual Representation of Wind Farms. Version 2.2 (Scottish Natural Heritage (Now NatureScot), 2017)⁵;
- Technical Guidance Note 06/19 Visual representation of development proposals (Landscape Institute, 2019)⁶;
- Guidance - Assessing the cumulative landscape and visual impact of onshore wind energy developments (NatureScot, 2021)⁷; and
- Technical Guidance Note 2/19 Residential Visual Amenity Assessment (Landscape Institute, 2019)⁸;

4.3.1 Desk Study and Field Surveys

Desk studies will be carried out to identify key landscape and visual receptors, and to identify the likely visibility of the Development based on Zone of Theoretical Visibility (ZTV) mapping. Computer generated 3D models will be used to prepare draft wireline images to illustrate theoretical visibility, and to enable the confirmation and analysis of viewpoints for fieldwork and for detailed visualisation modelling through the production of wirelines and photomontages.

Fieldwork will be carried out including a visit to the Site, to all viewpoints, and the wider area more generally to assess potential effects on landscape character and designated landscapes.

Photography will be undertaken for viewpoint locations, including photography at dusk for locations for which night-time photomontages are required to illustrate the effects of aviation lighting. Viewpoints to illustrate potential night-time effects will be agreed with statutory consultees once the lit turbines have been identified.

4.3.2 Assessment of Landscape Effects

Effects on landscape character will be considered in detail for Landscape Character Types (LCTs) within the Study Area, with ZTV mapping used as a means of identifying which LCTs require assessment. Predicted changes in both the physical landscape and landscape character will be identified. The assessment will identify the magnitude and type of change to the landscape, with reference to its key characteristics as set out in the NatureScot 2009 LCT descriptions. The sensitivity of the landscape will also be considered, acknowledging local sensitivity studies, and value placed on the landscape through designation, key or unique characteristics, as well as the presence of other consented and operational wind farms. The magnitude of the effect will be assessed in terms of the size and scale, geographical extent, duration and reversibility of the effect. These aspects will all be

³ Landscape Institute. (2024) *Notes and Clarifications on Aspects of Guidelines for Landscape and Visual Impact Assessment Third edition (GLVIA)*. Available at: https://landscapeinstitute.org/wp-content/uploads/2024/08/LITGN-2024-01-GLVIA3-NC_Aug-2024.pdf [Accessed: 3rd July 2026]

⁴ Scottish Natural Heritage (2017b). *Siting and Designing Wind Farms in the Landscape Guidance Version 3a*. [online] Available at: <https://www.nature.scot/sites/default/files/2017-11/Siting%20and%20designing%20windfarms%20in%20the%20landscape%20-%20version%203a.pdf>.

[Accessed: February 2025]^{3rd} of July 2026]

⁵ Scottish Natural Heritage (2017). *Scottish Natural Heritage Visual Representation of Wind Farms*. [online] Available at: <https://www.nature.scot/sites/default/files/2019-09/Guidance%20-%20Visual%20representation%20of%20wind%20farms%20-%20Feb%202017.pdf>.

[Accessed: 3rd of July 2026]

⁶ Landscape Institute (2019). *Visual Representation of Development Proposals*. [online] Available at: https://www.landscapeinstitute.org/wp-content/uploads/2019/09/LI_TGN-06-19_Visual_Representation-1.pdf.

[Accessed: 3rd of July 2026]

⁷ NatureScot (2021). *Guidance - Assessing the cumulative landscape and visual impact of onshore wind energy developments*. [online] NatureScot. Available at: <https://www.nature.scot/doc/guidance-assessing-cumulative-landscape-and-visual-impact-onshore-wind-energy-developments>.

[Accessed: 3rd of July 2026]

⁸ Landscape Institute (2019a). *Residential Visual Amenity Assessment (RVAA)*. [online] Available at: <https://landscapeinstitute.org/2019/03/tgn-02-2019-rvaa.pdf> [Accessed: 3rd of July 2026].

considered, to form a judgement regarding the overall effect and whether this is judged to be significant.

Significance of landscape effects, considering receptor sensitivity and the magnitude of change as set out above, will identify the level of effect using four categories: Major, Moderate, Minor, and Negligible. Major and Moderate landscape effects will be considered to be significant in the context of the EIA Regulations.

4.3.3 Assessment of Visual Effects

Visual effects are experienced by people at different locations around the Study Area, at static locations (for example from settlements or from selected viewpoints) and sequentially when travelling along routes. It is usually considered that grouping people related to 'status' (e.g. residents, visitors/ tourists/ motorists) or the 'activity' they are engaged in (sport, informal recreation, commuting) will help the assessment of sensitivity and lead to findings which can be considered representative. An assessment of the visual effects of the Development on receptors will be based on analysis of the ZTVs, field studies and assessment of representative viewpoints. Proposed viewpoints have been listed in Table 4.1. Some more distant key views may be provided with wirelines to illustrate potential visibility, even if no significant effects are likely to occur.

GLVIA3 states that the nature of visual receptors, commonly referred to as their 'sensitivity', should be assessed in terms of the susceptibility of the receptor to change in views/ visual amenity and the value attached to particular views. The magnitude of the effect will be assessed in terms of the size and scale, geographical extent, duration and reversibility of the effect. These aspects will all be considered in forming a judgement regarding the overall effect and whether this is judged to be significant.

Significance of visual effects, considering receptor sensitivity and the magnitude of change as set out above, will identify the level of effect using four categories: Major, Moderate, Minor, and Negligible. Major and Moderate visual effects would be considered to be significant in the context of the EIA Regulations.

4.3.4 Aviation Lighting

In the interests of aviation safety, Civil Aviation Authority (CAA) guidance states that turbines over 150 m to tip height are required to incorporate visible lighting. An assessment of the visual effects of aviation lighting on the proposed wind turbines will be carried out as part of the LVIA within the EIAR and included within the assessment.

The night-time context at viewpoint locations will be described, with the related sensitivity and magnitude of change arising from the proposed aviation lighting drawn upon to assess the likely visual effects of aviation lighting and to provide general comment on the likely effects across the wider study area.

Night-time photomontages, using photographs taken shortly after dusk (with due consideration of safety of photographers), will be produced for representative viewpoints as set out in Guidance on Aviation Lighting Impact Assessment (NatureScot, 2025), the number to be confirmed through consultation. These will illustrate the potential appearance of aviation lights on turbines relative to the existing night-time baseline. The selection of viewpoints to be represented will be agreed with consultees on completion of a design freeze and upon agreement of the scope of aviation lighting.

It is not proposed to provide night-time visualisations from hills or remote off-road locations for Health and Safety reasons, and because there are less likely to be viewers in these locations after dark.

4.3.5 Residential Visual Amenity Assessment

Visual amenity is a component of 'residential amenity', which includes noise, shadow flicker etc., and is strictly a planning consideration relevant to residents at their properties. Changes in visual aspects of residential amenity will be considered in a 'Residential Visual Amenity Assessment' (RVAA) for properties within 2.5 km of proposed turbine locations.

The RVAA will be carried out in accordance with the Landscape Institute guidance⁹.

4.3.6 Visualisations

Visualisations and graphics used to support the assessment will include:

- ZTV maps analysing visibility of the Development to turbine tip and hub height as well as combined ZTV maps with other wind farms;
- Baseline photographs of existing views from the selected viewpoints;
- Wireline images to illustrate theoretical visibility of the Development;
- Photomontages to illustrate the predicted changes to views; and
- Night-time photomontages from viewpoints illustrating the appearance of aviation lighting will be confirmed through consultation.

Wirelines will include cumulative schemes and will be produced in accordance with NatureScot guidance.

4.3.7 Assessment of Cumulative Effects

The LVIA as part of the EIA Report will consider operational wind farms and those under construction as part of the existing baseline.

The Cumulative Landscape and Visual Impact Assessment (CLVIA) within the EIAR will consider the current pattern of wind farms across the wider landscape and include consented and applications schemes.

The process for identifying wind farms to be considered in detail in the CLVIA will exclude single wind turbines of less than 50 m to blade tip height. Data will be collected for wind farms within 45 km of the Development. The assessment of effects will focus on those with the potential to have significant cumulative relationships with the Development, which tend to be those within approximately 15-20 km of the Development. Based on professional judgement, the Cumulative Study Area will focus on consented and application sites located within 25 km Study Area from the outer turbines of the Development.

The CLVIA will assess the combined visual effects of the Development with other existing or reasonably foreseeable wind farms within the Study Area. The CLVIA will consider the addition of the consented schemes, and those which have undetermined applications to those that are operational and under-construction considered in the LVIA. The CLVIA will seek to focus detailed assessment on the cumulative effects of the Development with other developments most likely to have cumulative relationships with the Development that result in significant effects.

As noted above, the research to collect cumulative data will be undertaken using the local council's planning portals and the Energy Consents Unit (ECU) websites. A 'cumulative cut-off date' of 3 months prior to the Development submission is proposed to allow figures and assessment to be completed and to ensure that the most up to date information is illustrated. More distant scoping proposals and schemes with turbines below 50 m to blade tip height will not be included in the assessment.

The CLVIA will be carried out in accordance with the principles contained in guidance on cumulative assessment (NatureScot, 2021). This methodology assesses different development scenarios with increasing levels of 'uncertainty'. Cumulative scenarios would include:

- Existing scenario: this assesses the effects with all operational developments and those under construction present in the baseline and thus represents the LVIA Chapter of the EIAR;
- Consented Scenario: this scenario is somewhat speculative because it assumes that consented developments are also present in the landscape;
- In-planning Scenario: this is the most speculative scenario because it assumes all undetermined applications, as well as all developments included in the earlier

⁹ Landscape Institute (2019a). *Residential Visual Amenity Assessment (RVAA)*. [online] Available at: <https://landscapewpstorage01.blob.core.windows.net/www-landscapeinstitute-org/2019/03/tgn-02-2019-rvaa.pdf> [Accessed: 3rd of July 2026].

scenarios, are present in the landscape and therefore considers the effect of adding the Development into this landscape; and

- Observations on relationships with scoping stage sites will be made separately.

The intervisibility of the Development with other developments in the surrounding area will be explored by overlaying the ZTVs. Paired ZTVs will be prepared to illustrate the key relationships between the Development and other developments (or development groups) close to the Site where there is a cumulative relationship. It is not proposed that exhaustive combined ZTVs will be produced, but rather that selected combinations will be used to illustrate key intervisibility relationships. Cumulative visual effects will be assessed through analysis of combined ZTVs, views from individual viewpoints and sequential views from routes.

The magnitude of additional cumulative change to views or landscape character is the additional influence the Development has on the views or character of the landscape, assuming the other developments are already present.

The cumulative assessment will consider the in-combination effects of emerging wind energy development patterns, and how the Development relates to these patterns and trends.

4.3.8 Designated Landscapes

The LVIA Chapter of the EIAR will review the baseline description and citations of designated landscapes within the ZTV and within the Study Area. Following the assessment of landscape and visual effects, there will be a review of the identified effects for landscape and visual receptors within those designated areas, and how the identified effects will affect the key qualities and reasons for designation. No separate assessment of effects on designated areas will be made, to avoid double counting.

4.3.9 Limitations and Assumptions

The assumptions and limitations that have been encountered during the production of this Scoping Report are as follows:

- Limitations to the LVIA Chapter include a reliance on bare-ground modelling for wireframes and ZTVs used in graphics, which does not take account of potential screening by buildings and vegetation. The theoretical visibility indicated by the bare-ground models is therefore an over-estimation of visibility. Actual visibility would be identified for receptors based on fieldwork and will also be illustrated in photomontages;
- It should be noted that illustrations and modelling cannot replace the need for site visits and can only be used to represent what people may see from the viewpoint. Whilst accuracy of modelling is essential, modelling can only be as accurate as the data used and cannot be used to replace field visits. It is noted also that the movement of the turbines may render them more noticeable in the view than static photographs/ photomontages can portray; and
- Limitations to the cumulative assessment include the uncertainty of whether the proposed wind farms would be built in the future. This includes consented schemes that may or may not be built. The assessment will also rely on data available at the 'cut-off' date, and it should be noted that the locations and specifications of turbines may change for proposed and consented schemes before they are actually built, through redesign and/ or micro-siting. Any further assumptions and limitations encountered during the assessment process will be set out in the EIAR.

4.4 PRELIMINARY BASELINE CONDITIONS

4.4.1 Proposed Study Area

The Study Area to be adopted for the LVIA Chapter, in accordance with NatureScot guidance¹⁰, suggests that for turbines of over 150 m to blade tip, an initial study area of

¹⁰ NatureScot (2017). *Visual representation of wind farms: Guidance*. [online] NatureScot. Available at: <https://www.nature.scot/doc/visual-representation-wind-farms-guidance>. [Accessed: 3rd of July 2026]

45 km radius should be considered, followed by refinement of the Study Area to focus on potential significant effects.

Subsequently, a basic Zone of Theoretical Visibility (ZTV) analysis was prepared from the outer turbines allowing some early analysis of the potential geographic range of potential landscape and visual effects. The ZTV (see Figures 4.1 and 4.2) show areas from where any part (however small) of the turbines of the Development would theoretically be visible. It does not take account of any screening or indicate how much of any turbine may be seen, i.e. whether visibility at any given point is of blade tips only or full turbines. This type of ZTV therefore represents the maximum theoretical visibility of the Development.

The ZTV shows that theoretical visibility would be widespread within 5 km from the Site, thereafter, would reduce to the western side of the M74/A74 road corridor to the north west, and scattered on elevated areas and ridgelines to the north, east and west, with widespread theoretical visibility predicted in lowland areas around the Solway Estuary to the south and south west.

Following a review of the ZTV and fieldwork, the Study Area was reduced to allow reporting to focus on the extent of likely significant effects. Visual effects were considered for locations across the wider area, but those reported on in detail are within an area of approximately 25 km radius from the outermost turbines for viewpoints and routes, and approximately 10 km radius for settlements. Effects on landscape character and designated landscapes were also considered for a wider area, and the report focuses on those within approximately 15 km radius where significant effects were found to be more likely.

There is extensive wind energy development within this part of southern Scotland. Key considerations will be the interaction of the Development with existing and other Developments, and the overall development pattern of wind farms within the Study Area (see Figure 4.3). It is unlikely that significant cumulative effects due to the introduction of the Development would be identified at a range greater than 15 km, and it is proposed therefore that the CLVIA will focus on receptors within 15 km of the Development. Cumulative data collection will focus on schemes within approximately 25 km from the Development (to allow for views in opposite directions).

4.4.2 Baseline Conditions

Following identification of the Study Area, a preliminary review of the baseline conditions has been undertaken, and the findings reported in the following section.

The key sources of information to inform the baseline landscape and visual conditions of the Site and its surroundings are:

- Ordnance Survey and other leisure maps;
- Landscape Character Type (LCT) descriptions available from NatureScot¹¹;
- Landscape Character Assessment: Dumfries and Galloway – Landscape Evolution and Influences¹²
- Dumfries and Galloway Council, Supplementary Guidance, Dumfries and Galloway Wind Farm Landscape Capacity Study¹³;
- Dumfries and Galloway Wind Energy Landscape Sensitivity Study, Assessment of Larger Wind Turbines¹⁴; and

¹¹ NatureScot (2019). *Scottish Landscape Character Types Map and Descriptions*. [online] NatureScot. <https://www.nature.scot/professional-advice/landscape/landscape-character-assessment/scottish-landscape-character-types-map-and-descriptions>.

[Accessed: 3rd of July 2026]

¹² NatureScot (2019a). *Landscape Character Assessment: Dumfries and Galloway - Landscape Evolution and Influences*.

[online] NatureScot. <https://www.nature.scot/doc/landscape-character-assessment-dumfries-and-galloway-landscape-evolution-and-influences>.

[Accessed: 3rd of July 2026]

¹³ Dumfries and Galloway Council (2017). Part 1 Wind Energy Development: Development Management Considerations Appendix 'C' Dumfries & Galloway Wind Farm Landscape Capacity Study Local Development Plan Supplementary Guidance.

[online] Available at: https://www.dumgal.gov.uk/media/18596/Dumfries-and-Galloway-Wind-Farm-Land-Capacity-Study-Appendix-C/pdf/Wind_Energy_Appendix_C_Landscape_June_2017.pdf.

[Accessed: 3rd of July 2026]

¹⁴ Carol Anderson Landscape Associates (2024). *Dumfries and Galloway Wind Energy Landscape Sensitivity Study Assessment of Larger Wind Turbines*. [online] Available at: <https://dumgal.gov.uk/media/30055/Consultation-Wind-Energy->

- Citations for designated landscapes available from NatureScot, Historic Environment Scotland (HES), and Dumfries and Galloway Council.

4.4.2.1 The Site

The Site covers approximately 320 ha of semi-improved pasture south west of the operational Minsca Wind Farm, occupying the north, east and western slopes of Howat's Hill 247 m AOD. The Site generally slopes from east to west between approximately 247 m AOD and 144 m AOD and is drained by a series of small watercourses flowing west and south westwards into the Darlwhill Grain. To the east of Howat's Hill, the slopes descend west to east and are steep with several small watercourses draining into the Mein Water beyond the Site. There is one large area of forestry in the north western part of the Site covering Yellow Knowe, and smaller plantations on the northern slopes of Howat's Hill and southern periphery of the Site. A 400 kV overhead line passes through the western side of the Site in a north west to south east direction.

The Surrounding Landscape

The Site forms part of a complex transitional landscape of foothills which separate the Southern Uplands to the north, and the lowlands of the Solway coast to the south, with a wide lowland dale to the west which accommodates the M74/A74 road, West Coast Railway Line and various services linking Scotland and England. Agriculture and forestry are the main land uses, with larger settlements being located within the dale to the west of the Site and along the Solway coast, and smaller villages and hamlets being scattered within the surrounding area.

There are numerous existing wind farms within 25 km of the Site, as shown on Figure 4.3, including large developments as follows:

- Harestanes/Forest of Ae, 23.6 km to the north west;
- Minsca, directly to the north east of the Site;
- Crossdykes, 8.9 km to the north east; and
- Ewe Hill, 7.8 km to the north east.

Consideration of the relationship between the Development and these wind farms will be a key aspect for both design of the scheme and assessment of landscape and visual effects.

4.4.2.2 Landscape Character

The LCTs within the Site and Study Area are described in the 2019 NatureScot review of the landscape character of Scotland and illustrated in Figure 4.4.

The Site lies predominantly within the Foothills – Dumfries & Galloway (LCT 175), where all of the proposed turbines would be located, with approximately 0.87 ha of the southern part of the Site being situated within Upland Fringe – Dumfries & Galloway (LCT 172).

The extent of theoretical visibility within each LCT will be reviewed during the design evolution of the Development and the EIAR.

4.4.2.3 Visual Amenity

Effects on views and visual amenity occur when the Development changes or influences the view or visual amenity as experienced by people. Visual amenity may be described as the overall visual experience from a given location, whilst a 'view' reflects a specific direction. People may invariably be engaged in different activities or have different perspectives and in recognition of these differences, it is common practice to refer to 'visual receptors' and these include:

- Residents within settlements and of individual properties, the latter within 2.5 km from the nearest turbine;
- People who travel through the area with potential views of the Development; and

- People engaged in recreational activities including walkers on hills, core paths and visitors to tourist destinations where the visual experience is likely to include a focus on the surrounding landscape.

Visual Receptors

The ZTV shown in Figure 4.5 indicates theoretical visibility at several settlements within the wider 45 km Study Area including Lockerbie, Dumfries, Lochmaben, Annan and several smaller settlements. The LVIA Chapter of the EIA Report will concentrate on the effect on views from settlements within 15 km of the Site, where there is potential for significant effects to occur. Settlements that are not within the ZTV, and those beyond 15 km, will be scoped out of the LVIA Chapter

Residential properties within approximately 2.5 km of the Site will be assessed separately in the RVAA which will be presented in an appendix and summarised in the LVIA chapter.

Roads within the Study Area tend to follow valleys or passes, although a network of roads cover flatter land. The main routes from which theoretical visibility is identified include but not limited to:

- A74 (M) road approximately 5.2 km to the west of the Site;
- M6; approximately 14.4 km to the south west;
- A7 road: approximately 14.7 km to the east;
- A75 road: approximately 11.2 km to the south west;
- B7068 road: approximately 2.3 km; and
- B725 road: approximately 1.7 km to the south.

The West Coast Main Line rail route between Glasgow and London passes through the landscape to the west of the Site in a north to south direction at approximately 5.0 km. The ZTV indicates theoretical visibility of the Development from the railway between Moffat and Lockerbie to be sporadic, and widespread between Lockerbie and Carlisle, in particular, within 10 km of the Site.

Recreational routes tend not to be limited to valleys, with the Annandale Way long distance path crossing the Southern Uplands to the north before passing through the dale towards Annan in a north to south direction approximately 7.6 km west of the Site. National Cycle Route 74 (NCN74) from Gretna to Glasgow runs parallel to the A74 (M) road approximately 5.4 km to the west of the Site.

Proposed LVIA Viewpoints

Viewpoints proposed for the assessment of visual effects will be discussed with Dumfries and Galloway Council and NatureScot, with an initial list of locations identified in Table 4.1 (shown on Figure 4.5). These include locations to represent:

- Views from the local roads including those listed above;
- Views from settlements close to the Development;
- Views from key visitor locations within the surrounding landscape e.g. from the Annandale Way; and
- Views from hilltops that are both popular with walkers and representative of designated landscapes, such as Wichita Hill, Joe Graham's Monument, and Burnswark Hill.

Table 4.1 Preliminary Viewpoints

No.	Viewpoint Name	Approx. Distance (km)	Receptor Represented
1	Waterbeck	2.3	Settlement.
2	Burnswark Hill	2.6	Popular Hill summit, archaeological interest.
3	B7068 road, Bankshill	2.6	Settlement.
4	Middlebie	2.8	Settlement.
5	West Linnbridgeford	4.1	Settlement.
6	Ecclefechan	4.7	Settlement.

No.	Viewpoint Name	Approx. Distance (km)	Receptor Represented
7	Corrie Common	6.0	Settlement.
8	Corrie Road, Lockerbie Golf Club	6.6	Settlement, Golf Course, and Footpath.
9	Annandale Way	7.7	Long Distance Walking Route.
10	Annan	11.2	Settlement.
11	Joe Grahams Monument, Annandale Way	12.5	Long Distance Walking Route, and Popular Summit.
12	Annandale Way, Lochmaben	12.7	Long Distance Walking Route, and Settlement.
13	Gretna	13.9	Settlement.
14	Bowness-on-Solway	15.9	Settlement, and NCR 72.
15	Wichita Hill	16.4	Popular Summit.

4.4.2.4 Cumulative

As noted previously, there are existing wind farms within and around the Study Area, which will be considered as part of the baseline for the LVIA chapter of the EIAR. With respect to potential cumulative landscape and visual effects with other proposed wind farms, there are numerous developments at varied stages in the planning process. Given the ever-changing situation, cumulative data is not collated exhaustively at this time but will be prepared during the LVIA chapter. Local authority planning portals and the ECU website will be used to identify proposed wind farms, and the final list would be agreed with statutory consultees.

4.4.2.5 Landscape Designations

Landscape designations between 15 km to 45 km would not be included in the detailed LVIA within the EIA Report as it is not considered that the addition of the Development would result in a significant effect upon the special qualities of the designation.

Landscape designations within the 15 km Study Area are illustrated on Figure 4.6 as follows:

- Langholm Hills Regional Scenic Area (RSA) – 11.3 km to the north east; and
- Torthwald Ridge RSA – 11.1 km to the west.

Dumfries and Galloway Council Technical Paper¹⁵ that accompanies the Local Development Plan will be referred to when assessing the special qualities of the two RSAs in the LVIA part of the EIAR.

4.5 POTENTIAL SIGNIFICANT EFFECTS

4.5.1 Construction

The landscape and visual effects that could arise as a result of the Development during construction are identified as follows:

- Temporary effects on landscape character, primarily as a result of wind turbine installation during construction, with direct physical effects on the fabric on the landscape and on the character of the Site landscape relating to ground level structures, and indirect effects on the perceived effects on the character of the surrounding landscape; and
- Temporary visual effects on views, primarily as a result of visibility of ground level activity and structures as well as wind turbine installation during construction, experienced by people (visual receptors).

¹⁵ Dumfries and Galloway Council (2014) *Local Development Plan: Technical Paper. Regional Scenic Areas*. [online] Available at: [https://www.dumgal.gov.uk/media/17552/Local-Plans-Technical-Paper-No-6-Identification-of-Regional-Scenic-Areas/pdf/Regional Scenic Areas Technical Paper \(including Errata pages\).pdf](https://www.dumgal.gov.uk/media/17552/Local-Plans-Technical-Paper-No-6-Identification-of-Regional-Scenic-Areas/pdf/Regional%20Scenic%20Areas%20Technical%20Paper%20(including%20Errata%20pages).pdf) [Accessed: February 2025]

4.5.2 Operation

The landscape and visual effects that could arise as a result of the Development during operation are identified as follows:

- Long-term effects on landscape character, as a result of wind turbine operation and ground level structures, either affecting the pattern of elements that define the character or affecting the visual/ perceptual characteristics of landscape character;
- Long-term visual effects as a result of the Development on nearby views, with effects as a result of wind turbine operation on wider views, experienced by people at places with visibility of different elements of the Development. This includes effects of aviation safety lighting after dark and effects on the visual aspects of residential amenity for properties close to the Site;
- Cumulative effects of the Development in combination with consented and proposed wind farm schemes across the wider area, including combined, successive and sequential visibility; and
- Implications of significant effects identified in or affecting designated landscapes, which may affect their special qualities and reasons for designation.

4.5.3 Decommissioning

The effects of the Development during decommissioning would be similar to those identified during construction but would reduce as decommissioning proceeds.

4.6 MATTERS AND ASPECTS TO BE SCOPED OUT OF THE ASSESSMENT

To allow focusing of the assessment, the LVIA Chapter of the EIAR will identify where receptors are unlikely to be affected by the Development, either through having little or no theoretical visibility, or being distant from the Development, those receptors will be scoped out of the LVIA Chapter. In addition to this, the scope of reporting will be further focused on those effects that are found to be significant or contribute to the meaningful discussion of landscape and visual effects of the Development.

Likely to be scoped out of the LVIA Chapter, on the basis of initial fieldwork and ZTV coverage, are the following elements (distances from the outer turbines):

- Effects on landscape character beyond approximately 15 km;
- Effects on views from viewpoints beyond approximately 25 km, although there would be locations where the Development would be visible at greater distances;
- Effects on views from routes beyond approximately 25 km;
- Effects on views from local paths (Core Paths and locally promoted paths) beyond approximately 5 km;
- Effects on views from settlements beyond approximately 10 km;
- Effects on designated landscapes beyond approximately 25 km;
- Cumulative effects with turbines of less than 50 m to blade tip; and
- Decommissioning effects, which are similar to, but in reverse of construction effects, reducing on completion.

No receptors or impacts will be scoped out prior to the confirmation of the final layout, details on aviation lighting requirements and turbine tip height included in the Development.

4.7 QUESTIONS TO CONSULTEES

- Are you in agreement with the proposed approach to consultation?
- Are you in agreement with the proposed methodology to be applied to the LVIA Chapter of the EIA Report?
- Are you in agreement with the proposed Study Areas for the assessment of landscape and visual receptors (including CLVIA)?
- Are there any comments or suggestions in relation to the viewpoint locations proposed in Table 4.1?
- Are there any comments regarding the visual receptors to be assessed?
- Are there any comments or suggestions on the approach to cumulative landscape and visual assessment?
- Are there any comments on the approach to assessing the effects of turbine aviation lighting?

- Are you in agreement that the assessment of the effects on landscape designations should focus on two RSAs located within 15 km of the Site?

5 CULTURAL HERITAGE

5.1 INTRODUCTION

This Chapter of the Scoping Report provides an overview of the archaeology and cultural heritage context for the Development. It sets out the proposed approach to the assessment of potential significant effects associated with the Development on archaeology and cultural heritage features. The Chapter has been produced by CFA Archaeology.

The Chapter is supported by the following Figures:

- Figure 5.1: Cultural Heritage: Inner Study Area
- Figure 5.2: Cultural Heritage: Outer Study Area

It is supported by the following Gazetteer:

- Appendix 5.1: Cultural Heritage Assets in the Inner Study Area

This Chapter includes the following elements:

- Preliminary Baseline Conditions;
- Likely Environmental Effects;
- Assessment Methodology;
- Matters and Aspects Scoped Out; and
- Questions to Consultees.

5.2 PRELIMINARY BASELINE CONDITIONS

5.2.1 Proposed Study Areas

Two Study Areas will be used for the cultural heritage assessment and have been used to produce a preliminary baseline review.

- The Inner Study Area - the Site will form the study area for the identification of heritage assets that could receive direct or indirect physical effects arising from the construction of the Development (shown on Figure 5.1).
- The Outer Study Area - a wider study area extending 10 km around the outermost finalised proposed turbine locations (and including the Inner Study Area with other aspects of the Development) will be used for the identification of cultural heritage assets (designated heritage assets and non-statutory register (NSR) sites) whose settings may be affected by the Development (including cumulative effects) (shown on Figure 5.2). These effects will be identified using the ZTV's (see Section 4.3.6) which will also be assessed to identify any designated assets beyond this 10 km Study Area that have settings that may be especially sensitive to the Development.

5.2.2 Preliminary Baseline Conditions

An initial review of the baseline conditions is presented below for the Inner Study Area and the Outer Study Area. The baseline conditions have been established through consultation of the Dumfries and Galloway Council (DGC) Historic Environment Record (HER); National Record of the Historic Environment (NHRE) database (Trove); Historic Environment Scotland (HES) data warehouse; historic mapping available online via the National Library of Scotland, Lidar imagery, and the results of a field survey which was conducted in February 2024 as part of a feasibility study. The field survey did not extend to the northern most extension of the Inner Study Area (north of the existing area of forestry plantation).

The baseline conditions will be further reviewed and updated within the EIAR in accordance with the methodology which is set out in Section 5.4.

5.2.2.1 Inner Study Area

There are no designated heritage assets in the Inner Study Area.

Forty non-designated sites have been identified in the Inner Study Area through consultation of the DGC HER, desk-based research and field survey.

There are no non-designated heritage assets in the Inner Study Area that are classified in the DGC HER as assets of 'national importance'.

The majority of the recorded sites are areas of relict rig and furrow cultivation, linear field boundaries, structures and enclosures, which flank Maggie's Burn and the Grainhall Burn and form elements of the post-medieval/pre-improvement period farming landscape. They are considered to be of heritage value at the local to regional level and to be of low to medium sensitivity.

Possible prehistoric settlement enclosures (2; 37), a rectangular enclosure (27), an area of possible cord rig (28) a group of two burnt mounds (30), and a separate burnt mound (39) are recorded in the HER. These prehistoric sites are assessed as being of heritage value at the regional level and of medium sensitivity.

The former location of a sheep shelter (34) which no longer survives and a trackway (3) crossing Maggie's Burn, are considered to be of negligible heritage value and of negligible sensitivity. In addition, there is an entry in the HER: Perceiving Burn (36) for which no further information is available, and it is unclear whether any archaeological feature exists, therefore no heritage value/sensitivity is assigned.

The locations of heritage assets in the Inner Study Area are illustrated on Figure 5.1, and a full list is provided in Appendix 5.1.

5.2.2.2 Outer Study Area

There are no World Heritage Sites, Inventory Gardens and Designed Landscapes, Inventory Historic Battlefields or Conservation Areas in the 10 km Outer Study Area.

Scheduled Monuments

There are 59 Scheduled Monuments within 10 km of the Development Site. These monuments include prehistoric settlement, hillforts, and funerary monuments; Roman camps and forts, and medieval defensive and ecclesiastical sites. The closest Scheduled Monuments to the Development are:

- Burnswark or Birrenswark Hill, fort & Roman camps (SM667) located 1.4 km to the west.
- Minsca, settlement 295m WNW of (SM12663) located 1.4 km to the north, beyond the existing wind farm.
- Birren Hill, enclosure and farmstead 750m W of Carruthers (SM645) located 1.9 km to the northeast.

As scheduled monuments these are assets of heritage value at the national level and of high sensitivity.

HER NSR Sites of National and Regional Importance

There are 29 non-designated assets within 10 km of the Development Site that are classified in the DGC HER as assets of 'national importance' and are therefore considered to be assets of heritage value at the national level and of high sensitivity. In addition, there are 10 non-designated assets within 5 km of the Development Site that are classified in the HER as assets of 'regional importance' and are therefore considered to be assets of heritage value at the regional level and of medium sensitivity. These include prehistoric settlements and burial cairns, and Roman forts and camps.

Listed Buildings

There are 228 Listed Buildings within 10 km of the Development Site (12 Category A of heritage value at the national level and of high sensitivity, 144 Category B of heritage value at the regional level and of medium sensitivity and 72 Category C of heritage value at the local level and of low sensitivity). Many of the Category B and C Listed Buildings have localised settings within the built environment of towns and villages throughout the Outer Study Area, at Lockerbie, Ecclefechan and Waterbeck for example.

Non-Inventory Designed Landscapes

The DGC HER records 15 Non-Inventory Designed Landscapes (NIDLs) of 'regional importance' within 10 km of the Development Site. These are assets of heritage value at the regional level and of medium sensitivity.

Archaeologically Sensitive Area

The DGC HER records one Archaeologically Sensitive Area (ASA) of 'regional importance' (an asset of assets of heritage value at the regional level and of medium sensitivity) within 5 km of the Development Site. The ASA encompasses Burnswark Hill and, in association with the Scheduled Monument (SM667).

The locations of heritage assets in the 10 km Outer Study Area are illustrated on Figure 5.2.

5.3 LIKELY ENVIRONMENTAL EFFECTS

5.3.1 Construction

The Development has been designed to avoid known archaeological features within the Inner Study Area. At south-west of the Development, the proposed access track passes through a group of historic agricultural features (assets of low sensitivity) but largely follows an existing farm track where possible. There is potential for direct or indirect construction impacts on hitherto unrecorded non-designated heritage assets within the Inner Study Area. Direct construction impacts are likely to occur where the physical fabric of the asset is removed or damaged.

The Development has potential for indirect construction impacts on known, and hitherto unrecorded archaeological remains within the Inner Study Area. Indirect impacts occur where the fabric of an asset, or buried archaeological remains, are removed or damaged as an indirect result of the proposal, such as may occur as a result of changes to the hydrological regime or through vibration or seismic activity associated with construction works or traffic movement.

5.3.2 Operation

The Development also has potential to affect the settings of designated heritage assets and NSR sites within the Inner and Outer Study Area through change within their settings adversely affecting their cultural significance or adversely affecting the ability to understand, appreciate or experience the sites and their settings.

Following an initial review of designated assets and the scoping ZTV (Figure 5.2) Burnswark or Birrenswark Hill, fort & Roman camps (SM667) has been identified as requiring a detailed setting assessment.

5.3.3 Decommissioning

No adverse effects are predicted during the decommissioning of the Development. It is expected that the as-built infrastructure would be used for this work, and therefore, no additional direct physical impacts to heritage assets within the Inner Study Area will arise. Any Operational setting effects resulting from the Development would be removed by Decommissioning.

5.4 ASSESSMENT METHODOLOGY

5.4.1 Legislation, Policy and Guidance

The assessment will be prepared following the advice and guidance in the following documents:

5.4.1.1 Legislation

- Ancient Monuments and Archaeological Areas Act 1979¹⁶.
- Planning (Listed Buildings and Conservation Areas (Scotland) Act 1997¹⁷ (as amended by Historic Environment (Amendment) (Scotland) Act 2011)¹⁸.

¹⁶ HM Government (1979) Ancient Monuments and Archaeological Areas Act 1979 (reprinted 1996). London, HMSO.

¹⁷ HM Government (1997) Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997. London, HMSO.

¹⁸ Historic Environment (Amendment) (Scotland) Act 2011.

- Town and Country Planning (Development Management Procedure) (Scotland) Regulations 2013¹⁹.
- Town and Country Planning (Environmental Impact Assessment) Regulations 2017²⁰.

5.4.1.2 Planning Policies

- National Planning Framework 4 (NPF 4) (Policy 7)²¹.
- Historic Environment Policy for Scotland (HEPS)²².
- Dumfries and Galloway Council Local Development Plan 2²³, including supplementary guidance^{24,25}.

5.4.1.3 Guidance

- Environmental Impact Assessment Handbook (SNH and HES 2018)²⁶.
- Standard and Guidance for Historic Environment Desk-Based Assessment (Chartered Institute for Archaeologists (CIfA) (2020)²⁷.
- Standard and Guidance for Commissioning Work or Providing Consultancy Advice on Archaeology and the Historic Environment (CIfA 2020)²⁸.
- Principles of Cultural Heritage Impact Assessment in the UK (IEMA, IHBC & CIfA 2021)²⁹.
- Designation Policy and Selection Guidance (HES 2019)³⁰.
- Managing Change in the Historic Environment: Setting (HES 2016)³¹.
- Planning Advice Note 1/2013: Environmental Impact Assessment (PAN 1/2013)³².
- Guidelines on Streamlining Environmental Impact Assessment for Onshore Wind Farms (Scottish Renewables 2025)³³.

5.4.2 Desk-based Assessment Method

A detailed desk-based assessment will be conducted covering the Inner Study Area building on, and supplementing, where necessary, the baseline assessment conducted to date. The purpose will be to identify all known heritage assets that could be affected by the Development, and to inform an assessment of the archaeological potential of the Development Site.

Sources to be consulted for the collation of data will include:

- Dumfries and Galloway Council Historic Environment Record.
- National Record of the Historic Environment (NRHE) (Trove).
- Historic Environment Scotland's (HES) on-line GIS Spatial Data Warehouse³⁴.
- Historic maps held by National Library of Scotland³⁵.
- Modern aerial photographic imagery available online.
- Historic Land-Use Assessment Data for Scotland (HLAmap)³⁶.
- Lidar data available through Scottish Remote Sensing Portal³⁷.

¹⁹ HM Government (2013) The Town and Country Planning (Development Management Procedure) (Scotland) Regulations 2013. London, HMSO.

²⁰ Scottish Government (2017) The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017. Edinburgh, Scottish Government.

²¹ Scottish Government (2024) National Planning Framework for Scotland 4. Edinburgh, Scottish Government.

²² HES (2019) Historic Environment Policy for Scotland (HEPS). Edinburgh, HES.

²³ Dumfries and Galloway Council (2019) Local Development Plan 2 (October 2019).

²⁴ Dumfries and Galloway Council (2018) Archaeologically Sensitive Areas (ASAs): Technical Paper. January 2018.

²⁵ Dumfries and Galloway Council (2020) Historic Built Environment: Supplementary Guidance. February 2020.

²⁶ SNH & HES (2018) Environmental Impact Assessment Handbook.

²⁷ CIfA (2020) Standard and guidance for historic environment desk-based assessment. London, CIfA.

²⁸ CIfA (2020) Standard and guidance for commissioning work or providing consultancy advice on archaeology and the historic environment. London, CIfA.

²⁹ IEMA, IHBC & CIfA (2021) Principles of Cultural Heritage Impact assessment in the UK. Lincoln, IEMA, IHBC & CIfA.

³⁰ HES (2019) Designation Policy and Selection Guidance. Edinburgh, HES.

³¹ HES (2020) Managing Change in the Historic Environment – Setting. Edinburgh, HES.

³² Scottish Government (2013) Planning Advice Note (PAN) 1/2013: Environmental Impact Assessment. Edinburgh, Scottish Government.

³³ Scottish Renewables (2025) Guidelines on Streamlining Environmental Impact Assessment for Onshore Wind Farms. September 2025.

³⁴ Historic Environment Scotland Spatial Data Warehouse. Available at: <http://portal.historicenvironment.scot/spatialdownloads>.

³⁵ National Library of Scotland Map Library. Available at: <https://maps.nls.uk/>.

³⁶ HES Historic Land-Use Assessment for Scotland (HLAmap). Available at: <http://hlapmap.org.uk/>.

³⁷ Scottish Remote Sensing Portal. Available at: <https://remotesensingdata.gov.scot/>.

- Any existing geotechnical data, including peat survey data if available.
- Other readily accessible published sources, including any reports referenced in HER/NRHE records.

5.4.3 Field Survey Method

A targeted walk-over field survey within the Site will be carried out with the aim to:

- Assess the present baseline condition of the heritage assets identified through the desk-based assessment;
- Identify any further features of cultural heritage interest not detected from the desk-based assessment that could be directly or indirectly affected by the Proposed Development; and
- Assess the Inner Study Area for its potential to contain currently unrecorded, buried archaeological remains.

Site visits to key heritage assets in the Outer Study Area will also be carried out, where necessary and in as far as access is possible, to assess the predicted effect of the Development on their settings. Site visits will include any assets specifically identified by consultees as requiring assessment and those identified through analysis of the ZTV's, where it is considered, based on professional judgement, that the effect on their settings could be significant.

5.4.4 Assessment Method

The effects of the Development on heritage assets will be assessed on the basis of their type (direct physical effects, indirect impacts, setting impacts, and cumulative impacts) and nature (adverse or beneficial). The assessment will take into account the value/ sensitivity of the heritage asset, and its setting, and the magnitude of the predicted impact.

- Direct physical impacts - occur where the physical fabric of the asset is removed or damaged, or where it is preserved or conserved, as a direct result of the Development. Such impacts are most likely to occur during the construction phase and are most likely to be permanent.
- Indirect impacts - occur where the fabric of an asset, or buried archaeological remains, is removed or damaged, or where it is preserved or conserved, as an indirect result of the Development even though the asset may lie some distance from it. Such impacts are most likely to occur during the construction phase and are most likely to be permanent.
- Setting impacts - these are generally direct and result from the Development causing change within the setting of a heritage asset that affects its cultural significance or the way in which it is understood, appreciated, and experienced. Such impacts are generally, but not exclusively, visual, occurring directly as a result of the appearance of the Development in the surroundings of the asset. However, they may relate to other senses or factors, such as noise, odour or emissions, or historical relationships that do not relate entirely to intervisibility, such as historic patterns of land-use and related historic features. Such impacts may occur at any stage of a Development's lifespan and may be permanent, reversible, or temporary.
- Cumulative impacts - can relate to the physical fabric or setting of assets. They may arise as a result of impact interactions, either of different impacts of the Development itself, or additive impacts resulting from incremental changes caused by the Development together with other projects already in the planning system.
- Adverse effects - are those that detract from or reduce cultural significance or special interest of heritage assets or their settings.
- Beneficial effects - are those that preserve, enhance or better reveal the cultural significance or special interest of heritage assets or their settings.

5.4.4.1 Assigning Sensitivity to Heritage Assets

Cultural heritage assets are assigned value/ importance through the designation process. Designation ensures that sites and places are recognised and protected by law through the planning system and other regulatory processes. The level of protection and how a site or place is managed varies depending on the type of designation and the laws and policies that

apply to it³⁸. In accordance with the Environmental Impact Assessment Handbook (SNH & HES, 2018³⁹, Appendix 1: Cultural Heritage Impact Assessment), Heritage Assets are *'features, buildings or places that provide physical evidence of past human activity identified as being of sufficient value to this and future generations to merit consideration in the planning system'*. The sensitivity of heritage assets is considered to range from high to negligible. Assets assessed to be of a value between high and low are considered to be sufficient value to this and future generations to merit consideration in the planning system. Any feature assessed to be of little or no intrinsic heritage value and therefore not of sufficient value, to this and future generations to merit consideration in planning decisions, may be said to have negligible sensitivity. Features assessed to be of negligible sensitivity will be listed in an appendix, no further assessment of these features will be included.

Table 5.1 summarises the relative sensitivity of heritage assets (including their settings) relevant to the Development, based on the guidance set out in the SNH/HES EIA Handbook (version 5; 2018)⁴⁰.

Table 5.1 Sensitivity of Heritage Assets

Sensitivity of Asset	Definition / Criteria
High	Assets valued at an international or national level, including: World Heritage Sites Scheduled Monuments Category A Listed Buildings Inventory Gardens and Designed Landscapes Inventory Historic Battlefields Non-designated assets that meet the relevant criteria for designation (including sites recorded in HERs as non-statutory register (NSR) sites of presumed national importance)
Medium	Assets valued at a regional level, including: Archaeological sites and areas that have regional value (contributing to the aims of regional research frameworks) Archaeologically Sensitive Areas (ASA) (where these are identified in Local Authority records) Non-Inventory Designed Landscapes (NIDL) (where these are identified in Local Authority records) Category B Listed Buildings Conservation Areas
Low	Assets valued at a local level, including: Archaeological sites that have local heritage value Category C listed buildings Unlisted historic buildings and townscapes with local (vernacular) characteristics
Negligible	Assets of little or no intrinsic heritage value, including: Artefact find-spots (where the artefacts are no longer in situ and where their provenance is uncertain) Poorly preserved examples of particular types of features (e.g. quarries and gravel pits, dilapidated sheepfolds, etc)

544.2 Criteria for Assessing the Magnitude of Impact

The magnitude of impact (adverse or beneficial) will be assessed in the categories, high, medium, low, and negligible as described in Table 5.2.

Table 5.2 Magnitude of Impact

Magnitude of Impact	Criteria
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³⁸ HES (2019) Designation Policy and Selection Guidance. Edinburgh, HES.

³⁹ SNH & HES (2018) Environmental Impact Assessment Handbook.

⁴⁰ SNH & HES (2018) Environmental Impact Assessment Handbook. SNH & HES.

	Adverse	Beneficial
High	Changes to the fabric or setting of a heritage asset resulting in the complete or near complete loss of the asset's cultural significance, such that it may no longer be considered a heritage asset.	Preservation of a heritage asset in situ where it would otherwise be completely lost or almost completely lost in the do-nothing scenario.
Medium	Changes to the elements of the fabric or setting of a heritage asset that contribute to its cultural significance such that this is substantially altered.	Changes to key elements of a heritage asset's fabric or setting, resulting in its cultural significance being preserved where this would otherwise be lost, or restored.
Low	Changes to the elements of the fabric or setting of a heritage asset that contribute to its cultural significance such that this is slightly altered.	Changes that result in elements of a heritage asset's fabric or setting that detract from its cultural significance being removed.
Negligible	Changes to fabric or setting of a heritage asset that leave its cultural significance unchanged.	
No Impact	No changes to the fabric or setting of a heritage asset.	

544.3 Assessment of Significance of Effects

The sensitivity of the asset (Table 5.1) and the magnitude of the predicted impact (Table 5.2) are used to inform an assessment of the significance of the effect (physical effect or effect on setting), summarised using the formula set out in the matrix in Table 5.3. The matrix employs a graduated scale of significance (from Negligible to Major effects) and where two outcomes are possible through application of the matrix, professional judgment supported by reasoned justification, will be used to determine the level of significance.

Table 5.3: Significance of Effects

Magnitude of Impact	Sensitivity of Asset		
	High	Medium	Low
High	Major	Major / Moderate	Moderate / Minor
Medium	Major / Moderate	Moderate	Moderate / Minor
Low	Moderate / Minor	Moderate / Minor	Minor
Negligible	Minor / Negligible	Minor / Negligible	Negligible
No Impact	None	None	None

Major and Moderate effects are considered to be 'significant' in the context of the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (EIA Regulations)⁴¹. Minor and Negligible effects are considered to be 'not significant'.

Where a significant effect on the setting of a Scheduled Monument is predicted as a result of change within its surroundings, using the approach outlined above, an assessment will be made as to whether that effect would result in a significant adverse effect on the integrity of its setting (NPF 4 Policy 7(h)ii). For the purposes of the assessment, *"Changes to factors of setting that contribute to cultural significance such that the understanding, appreciation and experience of an asset are not adequately retained will have a significant adverse impact on the integrity of its setting"*⁴² as defined and agreed at the Hill of Fare Inquiry. A significant effect in EIA terms does not necessarily equate to a significant impact on the integrity of the assets setting. Impacts on other designated assets will also be assessed in line with their relevant NPF4 tests.

⁴¹ Scottish Government (2017) Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017. Edinburgh, Scottish Government.

⁴² Hill of Fare Inquiry (July 2025) DEPA Reference WIN-110-4 Summary of Case - Historic Environment Scotland.

5.4.4.4 Assessment of Effects on Setting

The assessment will be in accordance with the guidance set out within the SNH and HES EIA Handbook⁴³ and Historic Environment Scotland's guidance document, 'Managing Change in the Historic Environment: Setting'⁴⁴. This will ensure the assessment considers the context and setting of the identified heritage assets, as well as the potential change in cultural significance.

The SNH/HES EIA Handbook (2018) Appendix 1, paragraph 42 advises that:

"In the context of cultural heritage impact assessment, the receptors are the heritage assets and impacts will be considered in terms of the change in their cultural significance".

Historic Environment Scotland's guidance document, 'Managing Change in the Historic Environment: Setting', notes that:

"Setting can be important to the way in which historic structures or places are understood, appreciated and experienced. It can often be integral to a historic asset's cultural significance."

"Setting often extends beyond the property boundary or 'curtilage' of an individual historic asset into a broader landscape context".

The guidance also advises that:

"If Development is likely to affect the setting of a key historic asset, an objective written assessment should be prepared by the applicant to inform the decision-making process. The conclusions should take into account the significance of the asset and its setting and attempt to quantify the extent of any impact. The methodology and level of information should be tailored to the circumstances of each case".

The guidance recommends that there are three stages in assessing the impact of a development on the setting of a historic asset or place.

- Stage 1: identify the historic assets that might be affected by the Development.
- Stage 2: define and analyse the setting by establishing how the surroundings contribute to the ways in which the historic asset or place is understood, appreciated and experienced.
- Stage 3: evaluate the potential impact of the proposed changes on the setting, and the extent to which any negative impacts can be mitigated.

The SNH and HES EIA Handbook Appendix 1, paragraph 43 advises that:

"When considering setting impacts, visual change should not be equated directly with adverse impact. Rather the impact should be assessed with reference to the degree that the proposal affects those aspects of setting that contribute to the asset's cultural significance".

Following these recommendations, ZTVs for the Development will be used to identify those heritage assets from which there would be theoretical visibility of one or more of the proposed wind turbines, solar PV arrays or BESS, and the degree of theoretical visibility.

Scheduled Monuments, non-designated assets identified in HERs as 'potentially of schedulable quality' (NSR sites) and Archaeologically Sensitive Areas, where long-distance views and intervisibility are an important aspect of their settings, Category A and B Listed Buildings, Conservation Areas and Non-Inventory Designed Landscapes, where present within 10 km of the outermost turbines, will be included in the assessment. Category C Listed Buildings within 5 km of the outermost turbines will also be included in the assessment.

Consideration will be given to designated heritage assets beyond 10 km where long-distance views and intervisibility between monuments are an important aspect of their settings.

Consideration will be given to designated heritage assets where there is no predicted visibility from the asset but where views of or across the asset are important factors

⁴³ SNH & HES (2018) Environmental Impact Assessment Handbook. SNH & HES.

⁴⁴ HES (2016) Managing Change in the Historic Environment: Setting. Edinburgh, HES.

contributing to its cultural significance. In such cases, consideration will be given to whether the Development could appear in the background to those views.

5.4.4.5 **Proposed Visualisation Viewpoint**

Where appropriate, the setting assessment will be informed by visualisations including for the assessment of Burnswark or Birrenswark Hill, fort & Roman camps (SM667) (see 5.3: Likely Environmental Impacts). Visualisations produced for the LVIA assessment (see Table 4.1 Preliminary Viewpoints) will be cross referenced. These include a LVIA viewpoint from the summit of Burnswark Hill (Viewpoint 2 and viewpoints from the surrounding landscape. A cultural heritage viewpoint is proposed in Table 5.4.

Table 5.4: Preliminary Cultural Heritage Viewpoint

Viewpoint Name	Easting	Northing	Approx. Distance (km)	Receptor / Purpose
Western approach to Burnswark or Birrenswark Hill, fort & Roman camps	316794	577487	4.5	Burnswark or Birrenswark Hill, fort & Roman camps (SM667). To show the view on the approach to the hill with the Development in the background.

5.4.4.6 **Cumulative Assessment**

The assessment of cumulative effects on heritage assets will be based upon consideration of the effects of the Development on the settings of assets with statutory designations and NSR sites within the Outer Study Area, in addition to the likely effects of other developments that are under construction, those that are consented but not yet built and those that are currently at the application stage (and for which sufficient detail is available upon which to develop an assessment). Developments at the scoping or pre-application stage will not be included in the assessment, as such proposals are not fully formed and may be subject to changes that cannot be foreseen. The schemes to be included in the cumulative impact assessment will be those identified through the LVIA consultations with DGC and Nature Scot.

The assessment of cumulative effects on the settings of heritage assets from the Development in combination with pre-existing developments will be addressed in the course of the assessment of effects of the Development alone, as pre-existing developments are part of the baseline environment.

The cumulative assessment will take into account the relative scale (i.e. size and number of turbines) of the identified developments, their distance from the affected assets, and the potential degree of visibility of the various developments from the assets under consideration. The use of cumulative wireline visualisations will be used to aid the assessment.

5.5 **MATTERS AND ASPECTS TO BE SCOPED OUT OF THE ASSESSMENT**

The following aspects outlined in Table 5.5 are proposed to be scoped out of the assessment.

Table 5.5: Aspects to be Scoped out of the Assessment

Aspect	Phase of Development	Reason
Impacts to the setting of Category C Listed Buildings further than 5 km from the outermost turbines	Operation	These Listed Buildings are likely to have a localised setting which will not be affected by changes in the landscape at great distances.
Decommissioning Effects	Decommissioning	No adverse effects are predicted during the decommissioning of the

		Development as it is expected that the as-built infrastructure would be used for this work.
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5.6 QUESTIONS TO CONSULTEES

- Is the proposed assessment methodology, including proposed Study Areas, accepted?
- Are there any comments or suggestions in relation to the viewpoint locations proposed in Table 4.1 and Table 5.4?
- Do the consultees agree with the aspects proposed to be scoped out of the assessment?
- Are there any additional assets beyond the proposed Study Areas that consultees consider significant effects are likely to occur?

6 HYDROLOGY, HYDROGEOLOGY AND GEOLOGY

6.1 INTRODUCTION

This Chapter of the Scoping Report relates to the potential effects of the Development on Hydrology, Hydrogeology and Geology resource. This assessment will be undertaken by Gondolin Land & Water Ltd (Gondolin).

This Chapter is supported by the following Figures:

- Figure 6.1: Carbon and Peatland Map;
- Figure 6.2: Phase 1 Peat Depth Results; and
- Figure 6.3: Hydrological Overview.

This section includes the following elements:

- Consultation to Date;
- Preliminary Baseline Conditions;
- Likely Environmental Effects;
- Assessment Methodology;
- Assessment of Cumulative Effects;
- Matters and Aspects Scoped Out; and
- Questions to consultees

6.2 CONSULTATION TO DATE

Pre-application consultation was undertaken by Gondolin who issued Freedom of Information (FOI) requests to DGC and the Scottish Environment Protection Agency (SEPA) on 13th December 2024. A response has been received from DGC on 14th January 2025 which provided information on flood risk and registered Private Water Supply (PWS) which has been duly incorporated into this Scoping assessment. A response from SEPA was received on 10th February 2025.

No further consultation with statutory consultees or other technical bodies has been undertaken to date. This document forms the start of the formal consultation process. Following EIA Scoping, consultation will be undertaken with SEPA, DGC and NatureScot, as required.

6.3 PRELIMINARY BASELINE CONDITIONS

6.3.1 Proposed Study Area / Survey Areas

The study area is based primarily on the land within the Site boundary ('the Site'), within a wider study area of 5 km for assessment of hydrological and hydrogeological receptors, including cumulative effects. This study area has been selected based on the scale of the Development and professional judgement / experience. Consultation and assessment of PWS will be undertaken within a 2 km study area. The effects on geological receptors will be assessed within the Site boundary.

6.3.2 Preliminary Baseline Conditions

A desk-based survey has been undertaken to provide an overview of the baseline conditions for hydrology, hydrogeology and geology, including peat at the Development. Baseline conditions have also been informed by a Site walkover which was undertaken in conjunction with the Phase 1 peat probing survey.

6.3.2.1 Watercourses and Surface Water Hydrology

Review of the Flood Estimation Handbook (FEH) Web Service⁴⁵ and other available mapping shows that the Site lays across several river catchments. This includes the main catchments of Middlebie Burn and its upstream tributaries Maggie's Burn, Grainhall Burn, and Darlawhill Grain to the west, and Mein Water and its tributary Stoneybeck Burn to the east. Minor unnamed watercourses are present throughout the Site which drain to these

⁴⁵ UK Centre for Ecology and Hydrology (2024) Flood Estimation Handbook Web Service. Available at: <https://fehweb.ceh.ac.uk/> (Accessed 1st July 2026)

larger watercourses. The Site largely drains to the River Annan via the Mein Water, with the confluence located approximately 5.9 km south of the Site.

The north of the Site and the existing access track is located within the catchment of Water of Milk, with a new crossing proposed across the Water of Milk. Onsite tributaries of the Water of Milk include the Perceiving Burn, Stand Burn, and Back Burn. The Back Burn crosses the existing access track and flows north along the track.

Table 6.1 presents the WFD status as of 2024 for Pennyland Burn / Mein Water (ID 10643) obtained from review of SEPA's Water Classification Hub⁴⁶. Table 6.2 presents the WFD status as of 2024 for Water of Milk (u/s Corrie Water Confluence) (ID 10646).

Table 6.1 Pennyland Burn / Mein Water WFD Status

Parameter	Classification
Overall Status	Moderate
Overall Ecology	Moderate
Morphology	Good
Physical condition / Hydromorphology	Good
Water Quality	Moderate

Table 6.2: Water of Milk WFD Status

Parameter	Classification
Overall Status	Good
Overall Ecology	Good
Morphology	Good
Physical condition / Hydromorphology	Good
Water Quality	High

Observations gained during the Site walkover indicated that historically the area has been extensively drained. Many of these drains have naturally revegetated but it is considered that they are still having a significant draining effect across the Site. Due to the nature of the superficial deposits largely consisting of clay and till deposits, watercourses were often observed as significantly incised with deep valleys. Surface water is widespread on and around the Development and is considered to have high sensitivity to pollution and sediment.

6.3.2.2 Geology

Review of the 1:50,000 BGS Superficial Geology Map⁴⁷ indicates that the Site is largely underlain by the Gretna Till Formation with areas of mapped peat in the centre of the Site. Alluvium (sand, silt, and clay) is mapped in the west of the Site associated with Maggie's Burn, Grainhall Burn, and Darlawhill Grain. The Kilblane Sand and Gravel Formation (sand, gravel, and boulders) is present in the south of the Site, north of the confluence of Maggie's Burn and Grainhall Burn. There are no superficial deposits mapped in the southeast of the Site. The north of the Site is underlain by the Langholm Till Formation, with areas of mapped peat present, with alluvium and river terrace deposits (sand and gravel) present along the Water of Milk.

Review of the 1:50,000 BGS Bedrock Geology Map indicates the Site is underlain by three bedrock formations. The north of the Site is underlain by the Riccarton Group, consisting of greywackes with interbedded mudstones. The south, centre and northeast of the Site is underlain by the Kinnesswood Formation comprised of interbedded sandstone and conglomerate, while the southeast is underlain by the Birrenswark Volcanic Formation

⁴⁶ SEPA (2015) Water Classification Hub. Available at: <https://informatics.sepa.org.uk/WaterClassificationHub/> (Accessed 2nd July 2025)

⁴⁷ BGS (2026) GeoIndex Onshore. Available at: <https://www.bgs.ac.uk/map-viewers/geoindex-onshore/> (Accessed 30th June 2026).

consisting of olivine-basalt lavas. Both the Kinnesswood Formation and Birrenswark Volcanic Formation are part of the Inverclyde Group.

Review of the 1:50,000 BGS mapping of linear features indicates no faults are located onsite, however there are features associated with previous glacial activity including glacial meltwater channels present.

6.3.2.3 Coal Mining

Following review of the Mining Remediation Authority Map Viewer⁴⁸, it is confirmed that the Site does not lie within a Coal Mining Reporting Area. As such, coal mining will not be considered further.

6.3.2.4 Soils and Peat

Review of NatureScot's Peatland and Carbon 2016 Map⁴⁹ indicates that the Site is largely underlain by Class 0 mineral soils on which peatland habitats are not typically found, as shown in Figure 6.1.

In the north of the Site, Class 3 peatland is present (defined as: *Occasional peatland habitats can be found. Most soils are carbon-rich soils, with some areas of deep peat*). Class 5 peatland is also present in the north (defined as: *No peatland habitat recorded. May also includes areas of bare soil. Soils are carbon-rich and deep peat*).

An isolated area of Class 4 peatland is present in the north (defined as: *Area unlikely to be associated with peatland habitats or wet and acidic type. Area unlikely to include carbon-rich soils*).

Along the existing access track, an area of Class 1 peatland is present (defined as: *Nationally important carbon-rich soils, deep peat and priority peatland habitat. Areas likely to be of high conservation value*).

To inform Scoping, a Phase 1 peat probing depth survey was undertaken by Gondolin in January 2025. This initial survey involved probing on a 100 m grid across the Site with a total number of 258 peat depth points collected. As the Site boundary has been revised since the Phase 1 survey, the peat depth probes and interpolation therefore do not extend to the north of the current Site, with additional peat depth probing survey to be undertaken within this area.

Phase 1 peat depth survey results including the interpolated peat depth have been illustrated in Figure 6.2. A summary of the peat survey results is provided in Table 6.3.

Table 6.3: Phase 1 Peat Probing Depth Results

Depth (cm)	Number of Probes	Percentage of Probes
< 30	209	81.0%
30 - 50	30	11.6%
>50	19	7.4%

The Phase 1 survey found that peat deposits were absent across most of the Site with some isolated areas identified in the centre and north. Peat depths within the Site range from 0 m to 0.9 m. Probes where depths recorded were <0.5 m, and therefore classified as not peat, comprised 92.6% of the probes recorded onsite.

In areas where peat deposits were encountered, peat habitats were found to be degraded due to the historic draining. Under the current layout (Figure 6.2), only the hardstanding of T2 is in an area containing peat deposits. Under the current layout, areas of the proposed PV Modules will be underlain by pockets of peat deposits.

⁴⁸ Mining Remediation Authority Map Viewer (2026). Available at: <https://datamine-cauk.hub.arcgis.com/> (Accessed 30th June 2026).

⁴⁹ NatureScot (2016) Carbon and Peatland 2016 map. Available at <https://www.nature.scot/professional-advice/planning-and-development/planning-and-development-advice/soils/carbon-and-peatland-2016-map> (Accessed 30th June 2026).

6.3.25 Hydrogeology

Review of the 1:625,000 BGS Hydrogeology Map indicates that the Site is underlain by three aquifers, the Riccarton Group to the north, the Inverclyde Group across the centre of the Site, and Unnamed Extrusive Rocks Dinantian to the east. The Riccarton Group and the extrusive bedrock are classed as low productivity aquifers with virtually all flow occurring through fractures and other discontinuities. The Inverclyde Group is classed as a moderately productive aquifer with fracture flow yielding up to 10 L/s.

Review of SEPA's Water Classification Hub indicates that the Site is situated across two groundwater bodies; Ecclefechan (ID: 150547) and East Dumfriesshire (ID: 150690), which are both classed as having a WFD status of 'Good'.

Superficial deposits onsite are dominated by till with smaller areas of alluvium and isolated pockets of peat. Till deposits are not considered significant aquifers and peat as a low permeability deposit that does not act as a significant aquifer. The areas of alluvium associated with the watercourses are likely to be moderate to high productivity aquifers⁵⁰.

6.3.26 Groundwater Dependent Terrestrial Ecosystems (GWDTE)

A National Vegetation Classification (NVC) survey will be undertaken for the Site, with potential GWDTEs identified in accordance with SEPA 2024 guidance 'Guidance on Assessing the Impacts of Developments on Groundwater Dependent Terrestrial Ecosystems'.

A detailed appraisal will be undertaken to determine the potential groundwater dependency of these habitats, including desk-based assessments and hydrological walkover. In accordance with SEPA guidance, where potential GWDTEs are determined to be supplied by groundwater and considered to be a high value or important habitat, SEPA recommended buffers will be implemented within the Development layout evolution as far as practicable.

6.3.27 Flooding

The Development is located within the Ecclefechan – Annan Potentially Vulnerable Area (PVA) (02/14/06) as identified by SEPA. The main sources of flood risk within this PVA are river, surface water, and coastal.

Review of the SEPA online Flood Map⁵¹ indicates there is no risk of coastal flooding onsite. There is low to high risk of fluvial flood attributed to Maggie's Burn, however the extent of this flooding is confined to the 50 m watercourse buffer. There is fluvial flooding associated with Purdomstone Reservoir, located 350 m south of the Site, where the floodplain is approximately 90 m width.

Areas of small watercourse and surface water flooding are located across the Site present along watercourses, including Maggie's Burn, Grainhall Burn, and Darlawhill Grain. The flood risk extent is largely confined to the 20 m watercourse buffer. The largest area of small watercourse and surface water flooding is immediately downstream of the Site associated with Purdomstone Reservoir. Isolated areas of low to high surface flood risk are found associated with small depressions and low points across the topography.

Along the existing track, low to high risk of fluvial, and small watercourse and surface water flooding are present, associated with watercourses. A widespread area of high risk of fluvial flooding is noted along the Water of Milk, where the floodplain is approximately 230 m width. Due to the presence of fluvial flood risk this will present a significant constraint in terms of the design of a crossing and ensuring no negative impacts to flood storage / flood flow.

As such, a Flood Risk Assessment is proposed for the Site to inform the Development layout, proposed watercourse crossings, and to minimise potential flood risk constraints.

6.3.28 Designated Sites

There are no designated sites located within 5 km of the Site. While the Solway Firth Special Protection Area (SPA) and Special Area of Conservation (SAC), Upper Solway Flats & Marshes RAMSAR and Site of Special Scientific Interest (SSSI) may be hydrologically

⁵⁰ BGS (2015) User Guide: Aquifer Productivity (Scotland) GIS datasets, Version 2. Revised Report . Available at: <https://nora.nerc.ac.uk/id/eprint/509619/1/OR15003.pdf> (Accessed 1st July 2026).

⁵¹ SEPA (2026) SEPA Flood Maps. Available at: <https://map.sepa.org.uk/floodmaps> (Accessed 1st July 2026).

connected to the Site, these are located over 12 km downstream. Given the distance from the Site and considering the effects of attenuation and dilution along the River Annan, these designated sites are scoped out of further assessment.

The Site falls within the catchment of the River Annan Trust & District Salmon Fishery Board and will therefore be consulted as appropriate to inform this assessment.

6.3.2.9 **Public Water Supplies**

The Site is not located in a surface water Drinking Water Protected Area (DWPA). The Site is located within the Ecclefechan groundwater DWPA in the south and East Dumfriesshire DWPA in the north.

Purdomstone Reservoir is located approx. 350 m south of the Site. Review of Scottish Water asset mapping indicates raw water is taken from this reservoir to Scottish Water Landheads Filter Station (Waterworks). Consultation will be sought from Scottish Water to confirm the use of Purdomstone Reservoir.

6.3.2.10 **Private Water Supplies (PWS)**

An FOI response from DGC received in January 2025 identified 4 registered PWS serving 8 registered properties within 2 km, as shown on Figure 6.3. The source types for these registered PWS are unknown.

Since an updated Site boundary and therefore revised 2 km Study Area is proposed, an additional FOI will be issued to DGC to identify any further registered PWS present along the existing access track and proposed Water of Milk crossing.

As individual supplies may not all be registered, an investigation to identify any additional unregistered PWS, which are in hydraulic connectivity with the Development will be undertaken. SEPA EASR authorisations for groundwater or surface water abstractions within 2 km from the Site will also be reviewed, as well as Scottish Water mains locations.

6.4 **LIKELY ENVIRONMENTAL EFFECTS**

Impact on hydrological, hydrogeological and geological receptors at the construction phase of the Development could include:

- Pollution, high levels of suspended solids and turbidity in downstream watercourses caused by sedimentation from disturbed ground and excavated/ stockpile material.
- Pollution of surface water and groundwater through operation of machinery (e.g. spillage of oils, fuels etc) and development of borrow pits.
- Concrete leaching from turbine foundations affecting surface water and groundwater quality.
- Disturbance or excavation of peat or Carbon Rich Soils (CRS) onsite can lead to 'drying out' and potential habitat loss.
- Alteration of natural drainage patterns, changes in runoff rates and volumes due to increased areas of temporary hardstanding and turbine foundations. Historic drainage onsite can increase risk of localised flooding.
- Localised flooding and erosion caused by impediments to flow. Accidental blockages at implemented watercourse crossings can locally increase flood risk.

Impacts on hydrological, hydrogeological and geological receptors at the operational phase of the Development could include:

- Pollution of surface water as a result of maintenance activities associated with the operation of the Development.
- Alteration of natural drainage patterns, changes in runoff rates and volumes due to increased areas of permanent hardstanding. Alteration of flow pathways could affect peat, GWDTEs and PWS.
- In the event of a fire during the operation of the BESS, this can result in polluted firewater with potential effects if discharged to surface water and groundwater.

6.5 ASSESSMENT METHODOLOGY

6.5.1 Scope of Assessment

The assessment will consider the effects of the Development on hydrology, hydrogeology and geology. It will assess the current baseline condition and identify potential alteration of run-off rates and volumes of surface water, sediment regime and water quality of the surface water environment. It will also consider factors relating to hydrogeology including the effects on groundwater levels, groundwater flows, groundwater quality, PWS and GWDTE.

A Watercourse Crossing Assessment, PWS Assessment, and an Outline Peat Management Plan (OPMP) will be completed as Technical Appendices to the EIA Chapter. If required, a Peat Landslide Hazard Risk Assessment (PLHRA) and GWDTE Assessment will be undertaken.

A Flood Risk Assessment (FRA) and Drainage Impact Assessment (DIA) will also be produced. As a BESS is proposed as part of the Development a Fire Water Management Plan (FWMP) will also be prepared.

6.5.2 Relevant Guidance, Legislation and Information

The assessment of hydrology, hydrogeology and geology will take account of the relevant legislation, planning policy and guidance. Of relevance are the following:

6.5.2.1 Legislation

- Directive 2007/60/EC on the assessment and management of flood risks (Floods Directive) (EC, 2007);
- 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 (Water Framework Directive) (EC, 2000);
- Water Environment and Water Services (Scotland) Act 2003 (WEWS), as amended by the Environment (EU Exit) (Scotland) (Amendment etc.) Regulations 2019;
- The Water Environment (Controlled Activities) (Scotland) Regulations as amended (Scottish Government, 2011);
- The Flood Risk Management (Scotland) Act 2009;
- The Water Environment (Miscellaneous) (Scotland) Regulations 2017;
- The Private Water Supplies (Scotland) Regulations 2006;
- The Water Intended for Human Consumption (Private Supplies) (Scotland) Regulations 2017;
- The Water Resources (Scotland) Act (Scottish Government, 2013); and
- The Private and Public Water Supplies (Miscellaneous Amendments) (Scotland) Regulations 2015.

6.5.2.2 Policy

National Planning Framework 4 (NPF4) provides planning guidance and policies regarding sustainable development, tackling climate change and achieving net zero. Policies relevant to this chapter include:

- Policy 2 (Climate Mitigation and Adaptation);
- Policy 4 (Natural Places);
- Policy 5 (Soils);
- Policy 11 (Energy);
- Policy 20 (Blue and Green Infrastructure); and
- Policy 22 (Flood Risk and Water Management).

In addition, Dumfries and Galloway Local Development Plan 2 (2019) has been reviewed and the following policies will be considered:

- NE11: Supporting the Water Environment;
- NE12: Protection of Water Margins;
- IN1: Renewable Energy;
- IN2: Wind Energy;
- IN7: Flooding and Development;
- IN8: Surface Water Drainage and Sustainable Drainage Systems (SuDS);

- NE14: Carbon Rich Soil; and
- NE15: Protection and Restoration of Peat Deposits as Carbon Sinks.

6.5.2.3 Guidance

The following relevant guidance / best practice guidance will be considered as part of the assessment of hydrology and hydrogeology and provision of appropriate mitigation measures:

- Solway Local Plan District Flood Risk Management Plan (2022-2028);
- Scottish Natural Heritage, SEPA and Forestry Commission Scotland (2019): Good Practice During Wind Farm Construction;
- SEPA Guidance Note 4: Planning Guidance on On-Shore Windfarm Developments (2017);
- SEPA, Developments on Peat and off-site uses of Waste Peat (WST-G-052) (2017);
- NatureScot, Advising on peatland, carbon-rich soils and priority peatland habitats in development management, (2023);
- SEPA, Planning Advice Note: Assessing the impact of developments on peatland and carbon rich soils (2025);
- SEPA, Standing advice on peaty soil (2025);
- SEPA, WAS-G-11, On-site Management of Excavated Peat (2025);
- Scottish Renewables and SEPA, Developments on Peatland: Guidance on the assessment of peat volumes, reuse of excavated peat and the minimisation of waste (2012);
- Guidance on Developments on Peat (Peatland Survey 2017), Scottish Government, SNH (NatureScot) and SEPA;
- SEPA Policy 19: Groundwater Protection Policy for Scotland (Version 3, 2009);
- SEPA Policy 41: Planning Authority Protocol - Development at Risk of Flooding: Advice and Consultation (2016);
- SEPA, Good Practice Guide, River crossings, 2nd edition (2010);
- SEPA, 'Culverting of Watercourses': Position Statement and Supporting Guidance (2015);
- Guidance for Pollution Prevention (GPP)1: Understanding your environmental responsibilities – good environmental practices, NetRegs, 2021;
- SEPA GPP5: Works and maintenance in or near water, 2018;
- SEPA, WAT-G-024, EASR Guidance, Engineering Activity Guide: Crossings, 2025;
- SEPA, WAT-G-034, EASR Guidance, works and silt / pollution mitigation, 2025;
- SEPA, Guidance on Assessing the Impacts of Development on Groundwater Abstractions (2024);
- SEPA, Guidance on Assessing the Impacts of Developments on Groundwater Dependent Terrestrial Ecosystems (2024);
- Technical Flood Risk Guidance for Stakeholders - SEPA Requirements for Undertaking a Flood Risk Assessment (Version 12, 2019);
- Construction Industry Research and Information Association (CIRIA) C532: 'Control of Water Pollution from Construction Sites - Guidance for Consultants and Contractors' (2001);
- CIRIA C648: 'Control of Water Pollution from Linear Construction Projects – Technical Guidance' (2006);
- CIRIA C741: 'Environmental good practice on site guide' 4th edition (2015);
- CIRIA C786: 'Culvert, screen and outfall manual' (2019);
- CIRIA C698: 'Site handbook for the construction of SUDS' (2007);
- CIRIA C753: 'The SuDS Manual' (2015);
- Scottish Government, Peat Landslide Hazard and Risk Assessments: Best Practice Guide for Proposed Electricity Generation Developments (2017);
- Scottish Government, River Crossing and Migratory Fish: Design Guidance Consultation (2012); and
- Dumfries and Galloway Council, Surface Water Drainage and Sustainable Drainage Systems (SuDS) (2020)

6.5.3 Baseline Survey Methodology

A desk-based approach to identifying receptors will be employed, utilising datasets from the regulators and consultees such as SEPA, NatureScot and the BGS.

Phase 1 peat depth probing was undertaken in January 2025 on a 100 m grid survey across the Development with 258 peat points collected onsite. During the Phase 1 survey only localised areas of peat deposits were recorded. It is proposed that Phase 2 peat surveys will be undertaken in accordance with the guidance at the proposed turbine locations, hardstanding, access tracks, BESS and substation are proposed where peat deposits and nationally important peatland is identified onsite. This will provide detailed and accurate depth measurements to support the additional avoidance of any peat >0.5 m, where practicable. The surveys will be undertaken in accordance with guidance and typically involve a 10 m grid survey within infrastructure footprints, and 50 m surveys along access tracks with 10 m offsets.

In accordance with NatureScot's General pre-application guidance for solar farms⁵², development proposals on peat will require Site-specific and detailed peat surveys to confirm the quality and distribution across the Site to inform design, micro-siting and mitigation. Where solar panels are proposed and Phase 1 surveys indicate the presence of peat deposits, a survey on a 20 m grid basis is proposed. Given the lower impact of solar panels, this coarser grid is considered appropriate, and this approach will be agreed with relevant stakeholders prior to the Phase 2 peat surveys taking place.

Peat condition has been noted at peat depth probing points. Peat erosion and instability features observed onsite will be noted and where opportunities are identified to reuse peat in association with habitat restoration (e.g. drain blocking / infilling) these will be outlined for consideration.

Peat cores will also be taken and peat profile noted at key locations within the Development. Furthermore, peat samples will be taken and analysed in a laboratory for moisture content, organic content etc. and hand vane shear tests will be performed to confirm the undrained shear strength of peat / soils at selected locations onsite where applicable.

A detailed hydrological Site walkover will be undertaken to inform the EIA chapter and associated technical appendices. The walkover will focus on proposed infrastructure locations and consider hydrological catchments, geomorphology, potential watercourse crossings, drainage flow pathways, potential flood risk sources, hydrogeology features such as springs and sub-surface flow routes, potential peatland restoration, review of peat landslip evidence / potential and potential GWDTE.

Any PWS within 2 km of the Site boundary will be identified as part of the study (including a visit by the project team to the property where relevant and issuing of questionnaires if further information is required). At sensitive PWS's, more focused reconnaissance, analysis and consultations, to establish their current use, condition, and sensitivity to the Development, will be carried out.

6.5.4 Methodology for the Assessment of Effects

The prediction and assessment of effects on hydrology, hydrogeology and geology will be undertaken using a series of tables to document the various potential impacts from aspects of the construction and operational phases of the Development. The criteria for defining the study area have been established based on the professional judgement and experience of the technical authors regarding likely access and working areas, and with due consideration to the relevant guidance on hydrological, hydrogeological and geological assessment

6.5.4.1 Sensitivity of Receptors

The sensitivity of hydrological, hydrogeological and geological receptors will be informed by the matrix presented in Table 6.4, which provides indicative criteria.

⁵² NatureScot (2025) Pre-application guidance for solar farms, available at: <https://www.nature.scot/doc/naturescot-pre-application-guidance-solar-farms> (Accessed 2nd July 2026).

Table 6.4: Sensitivity Criteria

Sensitivity of Receptor	Definition
High	Areas with geomorphological or hydrological features considered to be of national interest, for example Aquatic Natura 2000 sites, SACs, SSSIs, RAMSARs. Superficial deposits which are highly permeable / absent allowing free transportation of contaminants to surrounding surface waters and groundwater. Wetland / watercourse / groundwater of High or Good WFD Status. Raised or blanket bog with average peat depth ≥ 1 m and priority peatlands as defined by NatureScot. Proposed infrastructure is within a 'flood risk area' as set out within Policy 22 of NPF4. Proposed infrastructure is located within the 10 m / 100 m / 250 m SEPA Groundwater PWS source buffers. PWS source catchment in direct continuity with Development with proposed infrastructure within 250 m of the source. GWDTE within 10 m radius of all activities, 100 m of subsurface activities less than 1 m in depth and 250 m of all subsurface activities deeper than 1 m with high value / dependency. Highly sensitive or vulnerable receptors to contaminants. Development is within a DWPA catchment.
Medium	Areas with geomorphological or hydrological features considered to be of regional importance e.g. Geological Conservation Review (GCR) sites. Superficial deposits with medium permeability allowing limited transport of contaminants to surrounding surface waters and groundwater. Wetland / watercourse / groundwater of Moderate WFD Status. Peat with average depths between 0.5 – 1 m. Proposed infrastructure is directly adjacent to a 'flood risk area' as set out within Policy 22 of NPF4. PWS intake in direct continuity with Development and proposed infrastructure within 500 m in distance of the source. GWDTE within 10 m radius of all activities, 100 m subsurface activities less than 1 m in depth and 250 m of all subsurface activities deeper than 1 m with medium value / dependency. Sensitive or vulnerable receptors to contaminants. Development is not located within a DWPA catchment but is located upgradient of a DWPA catchment.
Low	Superficial deposits with low permeability likely to inhibit transportation of contaminants. Wetland / watercourse / groundwater of Poor or Bad WFD status or no WFD classification. Carbon rich soil with average depth <0.5 m. PWS intake in direct continuity with Development but proposed infrastructure is within 1.0 km in distance from source No sensitive receptors vulnerable to contaminants.

6.5.4.2 Magnitude of Effect

Impacts will be predicted based on the guidance criteria for the magnitude of change set out in Table 6.5.

Table 6.5: Magnitude of Change Criteria

Magnitude of Effects	Definition
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High	Significant change or the complete loss of key features of the baseline resource that cause post development characteristics or quality to be fundamentally and irreversibly changed e.g. development resulting in increased flood risk, PWS source pollution (during and post construction), groundwater or surface water quality or permanent changes to local surface and groundwater flow regimes.
Medium	Change or loss of key features of the baseline resource that cause post development characteristics or quality to be partially modified e.g. instream permanent bridge supports, temporary or non-material changes to local surface / groundwater flow regime, increased pollution potential / alteration of source volumes to remote PWS during construction only and localised change in groundwater or surface water quality.
Low	Small changes to the baseline resource, which can be identified but the intrinsic characteristics or quality of the baseline situation would have similarities to pre-development conditions e.g. culverting of very small (unmapped) watercourses / drains, temporary and / or very localised change in local surface / groundwater flow regime, very localised and temporary change in groundwater and surface water quality and. Possible although very remote potential for change in PWS source quality / quantity.
Negligible	A very slight change from baseline conditions, which is hardly identifiable, and is similar to the 'no-change' situation e.g. new site drainage discharge from developed SuDS scheme to receiving watercourse, new land drainage measures to maintain hydraulic continuity between upgradient and downgradient of development site and no / negligible development in PWS source catchment.

6.5.4.3 Significance of Effect

The significance of the predicted effects will be assessed in relation to the sensitivities of the baseline resource. A matrix of significance, based on the combination of magnitude of change and sensitivity of receptor, was developed to provide a consistent framework for evaluation, as presented in Table 6.6.

Table 6.6: Significance of Effects Matrix

Sensitivity of Receptor	Magnitude of Change			
	High	Medium	Low	Negligible
High	Major	Major	Moderate	Minor
Medium	Major	Moderate	Minor	Negligible
Low	Moderate	Minor	Negligible	Negligible
Negligible	Minor	Negligible	Negligible	Negligible

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 grey in the above table.

The matrices outlined will be used to guide the EIA assessment, however flexibility will be applied to allow for location specific characteristics to be accounted for. Results may differ from the set-out significance of effect matrix in cases where professional judgment and site conditions lead to a different interpretation.

6.6 ASSESSMENT OF CUMULATIVE EFFECTS

Cumulative effects may arise from sites located in the same hydrological catchments as the Development, particularly where construction periods may overlap. This may result in cumulative effects with increased risk of pollution to shared receptors. Cumulative effects will be analysed for consented developments and developments in planning identified within 5 km of the Development. These developments will be identified through review of ECU and DGC planning portals, consultation with the Client, relevant local authorities and statutory consultees. A study area of 5 km for cumulative effects has been applied as beyond this it is considered any cumulative impact on hydrology or geology will likely be negligible due to attenuation and dilution of potential contaminants.

6.7 PROPOSED EMBEDDED MITIGATION

Impacts on identified hydrological, hydrogeological and geological receptors will be avoided or minimised where practicable through the careful design of the Development. Mitigation embedded into the design of the Development is expected to include:

- Maintaining an appropriate buffer around any surface watercourse, waterbodies and drains where practicable. In accordance with SEPA guidance on riparian buffers, a 50 m buffer is proposed for turbine foundation, hardstanding, BESS, substation and access tracks where practicable. For solar panels a 20 m buffer is proposed given their lower impacts due to their installation methods.
- SEPA recommended buffers for groundwater abstractions (PWS) and confirmed GWDTEs will be implemented, where practicable. These buffers include: 10 m from all activities; 100 m from subsurface activities <1 m depth; and 250 m from subsurface activities >1 m depth.
- The Development will be designed to utilise existing tracks and crossings, with new watercourse crossings minimised where practicable.
- The Development will avoid siting infrastructure footprints in areas of >0.5 m peat depth where practicable. Areas of Moderate or High peat landslide risk will be avoided where practicable.

6.8 MATTERS AND ASPECTS TO BE SCOPED OUT OF THE ASSESSMENT

Based on the scoping assessment the aspects set out in Table 6.7 are proposed to be scoped out of the hydrology, hydrogeology and geology assessment.

Table 6.7: Effects to be Scoped Out of the EIA

Potential Effect	Phase of Development	Reason
Hydrological effects on Designated Sites	All	No designated sites are located within 5 km of the Site. Those located downstream of the Site (Solway Firth SPA and SAC, Upper Solway Flats & Marshes RAMSAR and SSSI) are located over 12 km from the Site and therefore the significant effects are considered negligible.
Excavation of superficial deposits (non-peat or non CRS) and solid geology.	All	As no GCR Sites are present, superficial (non-peat or non CRS) or solid geology are considered to be Low sensitivity receptors, the significant effects are considered to be negligible.
Hydrological effects on DWPAs	All	As no DWPAs are present onsite or hydrologically connected, the significant effects are considered to be negligible. Assumes Purdomstone Reservoir is not in use.
Ground stability or pollution from disturbance of historic coal mining.	All	As the Site is not located within a Coal Mining Reporting Area, this is scoped out of further assessment.

6.9 QUESTIONS TO CONSULTEES

- Are there any additional sources of baseline information which should be referred to inform the assessment of likely significant effects on hydrology, hydrogeology, geology and peat?
- Is the proposed survey scope sufficient and the methodology outlined appropriate?
- Are there any other potential effects, receptors and/or enhancements that should be considered?
- Is the resolution for the proposed peat survey across the solar infrastructure aspects of the Development appropriate?
- Can Scottish Water confirm whether Purdomstone Reservoir is still in use and whether it is used as a public water supply?

7 ECOLOGY

7.1 INTRODUCTION

This Chapter of the Scoping Report relates to the potential effects of the Development on ecology.

This Chapter defines the proposed methodology for the ecological assessment that will be included within the EIA Report. It also details the methods that will be used to establish the baseline conditions within the Site and its surroundings.

The ways in which habitats or species might be affected (directly or indirectly) by the construction, operation and decommissioning of the Development will be assessed prior to and after any mitigation measures are considered. In addition, any relevant cumulative effects will be considered, taking together effects of other wind farm or other relevant EIA projects in the area, along with the significance of any predicted effects associated with the Development.

This Chapter includes the following elements:

- Consultation to Date;
- Preliminary Baseline Conditions;
- Likely Environmental Effects;
- Assessment Methodology;
- Assessment of Cumulative Effects;
- Matters and Aspects Scoped Out; and
- Questions to Consultees.

This ecology assessment will be undertaken by SLR.

7.2 CONSULTATION TO DATE

Consultation for this Scoping Report regarding non-avian ecology has not yet been undertaken with statutory consultees or organisations, apart from Galloway Fisheries Trust (GFT). NatureScot and Dumfries and Galloway Council (DGC) will serve as the principal consultees for ecological matters related to the EIA. A range of other organisations will be contacted as part of the baseline studies to provide ecological data and information to help guide the scope of the assessment.

7.3 PRELIMINARY BASELINE CONDITIONS

Preliminary baseline conditions have been established through the desk-study and field surveys completed to date.

7.3.1 Desk-Study

Baseline ecological conditions have been established from the following desk-based sources:

- NatureScot Sitelink⁵³ to confirm the location and qualifying features of ecological statutory designated sites within potential zones of influence of the Development;
- The Ancient Woodland Inventory (AWI)⁵⁴ within 5 km of the Site;
- Non-statutory Local Nature Conservation Sites (LNCS) database⁵⁵ within 5 km of the Site;
- Information from the National Biodiversity Network (NBN) Atlas⁵⁶ for ecological records within 5 km (10 km for bats) of the Site within the last 15 years (since 2011);
- Information from the Carbon and Peatland Map 2016⁵⁷;

⁵³ NatureScot Sitelink. Available at: <https://sitelink.nature.scot/home>. (Accessed June 2026).

⁵⁴ Ancient Woodland Inventory (Scotland). Available at: <https://www.spatialdata.gov.scot/geonetwork/srv/api/records/A091F945-F744-4C8F-95B3-A09E6EF6AE33>. (Accessed: June 2026).

⁵⁵ https://data.spatialhub.scot/dataset/local_nature_conservation_sites-is/resource/2a2fb277-f8be-498e-8339-06a179ed32d5. (Accessed: June 2026)

⁵⁶ National Biodiversity Network Atlas Scotland (2026). Available at: <https://scotland.nbnatlas.org/>. (Accessed: June 2026)

⁵⁷ Scottish Government (2026). Scotland's Soils. Available at: https://map.environment.gov.scot/Soil_maps/?layer=10#. (Accessed: June 2026)

- Information from the Deer Distribution Survey by the British Deer Society⁵⁸;
- Information from the Saving Scotland's Red Squirrels website⁵⁹ for red and grey squirrel sightings;
- SEPA Water Environment Hub⁶⁰ for watercourse classifications; and
- SEPA Obstacles to Fish Passage⁶¹ for barriers to fish migration.

7.3.1.1 Designated Sites and Ancient Woodland

There are no statutory designated sites with ecological features within the Site or within 5 km of the Site.

The AWI indicates there are no areas of ancient woodland within the Site. Areas of ancient woodland within 5 km of the Site are frequent, these are scattered surrounding the Site. The closest area of ancient woodland is 10 m from the Site boundary by the very northern tip of the access route and on the opposite side of the C81a minor road. This is approximately 30 m from the proposed associated access track. This is an area of existing non-native conifer plantation and is classified in the AWI as Long-established woodland of plantation origin (LEPO).

There are no LNCS within 5 km of the Site.

7.3.1.2 NBN Atlas Records

A search of the NBN Atlas showed that the following protected or notable species, shown in **Table 7.1**, were recorded within 5 km (10 km for bats) of the Site since 2011.

Table 7.1: National Biodiversity Network Records (2011 – 2026) for Protected and Notable Species within 5 km (10 km for Bats) of the Site

Common name	Scientific name	Relevance	License	Rightsholder (Recorder)
Brown hare	<i>Lepus europaeus</i>	Protected species (during the close season)	CC-BY ⁶²	The Mammal Society, and Biological Records Centre (Fiona Mathews, Thirza Wesselink)
Badger	<i>Meles meles</i>	Protected species	CC-BY ⁶²	Wild Surveys Ltd
Red squirrel	<i>Sciurus vulgaris</i>	Protected species	CC-BY ⁶²	Scottish Wildlife Trust
Daubenton's bat	<i>Myotis daubentonii</i>	Protected species	OGL ⁶³	Bat Conservation Trust
Common pipistrelle	<i>Pipistrellus pipistrellus</i>	Protected species	OGL ⁶³	NatureScot (Rhiannon Hatfield) & Scottish Natural Heritage/British Trust for Ornithology (Southern Scotland Bat Survey)
Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>	Protected species	OGL ⁶³	Scottish Natural Heritage/British Trust for Ornithology (Southern Scotland Bat Survey)

⁵⁸ British Deer Society (2023). Deer Distribution Survey. Available at: <https://bds.org.uk/science-research/deer-surveys/deer-distribution-survey/>. (Accessed: June 2026)

⁵⁹ Scottish Squirrels (2026). Sightings of Red and Grey Squirrels across Scotland. Available at: <https://scottishsquirrels.org.uk/squirrel-sightings/>. (Accessed: June 2026)

⁶⁰ SEPA (2024). SEPA Water Environment Hub. Available at: <https://www.sepa.org.uk/data-visualisation/water-environment-hub/>. (Accessed: June 2026)

⁶¹ Scottish Government (2026). Obstacles to Fish Passage (SEPA WMS). Available at: <https://marine.gov.scot/?q=maps/1746>. (Accessed: June 2026)

⁶² Creative Commons with Attribution 4.0 (CC-BY) <https://creativecommons.org/licenses/by/4.0/>. (Accessed June 2026).

⁶³ Open Government Licence (OGL) <https://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/>. (Accessed: June 2026).

Common name	Scientific name	Relevance	License	Rightsholder (Recorder)
Natterer's bat	<i>Myotis nattereri</i>	Protected species	OGL ⁶³	Scottish Natural Heritage/British Trust for Ornithology (Southern Scotland Bat Survey)
Brown long-eared bat	<i>Plecotus auritus</i>	Protected species	OGL ⁶³	Scottish Natural Heritage/British Trust for Ornithology (Southern Scotland Bat Survey)
Noctule bat	<i>Nyctalus noctula</i>	Protected species	OGL ⁶³	Bat Conservation Trust & Scottish Natural Heritage/British Trust for Ornithology (Southern Scotland Bat Survey)

Table 7.2 contains the invasive non-native species (INNS) which were returned by these same search parameters.

Table 7.2: National Biodiversity Network Records (2011 – 2026) for Invasive Non-Native Species within 5 km of the Site

Common name	Scientific name	Relevance	License	Rightsholder (Recorder)
Grey squirrel	<i>Sciurus carolinensis</i>	INNS	CC-BY62	Scottish Wildlife Trust & Yorkshire Wildlife Trust (INNS Mapper User)

7.3.1.3 Carbon and Peatland Map 2016

The Carbon and Peatland Map 2016⁵⁷ shows the majority of the Site and surrounding area is Class 0⁶⁴ mineral soils. The north-western corner of the Site comprises a patchwork of Class 3⁶⁵ soils, Class 4⁶⁶ soils and Class 5⁶⁷ soils. All currently proposed turbine locations are within areas mapped as Class 0 mineral soils or Class 3 soils. There is one relatively small area of Class 1⁶⁸ peatland that overlaps with the Site, this being present in the north at Minsca Flow and along the access route and where it is dissected by a number of existing tracks for the operational Minsca Wind Farm (one of these tracks will be reused for the Development). There is no Class 2⁶⁹ peatland present within 5 km of the Site.

7.3.1.4 Deer Distribution Map

The Deer Distribution Survey⁵⁸ results showed that the following deer species are likely to be present in or around the wider area of the Site:

- Fallow deer (*Dama dama*);
- Red deer (*Cervus elaphus*); and
- Roe deer (*Capreolus capreolus*); and
- Sika deer (*Cervus nippon*).

⁶⁴ Class 0 – Mineral soil, peatland habitats are not typically found on such soils.

⁶⁵ Class 3 - Dominant vegetation cover is not priority peatland habitat but is associated with wet and acidic type. Occasional peatland habitats can be found. Most soils are carbon-rich soils, with some areas of deep peat.

⁶⁶ Class 4 - Area unlikely to be associated with peatland habitats or wet and acidic type. Area unlikely to include carbon-rich soils. Predominantly mineral soil with some peat soil.

⁶⁷ Class 5 – Soil information takes precedence over vegetation data. No peatland habitat recorded. May also include areas of bare soil. Soils are carbon-rich and deep peat.

⁶⁸ Class 1 – Nationally important carbon-rich soils, deep peat and priority peatland habitat. Areas likely to be of high conservation value.

⁶⁹ Class 2 - Nationally important carbon-rich soils, deep peat and priority peatland habitat. Areas of potentially high conservation value and restoration potential.

7.3.1.5 Saving Scotland's Red Squirrels

A few sightings of red and grey squirrels have been recorded on Saving Scotland's Red Squirrels website⁵⁹ within the surrounding area of the Site over the last 15 years (2011 – 2026).

7.3.1.6 Aquatic Habitats

There are primarily a number of small first and second order watercourses present within the Site, some of which are named. The majority of these which drain the Site flow southwards to the Middlebie Burn, outwith the Site, which itself feeds into the Mein Water. A portion of the eastern part of the Site drains via a number of small watercourses into the Mein Water. The Mein Water eventually flows into the River Annan.

The watercourses around the access route in the north of the Site generally drain in that direction and feed into the Water of Milk, with the Back Burn present along much of the western edge of the Site access route. The access route would also cross the Water of Milk to the west of Paddockhole. The Water of Milk eventually flows into the River Annan.

In 2024, the Pennyland Burn/Mein Water (ID: 10643) was recorded by SEPA to have an overall 'moderate' status, including 'moderate' overall ecology and 'moderate' water quality⁶⁰.

In 2024, the section of the Water of Milk connected to the Development, i.e. upstream of Corrie Water confluence (ID: 10646), was recorded by SEPA to have an overall 'good' status, including 'good' overall ecology and 'high' water quality⁶⁰. Further downstream, below the Corrie Water confluence, the Water of Milk is classified as 'poor' overall status with 'poor' overall ecology and 'high' water quality⁶⁰.

A review of the SEPA Obstacles to Fish Passage map⁶¹ for barriers to fish migration indicates that the Middlebie Burn to the north of Middlebie has a series of natural and artificial impassable barriers, therefore making the watercourses that drain the Site into Middlebie Burn inaccessible to migratory fish. The Water of Milk is accessible to migratory fish, whilst the Back Burn to the west of the access route is accessible from its confluence with the Water of Milk upstream for approximately 600 m to where there is a natural impassable barrier.

7.3.2 Baseline Field Surveys

The following baseline ecological surveys have been undertaken to date, during 2024 and 2025:

- National Vegetation Classification (NVC) surveys^{70,71}, incorporating Phase 1 Habitat⁷² and potential Groundwater Dependent Terrestrial Ecosystem (GWDTE) habitat characterisation⁷³;
- Protected species surveys, including daytime bat walkover (DBW) and a ground based Preliminary Roost Assessment (PRA);
- Electrofishing and fish habitat suitability surveys on relevant watercourses within the Site, in line with relevant guidelines⁷⁴ and in consultation with GFT; and
- Seasonal static bat detector (Anabat) surveys following NatureScot *et al.* (2021)⁷⁵ guidelines.

7.3.2.1 Habitats

Habitat surveys were undertaken over much of the Site in April 2025, with further surveys around the northern section of access route by the Water of Milk undertaken in June 2025. Any remaining habitat survey gaps will be surveyed during summer 2026.

⁷⁰ Rodwell, J.S. (Ed) *et al.* (1991 – 2000). British Plant Communities (5 volumes). Cambridge University Press, Cambridge.

⁷¹ Rodwell, J.S. (2006). NVC Users' Handbook. ISBN 978 1 86107 574 1

⁷² JNCC. (2010). Handbook for phase 1 habitat survey – a technique for environmental audit. JNCC, Peterborough.

⁷³ SEPA (2024). Guidance on Assessing the Impacts of Developments on Groundwater Dependent Terrestrial Ecosystems.

⁷⁴ <https://www.gov.scot/publications/freshwater-and-diadromous-fish-and-fisheries-associated-with-onshore-wind-farm-and-transmission-line-developments-generic-scoping-guidelines/>

⁷⁵ NatureScot, Natural England, Natural Resources Wales, RenewableUK, Scottish Power Renewables, Ecotricity Ltd, the University of Exeter & Bat Conservation Trust (BCT), (2021). Bats and Onshore Wind Turbines – Survey, Assessment and Mitigation. Available at: <https://www.nature.scot/doc/bats-and-onshore-wind-turbines-survey-assessment-and-mitigation>.

There are stands of conifer plantation located primarily in the west of the Site. The remainder of the Site is generally dominated by open ground habitats and mosaics thereof, including a range of lowland and upland fringe habitat types. Common habitat types within the Site include semi-improved acid grassland, semi-improved neutral grassland, marshy grassland and wet modified bog. A range of other habitat types contribute small areas to the overall Site extent.

Full details of the survey methods and survey mapping and results will be presented within the EIA Report.

7.3.2.2 **Protected Species**

Protected species surveys following recommend survey guidance were undertaken over much of the Site in March 2025, with further surveys around the northern section of access route by the Water of Milk undertaken in June 2025. Any remaining habitat survey gaps and a refresh survey of the Site will be undertaken during summer 2026.

Protected species surveys undertaken to date, within the respective survey areas, have recorded signs of badger, otter and common lizard (*Zootoca vivipara*). Feeding signs attributed to squirrel were also recorded (outwith the Site), but it was not possible to determine whether this was a result of red or grey squirrel (as both are present in the area).

The only projected species protected feature recorded to date relates to a badger sett, and which is located outwith the Site and distant to any proposed infrastructure associated with the Development.

Full details of the survey methods and survey results will be presented within the EIA Report.

7.3.2.3 **Fisheries**

The Development is in the wider River Annan catchment. The watercourses onsite tend to be small first order headwater watercourses, with several, or sections, deemed unsuitable for supporting fish. As noted above in Section 7.3.1.6, much of the Site is also deemed inaccessible to migratory fish.

Fish surveys, including an assessment of habitat suitability and electrofishing, were undertaken at eight sample locations at the Site in July and August 2024. All but one site within this survey contained fish.

A further additional fisheries survey was undertaken in August 2025 on the Water of Milk around the location of the proposed access route, and upstream and downstream thereof, and included an additional electrofishing survey location as well as a fisheries habitat survey.

Atlantic salmon (*Salmo salar*) were only recorded in the Water of Milk, with salmon fry found at a 'very high' density while salmon parr were at a 'very low' density in accordance with regional classifications⁷⁶. No Atlantic salmon were recorded in any other watercourses surveyed, with six of the eight other sites within the survey being above an impassable series of waterfalls/barriers on the Middlebie Burn.

Six of the nine survey sites contained brown trout (*Salmo trutta*). Five of these sites were upstream of the waterfall/barriers on the Middlebie Burn meaning all trout captured during the surveys in these watercourses were resident trout. The sample site above the waterfall/barriers with no brown trout present fell within the recently re-established channel flowing through the decommissioned Purdomstone Reservoir and is considered highly likely to contain brown trout in the future. The decommissioning of Purdomstone Reservoir was ongoing throughout 2024. Fish populations have not yet had a chance to re-establish in this reinstated watercourse.

Trout fry were recorded at three of the nine sites, with the density ranked in two sites as 'very low' and 'moderate' in the Water of Milk, in accordance with regional classifications⁷⁶. Trout parr were recorded at four of the nine survey sites, and where present the densities were classified as 'very low' at three sites, with one 'moderate' density site.

⁷⁶ Godfrey, J. D. (2005). Site Condition Monitoring of Atlantic Salmon SACs: Report by the SFCC to Scottish Natural Heritage, Contract F02AC608 <http://www.gov.scot/resource/doc/295194/0096508.pdf>

Other fish species recorded during surveys were common minnow (*Phoxinus phoxinus*), recorded at six sample sites, and stone loach (*Barbatula barbatula*), recorded in the Water of Milk only.

Full details of the survey methods, survey sites and results will be presented within the EIA Report.

7.3.2.4 **Bats**

The DBW surveys in 2025 followed the assessment methodology as set out in Collins (2023)⁷⁷ to observe, assess and record any habitats suitable for bats to roost, commute or forage, and in trees, buildings and structures for Potential Roost Features (PRFs), which could support roosting bats.

Where PRFs in structures were identified, they were assigned a value of low, moderate or high suitability in line with guidance⁷⁷ which indicates the likelihood of bats being present and informs the requirement for further survey work, such as internal inspections and/or dusk and dawn bat activity surveys.

A Ground Level Tree Assessment (GLTA) was conducted for trees within the survey area and followed the methodology as set out in Collins (2023)⁷⁷. Any trees with PRFs were categorised as one of the following:

- PRF-I – PRF is only suitable for individual bats or very small numbers of bats either due to size or lack of suitable surrounding habitats.
- PRF-M – PRF is suitable for multiple bats and may therefore be used by a maternity colony.

The surveys recorded a number of buildings in the wider survey area of moderate suitability for roosting bats. The GLTA recorded a small number of trees with PRFs, all located at the northern end of the access route in riparian trees by the Water of Milk. The majority of these were classified as PRF-I, with one recorded as PRF-M.

Automated bat activity surveys were conducted with the Site between May and October 2024. Seven Anabat detectors were positioned at proposed turbine locations and around the Site based on an indicative preliminary development layout provided at the time of survey. Surveys were undertaken over a minimum period of 42 days spread across spring, summer and autumn recording periods, and collecting 264 complete recording nights of data.

Nine bat species and one genus were recorded, as follows: common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle (*Pipistrellus nathusii*), Daubenton's, Natterer's, Whiskered (*Myotis mystacinus*), Noctule, Leisler's (*Nyctalus leisleri*) and brown long-eared bat. In total 32,100 bat registrations were made during the surveys; most records were of common pipistrelle (58%) and soprano pipistrelle (33%).

The data indicates certain parts of the Site show seasonally increased levels of bat activity; this data is being used in the iterative design process to reduce risks to bats.

Full details of the bat survey methods and results will be presented within the EIA Report.

7.4 **LIKELY ENVIRONMENTAL EFFECTS**

The ecological impact assessment (EclA) as part of the EIA Report will consider the potential impacts associated with construction, operation and decommissioning of the Development as detailed below. Where appropriate, the construction and operational impacts will also be considered in a cumulative assessment.

Construction Impacts:

- Permanent and temporary habitat loss/alteration/fragmentation/drainage associated with the Development infrastructure;
- Pollution impacts on watercourses within the Site;
- Loss of shelter, breeding or foraging habitat for protected species;
- Displacement of deer;

⁷⁷ Collins, J. (ed.) (2023). Bat Surveys for Professional Ecologists: Good Practice Guidelines. 4th Edition. The Bat Conservation Trust, London.

- Risk of injury or death to protected species from collisions with increased construction traffic; and
- Visual and noise disturbance to protected species associated with construction activities.

Operational Impacts:

- Displacement of protected species from shelter, breeding or foraging habitats around operational turbines and other permanent infrastructure, including barrier effects;
- Risks of bats colliding with or suffering barotrauma from proximity to operational wind turbine blades; and
- Habitat restoration/enhancement to be delivered as part of the Development's Biodiversity Enhancement Management Plan (BEMP).

Decommissioning impacts are assumed to be similar to (or less than), with a shorter duration, than those from construction.

7.5 ASSESSMENT METHODOLOGY

7.5.1 Scope of Assessment

The EclA will be undertaken in accordance with SNH (now NatureScot) guidance⁷⁸ and Chartered Institute of Ecology and Environmental Management (CIEEM) guidance⁷⁹.

The ecological features identified in the preliminary baseline are likely to include those that will be identified as 'Important Ecological Features' (IEFs) and thus scoped into the assessment, subject to the application of the assessment methodology. It is possible some of these features will fall below the threshold to be classified as IEFs, and thus will be scoped out of detailed assessment, whilst new IEFs will be identified as a result of ongoing baseline studies and consultations, and scoped in. Section 7.7 identifies ecological features that are proposed to be scoped out at this stage.

7.5.2 Relevant Legislation, Policy and Guidance

The assessment will be undertaken in line with the following European and National Legislation.

- European Union Council Directive 92/43/EEC on Conservation of Natural Habitats and of Wild Fauna and Flora (as amended) (Habitats Directive);
- European Union 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 ("Water Framework Directive");
- Environmental Impact Assessment Directive 85/337/EEC, as amended ("EIA Directive"), (as subsequently codified by Directive 2011/92/EU, and as amended by Directive 2014/52/EU);
- European Council Directive 2011/92/EU the European Parliament and of the Council on the assessment of the effects of certain public and private projects on the environment (codification);
- The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (the EIA Regulations);
- The Electricity Act 1989;
- Nature Conservation (Scotland) Act 2004 (as amended);
- Salmon and Freshwater Fisheries (Consolidation) (Scotland) Act 2003;
- The Conservation (Natural Habitats &c.) Regulations 1994 (as amended) 'The Habitats Regulations';
- The Protection of Badgers Act 1992;
- The Water Environment and Water Services (Scotland) Act 2003 (WEWS);
- The Water Environment (Controlled Activities) (Scotland) Regulations 2011;
- The Wildlife and Countryside Act 1981 (as amended); and

⁷⁸ SNH (2018). Environmental Impact Assessment Handbook – Version 5: Guidance for competent authorities, consultation bodies, and others involved in the Environmental Impact Assessment process in Scotland.

⁷⁹ CIEEM (2024). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.3. Chartered Institute of Ecology and Environmental Management, Winchester.

- The Wildlife and Natural Environment (Scotland) Act 2011 (WANE).

The assessment will be carried out in accordance with the principles contained within the following policy and guidance documents.

- CIEEM (2024⁷⁹). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine (Version 1.3);
- Collins, J. (2023⁸⁰). Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edition);
- Dumfries and Galloway Council (2009). Local Biodiversity Action Plan⁸¹;
- European Commission (2020). Guidance document on wind energy developments and EU nature legislation⁸²;
- Joint Nature Conservation Committee (JNCC) and Department for Environment, Food and Rural Affairs (DEFRA) (2012). UK Post-2010 Biodiversity Framework⁸³;
- JNCC (2019). Guidelines for selection of biological Sites of Special Scientific Interest (SSSI);
- NatureScot, Natural England, Natural Resources Wales, RenewableUK, Scottish Power Renewables, Ecotricity Ltd, the University of Exeter & Bat Conservation Trust (BCT) (2021⁷⁵). Bats and Onshore Wind Turbines – Survey, Assessment and Mitigation;
- NatureScot (2021⁸⁴). Assessing the cumulative landscape and visual impact of onshore wind energy developments;
- NatureScot (2023; revised 2026⁸⁵). Advising on peatland, carbon-rich soils and priority peatland habitats in development management;
- NatureScot (2025⁸⁶). General Pre-application and Scoping Advice to Developers of Onshore Wind Farms;
- Scottish Badgers (2018⁸⁷). Surveying for Badgers: Good Practice Guidelines. Version 1;
- SEPA (2024). Guidance on Assessing the Impacts of Developments on Groundwater Dependent Terrestrial Ecosystems;
- SERAD (Scottish Executive Rural Affairs Department) (2001⁸⁸). European Protected Species, Development Sites and the Planning Systems: Interim guidance for local authorities on licensing arrangements;
- Scottish Executive (2000⁸⁹). Nature conservation: implementation in Scotland of EC Directives on the conservation of natural habitats and of wild flora and fauna and the conservation of wild birds ('The Habitats and Birds Directives'). Revised guidance updating Scottish Office Circular no. 6/1995;
- Scottish Executive (2004⁹⁰). Scottish Biodiversity Strategy: It's in Your Hands;

⁸⁰ Collins, J. (ed.) (2023). Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edition). The Bat Conservation Trust, London.

⁸¹ Dumfries and Galloway Council (2009) Local Biodiversity Action Plan. Available at: Dumfries and Galloway Local Biodiversity Action Plan - Part 1 - SWSEIC.

⁸² European Commission (2020). Guidance document on wind energy developments and EU nature legislation. Available at: https://ec.europa.eu/environment/nature/natura2000/management/docs/wind_farms_en.pdf

⁸³ <https://jncc.gov.uk/our-work/uk-biodiversity-framework/>

⁸⁴ <https://www.nature.scot/doc/guidance-assessing-cumulative-landscape-and-visual-impact-onshore-wind-energy-developments>

⁸⁵ <https://www.nature.scot/doc/advising-peatland-carbon-rich-soils-and-priority-peatland-habitats-development-management>

⁸⁶ NatureScot (2024). General pre-application and scoping advice for onshore wind farms. Available at:

<https://www.nature.scot/doc/naturescot-pre-application-guidance-onshore-wind-farms>

⁸⁷ Scottish Badgers (2018). Surveying for Badgers: Good Practice Guidelines. Version 1. Available at:

https://www.scottishbadgers.org.uk/wp-content/uploads/2020/12/Surveying-for-Badgers-Good-Practice-Guidelines_V1-2020-2455979.pdf.

⁸⁸ SERAD (2001). European Protected Species, Development Sites and the Planning Systems: Interim guidance for local authorities on licensing arrangements. Available at:

<https://www.webarchive.org.uk/wayback/archive/20150220012946/http://www.gov.scot/Publications/2001/10/10122/File-1>.

⁸⁹ Scottish Executive (2000). Nature conservation: implementation in Scotland of EC Directives on the conservation of natural habitats and of wild flora and fauna and the conservation of wild birds. Revised guidance updating Scottish Office Circular no. 6/1995. Available at: <https://www.gov.scot/binaries/content/documents/govscot/publications/foi-eir-release/2020/01/foi-201900008726/documents/foi-201900008726-information-released-a/foi-201900008726-information-released-a/govscot%3Adocument/FOI%2B-%2B201900008726%2B-%2BInformation%2BReleased%2B-%2BCircular%2B6-1995%2BNature%2BConservation%2B-%2BThe%2BHabitats%2Band%2BBirds%2BDirectives%2527%2B-%2528Updated%2BJune%2B2000%2529..PDF>.

⁹⁰ <https://www.gov.scot/publications/scotlands-biodiversity---its-in-your-hands/>

- Scottish Government (2000⁹¹). Planning Advice Note (PAN) 60: Planning for Natural Heritage;
- Scottish Government (2006⁹²). European Protected Species – terms of guidance: Chief Planner letter;
- Scottish Government (2013⁹³). Scottish Biodiversity Strategy: It's in Your Hands (2004)/2020 Challenge for Scotland's Biodiversity;
- Scottish Government (2016⁹⁴). Draft Peatland and Energy Policy Statement;
- Scottish Government (2017a⁹⁵). Planning Advice Note 1/2013 - Environmental Impact Assessment, Revision 1.0;
- Scottish Government (2017b⁹⁶). Planning Circular 1/2017: Guidance on The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017;
- Scottish Government (2018⁹⁷). Climate Change Plan: Third Report on Policies and Proposals 2018-2032;
- Scottish Government (2019⁹⁸). The Scottish Forestry Strategy (SFS);
- Scottish Government (2020⁹⁹). Scottish biodiversity strategy post-2020: statement of intent;
- Scottish Government (2020¹⁰⁰). EU Exit: The Habitat Regulations in Scotland;
- Scottish Government (2020¹⁰¹). Securing a green recovery on a path to net zero: climate change plan 2018–2032 – update;
- Scottish Government (2021¹⁰²). Freshwater and diadromous fish and fisheries associated with onshore wind farm and transmission line developments: generic scoping guidelines;
- Scottish Government (2022a¹⁰³). Onshore Wind Policy Statement 2022;
- Scottish Government (2022b¹⁰⁴). Scottish Biodiversity Strategy to 2045. Tackling the Nature Emergency in Scotland;
- Scottish Government (2024¹⁰⁵). National Planning Framework 4;
- Scottish Government (2025¹⁰⁶). Planning Guidance: Biodiversity;
- SNH (2015¹⁰⁷). Scotland's National Peatland Plan;
- SNH (2016a¹⁰⁸). Planning for Development: What to consider and include in deer assessments and management at development sites (Version 2);

⁹¹ <https://www.gov.scot/publications/pan-60-natural-heritage/>

⁹² Scottish Government (2006). European Protected Species – terms of guidance: Chief Planner letter. Available at: https://www.gov.scot/binaries/content/documents/govscot/publications/correspondence/2006/05/european-protected-species-chief-planner-letter/documents/ec-directive-92_43_eec-conservation-natural-habitats-wild-flora-fauna-pdf/ec-directive-92_43_eec-conservation-natural-habitats-wild-flora-fauna-pdf/govscot%3Adocument/EC%2BDirective%2B92_43_EEC%2BOn%2Bthe%2BConservation%2Bof%2BNatural%2BHabitats%2BAnd%2Bof%2BWild%2BFlora%2BAnd%2BFauna.pdf.

⁹³ Scottish Government (2013). Scottish Biodiversity Strategy: It's in Your Hands (2004)/2020 Challenge for Scotland's Biodiversity (2013). Available at: <https://www.gov.scot/publications/scotlands-biodiversity---its-in-your-hands/>.

⁹⁴ Scottish Government (2016). Draft Peatland and Energy Policy Statement. Available at: <https://www.gov.scot/publications/peatland-and-energy-draft-policy-statement/>.

⁹⁵ Scottish Government (2017a). Planning Advice Note 1/2013 – Environmental Impact Assessment, Revision 1.0. Available at: <https://www.gov.scot/publications/planning-advice-note-1-2013-environmental-impact-assessment/>.

⁹⁶ Scottish Government (2017b). Planning Circular 1/2017: Guidance on The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017. Available at: <https://www.gov.scot/publications/planning-circular-1-2017-environmental-impact-assessment-regulations-2017/>.

⁹⁷ Scottish Government (2018). Climate Change Plan: Third Report on Policies and Proposals 2018-2032. Available at: <https://www.gov.scot/publications/scottish-governments-climate-change-plan-third-report-proposals-policies-2018/>.

⁹⁸ <https://www.gov.scot/publications/scotlands-forestry-strategy-20192029/>

⁹⁹ Scottish Government (2020). Scottish biodiversity strategy post-2020: statement of intent. Available at: <https://www.gov.scot/publications/scottish-biodiversity-strategy-post-2020-statement-intent/>.

¹⁰⁰ <https://www.gov.scot/publications/eu-exit-habitats-regulations-scotland-2/>

¹⁰¹ <https://www.gov.scot/publications/securing-green-recovery-path-net-zero-update-climate-change-plan-20182032/>

¹⁰² <https://www.gov.scot/publications/freshwater-and-diadromous-fish-and-fisheries-associated-with-onshore-wind-farm-and-transmission-line-developments-generic-scoping-guidelines/>

¹⁰³ <https://www.gov.scot/publications/onshore-wind-policy-statement-2022/>

¹⁰⁴ <https://www.gov.scot/publications/scottish-biodiversity-strategy-2045-tackling-nature-emergency-scotland/>

¹⁰⁵ Scottish Government (2024) National Planning Framework 4. Available at: <https://www.gov.scot/publications/national-planning-framework-4/>

¹⁰⁶ Available at: <https://www.gov.scot/publications/scottish-government-planning-guidance-biodiversity/documents/>

¹⁰⁷ SNH (2015). Scotland's National Peatland Plan. Available at: <https://www.nature.scot/doc/scotlands-national-peatland-plan-working-our-future>.

¹⁰⁸ SNH (2016a). Planning for Development: What to consider and including in deer assessments and management at development sites (Version 2). Available at: <https://www.nature.scot/doc/guidance-planning-development-what-consider-and-include-habitat-management-plans>.

- SNH (2016b¹⁰⁹). Planning for Development: What to consider and include in Habitat Management Plans. Version 2;
- SNH (2018¹¹⁰). Environmental Impact Assessment Handbook – Version 5: Guidance for competent authorities, consultation bodies, and others involved in the Environmental Impact Assessment process in Scotland; and
- Scottish Renewables, SNH, SEPA, Forestry Commission (Scotland), HES, AEECoW (2019, updated 2024¹¹¹). Good Practice During Windfarm Construction (4th Edition).

7.5.3 Proposed Study Area/Survey Areas

The ecological study areas include the areas within which the baseline will be established to understand the effects of the Development. The study areas are defined below with reference to the Site boundary and are based on professional judgement and prevailing good practice. The study areas may be refined based on the Development design and the results of further studies and consultation responses.

The assessment will likely incorporate the following study areas:

- Statutory and non-statutory designated sites and ancient woodland: the Site boundary and a 5 km study area;
- Protected species: the Site boundary and any species-specific buffers as necessary;
- Fisheries (carried out by GFT): watercourses onsite and downstream as deemed relevant;
- Potential bat roost features: the Development and a 200 m plus turbine blade length buffer (as per NatureScot *et al.*⁷⁵) study area;
- Habitats: the Site boundary;
- Bat collisions: the Development (static bat data will be processed through Ecobat (Mammal Society, 2017¹¹²)); and
- Cumulative assessment (if required): the Site boundary and a 5 km study area.

7.5.4 Baseline Study Methods

7.5.4.1 Desk-Study

The desk-study will obtain information and data about designated sites and protected and notable species and habitats at and around the Development. Desk-studies are underway, as detailed in Section 7.3.1 above. Any further desk-based searches or information gathered (e.g., from local record centres or any Environmental Statements (ES), EIA Reports or technical reports from other developments or Developments in the local area) will be detailed and presented in the EIA Report.

7.5.4.2 Field Survey

Ecology field surveys were initiated in 2024 and continued into 2025 with surveys relating to habitats, protected species (including bats), and fish undertaken (see Section 7.3.2 above).

Further surveys planned for 2026 include:

- NVC surveys, incorporating Phase 1 Habitat and potential Groundwater Dependent Terrestrial Ecosystem (GWDTE) habitat characterisation for any survey coverage gaps due to the iterative design process;
- Protected species surveys, including a ground based Preliminary Roost Assessment (PRA) for bats, for any survey coverage gaps due to the iterative design process; and
- A peatland condition assessment of bog habitats within the Site in cognisance of associated data requirements set out within relevant NatureScot guidance⁸⁵.

¹⁰⁹ SNH (2016b). Planning for Development: What to considered and including in Habitat Management Plans. (Version 2). Available at: <https://www.nature.scot/doc/guidance-planning-development-what-consider-and-include-habitat-management-plans>.

¹¹⁰ SNH (2018b). Environmental Impact Assessment Handbook – Version 5: Guidance for competent authorities, consultation bodies, and others involved in the Environmental Impact Assessment process in Scotland. Scottish Natural Heritage. Available at: <https://www.nature.scot/doc/handbook-environmental-impact-assessment-guidance-competent-authorities-consultees-and-others>.

¹¹¹ Scottish Renewables, SNH, SEPA, Forestry Commission (Scotland), HES, AEECoW (2019). Good Practice During Windfarm Construction (4th Edition). Available at: <https://www.nature.scot/doc/guidance-good-practice-during-wind-farm-construction>.

¹¹² The Mammal Society (2017). Ecobat. Available at: <https://mammal.org.uk/current-research/bat-recording-tools>

7.5.5 Methodology for the Assessment of Effects

The EIA Report will include an EclA. The significance of the potential effects will be assessed by considering the spatial and temporal magnitude of the potential impacts and the sensitivity of IEFs. The EclA will consider the potential direct, indirect and cumulative impacts that the construction, operation and decommissioning of the Development could have on IEFs. The assessment will be supported by appendices that will include details of survey methodologies and all survey data.

The assessment will include the following elements:

- Baseline conditions;
- Scoping in/out of ecological features and impacts;
- Assessment of potential impacts and effects on IEFs during construction, operational and decommissioning phases;
- Cumulative effects;
- Mitigation; and
- Summary of significant residual effects.

Effects on IEFs will be assessed in relation to the species' reference population or habitat extent, conservation status, range, and distribution. The assessment of potential effects will be informed by guidelines published by CIEEM⁷⁹[Error! Bookmark not defined.](#) and SNH¹¹⁰, which is in line with the EIA Regulations.

The assessment involves the following process:

- Identifying potential impacts of the Development on ecological features, including both positive and negative;
- Considering the likelihood of occurrence of potential impacts;
- Determining the sensitivity of the IEF by defining its nature conservation importance and conservation status;
- Establishing the magnitude of change associated with the potential impact (both spatial and temporal) on each IEF;
- Based on the above information, making a judgement as to whether or not the consequent potential effect would be significant with respect to the EIA Regulations;
- If a potential effect is determined to be significant, measures to avoid, reduce, mitigate or compensate for the effect are presented where required;
- Considering opportunities for enhancement where appropriate; and
- Confirming residual effects after mitigation, compensation and/or enhancement are considered.

7.5.6 Mitigation and Enhancement

7.5.6.1 Mitigation

Significant effects on ecological features will be avoided or minimised where possible via the iterative design process (in line with the mitigation hierarchy) as further baseline information and environmental constraints data is gathered. Embedded mitigation through design will likely include, but not be restricted to:

- Applying a minimum 50 m buffer for any infrastructure or construction activity around all watercourses, except where a minimum number of watercourse crossings are required. This will minimise effects on associated habitats and species;
- Use of, or upgrading, existing tracks and infrastructure as far as practicable;
- Designing the track length and its alignment to minimise the extent of new track and number of watercourse crossings required;
- Avoidance of deeper peat or carbon-rich soils (>0.5 m in depth) as far as practicable; and
- Establishing a minimum 50 m buffer from turbine blade tips to important edge habitats for bats across the Site to reduce collision risk.

The EclA will identify whether there are significant predicted ecological effects from the Development. Good practice and embedded mitigation during construction and operation of the Development will be implemented as standard (and the assessment undertaken on this basis). This would include, but not be limited to, the following:

- A Species Protection Plan (SPP) would be implemented as part of a Site-specific robust Construction Environmental Management Plan (CEMP) or similar during the construction phase to ensure that all reasonable precautions are taken to adhere to the relevant wildlife legislation;
- Pre- and during-construction surveys carried out by an Ecological Clerk of Works (ECoW) or suitably qualified ecologist would take place as part of the SPP, and an ECoW present during the construction period;
- Reduced rotation speed whilst idling mitigation as detailed within NatureScot *et al.*⁷⁵ to reduce collision risk to bats; and
- Operational phase environmental management plans following relevant best practice and guidance will be in place during operation of the Proposed Development, these will, for example, include provisions for, but not limited to, ongoing pollution prevention control measures.

Where significant effects on IEFs are identified, additional mitigation measures to prevent and reduce these adverse effects would be proposed.

7.5.6.2 Enhancement

Enhancement, restoration and creation of habitats of conservation value through the delivery of a Biodiversity Enhancement Management Plan (BEMP) would reduce potential effects on habitats further, with the Development providing an opportunity to deliver significant biodiversity enhancement at the Site, in line with objectives outlined in NPF4 Policy 3, the Onshore Wind Policy Statement, and the Scottish Biodiversity Strategy to 2045. An outline BEMP will be provided with the EIA Report.

Specific biodiversity enhancement proposals will be developed through discussions with the Applicant, landowners, and relevant technical specialists in order to enhance, create and connect habitats of biodiversity value. The full suite of proposals will be presented within the outline BEMP in the EIA Report.

If appropriate, biodiversity enhancement may be demonstrated through the use of an appropriate Biodiversity Net Gain (BNG) metric, which would calculate the net change in biodiversity value of the Site based on the pre- and post-development habitats.

7.6 ASSESSMENT OF CUMULATIVE EFFECTS

An assessment of relevant cumulative impacts will be undertaken following published guidance¹¹⁰. Where determined that a cumulative assessment is necessary, impacts will be assessed with other wind farm or related projects subject to the EIA process within a relevant search area. The spatial scale of the cumulative assessment will relate to the specific ecological feature, the relevant reference population and the ecology of the feature being assessed, and it may extend from, for example, a watercourse or watershed to the biogeographic area, such as the relevant Natural Heritage Zone (NHZ). Therefore, where it is considered necessary, an assessment of cumulative effects will be made for each feature, appropriate to its ecology.

7.7 MATTERS AND ASPECTS TO BE SCOPED OUT OF THE ASSESSMENT

Table 7.3 outlines the effects that are proposed to be scoped out of the EIA.

Potential Effect	Phase of Development	Reason
Adverse effects on statutory and non-statutory designated sites	All	There are no ecological statutory or non-statutory designated sites within 5 km of the Site, and thus there is an absence of connectivity with any designated site.
Adverse effects on ancient woodland	All	There is no ancient woodland within the Site. The closest ancient woodland is a stand of LEPO 10 m north of the Site boundary, on the opposite side of a minor road, and 30 m from a proposed access track for the Development. No adverse effects are anticipated.

Potential Effect	Phase of Development	Reason
Adverse effects on common and widely distributed habitats or species.	All	On the basis of the results of the desk-based work undertaken to date, the professional judgement of the EIA team, experience from other relevant projects and policy guidance or standards, generally common and widely distributed habitats or species which do not fall within the categories listed below will be scoped out of the assessment, i.e., habitats not on Annex I to the Habitats Directive and species not on Annex II to the Habitats Directive and habitats or species not protected by other legislation (e.g., The Wildlife and Countryside Act 1981 (as amended), the Nature Conservation (Scotland) Act 2004 or The Protection of Badgers Act).
Adverse effects on great crested newt, wildcat and beaver.	All	Effects on these species are scoped out due to the absence of suitable habitat at the Site (in the case of great crested newt) or the Sites geographical location being outwith the known range of the respective species and/or the lack of evidence of their presence locally from desk-based research and field surveys to date (in the case of wildcat and beaver).
Adverse effects on fish and aquatic habitats	Construction	Baseline surveys have indicated that several of the onsite watercourses contain no, or very low numbers of fish, with migratory salmonids only present in the Water of Milk of the nine sites electrofished. With standard good practice measures and embedded mitigation and monitoring in place it is predicted that adverse effects on fish and aquatic habitats can be avoided. For instance, to avoid direct or indirect impacts on water quality and hydrogeomorphology a minimum 50 m buffer distance between infrastructure and watercourses has been maintained where possible, the design of permanent and temporary access track watercourse crossings would comply with SEPA good practice guidance to minimise impacts on fish and their habitat, construction work would comply with a CEMP which would include good practice mitigation for effective silt and pollution prevention and undertaking works in accordance with SEPA best practice guidelines, presence of and monitoring by an ECoW, and a monitoring programme for fish and macroinvertebrates pre-, during and post-construction following standard guidance ¹¹³ .

7.8 SCOPING QUESTIONS TO CONSULTEES

- Do consultees agree that the methodology and scope of assessment is appropriate?
- Do consultees agree that the suite of field surveys undertaken in 2024/2025 and planned for 2026, in addition to a desk study, are sufficient to inform a robust impact assessment?
- Do consultees agree with the potential effects to be scoped out of the assessment in Table 7.3?
- Are there any relevant consultees who should be consulted, or other sources of information that should be considered?

¹¹³ <https://www.gov.scot/publications/monitoring-watercourses-in-relation-to-onshore-wind-farm-developments-generic-monitoring-programme/>
Renewco Power
July 2026

8 ORNITHOLOGY

8.1 INTRODUCTION

This Chapter of the Scoping Report details the approach to establishing baseline ornithological conditions and the proposed scope and methodology of the assessment of potentially significant effects upon Important Ornithological Features (IOFs) that will be presented EIA Report.

The assessment will be undertaken by SLR.

This Chapter is supported by the following figures:

- Figure 8.1: Ornithological Designated Sites;
- Figure 8.2: Vantage Point Survey Locations and Viewsheds; and
- Figure 8.3: Ornithological Survey Areas.

This Chapter includes the following elements:

- Consultation to Date;
- Baseline Study Methods;
- Preliminary Baseline Conditions;
- Important Ornithological Features;
- Likely Environmental Effects;
- Assessment Methodology;
- Relevant Guidance, Legislation and Information;
- Matters and Aspects Scoped Out.
- Questions to Consultees.

8.2 CONSULTATION TO DATE

Consultation has been undertaken with the following statutory and non-statutory bodies with relation to ornithology as summarised in Table 8.1:

- NatureScot;
- Royal Society for the Protection of Birds (RSPB) Data Unit; and
- Dumfries and Galloway Raptor Study Group (DGRSG).

The purpose of these consultations has been to obtain existing ornithological information for the Site and surrounding area and inform the scope of baseline surveys.

Table 8.1: Summary of consultation responses.

Consultee	Purpose of Consultation	Summary of Response
DGRSG	To obtain existing ornithological information within 2 km of the Site for the most recent five-year period, extended to 6 km for eagle species for the most recent 10-year period.	Existing Ornithological Records Held no records for the search area and time period requested.
RSPB Data Unit		Existing Ornithological Records Provided two records of swift for the search area and time period requested.
NatureScot	To provide an overview of baseline study findings and seek comment and advice on the scope of baseline studies and key ornithological features identified.	Baseline Survey Scope Advised on the requirement for two years of field survey due to the presence of breeding Schedule 1¹¹⁴ species (barn owl) and breeding waders (including curlew). Commented on the potential for deficiencies in Vantage Point (VP) survey coverage of proposed turbine locations and VP locations being present within the survey area. Designated Sites Advised there is no connectivity with the Langholm – Newcastleton Special Protection Area (SPA) due to the distances involved and foraging range of its qualifying feature. Advised there is connectivity between the Development and the Castleloch, Lochmaben SPA and that an assessment of the potential for effects upon the designations qualifying features should be included. Golden Eagle Commented it did not know of any particular interest in this Site and if the species hasn't been recorded in surveys, no further assessment is needed. Breeding Waders Commented that a commitment to wader mitigation may be required and a positive effect for biodiversity should be demonstrated. Details of mitigations proposals should be presented at the application stage.

8.3 BASELINE STUDY METHODS

Baseline ornithological studies to inform the Development were undertaken between March 2023 and February 2025 and April to July 2026. These comprise a desk-based review of existing ornithological information relevant to the Development, two full consecutive years of ornithological field surveys, supplemented in 2026 which included additional areas not directly covered in 2023 to 2025. Surveys were undertaken in accordance with NatureScot 2025(a) guidance¹¹⁵ and site-specific advice (see Table 8.1).

This section provides a summary of the baseline studies that have been completed. This includes the 2023, 2024 and 2026 breeding seasons, along with the 2023/2024 and the 2024/2025 non-breeding seasons.

Full details of all baseline studies completed including survey results, survey methods and conditions will be presented within the EIA Report, associated Technical Appendices and Figures.

¹¹⁴ Bird species listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended).

¹¹⁵ NatureScot (2025a) Recommended bird survey methods to inform impact assessment of onshore wind farms. <https://www.nature.scot/doc/recommended-bird-survey-methods-inform-impact-assessment-onshore-windfarms>

Information pertaining to the locations of breeding sites of birds listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) will be restricted to a Confidential Volume of the EIA Report in accordance with NatureScot 2016 guidance¹¹⁶. This Volume of the EIA Report will not be made publicly available but will be provided to the Scottish Government Energy Consents Unit (ECU), NatureScot and Royal Society for the Protection of Birds (RSPB) Scotland who have a duty to consider such information during their own appraisals of the Development.

8.3.1 Study and Survey Areas

The study area for existing ornithological information has included the Site and out to:

- 20 km for statutory designated sites with qualifying ornithological features, with 20 km comprising the maximum core dispersal and/or foraging distance of ornithological qualifying features from SPAs cited within NatureScot 2025 (b)117; and
- 2 km for Schedule 1 species and species listed on Annex 1 of NatureScot 2025(b) guidance¹¹⁸, extended to 6 km for eagle species, which is in accordance with NatureScot 2025(a) guidance.
- Field survey areas are illustrated in Figure 8.2 and Figure 8.3 and have been defined on the basis of the largest possible layout of turbines, solar layout and ancillary infrastructure within the Site, and species or species group-specific buffers as set out in NatureScot 2025(a) guidance.
- For assessment, the EIA Report will adopt the following refined study areas within which baseline ornithological information will have been gathered and the potential for significant effects upon IOFs will be considered:
- Designated sites - the final layout of the Development and a 20 km buffer around proposed turbine locations, in order to take into account the maximum possible connectivity distance from designated sites (as per NatureScot 2016b);
- Collision risk modelling - the results of the flight activity surveys will be used to inform collision risk modelling. A Collision Risk Analysis Area (CRAA) will be created using GIS Delaunay triangulation from final proposed turbine locations to create a wind farm area which will then be buffered out to 500 m (as per NatureScot 2025a);
- Scarce breeding birds - the final layout of the Development, a 2 km buffer around proposed turbine locations (extended to 6 km for eagle species) and an 800 m buffer around all other infrastructure (extended to 1 km for eagle species) (as per NatureScot 2025a and with reference to Goodship and Furness 2022¹¹⁹);
- Moorland breeding and wintering birds - the final layout of the Development and a 500 m buffer (as per NatureScot 2025a and Goodship and Furness 2022); and
- Black grouse - the final layout of the Development, a 1.5 km buffer around proposed turbine locations and 750 m around all other infrastructure (as per SNH 2017 and with reference to Goodship and Furness 2022).

8.3.2 Desk Study

The following key sources have been consulted for existing ornithological information within the study area:

- NatureScot Sitelink¹²⁰;
- RSPB Data Unit (see Table 8.1); and
- DGRSG (see Table 8.1).

Operational monitoring data from the operational Minsca Wind Farm (operated by Nadara), will also be sought and where made available, will be used to inform the design and

¹¹⁶ NatureScot (formerly SNH) (2016a) Environmental Statements and Annexes of environmentally sensitive bird information: Guidance for developers, consultants and consultees [Online]. Available at: <https://www.nature.scot/doc/environmental-statements-and-annexes-environmentally-sensitive-bird-information> [Accessed 25 June 2026].

¹¹⁷ NatureScot (2016b) Assessing Connectivity with Special Protection Areas (SPAs). Version 3 - June 2016. Guidance. <https://www.nature.scot/sites/default/files/2022-12/Assessing%20connectivity%20with%20special%20protection%20areas.pdf> [Accessed 25 June 2026].

¹¹⁸ NatureScot (2025b) Assessing the significance of impacts on bird populations from onshore wind farms that do not affect protected areas – March 2025. Guidance.

¹¹⁹ Goodship, N.M. and Furness, R.W. (MacArthur Green) (2022). Disturbance Distances Review: An updated literature review of disturbance distances of selected bird species. NatureScot Research Report 1283.

¹²⁰ Available at: <https://sitelink.nature.scot/home>

assessment of the Development and/or provide context for observations recorded during baseline surveys.

8.3.3 Ornithological Field Surveys

Target species for survey and recording have been identified in accordance with NatureScot guidance (NatureScot 2025a and 2016b) and knowledge of bird-habitat associations at the locale and across Scotland.

The following ornithological field surveys have been completed, or are otherwise proposed for completion between March 2023 and June 2026:

- Flight activity surveys (2023 and 2024 breeding seasons and 2023/2024 and 2024/2025 non-breeding seasons), from a total of two Vantage Points (VPs);
- Scarce breeding bird surveys (2023 and 2024 breeding seasons, with supplementary surveys in 2026 breeding season);
- Black grouse surveys (2023 and 2024 breeding seasons);
- Breeding bird surveys (2023 and 2024 breeding seasons, with supplementary surveys in 2026 breeding season); and
- Winter walkover surveys (2023/2024 and 2024/2025 non-breeding seasons).

All field surveys have followed methodologies recommended by NatureScot (in NatureScot 2025a and previous guidance), including species-specific survey methodologies as set out in Hardey *et al.* (2013¹²¹) and Gilbert *et al.* (1998¹²²).

Vantage Point (VP) locations adopted during flight activity surveys and their associated viewsheds, together with distribution survey areas are illustrated on Figures 8.2 and 8.3.

A summary of observational effort completed is included in Table 8.2.

Table 8.2: VP Flight activity survey summary.

Survey Period	Survey Effort (Hours)	
	VP1	VP2
2023 Breeding season	33	33
2023/2024 Non-breeding season	36	36
2024 breeding season	36	36
2024/2025 Non-breeding season	36	36

8.4 PRELIMINARY BASELINE CONDITIONS

8.4.1 Designated Sites

Table 8.3 provides a summary of designated sites within ornithological qualifying features, located within 20km of the Development Site boundary, the maximum core range of breeding and non-breeding qualifying ornithological features from Special Protection Area (SPA) boundaries, set out in NatureScot guidance (NatureScot 2016b).

In review of each designations qualifying interests and connectivity distances set out in NatureScot guidance (NatureScot 2016b), there is considered to be potential connectivity between the Development and Castle Loch, Lochmaben SPA, based on the core foraging range for pink-footed goose (15-20 km). However, the Site is located outside of known migratory goose feeding areas (according to Mitchell 2012¹²³) and in consultation with

¹²¹ Hardey, J., Crick, H., Wernham, C., Riley, H., Etheridge, B. & Thompson, D. (2013) Raptors: a field guide to survey and monitoring. 3rd Edition. The Stationery Office, Edinburgh.

¹²² Gilbert, G., Gibbons, D.W., & Evans, J. (1998) Bird Monitoring Methods: A Manual of Techniques for UK Key Species. Royal Society for the protection of Birds, Sandy, Bedfordshire, England.

¹²³ Mitchell, C. (2012). Mapping the distribution of feeding Pink-footed and Iceland Greylag Geese in Scotland. Wildfowl & Wetlands Trust / Scottish Natural Heritage (SNH) Report, Slimbridge.

NatureScot, it is understood the SPA is no longer used by pink-footed goose as a wintering roost location (see Table 8.1).

There is considered to be no potential for connectivity between the Development and the Langholm – Newcastleton Hills SPA, due to spatial separation and the core foraging range of hen harrier from the SPA (2 km; NatureScot 2016b). This has been agreed in consultation with NatureScot (see Table 8.1).

In relation to the Solway Firth SPA and Upper Solway Flats and Marshes Ramsar site, there is considered to be potential for connectivity between the Development and the designations qualifying non-breeding pink-footed and barnacle goose features, based on the core foraging range of those species during the non-breeding season (15-20 km; NatureScot 2016b). The Site is however located outside of known migratory goose feeding areas (according to Mitchell 2012).

The potential for connectivity between the Development and all other qualifying features of the Solway Firth and Upper Solway Flats ornithological designations is considered unlikely on the basis of spatial separation and the general dependency of those species on the intertidal and marine environments contained within the designation boundary during the non-breeding season.

Table 8.3: Ornithological designated sites within 20 km of the Development.

Site Name	Designation	Distance ¹²⁴	Qualifying features
Castle Loch, Lochmaben	SPA and Ramsar site	10.9 km	Pink-footed goose (non-breeding)
Castle Loch	SSSI	10.9 km	Goosander (non-breeding) Greylag goose (non-breeding)
Solway Firth	SPA and Ramsar site	12.4 km	Non-breeding: bar-tailed godwit, black-headed gull, common gull, common scoter, cormorant, curlew, dunlin, golden plover, goldeneye, goosander, grey plover, herring gull, knot, lapwing, oystercatcher, pink-footed goose, pintail, red-throated diver, redshank, sanderling, scaup, shelduck, shoveler, barnacle goose, teal, turnstone, whooper swan, waterfowl assemblage ¹²⁵ . Passage: ringed plover.
Upper Solway Flats and Marshes	Ramsar site	12.4 km	Non-breeding: bar-tailed godwit, black-headed gull, common gull, cormorant, curlew, dunlin, golden plover, goldeneye, grey plover, herring gull, knot, lapwing, oystercatcher, pink-footed goose, pintail, redshank, sanderling, scaup, shelduck, shoveler, barnacle goose, teal, turnstone, whooper swan, waterfowl assemblage. Passage: ringed plover.
Upper Solway Flats and Marshes	SSSI	12.4 km	Non-breeding: bar-tailed godwit, breeding bird assemblage ¹²⁶ , curlew, dunlin, golden plover, goldeneye, grey plover, knot, oystercatcher, pintail, redshank, ringed plover, sanderling, scaup, shelduck, shoveler, barnacle goose.
Langholm – Newcastleton Hills	SPA	14.8 km	Hen harrier (breeding)
Langholm – Newcastleton Hills	SSSI	14.8 km	Hen harrier (breeding) Breeding bird assemblage ¹²⁷

¹²⁴ Distance from the Site Boundary to the designation at its nearest point.

¹²⁵ Citation species including shelduck, teal, shoveler, goldeneye, grey plover, sanderling, dunlin, turnstone, common scoter, goosander, lapwing, cormorant, black-headed gull, common gull and herring gull.

¹²⁶ Citation species include lesser black-backed and herring gulls, black-headed gulls, redshank, lapwing and oystercatcher.

¹²⁷ Citation assemblage stating black and red grouse, nine species of wader and six raptor species including hen harrier.

8.4.2 Flight Activity

Flight activity surveys to quantify the level and distribution of target species flight activity within proximity to potential turbine locations, were undertaken for two years commencing in March 2023 from two VP locations (see Figure 8.2 and Table 8.2).

Over the course of surveys, flight activity has been recorded for a total of 14 target species, comprising: curlew, goshawk, peregrine falcon, red kite, golden plover, great black-backed gull, hen harrier, herring gull, lapwing, little egret, osprey, pink-footed goose, whimbrel and whooper swan.

8.4.3 Scarce Breeding Birds

Scarce breeding bird surveys were completed during the 2023 and 2024 breeding season, and are being updated in the 2026 breeding season, to establish the breeding status and location of Schedule 1 breeding raptor and owl species, and short-eared owl.

Surveys recorded the breeding sites of two raptor species within the survey area, comprising red kite (one site) and barn owl (two sites).

Observations of goshawk, peregrine falcon, and osprey have also been recorded over the course of surveys, but no breeding activity identified.

The DGRSG and the RSPB Data Unit hold no existing records of breeding or roosting Schedule 1 raptor or owls, or records of short-eared owl within 2 km of the Site over the most recent five-year period, and no records of eagle breeding sites within 6 km of the Site over the last 10 years (see Table 8.1).

8.4.4 Moorland Breeding Birds

Breeding bird surveys were completed over the 2023 and 2024 breeding season and are being updated in the 2026 breeding season. The 2023 and 2024 surveys established the presence of a moorland breeding bird assemblage within the Site and wider survey area comprising curlew (up to eight territories), oystercatcher (up to four territories), and snipe (up to two territories).

The RSPB Data Unit holds no existing breeding wader records within 2 km of the Site over the most recent five-year period (see Table 8.1).

8.4.5 Black Grouse

Surveys to identify areas of black grouse activity, locate lek locations and establish lek sizes were conducted in April and May 2023 and 2024.

No observations of black grouse were made during these surveys, and no observations have been made of the species during all other field surveys to date.

The RSPB Data Unit holds no existing records of black grouse within 2 km of the Site over the most recent five-year period (see Table 8.1).

8.4.6 Non-breeding Birds

Winter walkover surveys were carried out over the 2023/2024 non-breeding season. The purpose of surveys was to record any aggregations of foraging migratory waterfowl and the potential for communally roosting non-breeding Schedule 1 raptors or short-eared owl within the survey area and recorded any additional observations of non-breeding target species with reference to Annex 1 of NatureScot guidance (NatureScot 2025b).

Target species recorded over the 2023/2024 non-breeding season included pink-footed goose (in flight), peregrine falcon, herring gull and red kite.

No observations suggesting the presence of communally roosting Schedule 1 raptor or short-eared owl or foraging migratory waterfowl (including pink-footed goose) have been recorded.

In review of British Trust for Ornithology (BTO) Wetland Birds Survey (WeBS) data (Woodward *et al.* 2024¹²⁸) for Purdomstone Reservoir (within the Site) and Torbeckhill Reservoir (to the east of the Site), these waterbodies are not known to regularly support flocks of migratory geese or swans¹²⁹.

8.5 IMPORTANT ORNITHOLOGICAL FEATURES

On the basis of the information collated on species activity and distributions to date, it is likely that IOFs will include breeding curlew, red kite and barn owl together with non-breeding pink-footed goose (as a qualifying feature of the Upper Solway Flats and Marshes SPA and Castle Lochs SPA, see Table 8.1) as summarised in Table 8.4.

Table 8.4: Important Ornithological Features (IOFs).

Feature	Summary
Curlew	Breeding territories present and flight activity recorded. Potential for construction, decommissioning and operational effects.
Pink-footed goose <i>As a qualifying feature of the Upper Solway Flats and Marshes SPA and Castle Lochs SPA</i>	Flight activity recorded, but no foraging or roosting behaviour recorded. Potential for operational effects.
Red kite	A single breeding site present and flight activity recorded. Potential for construction, decommissioning and operational effects.
Barn owl	Two breeding sites present. Potential for construction, decommissioning and operational effects.

8.6 LIKELY ENVIRONMENTAL EFFECTS

The assessment will consider the potential for significant effects upon all IOFs during the construction, operation, and decommissioning of the Development as set out below.

8.6.1 Construction

In the absence of mitigation, potentially significant effects to IOFs during construction works for the Development could arise from:

- Nesting and foraging habitat loss, fragmentation, and/ or alteration during the installation of infrastructure; and
- Disturbance to nest sites, eggs, and/ or dependant young.

Construction activities may be predicted to result in a temporary increase in noise, vibration and human presence within construction areas. This has the potential to displace breeding, foraging or roosting birds from the vicinity of construction areas for the duration of construction works.

Impacts would likely be greatest during the breeding season (generally from March to August) but are variable between location and species. The potential for disturbance to occur to breeding sites of specific species will therefore be assessed on the basis of best available species guidance, including Goodship and Furness (2022) which will be referred to within the EIA Report.

Overall construction disturbance would be considered temporary and would only occur when construction works were being carried out. Construction works would also not be expected to take place across the whole of the Site at once but phased within smaller defined working areas across the Site.

¹²⁸ Woodward, I.D., Calbrade, N.A., Birtles, A., Feather, G.A., Peck, K., Wotton, S.R., Shaw, J.M., Balmer, D.E. and Frost, T.M. (2024) Waterbirds in the UK 2022/23: The Wetland Bird Survey and Goose & Swan Monitoring Programme. BTO/RSPB/JNCC/NatureScot. Thetford.

¹²⁹ Wetland Bird Survey (WeBS) data from Waterbirds in the UK 2022/23 © copyright and database right 2024. WeBS is a partnership jointly funded by the BTO, RSPB and JNCC, with fieldwork conducted by volunteers and previous support from WWT.

8.6.2 Operation

The operation of the Development, including maintenance activities, may cause disturbance and displacement of bird species from nesting, roosting and/ or foraging habitats.

The extent of operational displacement is also highly variable between species, and as such, a species-specific assessment will take place based upon the baseline studies and will be assessed based on the best available guidance, including Goodship and Furness (2022), and referred to within the EIA report.

The operation of the Development also has the potential to result in the risk of collisions with operational turbines or other installed infrastructure. Where the level of flight activity requires it, the NatureScot collision risk model (Band, 2024¹³⁰) will be used to estimate potential collision mortality risks for target species.

8.6.3 Decommissioning

The potential for impacts on IOFs resulting from the decommissioning of the Development, including the removal of infrastructure from the Site are considered to be similar to those identified for the construction phase of the Development.

As such, the associated effects of decommissioning will not be assessed exclusively for IOFs but will be assessed in the EIA Report with reference to construction phase effects.

8.7 ASSESSMENT METHODOLOGY

8.7.1 Scope of Assessment

The assessment will be undertaken adopting an established approach to the assessment of onshore wind farm developments in Scotland, as recommended in NatureScot guidance (NatureScot 2025b) and impact assessment guidance published by the Chartered Institute of Environmental and Ecological Management (CIEEM 2018¹³¹).

The approach to assessment will also take account of existing guidance and published scientific literature in relation to birds and windfarms, together with professional judgement and experience of renewable energy EIAs.

The assessment will consider in detail only those impacts upon IOF's considered sensitive to wind farm developments, including features set out in Annex 1 of NatureScot guidance (NatureScot 2025b), and upon which potentially significant effects may occur. Impacts upon IOFs will be assessed in relation to the species' relevant reference population, conservation status, range and distribution, based on best available evidence.

The assessment will consider the following three main potential impacts upon IOFs as set out in Section 8.5:

- displacement/ habitat loss through wind farm construction;
- mortality risk through collision with operational turbines/ other infrastructure; and
- indirect displacement/ habitat loss through the avoidance of operational wind farm infrastructure.

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The assessment will be supported by technical appendices and figures as appropriate and will include the following stages:

- description of the ornithological baseline;
- scoping in/ out of IOFs and associated impacts;
- identification and characterisation of potentially significant effects;
- outline of additional mitigation measures to avoid and reduce significant effects;
- assessment of the significance of any residual effects after such measures;
- where required, identification of appropriate compensation measures to offset significant residual effects;
- identification and outline of opportunities for enhancement; and

¹³⁰ Band, W. 2024. Using a collision risk model to assess bird collision risks for onshore wind farms. NatureScot Research Report 909.

¹³¹ CIEEM (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.2. Chartered Institute of Ecology and Environmental Management (CIEEM), Winchester.

- where required, cumulative assessments.

8.7.2 Approach to Mitigation and Enhancement

The design of the Development will seek to avoid and/or minimise any significant effects on birds, based on the known locations of breeding sites, potential roosts and key foraging habitats identified during baseline studies, and adoption of suitable bird disturbance distances set out in accordance with Goodship and Furness (2022).

Good practice measures, as set out in NatureScot guidance (NatureScot 2026¹³²) during construction/ decommissioning and operation of the Development will also be implemented (and the assessment undertaken on this basis).

This will include the following:

- A Bird Disturbance Management Plan (BDMP) as part of a Construction Environmental Management Plan (CEMP). This will ensure that precautions are taken in order to comply with legislation in regard to the protection afforded to wild birds; and
- Pre- and during- construction/ decommissioning surveys carried out by an Ecological Clerk of Works (ECoW) or suitably qualified ornithologist as part of the BDMP.
- A Biodiversity Enhancement Management Plan (BEMP) will also form part of the Development, and an Outline Biodiversity Enhancement Management Plan (OBEMP) will be submitted as part of the EIA Report.
- The OBEMP will present draft habitat and species conservation management measures that will be committed to as part of the Development, and which will contribute to the enhancement of biodiversity in accordance with the principals of National Planning Policy Framework 4 (NPF4) Policy 3: Biodiversity, through restoring degraded habitats and creating and strengthening nature networks.

The finalisation of management measures and the areas over which those measures will take place, would be undertaken in consultation with relevant stakeholders following planning consent and any further site-investigations, as required.

8.7.3 Assessment of Cumulative Effects

An assessment of cumulative effects will be undertaken following published guidance (NatureScot 2025c¹³³ **Error! Bookmark not defined.**). Cumulative effects on each IOF relevant to the Development will be assessed in relation to other projects and activities subject to the EIA process within a relevant search area and their effects on a relevant reference population. NatureScot 2025c states that *"the impacts of wind farm (and other) developments on any species' population can be assessed at a number of scales, ranging from the very local (e.g. on the wind farm site, designated site, etc.), to a regional scale, such as a Natural Heritage Zone (NHZ), or at a national (i.e. Scottish) scale. Population estimates of key bird species at the NHZ level are available in Wilson et al. (2015)¹³⁴".*

The main issue with assessing cumulative effects in this case is that the site lies within the southern part of NHZ 20 (Border Hills) very close to the boundary of NHZ 19 (Western Southern Uplands and Inner Solway). Both are large NHZs with large numbers of wind farms. This would result in screening an unnecessarily large number of projects for the assessment. A more suitable scale of assessment would be based on species ecology and/ or potential connectivity with designated sites (NatureScot 2016b), rather than assessing all projects in NHZ 20 and/ or NHZ 19. It is therefore proposed that a cumulative assessment buffer of 20 km will be used for the IOFs listed in Table 8.4.

Another issue with this guidance is the population estimates provided in Wilson *et al.* (2015) are very old. Therefore other, more up to date, reference populations will be used where available.

¹³² NatureScot (2026). Dealing with construction and birds. Guidance published in 2016, reviewed 2026.

¹³³ NatureScot (2025c). Assessing the cumulative impacts of onshore wind farms on birds. Guidance published in 2018, updated March 2025.

¹³⁴ Wilson, M. W., Austin, G. E., Gillings S. and Wernham, C. V. (2015). Natural Heritage Zone Bird Population Estimates. SWBSG Commissioned report number SWBSG_1504. pp72.

8.8 RELEVANT GUIDANCE, LEGISLATION AND INFORMATION

The following key pieces of legislation, planning policy and guidance of relevance to ornithology will be referred to during the completion of baseline studies and subsequent assessment.

Legislation:

- The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (the EIA Regulations);
- Environmental Impact Assessment Directive 2014/52/EU (the EIA Directive);
- Directive 2009/147/EC on the Conservation of Wild Birds (the EU Birds Directive);
- The Habitats Regulations 1994 (as amended) and The Conservation of Habitats and Species Regulations 2010, as amended by The Conservation (Natural Habitats, &c.) (EU Exit) (Scotland) (Amendment) Regulations 2019 in Scotland (hereafter the 'Habitat Regulations');
- The Wildlife & Countryside Act 1981 (as amended); and
- The Nature Conservation (Scotland) Act 2004.

Policy:

- National Planning Framework 4 (NPF4) (February 2023);
- Draft Planning Guidance: Biodiversity (November 2023);
- Scottish Biodiversity Strategy to 2045: Tackling the Nature Emergency in Scotland (September 2023);
- Planning Advice Note 60: Planning for Natural Heritage (January 2000);
- Planning Advice Note 1/2013-Environmental Impact Assessment (August 2013);
- Onshore Wind Turbines: Planning Advice (May 2014); and
- The Scottish Biodiversity List (2020).

Guidance:

- Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine (CIEEM 2018);
- Using a collision risk model to assess bird collision risks for onshore wind farms. NatureScot Research Report 909 (Band 2024);
- Guidance on using an updated collision risk model to assess bird collision risk at onshore wind farms (NatureScot 2024 Guidance¹³⁵);
- Calculating a theoretical collision risk assuming no avoiding action (SNH, 2000¹³⁶);
- Bird monitoring methods (Gilbert *et al.* 1998);
- Disturbance distances review: An updated literature review of disturbance distances of selected bird species (Goodship and Furness 2022);
- Raptors: a field guide to survey and monitoring (Hardey *et al.* 2013);
- Standing advice for planning consultations – Birds (NatureScot 2024a¹³⁷);
- General pre-application and scoping advice for onshore wind farms. NatureScot, Inverness (NatureScot 2024b¹³⁸);
- Environmental Statements and Annexes of environmentally sensitive bird information: Guidance for developers, consultants and consultees (NatureScot 2016a);
- Assessing connectivity with Special Protection Areas (NatureScot 2016b);
- Dealing with construction and birds (NatureScot 2026);
- Recommended bird survey methods to inform impact assessment of onshore wind farms (NatureScot 2025a);
- Assessing the significance of impacts on bird populations from onshore wind farms that do not affect protected areas (NatureScot 2025b); and
- Assessing the cumulative impacts of onshore wind farms on birds (NatureScot 2025c).

¹³⁵ <https://www.nature.scot/doc/guidance-using-updated-collision-risk-model-assess-bird-collision-risk-onshore-wind-farms>

¹³⁶ SNH (2000), Windfarms and Birds: Calculating a theoretical collision risk assuming no avoiding action. Scottish Natural Heritage (SNH), Guidance.

¹³⁷ NatureScot (2024a) Standing Advice for Planning Consultations – Birds. NatureScot, Guidance.

¹³⁸ NatureScot (2024b). General pre-application and scoping advice for onshore wind farms. NatureScot, Guidance.

8.9 MATTERS TO BE SCOPED OUT OF ASSESSMENT

NatureScot guidance (2025b and 2024a) and CIEEM (2018) environmental impact assessment (EIA) guidelines stipulate that the detailed assessment of impacts upon ornithological features that are widespread, unthreatened, and/or resilient to construction and operations of windfarms with standard mitigation, is not necessary. This includes species that do not require surveys to inform the EIA but will require mitigation in order to comply with legislation – such as breeding passerines.

As such, with the support of relevant guidance and professional judgement, ornithological features which do not require detailed assessment, or are not expected to be significantly affected at a population level based on established baseline conditions, are proposed to be 'scoped out' of the impact assessment process. Specific mitigation measures may however be outlined within the EIA Report to reduce and/ or avoid any potential negative effects that may be in breach of legislative compliance throughout construction, operation and decommissioning of the Development.

It is therefore proposed that the following species and designated areas are to be 'scoped out' since significant effects are unlikely:

- Common and/ or low conservation species not recognised in statute as requiring special conservation measures (i.e., not listed as Annex 1¹³⁹/ Schedule 1 species);
- Common and/ or low conservation species not included in non-statutory lists (i.e., not listed as a Red-listed Birds of Conservation Concern species as per Stanbury *et al.* 2021¹⁴⁰), showing birds whose populations are at some risk either generally or in parts of their range;
- Passerine species, not generally considered to be at risk from wind farm developments (NatureScot 2025a), unless being particularly rare or vulnerable at a national level.

Following a review of designated sites within 20 km of the Site and consultation with NatureScot (see Table 8.1), there is considered to be no connectivity between the Site and the Langholm – Newcastleton SPA on account of spatial separation from the Site (see Table 8.1). The potential for Likely Significant Effects (LSEs) upon the SPA is therefore considered unlikely and will be scoped out of consideration with the EIA Report.

Based on typical species foraging ranges and/or general dependency of habitats within the designation, the potential for Likely Significant Effects upon the Solway Firth SPAs qualifying ornithological features, with the exception of pink-footed goose, is also considered unlikely and proposed to be scoped out of consideration with the EIA Report.

At this stage, it is also proposed that some additional individual ornithological features can be scoped out of the requirement for detailed consideration during the design and assessment of the Development:

- Foraging non-breeding migratory waterfowl (including geese, swans and waders); no observations or existing records of non-breeding aggregations of such have been recorded over the course of baseline studies to date.
- Black grouse; no observations or existing records have been collected over the course of baseline studies and which suggest the species may be absent locally; and
- Golden eagle; no observations or records of golden eagle have been collected over the course of baseline studies to date. The Site is considered to be outside of predicted areas of settlement for golden eagles as part of the South of Scotland Golden Eagle Project (SSGEP) project (Restoring Upland Nature¹⁴¹, Fielding and Haworth 2014¹⁴² and Fielding *et al.* 2024¹⁴³). This is agreed in consultation with NatureScot (Table 8.1).

Baseline studies have also not identified the importance of the Site for species susceptible to elevated risks to collisions with lit turbines (NatureScot 2020) and as such impacts upon

¹³⁹ Listed on Annex 1 of the Birds Directive.

¹⁴⁰ Stanbury, A., Eaton, M., Aebischer, N., Balmer, D., Brown, A., Douse, A., Lindley, P., McCulloch, N., Noble, D., & Win I. (2021) The status of our bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain. *British Birds*, 114, pp. 723-747.

¹⁴¹ <https://www.goldeneaglessouthofscotland.co.uk/>

¹⁴² Fielding, A.H. and Haworth, P.F. (2014) Golden eagles in the south of Scotland: an overview. Scottish Natural Heritage Commissioned Report No. 626.

¹⁴³ Fielding, A.H., Anderson, D., Barlow, C., Benn, C., Reid, R., Tingray, R., Weston, E.D. and Whitfield, D., P. (2024) Golden eagle populations, movements and landscape barriers: Insights from Scotland. *Diversity*, 16(4).

ornithological features relating to turbine, or any other infrastructure lighting where this is proposed, will not be assessed within the EIA Report.

8.10 QUESTIONS FOR CONSULTEES

- Do consultees agree that the survey data collected is sufficient to inform the assessment and that the proposed assessment methodologies are appropriate?
- Do consultees agree with the matters scoped out?
- Are consultees aware of any additional sources of data, not referred to above, that may be relevant to the assessment?
- Do consultees agree with the proposed approach to the assessment of cumulative effects?

9 NOISE

9.1 INTRODUCTION

This Chapter of the Scoping Report details the proposed methodology for assessing the effects of the Development on noise sensitive receptors. This assessment will be undertaken by Metrica Environmental Consulting Limited.

This Chapter includes the following elements:

- Preliminary Baseline Conditions;
- Study Areas;
- Assessment Methodology;
- Assessment of Cumulative Effects;
- Matters and Aspects Scoped out of The Assessment; and
- Questions to consultees.

Sources of noise during operation of a wind turbine are both mechanical (from machinery housed within the turbine nacelle) and aerodynamic (from the movement of the blades through the air).

Modern turbines are designed to minimise mechanical noise emissions from the nacelle through isolation of mechanical components and acoustic insulation of the nacelle. Aerodynamic noise is controlled through the design of the blade tips and edges. In most modern wind turbines, aerodynamic noise is also restricted by control systems which actively regulate the pitch of the blades.

Whilst noise from the wind turbines increases with wind speed, at the same time ambient background noise (for example wind in trees) usually increases at a greater rate. Planning conditions are used to enforce compliance with specified noise level limits.

The effects of noise from the construction (where necessary) and operation of the Development will be assessed in consultation with the Environmental Health Officer (EHO) of DGC.

9.2 PRELIMINARY BASELINE CONDITIONS

The majority of dwellings in the local area are concentrated approximately 2.5 km southeast of the Development, in and around the village of Waterbeck. A number of other isolated dwellings are distributed across the local area, generally to the south of the Development. The operational Minsca Wind farm is located immediately north of the Development (see Section 9.2.1)

9.2.1 Cumulative Developments

The newly published 'Assessment and Rating of Wind Turbine Noise' (ARWTN)¹⁴⁴ and the Institute of Acoustics (IOA) Good Practice Guide¹⁴⁵ (GPG) state that the noise limits apply to the cumulative effect of noise from all wind turbines that may affect a particular location. An initial cumulative search has been undertaken to identify any other wind energy developments in the local area which are either operational, consented or subject to a current planning application. This search identified one other wind energy development considered to have the potential for cumulative effects from a noise perspective: the operational Minsca Wind Farm, located immediately north of the Development.

A full updated cumulative search will be undertaken as part of the EIA process to ensure that any further developments with the potential for cumulative noise effects are identified and appropriately assessed.

¹⁴⁴ DESNZ (2026). Assessment and Rating of Wind Turbine Noise (ARWTN). Department for Energy Security and Net Zero, UK Government.

¹⁴⁵ Institute of Acoustics (2013) A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind turbine Noise.

9.3 STUDY AREAS

Construction noise will be assessed at any receptors located within 500 m of any areas where construction activities are likely to occur. In the event that no receptors are located within this distance, the assessment of construction noise will be scoped out. In the event that construction noise is scoped out, the EIA Report will provide a summary of relevant guidance and best practice construction methods, along with a commitment to adhere to best practice means of controlling noise from construction activities, as advocated by BS 5228.

The Study Area for the assessment of operational noise will be defined as described in the GPG. This states that cumulative noise should be considered for all receptors in areas where the predicted cumulative noise levels from the Development together with any other wind energy developments that are operational, under construction, consented or the subject of a current valid planning application is at least 35dB LA_{90,10min} and the difference between the predicted noise level for the Development and those for the other turbines is less than 10 dB. This typically comprises an area within approximately 5 km of the proposed turbine locations.

9.4 ASSESSMENT METHODOLOGY

The Scottish Government's Onshore Wind: Policy Statement¹⁴⁶ explicitly requires that all applicants adopt the methodology described in ETSU-R-97 to assess and rate operational noise from wind energy developments, together with the GPG.

9.4.1 The Assessment and Rating of Wind Turbine Noise

The Assessment and Rating of Wind Turbine Noise (ARWTN) was formally published by the UK Government in June 2026. It represents an update to ETSU-R-97¹⁴⁷, which has underpinned the assessment and rating of wind turbine noise in the UK for over two decades. It should be noted that rather than introducing a fundamentally new methodology, ARWTN is an evolution of the former ETSU-R-97, providing clarifications and consolidating existing best practice that has evolved since ETSU-R-97 was first published.

The aim of ARWTN is to provide:

"...a framework for assessing and rating operational noise from individual wind turbines and wind farms. It provides guidelines for the control of wind turbine noise, such that wind farm neighbours receive a reasonable degree of protection without placing unreasonable restrictions on wind farm development."

Total noise assessment criteria (TNAC) are specified, which are a combination of a margin of 5 dB above the prevailing, wind speed dependent, background noise level and Lower Limiting Values (LLVs), which are applicable in low background noise situations. The LLVs are defined as:

- 35 - 40dB, LA_{90,10min} during the day, with the value chosen dependent on the number of affected properties, the effect on the generating capacity of the wind farm and the duration and level of exposure;
- 43dB, LA_{90,10min} at night, a level chosen to safeguard against sleep disturbance; and
- 45dB, LA_{90,10min} at properties where the occupier has a financial involvement in the Development, during both the day and night (the financial involvement of any residents in terms of the Development will be confirmed in the EIA Report).

The specified LLVs relate to the cumulative effects of all turbines that affect a particular location.

The specific methodologies involved in applying ARWTN to a proposed new development will be detailed in full in the EIA Report but in summary, these provide recommendations for LLVs relating to the existing levels of background noise for quiet daytime and night-time periods.

¹⁴⁶ Scottish Government (2022) Onshore wind: policy statement [online] Available at <https://www.gov.scot/publications/onshore-wind-policy-statement-2022/pages/4/> (Accessed 18/06/2026)

¹⁴⁷ ETSU for the Department of Trade and Industry (1996). ETSU-R-97 The Assessment and Rating of Noise from Wind Farms

To carry out a noise assessment in accordance with ARWTN, the following steps are required:

- Specification of the number and locations of the wind turbines;
- Identification of the locations of the nearest, or most noise-sensitive, neighbours;
- Determination of the background noise levels as a function of site wind speed at the nearest neighbours, or a representative sample of the nearest neighbours;
- Determination of the quiet daytime and night-time LLV curves from the background noise levels identified at the nearest neighbours;
- Specification of the type and noise emission characteristics of the wind turbines proposed for the site;
- Calculation of the noise immission levels due to the operation of the wind turbines as a function of site wind speed at the nearest neighbours; and
- Comparison of the calculated noise immission levels with the derived LLV curves and assess in the light of relevant planning requirements.

9.4.2 Good Practice Guide to the Application of ETSU-R-97 for Wind Turbine Noise Assessment

The GPG was published by the IOA in May 2013 and has been endorsed by the Scottish Government as current industry good practice. Following the publication of the new ARWTN guidance, the IOA released an official statement¹⁴⁸ confirming the continued use of the GPG alongside the new guidance:

"The current version of the IOA's Good Practice Guide (GPG) and supplementary guidance notes (SGN), previously endorsed by the UK Governments and devolved administrations, were published in 2013 & 2014. These remain current guidance endorsed for use until such time as updated and approved versions are published."

As such, the guide presents current good practice in the application of ARWTN assessment methodology for wind energy developments at the various stages of the assessment and will be followed throughout the assessment.

9.4.3 Background Noise Monitoring

Background noise levels (and therefore ARWTN LLVs) will be determined using data collected during a background noise survey, in line with the requirements of the GPG. Suitable monitoring locations will be selected by identifying those properties that are likely to be subject to noise levels in excess of the most stringent LLV specified in ARWTN of 35dB, LA90,10min, and in consultation with the Council's Environmental Health Officer (EHO).

As stated in the GPG, background noise levels in a given area should not include any existing noise from other operational wind turbines. Given the proximity of the operational Minsca Windfarm, there is potential for noise from the existing turbines to contribute to the measured background noise levels. Therefore, the resulting data will be analysed and corrected to remove the influence of Minsca Windfarm where necessary through the use of suitable proxy monitoring locations, directional filtering, and / or modelling of existing wind turbine noise levels

The Development layout and turbine selection will be subject to on-going assessment, and if necessary, modified during the design process to ensure the Development will comply with the requirements of ARWTN.

9.5 ASSESSMENT OF CUMULATIVE EFFECTS

9.5.1 Operational Noise

The assessment is limited to the effects on human receptors at residential properties or other noise sensitive locations, such as schools, hospitals or places of worship. Each of these receptor types are considered to be of equal value. Noise effects are assessed on the basis of the level of noise produced by the Development relative to established limits.

¹⁴⁸ Institute of Acoustics (2026) IOA Statement – Wind Turbine Noise Assessment.
Renewco Power
July 2026

9.5.1.1 Cumulative Effects

As discussed previously, an updated search will be undertaken as part of the EIA process to identify any additional wind energy developments either operational, consented or in planning which may require consideration in the assessment process. A screening exercise will then be carried out to identify which (if any) of these require inclusion in the cumulative assessment, based on consideration of the '10 dB difference' rule described in the GPG.

A detailed cumulative assessment will then be undertaken for each wind energy development identified by the initial screening exercise, taking account of any relevant planning conditions, installed turbine types, available headroom, and controlling properties as described in the GPG.

9.5.1.2 Construction Noise

Due to the large separation distances typically required from wind turbines to the nearest noise sensitive receptors, it is anticipated that the large majority of working areas will be sufficiently remote that a detailed assessment of construction noise effects will not be required. However, this will be investigated as the Development design progresses, and any receptors which are identified within the construction noise study area (see section 9.3) will be assessed accordingly.

9.6 MATTERS AND ASPECTS TO BE SCOPED OUT OF THE ASSESSMENT

9.6.1 Low Frequency Noise and Infrasound

A study¹⁴⁹, published in 2006 by acoustic consultants Hayes McKenzie on behalf of the Department of Trade and Industry (DTI), investigated low frequency noise from wind farms. This study concluded that there is no evidence of health effects arising from infrasound or low frequency noise generated by wind turbines, but that complaints attributed to low frequency noise were possibly due to a phenomenon known as Amplitude Modulation (AM) (see following section for details). In February 2013, the Environmental Protection Authority of South Australia published the results of a study into infrasound levels near windfarms¹⁵⁰. This study measured infrasound levels at urban locations and rural locations with wind turbines close by, and rural locations with no wind turbines in the vicinity. It found that infrasound levels near windfarms are comparable to levels away from windfarms in both urban and rural locations. Infrasound levels were also measured during organised shutdowns of the wind farms; the results showed that there was no noticeable difference in infrasound levels whether the turbines were active or inactive.

Bowdler et al. (2009)¹⁵¹ concluded that:

"...there is no robust evidence that low frequency noise (including 'infrasound') or ground-borne vibration from windfarms generally has adverse effects on windfarm neighbours".

It is therefore not considered necessary to carry out specific assessments of low frequency noise or infrasound. However, supporting information on these subjects will be provided in the EIA Report.

9.6.2 Amplitude Modulation

In its simplest form, AM, by definition, is the regular variation in noise level of a given noise source. This variation (the modulation) occurs at a specific frequency, which, in the case of wind turbines, is defined by the rotational speed of the blades, i.e., it occurs at the rate at which the blades pass a fixed point (e.g., the tower), known as Blade Passing Frequency.

There is a distinction between 'normal AM' of wind turbine noise, characterised as blade swish and Enhanced AM (EAM) or Other AM (OAM), sometimes characterised onomatopoeically as 'thump'. It should be noted that ETSU-R-97 describes and makes

¹⁴⁹ Hayes McKenzie Partnership, The Department for Trade and Industry, URN 06/1412 (2006). *The Measurement of Low Frequency Noise at Three UK Wind Farms*. [online] Available at: https://hayesmckenzie.co.uk/uploads/Hayes_-_The_Measurement_of_Low_Frequency_Noise_at_Three_-_IoA_WFN_3_2007.pdf [Accessed February 2025].

¹⁵⁰ Environment Protection authority (2013) Infrasound levels near wind farms and in other environments [online] Available at: http://www.epa.sa.gov.au/xstd_files/Noise/Report/infrasound.pdf

¹⁵¹ Bowdler et al. (2009). Prediction and Assessment of Wind Turbine Noise: Agreement about relevant factors for noise assessment from wind energy projects. Acoustic Bulletin, Vol 34 No2 March/April 2009, Institute of Acoustics

allowance for normal AM or blade swish. A study¹⁵² was carried out in 2007 on behalf of the Department for Business, Enterprise and Regulatory Reform (BERR) by the University of Salford, which investigated the incidence of noise complaints associated with windfarms and whether these were associated with AM. The study defined AM as aerodynamic noise from wind turbines with a greater degree of fluctuation than normal at blade passing frequency. Its aims were to ascertain the prevalence of AM on UK wind farm sites, to try to gain a better understanding of the likely causes, and to establish whether further research into AM is required.

The study concluded that AM had occurred at only a small number (4 of 133) of wind farms in the UK, and only for between 7% and 15% of the time. It also stated that the causes of AM are not well understood and that prediction of the effect was not currently possible.

This research was updated in 2013 by an in-depth study undertaken by RenewableUK¹⁵³, which identified that many of the previously suggested causes of OAM have little or no association to the occurrence of OAM in practice. The generation of OAM is based upon the interaction of a number of factors, the combination and contributions of which are unique to each site. With the current state of knowledge, it is not possible to predict whether any particular site is more or less likely to give rise to OAM, and the incidence of OAM occurring at any particular site remains low, as identified in the University of Salford study. The report includes a sample planning condition to address AM, however that has not yet been validated or endorsed by UK Government.

In 2016, the IOA proposed a measurement technique¹⁵⁴ to quantify the level of AM present in any particular sample of wind farm noise. This technique is supported by the Department of Business, Energy & Industrial Strategy (BEIS, formerly The Department of Energy & Climate Change) who published guidance¹⁵⁵ which follows on from the conclusions of the IOA study in order to define an appropriate assessment method for AM, including a penalty scheme and an outline planning condition. Notwithstanding this, the suggested outline planning condition is as yet invalidated, remains in a draft form and will require site-specific legal advice on its appropriateness to a specific development. Section 7.2.1 of the GPG therefore remains current, stating:

“The evidence in relation to ‘Excess’ or ‘Other’ Amplitude Modulation (AM) is still developing. At the time of writing, current practice is not to assign a planning condition to deal with AM”.

It is therefore not considered necessary to carry out specific assessments of AM. However, supporting information on this subject will be provided in the EIA Report.

9.6.3 Ground-Borne Vibration

Research undertaken by Snow¹⁵⁶ in 1996 found that levels of ground-borne vibration 100 m from the nearest wind turbine were significantly below criteria for 'critical working areas' given by British Standard BS 6472:1992 'Evaluation of human exposure to vibration in buildings' (1 Hz to 80 Hz), and were lower than limits specified for residential premises by an even greater margin.

Ground-borne vibration from wind turbines can be detected using sophisticated instruments several kilometres from a wind farm site as reported by Keele University¹⁵⁷. This report clearly shows that, although detectable using highly sensitive instruments, the magnitude of

¹⁵² University of Salford, The Department for Business, Enterprise and Regulatory Reform, URN 07/1235 (2007). *Research into aerodynamic modulation of wind turbine noise: final report*. [online] Available at: https://www.researchgate.net/publication/28579797_Research_into_aerodynamic_modulation_of_wind_turbine_noise/final_report [Accessed February 2025].

¹⁵³ Renewable UK (2013). 'Wind Turbine Amplitude Modulation: Research to improve understanding as to its Cause and effects' [online] Available at: [Wind Turbine Amplitude Modulation: Research to Improve Understanding as to its Cause & Effect](https://www.renewableuk.co.uk/wp-content/uploads/2013/06/Wind-Turbine-Amplitude-Modulation-Research-to-improve-understanding-as-to-its-cause-and-effects.pdf) [Accessed February 2025].

¹⁵⁴ Institute of Acoustics (2016) A Method for Rating Amplitude Modulation in Wind Turbine Noise.

¹⁵⁵ BEIS, (2016) Review of the evidence on the response to amplitude modulation from wind turbines.

¹⁵⁶ ETSU (1997), Low Frequency Noise and Vibrations Measurement at a Modern Wind Farm, prepared by D J Snow

¹⁵⁷ Keele University (2005) Microseismic and infrasound monitoring of low frequency noise and vibrations from wind farms: recommendations on the siting of wind farms in the vicinity of Eskdalemuir, Scotland.

the vibration is orders of magnitude below the human level of perception and does not pose any risk to human health.

9.6.4 Battery Energy Storage System (BESS)

The proposed BESS is likely to be located over 500 m from the nearest noise-sensitive receptor. The noise sources associated with this facility (e.g., fans, transformers, inverters) would be unlikely to generate significant levels of noise at such a distance. It is therefore proposed to scope out the assessment of operational noise from the BESS for any/all receptors located more than 500 m from the final BESS location.

9.6.5 Decommissioning

The effects of noise during decommissioning of the Development are likely to be similar to those during construction. However, both the magnitude and duration of such effects are likely to be less than those during construction. It is therefore proposed to scope out decommissioning noise, subject to a suitable noise assessment being carried out prior to decommissioning work taking place in accordance with guidance, standards and best practice relevant at that time.

9.7 QUESTIONS TO CONSULTEES

- Do the Council and consultees agree with the proposed methodology and scope of the assessment?
- Does the Council have details of any further cumulative developments in the locality which they consider may raise significant issues within the EIA process for the Development?
- Are there any other relevant consultees who should be contacted with respect to the noise assessment?

10 TRANSPORT AND ACCESS

10.1 INTRODUCTION

This Chapter of the Scoping Report relates to the potential effects of the Development on the surrounding transport network and sensitive receptors with respect to transportation and access. This assessment will be undertaken by ECS Transport Planning Limited.

This Chapter includes the following elements:

- Consultation;
- Preliminary Baseline Conditions;
- Likely Environmental Effects;
- Assessment Methodology;
- Assessment of Cumulative Effects;
- Matters and Aspects Scoped Out; and
- Questions to consultees.

10.2 CONSULTATION TO DATE

Scoping discussions will be undertaken with both Dumfries & Galloway Council and Transport Scotland to determine the methodology for assessing the effects of the Development on the local and strategic road network respectively.

10.3 PRELIMINARY BASELINE CONDITIONS

10.3.1 Proposed Study Area / Survey Areas

The study area for the assessment of traffic and associated environmental effects will consider receptors from the M74 to the site. At this stage, it is envisaged there will be three separate routes. One for construction traffic from the north, one for construction traffic from the south and a completely separate route for abnormal loads. HGV's and general construction movements, including staff, will take the shortest route from the M74 to the site access, whereas, abnormal loads will take a specifically designed route. Operational generation will be infrequent and will vary.

Access from the north is proposed via Junction 19 of the A74(M), east along the B725 towards Middlebie and north on Bankhill Road towards the site.

Access from the south is proposed via Junction 20 of the A74(M), east along the B722, north of Middlebie Road and north on Bankhill Road towards the site.

Abnormal load access is proposed from Junction 17 of the A74(M) which is a grade separated junction arrangement and can support access from both the north and south on the trunk road. Vehicles would route east on the B7068, turn north onto the B7076, route north to Breckenry Road, continue northeast towards the B723 and through Boreland, south through Corsehill, Heithat and Corrie Common, across the watercourse via a new river crossing west of Paddockhole to access the B7076 and access the Development Site via the existing Minsca Windfarm site tracks.

The main sensitive receptors to increased traffic levels and associated environmental effects are likely to be the small clusters of residential properties along the route corridors, users of Middlebie Community Centre, and those who use the routes for leisure and recreational purposes (cyclists, *etc.*). The study will consider access to the site by all modes of travel.

At this stage, ports for component parts have yet to be confirmed. An Abnormal Loads Assessment (ALA) will be undertaken to examine the access routes to Site by non-standard vehicles. Details of the abnormal load route and associated land requirements will be detailed within the EIA Report, however, the formal report is expected to be conditioned as part of any planning consent.

10.3.2 Baseline Conditions

The Development Site is located 7.7 km southeast of Lockerbie and 2 km northwest of Waterbeck Village in Dumfries and Galloway, in close proximity to Purdomstone Reservoir.

The site is located north of the A74(M) and directly northwest of the B725. The trunk road network is accessible from the site within 4km.

Access to the site is relatively good with multiple routing options available to the trunk road network namely, the B725, B722 and B723, and established construction routes / abnormal load routes available given location of the site in relation to the operational Minsca Wind Farm, directly northeast.

The A74(M), provides a strategic link to Glasgow to the north and Carlisle to the south.

The Development Site itself will be accessed from Bankshill Road via a new priority junction arrangement.

The traffic and transport chapter of the EIA Report will provide a detailed description of each road link within the Study Area.

10.4 LIKELY ENVIRONMENTAL EFFECTS

The main potential effects of the Development are associated with temporary increase in traffic flows, or changes to the traffic composition, as a result of traffic movements during construction. The greatest volume of construction traffic will likely be experienced over the first few months of the construction period as materials are delivered for access tracks and site establishment. The EIA Report chapter will set out the key construction activities and will identify the volume of vehicle movements associated with each of these activities.

10.5 ASSESSMENT METHODOLOGY

10.5.1 Scope of Assessment

The key issues for the assessment of potential traffic and transport effects relating to the Development are likely to be:

- Temporary effects arising from the construction and decommissioning phases such as delay and severance; and
- Permanent effects, including those that last for the operational phase only. These are proposed to be scoped out of the EIA, however, on the basis that traffic generated during the operational phase is very low and any associated effects would not be significant.

10.5.2 Relevant Guidance, Legislation and Information

The following guidance, legislation and information sources, including best practice will be considered when carrying out the Environmental Impact Assessment (EIA):

- National Planning Framework 4 (NPF4);
- Planning Advice Notice (PAN) 75 – ‘Planning for Transport’;
- Institute of Highways and Transportation (IHT) publications - “Guidelines for Traffic Impact Assessment”;
- Institute of Environmental Management and Assessment (IEMA) publication - “Environmental Assessment of Traffic and Movement”, 2023 (“the IEMA Guidelines”);
- Scottish Government: ‘Transport Assessment Guidance’, 2012, (the SG Guidelines);
- and
- Department for Transport (DfT) publication “Design Manual for Roads and Bridges” (DMRB).

10.5.3 Baseline Survey Methodology

The scope of survey works relating to traffic and transport is likely to include both a desk-based collation of publicly available traffic count data surrounding the A74(M) and newly recorded data on the proposed construction routes. It is anticipated that some count data may be obtained directly from the Transport Scotland Database¹⁵⁸ with the validity of the data will be investigated before use. Additional information, if not available within the public domain, may be required for the B725, B722 and Bankshill Road. Any new count data

¹⁵⁸ <https://ts.drakewell.com/>
Renewco Power
July 2026

would be collected by means of new 7-day ATC surveys. The location and timing of any new surveys would be agreed with DGC

Accident data will also be obtained for the last five years along the road links within the Study Area for both construction routes and the abnormal load route detailed within 10.3.1 above.

10.5.4 Methodology for the Assessment of Effects

The effect of the increase in construction vehicle traffic movements will be quantified through comparison of existing traffic flows and vehicle composition (baseline data) with the flows predicted as a result of the construction of the Development. Consideration of the potential effect on other road users will also be undertaken where road links are affected by construction traffic.

The 2023 IEMA guidelines on the Assessment of Traffic and Movement set out a list of environmental effects which should be assessed for significance in relation to the transport resource (if the identified thresholds are exceeded, i.e. 'Rule 1' or 'Rule 2' described below), as follows:

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

The assessment will explore whether potential effects are likely to be significant based upon two tests contained within IEMA Guidelines. The guidelines suggest that, in order to determine the scale and extent of the assessment and the level of impact that the development will have on the surrounding road network, the following two 'rules' should be applied:

- Rule 1 - Include highway links where flows are predicted to increase by more than 30% or where the number of HGVs is predicted to increase by more than 30%; and
- Rule 2 - Include any other specifically sensitive areas where traffic flows are predicted to increase by 10% or more.

These rules will be used as a screening exercise to determine whether a detailed assessment of effects on the routes within the Study Area is necessary. Where a detailed assessment is required, sensitivity and magnitude criteria will be used in order to determine the significance of effects.

For the purposes of this assessment, sensitive receptors are those that could potentially be affected by the traffic movements generated by the development proposals. Examples of sensitive receptors can include residential properties, settlements, schools, or areas of pedestrian and cycle movement.

The criteria used to determine the significance level of traffic associated with the proposals has been sourced from the SG Guidelines. This document states the following regarding perceived traffic impacts:

"The significance of a traffic impact depends not only on the percentage increase of traffic but the available capacity. A 10% increase on a lightly trafficked route may not be significant, whereas a 1% increase on a congested motorway will be".

The above statement also applies in reverse in terms of environmental effects, i.e. a 10% increase on a lightly trafficked route may not represent a significant capacity issue but could be considered to have a major environmental effect.

10.5.4.1 Sensitivity of Receptors

The sensitivity of the baseline conditions, including the importance of environmental features on or near to the Development or the sensitivity of potentially affected receptors, will be

assessed in line with best practice guidance, legislation, statutory designations and / or professional judgement.

Table 10.1 details the proposed framework for determining the sensitivity of receptors.

Table 10.1 Framework for Determining Sensitivity of Receptors

Sensitivity of Receptor	Definition
Very High	The receptor has little or no ability to absorb change without fundamentally altering its present character, is of very high environmental value, or of international importance.
High	The receptor has low ability to absorb change without fundamentally altering its present character, is of high environmental value, or of national importance.
Medium	The receptor has moderate capacity to absorb change without significantly altering its present character, has some environmental value, or is of regional importance.
Low	The receptor is tolerant of change without detriment to its character, is low environmental value, or local importance.
Negligible	The receptor is resistant to change and is of little environmental value.

10.5.4.2 Magnitude of Effect

The magnitude of potential effects will be identified through consideration of the Development, the degree of change to baseline conditions, the duration of construction, reversibility of an effect and professional judgement, best practice guidance and legislation.

The criteria for assessing the magnitude of an effect are presented in Table 10.2.

Table 10.2 Framework for Determining Magnitude of Effects

Magnitude of Effects	Definition
High	Total loss of, or high/substantial alteration to, key elements/features of the baseline (pre-development) conditions such that the post development character/composition/attributes will be fundamentally changed. Generally, a rule of >90% (or >70% at sensitive receptors) change in traffic is considered to be a high magnitude.
Medium	Loss or alteration to one or more key elements/features of the baseline conditions such that post development character/composition/attributes of the baseline will be materially changed. Generally, a rule of 60% - 90% (or 40% - 70% at sensitive receptors) change in traffic is considered to be a medium magnitude.
Low	A minor shift away from baseline conditions. Change arising from the loss / alteration will be discernible/detectable but not material. The underlying character/composition/attributes of the baseline condition will be similar to the pre-development circumstances/situation. Generally, a rule of 30 – 60% (or 10% - 40% at sensitive receptors) change in traffic is considered to be of low magnitude.
Negligible	Very little change from baseline conditions. Change barely distinguishable, approximating to a 'no change' situation. Generally, a rule of <30% (or <10% at sensitive receptors) change in traffic is considered to be a negligible magnitude.

10.5.4.3 Significance of Effect

The significance of an environmental effect is determined by the combination of sensitivity and magnitude, which can be beneficial or adverse, as set out in Table 10.3.

Table 10.3 Framework for Assessment of the Significance of Effects

Magnitude of Effect	Sensitivity of Resource or 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

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 grey in the above table.

10.6 ASSESSMENT OF CUMULATIVE EFFECTS

The potential for cumulative effects will be considered with other wind farms which are, during their construction or decommissioning period, proposed to use the same public roads as the Development during construction, and where the two construction periods may overlap.

In addition to the above, any committed developments or infrastructure in the area will also be considered as part of the review process.

10.7 MATTERS AND ASPECTS TO BE SCOPED OUT OF THE ASSESSMENT

On the basis of the detailed desktop study, the professional judgement of the EIA team and experience from other relevant projects and policy guidance, the following effects will be scoped out of the traffic and transport assessment:

- Operational Stage - Once the Development is operational, generation will be infrequent and likely to equate to a limited number of maintenance trips per month. The exact figure will be detailed within the study. Therefore, the effect of vehicle movements during the operational phase will be negligible. In respect of traffic and transport, the operational phase of the Development will therefore not be assessed in this Chapter.
- Traffic associated with the decommissioning stage is anticipated to be significantly less than that generated during construction. Given the timescales involved and the likelihood for changes to the baseline situation during this period, the traffic and transport effects of wind farm decommissioning will not be assessed in this Chapter. Decommissioning effects will not be scoped out, however, but will be assumed, as a worst case, to be the same as construction effects. Decommissioning effects will therefore not be explicitly described.

10.8 QUESTIONS TO CONSULTEES

Through the consultation process, it would be beneficial if D&GC could confirm the following:

- Is the routing strategy for construction satisfactory or should focus be given to one route, namely the abnormal load route? The theory behind the alternative options is simply distance travelled and unnecessary mileage, particularly for staff.
- Views on the study area and traffic survey counts / methodology;
- Is there any traffic data available within the public domain;
- Are there any other potential effects, receptors and/or enhancements that should be considered?
- Are there any other committed developments that D&GC would like scope into the cumulative assessment?

11 SOCIO-ECONOMIC, LAND USE, RECREATION AND TOURISM

11.1 INTRODUCTION

This Chapter of the Scoping Report relates to the potential effects of the Development on the Socio-Economics, Land Use, and Recreation and Tourism resource. This assessment will be undertaken by Envams Limited.

This Chapter includes the following elements;

- Consultation to Date
- Preliminary Baseline Conditions;
- Likely Environmental Effects;
- Assessment Methodology;
- Assessment of Cumulative Effects;
- Matters and Aspects Scoped Out; and
- Questions to Consultees

11.2 CONSULTATION TO DATE

Consultation for this Scoping Report in relation to Socio-Economics, Land Use, and Recreation and Tourism has not yet been undertaken with statutory consultees or other technical bodies. Consultation following Scoping may be undertaken with, but not be limited to, the following organisations:

- Dumfries and Galloway Council (DGC);
- Local Community Councils;
- VisitScotland;
- Scottish Rights of Way and Access Society; and
- Sustrans Scotland.

11.3 PRELIMINARY BASELINE CONDITIONS

11.3.1 Proposed Study Areas/ Survey Areas

The study areas for the assessments are receptor-specific and are defined as follows.

11.3.2 Socio-economics

The Socio-economic Study Areas are defined at local, regional, or national scale and are as follows:

- 'Local' comprises the electoral wards of Annandale East and Eskdale, and Annandale North. The Site is situated in the Annandale East and Eskdale, yet is situated approximately <1 km south-west of Annandale North.
- 'Regional' is defined as the DGC administrative area. The geographical size of the regional area means that the Development will not affect the entire area; and
- 'National' is defined as Scotland.

11.3.3 Land Use

The land use Study Area comprises of the land within the Site and taken or altered by the Development, either temporarily during construction or permanently during and after operation and decommissioning.

11.3.4 Recreation and Tourism

The study areas for recreation and tourism are defined as being the "Primary Study Area", and the "Secondary Study Area".

The Primary Study Area for recreation and tourism comprises land within and immediately adjacent to the Site, and considers direct effects on tourism and recreation receptors.

The Secondary Study Area, comprising land within 5 km of the Site, is used for assessing indirect effects on recreation and tourism receptors.

11.3.5 Socio-economics

A summary of key baseline characteristic of the relevant geographies at this present time is set out below:

11.3.5.1 Population

Local Study Area

The areas surrounding the Site are remote and therefore relatively sparsely populated, with Annandale East and Eskdale has a population density of 14 people per km², and Annandale North having a population density of 20 people per km² ¹⁵⁹.

As of 2022, Annandale East and Eskdale had a population of 10,214¹⁶⁰ and Annandale North had a population of 14,576¹⁶¹.

Regional Study Area

The Dumfries and Galloway Council area covers an area of 6,439 km², which is 8.2 % of the land area in Scotland and 2.6% of Great Britain.

As of 2024, the population of Dumfries and Galloway Council area was 145,860, with the population decreasing by 0.0% from 145,890 in 2023¹⁶² compared to a 0.7% increase in the population of Scotland over the same period.

The area also has a relatively low population density of 60 people per square mile, compared to the Scottish average of 168 ¹⁶³.

Based on 2018 data, between 2018 and 2028, the population of Dumfries and Galloway Council is projected to reduce by 4,215 to 144,575; a decrease of 2.8%. In comparison, the population of Scotland is projected to increase by 1.8% over the same time period ¹⁶⁴.

National Study Area

According to the last Census (2022 estimation), Scotland's population is approximately 5,436,600. This is its highest ever population, with an increase of 141,200 (2.7%) since the last census in 2011¹⁶⁵.

11.3.5.2 Economy

Dumfries and Galloway

The employment rate (16–64 year-olds) for 2023 was 67.8%, lower than the Scottish average of 74.7%. In 2023, the principle employment industries within Dumfries and Galloway Council and Scotland are shown in Table 11.1

¹⁵⁹ City Population (2021) Council Areas and Electoral Wards [Online] Available at: <https://www.citypopulation.de/en/uk/scotland/wards/> (Accessed February 2025)

¹⁶⁰ Scottish Government (2022) Electoral Ward – Annandale East and Eskdale [Online] Available at: [statistics.gov.scot | Annandale East and Eskdale](https://statistics.gov.scot/Annandale-East-and-Eskdale) (Accessed February 2025)

¹⁶¹ Scottish Government (2022) Electoral Ward – Annandale North [Online] Available at: [statistics.gov.scot | Annandale North](https://statistics.gov.scot/Annandale-North) (Accessed February 2025)

¹⁶² National Records of Scotland (2025). Dumfries and Galloway Council Area Profile. [Online]. Available at: [Dumfries and Galloway - National Records of Scotland \(NRS\)](https://webarchive.nrscotland.gov.uk/20241128124722/https://www.nrscotland.gov.uk/files/statistics/council-area-data-sheets/dumfries-and-galloway-council-profile.html) (Accessed June 2026)

¹⁶³ Dumfries and Galloway: Factual Information (2024) .[Online] Available at: [Factual Information - Facts and Figures - Dumfries and Galloway](https://webarchive.nrscotland.gov.uk/20241128124722/https://www.nrscotland.gov.uk/files/statistics/council-area-data-sheets/dumfries-and-galloway-council-profile.html) (Accessed February 2025).

¹⁶⁴ National Records of Scotland (2024). Dumfries and Galloway Council Area Profile.[Online] Available at: <https://webarchive.nrscotland.gov.uk/20241128124722/https://www.nrscotland.gov.uk/files/statistics/council-area-data-sheets/dumfries-and-galloway-council-profile.html>. (Accessed February 2025).

¹⁶⁵ Scotland's Census. (2022). *Scotland's Census 2022 - Rounded population estimates - data*. [online] Available at: <https://www.scotlandscensus.gov.uk/documents/scotlands-census-2022-rounded-population-estimates-data/> (Accessed February 2025).

Table 11.1: Employment by Industry (Percent of Total Employed)¹⁶⁶

Industry	Dumfries and Galloway	Scotland
B : Mining And Quarrying	0.1	1.0
C : Manufacturing	8.9	7.0
D : Electricity, Gas, Steam And Air Conditioning Supply	0.5	0.8
E : Water Supply; Sewerage, Waste Management And Remediation Activities	1.2	0.8
F : Construction	4.5	5.1
G : Wholesale And Retail Trade; Repair Of Motor Vehicles And Motorcycles	16.1	13.3
H : Transportation And Storage	5.4	4.6
I : Accommodation And Food Service Activities	10.7	8.8
J : Information And Communication	0.9	3.2
K : Financial And Insurance Activities	0.7	3.3
L : Real Estate Activities	1.6	1.4
M : Professional, Scientific And Technical Activities	4.5	7.3
N : Administrative And Support Service Activities	5.4	7.0
O : Public Administration And Defence; Compulsory Social Security	4.5	6.5
P : Education	8.9	8.5
Q : Human Health And Social Work Activities	19.6	16.2
R : Arts, Entertainment And Recreation	2.7	2.8
S : Other Service Activities	1.6	1.7

11.3.6 Land Use

The application site boundary encloses approximately 320 hectares (ha) of open moorland and grassland, composed of low quality agricultural land, capable of producing only a narrow range of crops¹⁶⁷. There are also some areas of coniferous forestry in north-east of the Site.

11.3.7 Recreation and Tourism

11.3.7.1 Primary Study Area

There are no recreation and tourism receptors within the Site, due to the rural location and absence of public footpaths and tracks. There are limited receptors nearby, including Hazelberry Wood, a scenic woodland area and Burnswark Hill, a historical landmark with panoramic views of the surrounding area.

¹⁶⁶ Nomisweb.co.uk. (2020). Labour Market Profile - Nomis - Official Census and Labour Market Statistics. [online] Available at: <https://www.nomisweb.co.uk/reports/lmp/la/1946157410/report.aspx#tabempocc> (Accessed February 2025).

¹⁶⁷ Scottish Government (2025). *Scotland's Soils - soil maps*. [online] Available at: https://map.environment.gov.scot/Soil_maps/?layer=5 (Accessed 11/02/2025)

11.3.7.2 Secondary Study Area

In 2023, the tourism sector accounted for 11.5% of employment in Dumfries and Galloway¹⁶⁸ council area, 2.3% higher than the national average in Scotland¹⁶⁹

VisitScotland details that the scenery, landscape and historical cultural attractions are some of the top reasons that people visit Dumfries and Galloway. Overnight visitor spending totalled £133 million in 2023 and in the same year, 490,000 trips were made by international and domestic visitors¹⁷⁰.

Due to the remote location, the land use around the Site is predominantly centred around the natural environment and recreational activities include shooting, hill walking and horse riding. Key walking routes are situated within the Secondary Study Area, including The Annandale Way and the circular Burnswark Hill Walk.

Tourism receptors within the Secondary Study Area are limited due to the remote location of the Site. Hazelberry Wood, a popular walking area lies approximately 1 km north-west of the Site and Burnswark Hill is a historical tourist attraction and hiking route which is situated approximately 2 km west.

Other nearby tourist attractions that are outwith the Secondary Study Area include:

- Eskrigg Reserve, approximately 8 km north-west of the Site;
- Lockerbie Memorial Gardens, approximately 7.8 km north-west of the Site; and
- Repentance Tower, approximately 7.5 km south-west of the Site;

11.4 LIKELY ENVIRONMENTAL EFFECTS

The following potential effects will be scoped into the assessment:

- Effects of the Development on employment;
- Community and local benefits as a result of the Development;
- Impacts to the existing land use, and the total temporary and permanent footprint of the Development;
- Physical impacts on access and amenity; and
- Indirect (visual and noise) impacts on recreational amenity.

11.5 ASSESSMENT METHODOLOGY

11.5.1 Scope of Assessment

The key issues for the assessment of potential socio-economics, land use, and recreation and tourism effects relating to the Development are likely to be as follows:

11.5.1.1 Socio-Economic

The following potential socio-economic effects will be scoped into the assessment:

Direct effects, including but not limited to:

- Employment opportunities in the construction, operation and maintenance of the Development;
- A community benefit fund and the payment of business rates payable to the local authority or directly to community councils throughout the operational phase of the Development;
- Spending within the local area through additional spend of wages into the local economy and the purchasing of basic materials, equipment, services and office space for staff; and

Indirect effects, including but not limited to:

¹⁶⁸ VisitScotland (2021). *Dumfries & Galloway - Tourism Statistics & Research* | VisitScotland.org. [online]. Available at: <https://www.visitscotland.org/research-insights/regions/dumfries-galloway> (Accessed 12/02/2025).

¹⁶⁹ Visit Scotland (2023). *Scotland's Visitor Economy* | VisitScotland.org. [online]. Available at: <https://www.visitscotland.org/research-insights/latest-statistics/visitor-economy> (Accessed 12/02/2025).

¹⁷⁰ International Passenger Survey: GB Residents Great British Tourism Survey (2023).

- Employment opportunities created across the supply chain by companies providing services to the Development during construction and operation.

11.5.1.2 Land Use

The following potential Land Use effects will be scoped into the assessment:

Direct effects, including but not limited to:

- The total area taken from the Development, both temporarily during construction and decommissioning and permanently after operation and decommissioning.

11.5.1.3 Recreation and Tourism

The following potential recreation and tourism effects will be scoped into the assessment:

Direct physical effects, including but not limited to:

- Construction activities interfering with rights of access; and

Indirect effects, including but not limited to:

- The effects of noise and changes in view on tourists and recreational land users.

11.5.2 Relevant Guidance, Legislation and Information

The following guidance, legislation and information sources will be considered when carrying out the assessment:

- Scotland's National Performance Framework 4171;
- Scotland's National Strategy for Economic Transformation¹⁷²;
- Dumfries and Galloway Local Development Plan¹⁷³;
- Scotland Outlook 2030 – Scotland's tourism strategy¹⁷⁴; and
- Wind Farms and Tourism Trends in Scotland: BiGGAR Economics: Evidence from 44 Wind Farms (2021)¹⁷⁵.

There is no specific legislation or guidance on the methods that should be used when assessing the socio-economic impacts of a proposed onshore wind farm development, solar or BESS scheme.

There is also no formal legislation or guidance methods to be used to assess the effects that wind farm, solar and BESS developments may have on tourism and recreation interests.

However, planning policy and guidance relating to socio-economics and land-use, relevant to the proposed development includes:

- NPS EN-1176; paragraph 4.1.5 relating to the potential adverse impacts and benefits associated with proposed developments; paragraph 4.2.10 in relation to EU directive requirements, paragraph 5.11.8 in relation to land-use and paragraph 5.13.2 in relation to socio-economic impacts.
- The Draft NPS EN-1177; paragraph 4.1.1 in relation to potential adverse effects and benefits associated with proposed developments; paragraph 4.2.2 in relation to socio-economics; and section 5.13 in relation to socio-economic impacts.

¹⁷¹ Scottish Government (2024) National Planning Framework 4 [Online] <https://www.gov.scot/publications/national-planning-framework-4/documents/> (Accessed February 2025)

¹⁷² Scottish Government (2023) Scotland's National Strategy for Economic Transformation [Online] Available at: <https://www.gov.scot/publications/scotlands-national-strategy-economic-transformation/> (Accessed February 2025).

¹⁷³ Dumfries and Galloway Council (2019). Local Development Plan 2 (LDP2) [Online] Available at: https://www.dumfriesandgalloway.gov.uk/planning-building/planning-policy/local-development-plan/local-development-plan-2-ldp2#lqd-guides_title#lqd-guides_title (Accessed February 2025)

¹⁷⁴ Scottish Tourism Alliance (2020) Scotland Outlook 2030 – Responsible Tourism for a Sustainable Future [Online] Available at: <https://scottishtourismalliance.co.uk/wp-content/uploads/2020/03/Scotland-Outlook-2030.pdf> (Accessed February 2025)

¹⁷⁵ BiGGAR Economics (2021) Wind Farms & Tourism Trends in Scotland: Evidence from 44 Wind Farms [Online] Available at: <https://biggareconomics.co.uk/wp-content/uploads/2021/11/BiGGAR-Economics-Wind-Farms-and-Tourism-2021.pdf> (Accessed February 2025)

¹⁷⁶ Department for Energy and Climate Change (2023). National Policy Statements for energy infrastructure. [online] GOV.UK. Available at: <https://www.gov.uk/government/collections/national-policy-statements-for-energy-infrastructure>.

¹⁷⁷ Department for Business, Energy & Industrial Strategy (2021). Draft National Policy Statement for Renewable Energy (EN-3). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1015236/en-3-draft-for-consultation.pdf. (Accessed February 2025)

- Paragraph 2.49.11 of the Draft EN-3178 refers to the socio-economic benefits of retaining site infrastructure after the operational life of a solar farm.
- NPPF 179 : Section 6, Building a strong, competitive economy; Section 12, Achieving well-designed places (paragraphs 127-128); and, Section 17, Facilitating the sustainable use of minerals;
- National Economic Development Policy 180, with particular reference to the Government's Industrial Strategy White Paper ambitions to increase productivity and drive growth. In particular, Clean Growth is highlighted as a method through which to lead the world in the development, manufacture and use of low carbon technologies; and
- Planning Practice Guidance 181 , with particular reference to guidance on planning and the economy and the potential future needs of the population in terms of economic development, jobs and employment opportunities.

11.5.3 Baseline Study Methodology

The proposed method is based on established best practice. In particular, the assessment will draw from studies carried out by BiGGAR Economics on the onshore wind energy sector in the UK. These include a report published in 2012 by RenewableUK and the Department of Energy and Climate Change (now the Department for Business, Energy and Industrial Strategy) on the direct and wider economic benefits of the onshore wind sector to the UK Economy¹⁸² and an update to this report published by RenewableUK in 2015¹⁸³. These reports will provide the input assumptions if the data for the Development is not available.

11.5.4 Land Use

A desk stop study of the site will be carried out to identify the land-uses on Site at the time of assessment. Landowners may be contacted to confirm any details as necessary.

11.5.5 Recreation and Tourism

The proposed method would consider individual attractions and tourism facilities, identified through a desk-based survey, to assess if there could be any effects from the Development. Public perception surveys and studies on the views of tourists visiting areas containing windfarms, solar and BESS schemes will be reviewed as part of this assessment, in combination with the views of local communities who live nearby these developments.

11.5.6 Methodology for the Assessment of Effects

The significance of the potential effects of the Development will be classified by professional consideration of the sensitivity of the receptor and the magnitude of the potential effect.

11.5.6.1 Sensitivity of Receptors

The sensitivity of the baseline conditions, including the importance of environmental features on or near to the Development or the sensitivity of potentially affected receptors, will be assessed in line with best practice guidance, legislation, statutory designations and / or professional judgement.

¹⁷⁸ Department for Business, Energy & Industrial Strategy (2021). Draft National Policy Statement for Renewable Energy (EN-3). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1015236/en-3-draft-for-consultation.pdf. (Accessed February 2025)

¹⁷⁹ Ministry of Housing, Communities and Local Government (MHCLG) (2021) National Planning Policy Framework, Available at: <https://www.gov.uk/government/publications/national-planning-policy-framework-2> (Accessed February 2025)

¹⁸⁰ HM Government (2017) Industrial Strategy: building a Britain fit for the future. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/664563/industrial-strategy-white-paper-web-ready-version.pdf. Prepared for: East Yorkshire Solar Farm Limited AECOM 255 East Yorkshire Solar Farm Environmental Impact Assessment Scoping Report September 2022

¹⁸¹ MHCLG (2016) Draft Planning Practice Guidance. Available at: <https://www.gov.uk/government/collections/planning-practice-guidance>. (Accessed February 2025)

¹⁸² RenewableUK (2012) Onshore Wind – Direct and Wider Economic Impacts [Online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/48359/5229-onshore-wind-direct-wider-economic-impacts.pdf (Accessed February 2025).

¹⁸³ RenewableUK (2015) Onshore Wind: Economic Impacts in 2014 [Online] Available at: https://cdn.ymaws.com/www.renewableuk.com/resource/resmgr/publications/reports/onshore_economic_benefits_re.pdf (Accessed February 2025)

Table 11.2 details the proposed framework for determining the sensitivity of receptors.

Table 11.2 Framework for Determining Sensitivity of Receptors

Sensitivity of Receptor	Definition
Very High	The asset is of very high socio-economic, land use, recreational or tourism value, or of importance at a National (Scotland) or International level, and has little or no capacity to absorb change without fundamentally altering its present character. For example, it is a destination in its own right (for attractions), with a substantial proportion of visitors on a national (Scotland) level and/or possesses priority in national policy.
High	The asset is of high socio-economic, land use, recreational or tourism value, or of importance to Scotland, and has low capacity to absorb change without fundamentally altering its present character. For example, it is a destination in its own right (for attractions), with a significant contribution to the national (Scotland) economy and/or possesses priority/weight in regional and/or local policy.
Medium	The asset is of some socio-economic, land use, recreational or tourism value, or is of regional importance (e.g. The Dumfries and Galloway area), and has moderate capacity to absorb change without substantially altering its present character. For example, it is a popular destination among current visitors (for attractions), with a significant contribution to the regional economy and/or possesses priority/weight in regional and/or local policy.
Low	The asset has low socio-economic, land use, recreational or tourism value, or is of local importance (e.g. the Annandale East and Eskdale, and Annandale North electoral wards), and is tolerant to change without detriment to its character. For example, it is an incidental destination for current visitors (for attractions).
Negligible	The asset is of little socio-economic, land use, recreational or tourism value, and is resistant to change. For example, an incidental destination for low numbers of current visitors (for attractions) and/or possesses no weight in authority policy.

11.5.6.2 Magnitude of Effect

The magnitude of potential effects will be identified through consideration of the Development, the degree of change to baseline conditions predicted as a result of the Development, the duration and reversibility of an effect and professional judgement, best practice guidance and legislation.

The criteria for assessing the magnitude of an effect are presented in Table 11.3.

Table 11.3 Framework for Determining Magnitude of Effects

Magnitude of Effects	Definition
High	Total loss or major alteration (positive or negative) of the socio-economic, land use, or recreation and tourism assets/receptors.
Medium	Loss of, or alteration to (positive or negative), one of more key elements of the socio-economic, land use, or recreation and tourism asset's baseline value.
Low	Slight alteration (positive or negative) of the socio-economic, land use, or recreation and tourism asset/receptors.
Negligible	Barely perceptible alteration (positive or negative) of the socio-economic, land use, or recreation and tourism asset/receptors.

11.5.6.3 Significance of Effect

The sensitivity of the asset and the magnitude of the predicted effects will be used as a guide, in addition to professional judgement, to predict the significance of the likely effects. Table 11.4 summarises guideline criteria for assessing the significance of effects.

Table 11.4 Framework for Assessment of the Significance of Effects

Magnitude of Effect	Sensitivity of Resource or 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

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 grey in the above table.

Effects may be positive, negative or neutral and these would be specified where applicable in the assessment within the EIA Report Chapter.

Consideration would be given to the national, regional and local baselines when assessing sensitivity. The magnitude of change would be determined in proportion to the geographic scale relevant to each receptor.

In terms of socio-economic elements, potential effects would be determined to be significant if the Development results in any fundamental or material changes in population, structure of community, and economic activity during the operational phase.

For tourism and recreation elements, potential effects would be determined to be significant if the Development results in fundamental or material changes in key elements/features of the receptor, or if effects result in major, long-term alterations of the baseline conditions of the attraction, recreational route, accommodation etc.

In terms of land use, potential effects would be determined to be significant if the Development results in long-term modification or net loss of important land use receptors.

11.6 ASSESSMENT OF CUMULATIVE EFFECTS

The purpose of a cumulative effect assessment is to identify effects that might not be significant on their own but which become significant when considered in combination with effects from other plans or developments. The appropriate scale for considering cumulative development will depend on the nature of the potential effect. These would be considered in turn, for each category of potential effect.

11.6.1 Socio-Economics

Cumulative effects will be assessed using the regional study area. The cumulative assessment would determine whether potential cumulative effects may provide opportunities for prolonged socio-economics benefits in the terms of job and wealth creation through the increase of jobs and supply chain opportunities.

11.6.2 Land Use

As the footprint of the Development would only be within the Site itself, there would be no cumulative effects on the existing land use within the Site and it is proposed that cumulative effects on land use can be scoped out of the assessment.

11.6.3 Recreation and Tourism

Cumulative effects on outdoor recreational and tourism facilities are generally related to the visibility of multiple schemes, or effects such as multiple developments being constructed within close proximity to one another where access restrictions may cause impacts.

Cumulative visual effects would be assessed in the landscape and visual impact assessment.

For effects stemming from multiple developments being constructed in close proximity, It is proposed that potential cumulative developments will be identified at the time of assessment, and these would be considered to up to 15 km from the Site.

11.7 MATTERS AND ASPECTS TO BE SCOPED OUT OF THE ASSESSMENT

As the Development footprint would only be within the Site itself, there would be no cumulative effects and it is proposed that cumulative effects on land use can be scoped out.

11.8 QUESTIONS TO CONSULTEES

- Do you have any comments on the proposed methodology or scope of this assessment?

12 FORESTRY

12.1 INTRODUCTION

This Chapter of the Scoping Report sets out the approach which would be used to integrate the Development into the existing woodland structure. A Development Forest Plan will be prepared, which will detail felling and replanting proposals, illustrating the forestry requirements associated with the construction and operation of the Development. The Site includes areas of commercial forestry plantation in a matrix with open agricultural land. Forestry will be considered part of the project description and within technical chapters, rather than as a receptor which requires a standalone EIA assessment.

This Chapter includes the following elements:

- Consultation;
- Preliminary Baseline Conditions;
- Likely Environmental Effects;
- Assessment Methodology;
- Potential Mitigation;
- Matters and Aspects to be Scoped Out. Of the Assessment
- Questions to Consultees.

12.2 CONSULTATION

The main consultee on forestry matters is Scottish Forestry (SF), South Scotland Conservancy. SF will be consulted to ensure that the proposed changes to the woodlands address the requirements of the Scottish Government's Control of Woodland Removal Policy and other relevant guidance. In addition, there may be interrelated issues raised by other consultees and this will be clearly set out in the EIA Report.

12.3 PRELIMINARY BASELINE CONDITIONS

12.3.1 Proposed Study Area/ Survey Areas

The Forestry Study Area will be restricted to forestry within the Site boundary.

12.3.2 Baseline Conditions

A high-level desk based assessment has identified there are no woodlands on Site recorded in the Ancient Woodland Inventory Scotland¹⁸⁴ (SNH 2010). One small area is recorded in the Native Woodland Survey of Scotland (Forestry Commission Scotland 2013¹⁸⁵) which appears to have been part of a Woodland Grant Scheme planted in 1995. The desk based assessment identified a number of other woodlands on or adjacent to the Site which had been established under various forestry grant schemes. These largely comprise conifer woodland with small areas of broadleaf species.

12.4 LIKELY ENVIRONMENTAL EFFECTS

Commercial forests are dynamic environments, constantly changing through, for example, landowner activities; market forces; natural events, such as windblow, pest and diseases; or developments. Forestry is not regarded as a receptor for EIA purposes. The forestry assessment will be a factual assessment describing the changes to the forest structure resulting from the incorporation of the Development into the forests, in particular the loss of woodland area. Other Chapters within the EIA Report will identify the sensitive receptors relevant to their disciplines and report on the effects of the Development due to the forestry proposals.

There is potential for changes to the forest structure resulting from the Development, with consequential implications for the management plans across the remaining parts of the forests. It is anticipated areas of forestry would require felling for the construction of access

¹⁸⁴ Scottish Natural Heritage (2010). Ancient Woodland Inventory Scotland. Available at: <https://map.environment.gov.scot/sewebmap/> (Accessed April 2024).

¹⁸⁵ Forestry Commission Scotland (2013). The Native Woodlands Survey of Scotland. Available at <https://scottishforestry.maps.arcgis.com/apps/webappviewer/index.html?id=0d6125cfe892439ab0e5d0b74d9acc18> (Accessed April 2024).

tracks, wind turbine locations and other infrastructure, which would result in a loss of woodland area. Apart from the crops to be felled at the time of construction it is anticipated at this stage that no other Development felling is anticipated during the operation and decommissioning phases, but this will be clarified within the EIA Report following the design of the Development. Ongoing forestry management, including any further felling and restocking, is expected to be the responsibility of the forest owners as part of their normal routine management, subject to approval from SF as required.

12.5 ASSESSMENT METHODOLOGY

The forestry baseline will describe the crops existing at time of preparation of the EIA Report. This will include current species; planting year; felling and replanting plans; and other relevant woodland information where made available by the landowner. The baseline will be compiled from a desk based assessment and field surveys. The desk based assessment will include landowner crop databases; the Native Woodland Survey of Scotland; the Ancient Woodland Inventory Scotland; aerial photography; SF publicly available databases; and current Policy, Legislation and Guidance¹⁸⁶.

The field survey will consist of a site walkover to verify and update baseline data as necessary; assess the crops with respect to integration of the development infrastructure; and to identify any opportunities within the woodlands for on-site compensatory planting, if required.

A Development Forest Plan will be prepared. This will include a felling plan to show which woodlands are to be felled, and when, for the construction and operation of the Development. It will further include a restocking plan showing any areas which are to be replanted and with which species, and which areas are to be left unplanted for Development infrastructure.

A key issue will be the integration of the Development infrastructure into the forest structure to minimise the loss of woodland area and to prevent fragmentation of the remaining woodlands. Forest design and the effect of the Development infrastructure on it is an important part of the overall design process.

The changes to the woodland structure will be analysed and described including changes to woodland composition; felling and restocking plans; and traffic movements. The resulting changes to the woodland structure will be assessed for compliance against the UKFS (as amended from time to time) and the requirement for compensation planting to mitigate against any woodland loss. The Development Forest Plan will be assessed against the baseline data in line with the methodology outlined in Annex V of the Control of Woodland Removal Policy Guidance.

12.5.1 Key Issues

In the UK there is a strong presumption against permanent deforestation unless it addresses other environmental concerns. In Scotland, such deforestation is dealt with under the Scottish Government's "Control of Woodland Removal Policy" (CoWRP) (Forestry Commission 2009¹⁸⁷). The purpose of the policy is to provide direction for decisions on woodland removal in Scotland. It will be essential that the Development addresses and satisfies the requirements of the CoWRP.

The protection for Scotland's native woodlands has been strengthened with the introduction of National Planning Framework 4 (Scottish Government 2023¹⁸⁸). Policy 6 Part b) states that:

"Development proposals will not be supported where they will result in:

- *Any loss of ancient woodlands, ancient and veteran trees or adverse impact on their ecological condition;*

¹⁸⁶ Forestry Commission (2023). The UK Forestry Standard: The Government's Approach to Sustainable Forestry, Forestry Commission, Edinburgh. (Accessed February 2025)

¹⁸⁷ Forestry Commission Scotland (2009). The Scottish Government's Policy on the Control of Woodland Removal. Forestry Commission, Edinburgh.

¹⁸⁸ Scottish Government (2023): National Planning Framework 4, Edinburgh. Available at <https://www.gov.scot/publications/national-planning-framework-4/> (Accessed February 2025)

- *Adverse impacts on native woodlands, hedgerows and individual trees of high biodiversity value, or identified for protection in the Forestry and Woodland Strategy;*
- *Fragmenting or severing woodland habitats, unless appropriate mitigation measures are identified and implemented in line with the mitigation hierarchy;*"

This reinforces the implementation guidance for the CoWRP (Forestry Commission Scotland 2019¹⁸⁹) which states there is a presumption against woodland removal of UK BAP priority woodland types in areas mainly composed of ancient, semi-natural woodland (ASNW), ancient woodlands planted with native species, long-established woodlands of plantation origin (LEPO) with significant biodiversity interest, or well-established semi-natural priority woodland types.

12.5.2 Relevant Guidance, Legislation and Information

A desktop study will be undertaken drawing upon published National, Regional and local level publications, assessments and guidance to establish the broad planning and forestry context within which the Development is located. The forestry assessment will consider, but not be limited to the following forestry related policies and documents:

Legislation:

- Forestry and Land Management (Scotland) Act 2018¹⁹⁰;
- National Planning Framework 4¹⁹¹;
- The Waste (Scotland) Regulations 2012¹⁹²;
- UK Environmental Protection Act 1990¹⁹³; and
- EU Waste Legislation Waste Framework Directive¹⁹⁴.

Guidance:

- Scotland's Forestry Strategy 2019 – 2029¹⁹⁵;
- Scotland's Third Land Use Strategy 2021 – 2026¹⁹⁶;
- Right Tree in the Right Place¹⁹⁷;
- The Scottish Government's Control of Woodland Removal Policy¹⁹⁸;
- Scottish Government's policy on control of woodland removal: implementation guidance¹⁹⁹;
- The Scottish Environment Protection Agency (SEPA) guidance document WST-G-027, 'Management of Forestry Waste'²⁰⁰; and

¹⁸⁹ Forestry Commission Scotland (2019). Guidance to Forestry Commission Scotland staff on implementing the Scottish Government's Policy on Control of Woodland Removal. Available at <https://forestry.gov.scot/publications/349-scottish-government-s-policy-on-control-of-woodland-removal-implementation-guidance/viewdocument> (Accessed April 2024).

¹⁹⁰ Scottish Government (2018). *Forestry and Land Management (Scotland) Act 2018*. [online] Available at: <https://www.legislation.gov.uk/asp/2018/8/enacted> (Accessed February 2025)

¹⁹¹ Scottish Government (2023b). *National Planning Framework 4*. [online] [www.gov.scot](https://www.gov.scot/publications/national-planning-framework-4/). Available at: <https://www.gov.scot/publications/national-planning-framework-4/> (Accessed February 2025)

¹⁹² Scottish Government (2012). *The Waste (Scotland) Regulations 2012*. [online] Legislation.gov.uk. Available at: <https://www.legislation.gov.uk/ssi/2012/148> (Accessed February 2025)

¹⁹³ UK Government (1990). *Environmental Protection Act 1990*. [online] Legislation.gov.uk. Available at: <https://www.legislation.gov.uk/ukpga/1990/43/contents> (Accessed February 2025)

¹⁹⁴ European Parliament (2024). EU Waste Legislation Waste Framework Directive. [online] Available at: <https://eur-lex.europa.eu/legal-content/EN/AUTO/?uri=CELEX:02008L0098-20240218&qid=1740051129308> (Accessed February 2025).

¹⁹⁵ The Scottish Government (2019). *Scotland's Forestry Strategy 2019–2029*. [online] Gov.scot. Available at: <https://www.gov.scot/publications/scotlands-forestry-strategy-20192029/> (Accessed February 2025).

¹⁹⁶ Scottish Government (2021). *Land use - getting the best from our land: strategy 2021 to 2026*. [online] [www.gov.scot](https://www.gov.scot/publications/scotlands-third-land-use-strategy-2021-2026-getting-best-land/). Available at: <https://www.gov.scot/publications/scotlands-third-land-use-strategy-2021-2026-getting-best-land/> (Accessed February 2025)

¹⁹⁷ Scottish Forestry (2020a). *The Right Tree in the Right Place: Planning for Forestry and Woodlands*. [online] Scottish Forestry. Available at: <https://www.forestry.gov.scot/publications/96-the-right-tree-in-the-right-place-planning-for-forestry-and-woodlands> [Accessed February 2025].

¹⁹⁸ Scottish Forestry (2020b). *Control of Woodland Removal*. [online] Gov.scot. Available at: <https://www.forestry.gov.scot/publications/support-and-regulations/control-of-woodland-removal> [Accessed February 2025].

¹⁹⁹ Scottish Forestry (2020c). *Scottish Government's Policy on Control of Woodland Removal: Implementation Guidance*. [online] Scottish Forestry. Available at: <https://www.forestry.gov.scot/publications/349-scottish-government-s-policy-on-control-of-woodland-removal-implementation-guidance> [Accessed February 2025].

²⁰⁰ SEPA (2013). *Management of Forestry Waste*. [online] Available at: https://www.sepa.org.uk/media/28957/forestry_waste_guidance_note.pdf (Accessed 20 Feb. 2025).

- SEPA (2014): LUPS-GU27 'Use of Trees Cleared to Facilitate Development of Afforested Land'^{201.}

12.6 POTENTIAL MITIGATION

Measures to avoid or mitigate potential effects upon the forests will, as far as practicable, sought to be embedded in the design of the Development through consideration of the siting of the wind turbines; and by using existing access tracks and forest roads where possible. Woodland loss would be minimised by keyholing infrastructure into the felling and / or restocking plans as appropriate. Potential forms of mitigation may include a redesign of the existing forest structures including, for example, changes to the felling programme; the use of designed open space; alternative species and woodland types; changing the management intensity; or the provision of compensatory planting on or off-site.

12.7 MATTERS AND ASPECTS TO BE SCOPED OUT OF THE ASSESSMENT

The changes to the woodlands for a particular development are regarded as site specific and it is considered there are no cumulative on-site forestry issues to be addressed, therefore cumulative forestry effects are scoped out of the EIA Report.

12.8 QUESTIONS TO CONSULTEES

- Are consultees content with the proposed methodology and scope for the forestry assessment?
- Do the consultees have any information, particularly with reference to new guidance, which should be taken into account?

²⁰¹ SEPA (2014). *Land Use Planning System SEPA Guidance Note LUPS-GU27 Use of Trees Cleared to Facilitate Development on Afforested Land* [online] Available at: https://www.sepa.org.uk/media/143799/use_of_trees_cleared_to_facilitate_development_on_afforested_land_sepa_snh_fcs_guidance-_april_2014.pdf (Accessed February 2025).

13 CLIMATE CHANGE AND CARBON BALANCE

13.1 INTRODUCTION

The aim of the Climate Change and Carbon Balance assessment is to determine how the Development is likely to interact with a changing climate and to identify and assess any significant effects. This assessment will be undertaken by Envams Limited.

This Chapter includes the following elements:

- Consultation to Date;
- Preliminary Baseline Conditions;
- Likely Environmental Effects;
- Assessment Methodology;
- Assessment of Cumulative Effects; and
- Matters and Aspects Scoped Out Of The Assessment.

13.2 CONSULTATION TO DATE

No consultation has been undertaken to date with statutory consultees or other technical bodies and no specific organisations have yet been identified that should be consulted in relation to Climate Change and Carbon Balance. Should this scoping exercise identify any organisations that should be consulted, they will be contacted and consulted with through the EIA process.

13.3 PRELIMINARY BASELINE CONDITIONS

13.3.1 Proposed Study Areas/ Survey Areas

The Study Area considered for the assessment of the vulnerability of the Development to climate change consists of all of the Development infrastructure. The assessment will consider the forecast climate changes over the planned operational lifetime of the Development.

The assessment of the influence of the Development on climate change considers greenhouse gas emissions within Scotland and the United Kingdom.

13.3.2 Preliminary Baseline Conditions

The most recent climate change projections iteration, UKCP18 (2022 update)²⁰² has identified the following climatic trends as a result of climate change:

- Increased temperature;
- Changes in the frequency, intensity and distribution of rainfall events (e.g. an increase in the contribution to wind rainfall from heavy precipitation event and decreases in summer rainfall);
- Increased wind storms; and
- Sea level rise.

The State of the UK Climate 2024²⁰³ provides the latest report on observed climate data for the UK. Key findings are as follows:

- The UK is warming: Since the 1980s the UK climate has been warming at a rate of approximately 0.25°C per decade. The last three years have all been in the UK's top five warmest on record.
- The last 3 years have been in the UK's top-five warmest on record. 2024 was the fourth warmest year in the series from 1884.
- The Central England Temperature series shows that recent warmth has far exceeded any observed temperatures in at least 300 years.

²⁰² Met Office (2022) UKCP18 UK Climate Projections [Online] Available at: https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/research/ukcp/ukcp18_headline_findings_v4_aug22.pdf (Accessed February 2025)

²⁰³ State of the UK Climate - Met Office [Accessed July 2026]

- 2024 included the UK's second warmest February, warmest May, fifth warmest December, fifth warmest winter and warmest spring on record. Statistics like this are typical of recent years in the UK's climate records.
- The number of days with temperature anomalies exceeding the 1961–1990 average by 5°C has doubled for the most recent decade 2015–2024 compared to 1961–1990. For 8°C, it has trebled, and for 10°C, it has quadrupled.
- When comparing the most recent decade 2015–2024 to 1961–1990, the hottest summer days and coldest winter nights have warmed around twice as much as average summer days and winter nights for some parts of the UK

13.4 LIKELY ENVIRONMENTAL EFFECTS

The following potential effects will be scoped into the assessment:

- Effects of the Development on climate change;
- Effects of climate change on the Development; and
- Effects of climate change on assessments made in other topics of the EIA.

13.5 ASSESSMENT METHODOLOGY

13.5.1 Scope of Assessment

The following assessments are considered in terms of the Development:

- The influence of the Development on climate change; and
- A summary of effects on environmental receptors sensitive to climate change.

The method of assessing the above will be through the use of the Scottish Governments Carbon Calculator tool. The assessment will be completed using the latest version of the calculator (C- CalcWebV1.7.0)²⁰⁴. This tool provides a method based on good practice to calculate carbon emission savings associated with renewable energy developments on Scottish peatlands.

The input values to the Scottish Government Carbon Calculator Tool will be provided as a technical appendix to the EIA Report, with the calculation output figures and charts also to be included.

13.5.2 Relevant Guidance, Legislation and Information

The following legislation, policies and guidance will be considered in carrying out this assessment:

- Institute of Environmental Management and Assessment (IEMA) Environmental Impact Assessment Guide to Climate Change Resilience and Adaptation 2020²⁰⁵;
- Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017²⁰⁶ (the EIA Regulations);
- The 2020 Routemap for Renewable Energy in Scotland (2011)²⁰⁷ and as updated in 2015²⁰⁸;
- Scottish Energy Strategy (December 2017)²⁰⁹ and as updated in 2023²¹⁰;

²⁰⁴ Scottish Government & SEPA. Carbon Calculator Tool v1.7.0 [Online]. Available at:

<https://informatics.sepa.org.uk/CarbonCalculator/index.jsp> (Accessed February 2025)

²⁰⁵ IEMA (2020) Environmental Impact Assessment Guide to Climate Change Resilience and Adaptation 2020 [Online] Available at: <https://www.iema.net/resources/reading-room/2020/06/26/iema-eia-guide-to-climate-change-resilience-and-adaptation-2020> (Accessed February 2025)

²⁰⁶ UK Government (2017) Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 [Online] Available at: <https://www.legislation.gov.uk/ssi/2017/102/contents/made> (Accessed February 2025)

²⁰⁷ Scottish Government (2011) 2020 Routemap for Renewable Energy in Scotland [Online] Available at: <https://www.webarchive.org.uk/wayback/archive/20150218121205/http://www.gov.scot/Publications/2011/08/04110353/0> (Accessed February 2025)

²⁰⁸ Scottish Government (2015) 2020 Routemap for Renewable Energy in Scotland – Update 2015 [Online] Available at: <https://www.webarchive.org.uk/wayback/archive/3000/https://www.gov.scot/Resource/0048/00485407.pdf> (Accessed February 2025)

²⁰⁹ Scottish Government (2017) The Future of Energy in Scotland: Scottish Energy Strategy [Online] Available at: <https://www.gov.scot/publications/scottish-energy-strategy-future-energy-scotland-9781788515276/> (Accessed February 2025).

²¹⁰ Scottish Government (2023) Draft Energy Strategy and Just Transition Plan [Online] Available at: <https://www.gov.scot/publications/draft-energy-strategy-transition-plan/> (Accessed February 2025).

- Scottish Government's Climate Change Adaption Plan 2024-2029²¹¹
- The Scottish Climate Change Plan (2018)²¹² and updates (2020)²¹³;
- The Climate Change (Emissions Reduction Targets) (Scotland) Act 2019²¹⁴ and the legally binding net zero target for 2045 and interim targets for 2020, 2030 and 2040;
- Achieving Net Zero (2020)²¹⁵;
- Energy White Paper: Powering our net zero future (2020)²¹⁶;
- Securing a green recovery on a path to net zero: climate change plan 2018–2032 – update (2020)²¹⁷; and
- The Committee on Climate Change (CCC) Reducing UK emissions: 2022 Progress Report (2022)²¹⁸.
- Notable information sources containing baseline and projected climate data may include:
 - Digest of United Kingdom Energy Statistics (DUKES) 2024²¹⁹; and
 - State of the UK Climate 2023²²⁰.

13.5.3 Baseline Study Methodology

The assessment would use desk-based information sources to assess the likely effects. Sources will be identified in citations throughout.

The desktop baseline survey would cover the following topic areas:

- An update to the key trends of wind speed, temperature, and precipitation over the UK;
- Current greenhouse gas emissions from both Scotland and the UK as a whole;
- Renewable generation capacity from both Scotland and the UK as a whole; and
- Current progress toward Net-Zero targets.

The baseline research would then be used to identify the potential impact of the Development on these trends by showing the potential greenhouse gas emissions that would be offset through the generation of electricity using wind, as opposed to the same output generated through using fossil fuels.

13.5.4 Methodology for the Assessment of Effects

To determine whether effects are significant under the EIA Regulations, it is appropriate to consider the sensitivity (vulnerability and susceptibility) of the receptor and the magnitude of the impact, taking into account uncertainty. This is based on the professional judgement of the assessor.

13.5.4.1 Sensitivity of Receptors

The sensitivity of the baseline conditions, including the importance of environmental features on or near to the Site or the sensitivity of potentially affected receptors, will be assessed in

²¹¹ Scottish Government (2024) Climate Change: Scottish National Adaption Plan 2024-2029. [Online] Available at: [Supporting documents - Climate change: Scottish National Adaptation Plan 2024-2029 - gov.scot](#) (Accessed February 2025).

²¹² Scottish Government (2018) Climate Change Plan: Third Report on Proposals and Policies 2018 – 2031 (RPP3) [Online] Available at: <https://www.gov.scot/publications/scottish-governments-climate-change-plan-third-report-proposals-policies-2018-9781788516488/> (Accessed February 2025).

²¹³ Scottish Government (2020) Update to the Climate Change Plan. [Online] Available at: [Update to the Climate Change Plan 2018 - 2032: Securing a Green Recovery on a Path to Net Zero](#) (Accessed February 2025).

²¹⁴ Scottish Government (2019) Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 [Online] Available at: <http://www.legislation.gov.uk/asp/2019/15/enacted> (Accessed February 2025)

²¹⁵ National Audit Office (2020) Achieving Net Zero [Online] Available at: <https://www.nao.org.uk/report/achieving-net-zero/> (Accessed February 2025)

²¹⁶ UK Government (2020) Energy White paper: powering our net zero future [Online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/945899/201216_BEIS_EWP_Command_Paper_Accessible.pdf (Accessed February 2025)

²¹⁷ Scottish Government (2020) Securing a green recovery on a path to net zero: climate change plan 2018–2032 – update [Online] Available at: <https://www.gov.scot/publications/securing-green-recovery-path-net-zero-update-climate-change-plan-20182032/> (Accessed February 2025)

²¹⁸ The CCC (2022) Reducing UK emissions: 2022 Progress Report to Parliament [Online] Available at: <https://www.theccc.org.uk/publication/2022-progress-report-to-parliament/> (Accessed February 2025)

²¹⁹ UK Government (2024) Digest of United Kingdom Energy Statistics 2024 [Online] Available at [Digest of UK Energy Statistics \(DUKES\) 2024 - GOV.UK](#) (Accessed February 2025)

²²⁰ Kendon, M., Doherty, A., Hollis, D., Carlisle, E., Packman, S., McCarthy, M., Jevrejeva, S., Matthews, A., Williams, J., Garforth, J. and Sparks, T. (2024b). State of the UK Climate 2023. *International Journal of Climatology*, [online] 44(S1), pp.1–117.

line with best practice guidance, legislation, statutory designations and / or professional judgement.

Table 13.1 details the criteria for determining the sensitivity of receptors.

Table 13.1: Framework for Determining Sensitivity of Receptors

Sensitivity of Receptor	Definition
High	The receptor has little or no ability to absorb change without fundamentally altering its present character, is of high environmental value, or of national importance.
Medium	The receptor has moderate capacity to absorb change without significantly altering its present character, has some environmental value, or is of regional importance.
Low	The receptor is tolerant of change without detriment or benefit to its character, is low environmental value, or is of local importance.
Negligible	The receptor is resistant to change and is of little environmental value.

13.5.4.2 Magnitude of Change

The magnitude of change will be identified through consideration of the Development, the degree of change to baseline conditions predicted as a result of the Development, the duration and reversibility of an effect and professional judgement, best practice guidance and legislation. The criteria for assessing the magnitude of an effect are presented in Table 13.2.

Table 13.2 Framework for Determining Magnitude of Change

Magnitude of Change	Definition
High	A fundamental change (positive or negative) to the baseline condition of the receptor, leading to a major loss or alteration of character.
Medium	A material change (positive or negative) leading to partial loss or alteration of character.
Low	A slight, detectable, change to the baseline condition which may be positive or negative, leading to a minor loss or alteration of character.
Negligible	A barely distinguishable change from baseline conditions, leading to no noticeable loss or alteration of character.

13.5.4.3 Significance of Effect

The sensitivity of the asset and the magnitude of the predicted change will be used as a guide, to predict the significance of the likely effects.

IEMA guidance for Climate Change Impact Assessments outlines that the assessment of significance should account for the susceptibility or resilience of the receptor to climate change, as well as the value of the receptor itself. High value receptors that have little resilience to changes in climatic conditions should be considered more likely to be significantly affected than high-value receptors that are very resilient to changes in climatic conditions. Where there is uncertainty about how a receptor will adapt to a changing climate, IEMA recommends that a conservative threshold of significance is adopted.

Table 13.3 outlines the framework for the assessment of significance of effects.

Table 13.3: Framework for Assessment of the Significance of Effects

Magnitude of Effects	Sensitivity of Resource or Receptor			
	High	Medium	Low	Negligible
High	Major	Moderate	Moderate	Minor

Medium	Moderate	Moderate	Minor	Negligible
Low	Minor	Minor	Negligible	Negligible
Negligible	Negligible	Negligible	Negligible	Negligible

Those 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 grey in the above table.

Effects assessed can be either positive, negative or neutral. Whilst receptors may be considered "high-value", a non-material magnitude of the impact would result in any effect being considered not significant.

13.6 ASSESSMENT OF CUMULATIVE EFFECTS

Cumulative effects are considered to be any additional effects arising from the Development in combination with any other existing developments of the same nature (i.e., renewable energy generation). The cumulative assessment will consider the national context, and account for the effect of the Development alongside other Scottish / UK renewable energy generation on the Scottish / UK energy supply, and how this cumulative effect may contribute to Scotland's and the UK's legally binding emission reduction targets.

13.7 MATTERS AND ASPECTS TO BE SCOPED OUT OF THE ASSESSMENT

It is proposed that the effects of climate change on the Development can be scoped out of the EIA. None of the identified climate change trends listed in Section 13.3.2 could affect the Development with the potential exception of increased high-wind storm events. Braking mechanisms installed on turbines allow for them to operate within specific wind conditions. This allows for turbines to be shut down during storm events and the risk of damage to turbines to be mitigated. Similarly, the solar PV arrays will be designed to withstand a range of weather conditions over the lifetime of the Development. Therefore, climate change is not expected to have a significant effect on the Development, and this topic would be scoped out.

13.8 QUESTION TO CONSULTEES

- Do you have any comments on the proposed methodology or scope of this assessment?

14 OTHER ISSUES

14.1 INTRODUCTION

An 'Other Issues' chapter will be included in the EIA Report and will contain the assessments of the potential impacts of the Development from issues which are not covered within the preceding technical chapters.

This section of the Scoping Report sets out the proposed approach in respect to 'Other Issues' assessments that will be required in order to provide a comprehensive assessment of the potential environmental impacts of the Development.

The other issues identified for assessment include:

- Aviation;
- Telecommunications;
- Shadow flicker

Matters to be Scoped Out of the Assessment

- Glint and Glare.

14.2 AVIATION AND DEFENCE INFRASTRUCTURE

Wind turbine development and operation has the potential to cause a variety of adverse effects on aviation. These include but are not limited to;

- Physical obstructions;
- Generation of unwanted returns on Primary Surveillance Radar (PSR); and
- Adverse effects on overall performance on Communications, Navigations and Surveillance (CNS) equipment.

Where line of sight exists between turbines and air traffic control radars, there is the possibility that those turbines may be detected by the radar and appear as clutter on air traffic controllers' screens, although this is dependent on atmospheric conditions. Such clutter may have direct operational impacts on air traffic control operations.

Potential effects on other aviation interests will be evaluated by considering consultation responses which will be sought from the Civil Aviation Authority (CAA), National Air Traffic Services En Route Plc (NATS) and the Ministry of Defence (MoD), in the context of the likelihood of identified aviation operators using the airspace in the vicinity of the Development.

14.2.1 Potential Effects and Baseline Conditions

The closest radar equipped civilian airport is at Carlisle Lake District Airport, approximately 32 km south-east of the Development.

The nearest known Ministry of Defence (MoD) RAF base is at RAF Spadeadam, located approximately 41 km south-east of the Site.

The proposed turbines are anticipated to fall within the 50 km radius statutory consultation zone of the seismological recording station at Eskdalemuir, a UK asset that contributes to the Comprehensive Nuclear Test Ban Treaty. A noise budget, based on a 50 km radius, is managed by the Ministry of Defence.

At the time of writing, consultation is being undertaken by the Department for Energy Security and Net Zero (DEZNEZ) as part of the Scottish Government to update the approach to managing wind turbine developments near Eskdalemuir²²¹. As part of this consultation, a new zoning framework is proposed:

- A formal 15 km Exclusion Zone within which no turbines can be built; and
- A 15-50 km Restricted Zone in which new seismic assessment rules and limits would apply.

²²¹ Eskdalemuir seismic array: revised approach to managing onshore wind turbine interference - GOV.UK [Accessed 7th July 2026]

For wind turbine developments within the Restricted Zone, regulations are proposed that would require developers to submit seismic impact information for consideration alongside the planning application. This seismic information would be in the form of a Seismic Ground Vibration Report (SGV). As the turbines for the Proposed Development are sited approximately 20 km south of Eskdalemuir, they would be within the Restricted Zone and an SGV would therefore be required. Open consultation of the proposed updated approach ends on the 5th August 2026 and appropriate consideration will be given to the outcome of this report to ensure this is suitably considered as part of the layout design and EIA. Consultation and additional study will be undertaken if required.

The NATS En Route Plc (NERL) web-based assessment data has been used to assess whether the Development is located in an area where wind turbines have the potential to interfere with NERL operations. Review of the NERL data has shown that the Development is situated in an area unlikely to interfere with NERL infrastructure.

The proposed turbines, at 200 m to blade tip, will require lighting under Article 222 of the Air Navigation Order (ANO, 2016)²²². This order requires that 'en-route obstacles' at or above 150 m above ground level are lit with visible lighting to assist their detection by aircraft. The policy statement describes a scenario with a red light fitted as close as possible to the top of the fixed structure i.e. the nacelle with additional lights to provide 360° coverage at half of the nacelle height.

It is therefore expected that an aviation assessment will be required to identify and assess the likely aviation issues associated with the Development.

14.2.2 Assessment Methodology

The assessment of effects of the Development will be based upon the guidance laid down in CAA Publication CAP 764 Policy and Guidelines on Wind Turbines Version 6 (dated February 2016)²²³ with the consultation criteria for aviation stakeholders defined in Chapter 4 of CAP 764.

CAP 764 states the distances from various types of airfields where consultation should take place. These distances include:

Airfield with a surveillance radar – 30 km;

- Non-radar licensed aerodrome with a runway of more than 1,100 m – 17 km;
- Non-radar licensed aerodrome with a runway of less than 1,100 m – 5 km;
- Licensed aerodromes where the turbines would lie within airspace coincidental with any published Instrument Flight Procedure (IFP);
- Unlicensed aerodromes with runways of more than 800 metres – 4 km;
- Unlicensed aerodromes with runways of less than 800 metres – 3 km;
- Gliding sites – 10 km; and
- Other aviation activity such as parachute sites and microlight sites within 3 km – in such instances developers are referred to appropriate organisations.

CAP 764 goes on to state that these distances are for guidance purposes only and do not represent ranges beyond which all wind turbine developments will be approved or within which they will always be objected to. These ranges are intended as a prompt for further discussion between developers and aviation stakeholders which may result in a study area being modified as required based on specific airspace and operational considerations.

In relation to the Development, the following consultees have been identified:

- MoD (Defence Infrastructure Organisation);
- National Air Traffic Services (NATS);
- Civil Aviation Authority (CAA); and

²²² Civil Aviation Publication (2021) CAP 393: Regulations made under powers in the Civil Aviation Act 1982 and the Air Navigation Order 2016 [online] Available at: <https://publicapps.caa.co.uk/docs/33/CAP393%20Regulations%20made%20under%20powers%20in%20the%20Civil%20Aviation%20Act%201982%20and%20the%20Air%20Navigation%20Order%202016.pdf>

²²³ Civil Aviation Publication (2016) CAP 764: CAA Policy and Guidelines on Wind Turbines [online] Available at: <https://publicapps.caa.co.uk/docs/33/CAP764%20Issue6%20FINAL%20Feb.pdf> (Accessed February 2025)

A search for private airfields will be conducted in parallel with the consultation process, and any identified airfields will also be consulted on the proposed turbine development. It is therefore expected that an aviation assessment will be required to identify and assess the likely aviation issues associated with the Development.

The assessment will consider effects on both civil and military aviation receptors.

14.3 TELECOMMUNICATIONS AND UTILITIES

Wind farms have the potential to interfere with electro-magnetic (EM) signals and therefore have the potential to affect television reception, fixed telecommunication links and other utilities. Interference of EM signals can cause distorted data, sound, or image transmission and can potentially occur when existing telecommunication receptors are not effectively considered during a wind farms design and development.

The Study Area will comprise the Site and the wind turbine locations. Only EM and telecommunications links which travel across the Site and close to the wind turbine locations will be impacted by the Development.

To identify any potential constraints, a desk-based study will be conducted, followed by consultation with relevant parties. As an initial step, Ofcom's Spectrum Information Portal²²⁴ will be used to aid the identification of existing infrastructure within the Study Area, and consultation will be undertaken with the following key infrastructure operators as a minimum:

- Arqiva;
- Atkins; and
- Joint Radio Company (JRC).

Any additional operators identified as being potentially affected by the Development will be consulted as required.

The paths of any links through the Site will be plotted and appropriate safeguarding buffers will be applied, as advised by the respective link operator. These buffers will be fed into the design of the Development, with the primary aim of preventing effects by siting turbine infrastructure outwith the respective safeguarding areas. Should turbines be proposed to be sited within the identified safeguarding areas, further consultation will be undertaken with the relevant operator(s) and appropriate mitigation measures will be agreed.

Since the introduction of digital television signals, effects from wind turbines on television reception have been substantially reduced as digital signals are rarely affected. Effects on television reception are therefore considered unlikely, and are proposed to be scoped out of the EIA Report.

14.4 SHADOW FLICKER

Under certain combinations of geographical position, time of day and time of year, the sun may pass behind the rotors of a wind turbine when viewed from nearby receptors, potentially casting a shadow over neighbouring properties. Shadow flicker is an effect that can occur when the shadow of a blade passes over a small opening (such as a window), briefly reducing the intensity of light within the room, and causing a flickering to be perceived. Shadow flicker effects can only occur inside buildings when the blade casts a shadow across an entire window opening. Shadow flicker is a phenomenon specifically associated with wind turbines, and is therefore not relevant to other aspects of the Development.

There is no formal guidance regarding the assessment of shadow flicker. The withdrawn Scottish Government's Onshore Wind Turbines: Planning Advice stated the following:

"Where separation is provided between wind turbines and nearby dwellings (as a general rule 10 rotor diameters), 'shadow flicker' should not be a problem".

A review²²⁵ of light and shadow effects from wind turbines was commissioned by ClimateXChange to review how light and shadow flicker effects are considered in the development planning process in Scotland. The document includes a review of then current

²²⁴ Ofcom. Spectrum Information Portal. [Online] Available at: <https://www.ofcom.org.uk/spectrum/information/spectrum-information-system-sis/spectrum-information-portal> (Accessed February 2025).

²²⁵ Review of Light and Shadow Flicker Effects from Wind Turbines in Scotland, LUC, March 2017.

UK guidance, along with a review of how the current guidance is applied through the selection and review of case studies.

Since the publication of this review (2017), while the Scottish Government's Onshore Wind Turbines: Planning Advice has been withdrawn, no new guidance has been published.

No formal guidance is available regarding what levels of shadow flicker may be considered acceptable in the UK. However, the thresholds in the Northern Ireland Department of the Environment, Heritage and Local Government's Wind Energy Development Guidelines are commonly applied across the UK. It states that:

"It is recommended that shadow flicker at neighbouring offices and dwellings within 500 m should not exceed 30 hours per year or 30 minutes per day."

It should be noted that whilst the Northern Irish guidance states that the thresholds should apply to receptors within 500 m, all residential receptors within 10 rotor diameters of the Development will be considered, in line with the withdrawn Scottish guidance.

The location of potential shadow flicker receptors will be identified, and a shadow flicker model will be prepared using industry standard computer modelling software to predict the potential levels of effect. The results of this modelling will be used to inform the design of the Development through an iterative process and updated to reflect the final turbine layout.

Cumulative effects arising from the Development in combination with the existing Minsca Wind Farm will be identified and assessed. In addition, a cumulative search will be undertaken to identify any other wind energy developments (either operational, consented or subject to a current planning application) with the potential for cumulative shadow flicker effects; any such developments will be assessed accordingly.

14.5 AIR QUALITY

Potential air quality impacts arise principally from combustion emissions from construction/decommissioning vehicles, and from dust arising from ground disturbance during construction and decommissioning. During the operational phase, there would be no ground disturbance and minimal traffic movements (less than one vehicle per day, typically).

For traffic emissions, the EPUK/IAQM 2017 guidance²²⁶ states that the indicative criteria for requiring an air quality assessment in an area not within an Air Quality Management Area (AQMA) includes:

"A change of LDV [Light Duty Vehicles] flows of: more than 500 AADT [Annual Average Daily Traffic] elsewhere"; and

"a change of HDV [Heavy Duty Vehicle] flows of: more than 100 AADT elsewhere".

The guidance notes that these criteria are precautionary. These criteria apply for all receptor types, including ecological receptors.

No AQMAs have been declared by local councils along the routes expected to be used by construction/decommissioning vehicles between the M74 and the site.

Construction traffic levels (which will be higher than decommissioning traffic levels) will be evaluated in the Traffic chapter of the EIA Report, as part of the application for consent for the Development. From experience, traffic levels are expected to be well below the thresholds set out above (c. 10 HDV movements per day, for c. 6 months only, and up to c. 50 LDV movements per day for 6 months). On this basis, an assessment of air quality impacts arising from vehicle emissions is proposed to be scoped out of the EIA. If the EIA Report shows traffic levels in excess of the thresholds above, an assessment of air quality impacts arising from vehicle emissions will be included in the EIA Report.

14.6 DUST

For dust during construction and decommissioning, standard dust control measures will be included in a Construction Environmental Management Plan (CEMP) to be submitted as part

²²⁶ EPUK and IAQM (2017). Land Use Planning and Development Control: Planning for Air Quality. <https://www.iaqm.co.uk/text/guidance/air-quality-planning-guidance.pdf> [accessed on 01/06/2025].

of the EIA Report, as part of the application for consent for the Development. These are likely to include measures such as the following:

- Excavation and earthworks areas will be stripped as required in order to minimise exposed areas;
- During excavation works, drop heights from buckets will be minimised to control the fall of materials to reduce dust escape;
- Completed earthworks and other exposed areas will be covered with topsoil and revegetated as soon as it is practical in order to stabilise surfaces;
- During stockpiling of loose materials, stockpiles shall exist for the shortest possible time;
- Material stockpiles will be low mounds without steep sides or sharp changes in shape;
- Material stockpiles will be located away from the site boundary, sensitive receptors, watercourses and surface drains;
- Material stockpiles will be sited to account for the predominant wind direction and the location of sensitive receptors;
- Water bowsers will be available on site and utilised for dust suppression when and where required;
- Daily visual inspections will be undertaken to assess the need for water bowsers, with increased frequency when activities with high potential to generate dust are carried out during prolonged dry or windy conditions;
- Shielding of dust-generating activities;
- Use of covered skips;
- Covering vehicles carrying dry spoil and other wastes to prevent escape of materials;
- Provision of wheel washing and wet suppression during loading of wagons/vehicles; and
- Daily visual inspections will be undertaken to assess the condition of any in-use junctions of the site tracks with public roads.

Following the adoption of measures such as these, no significant effects associated with dust are anticipated, in accordance with IAQM guidance on the assessment of dust²²⁷. On this basis, an assessment of dust impacts arising from construction and decommissioning activities is proposed to be scoped out of the EIA.

14.7 MATTERS AND ASPECTS TO BE SCOPED OUT OF THE ASSESSMENT

14.7.1 Glint and Glare

UK planning guidance does not provide a specific methodology or criteria for assessing the impact of glint and glare from solar PV developments. However, the following guidance is regularly applied to assessments in the UK and together is considered to provide a reasonable and robust approach:

- Measurement and Assessment of Light Immissions²²⁸;
- Rail Industry Standard (RIS) RIS-0737-CCS²²⁹;
- Renewable Energy Developments: Solar Photovoltaic Developments²³⁰; and
- Review of Solar Energy System Projects on Federally-Obligated Airports²³¹.

Based upon an initial review and our prior experience of similar projects, it appears that no sensitive receptors (typically residential dwellings, national / regional roads, rail lines and aerodromes) are located sufficiently close to the proposed PV arrays to require a detailed consideration of glint and glare which is therefore proposed to be scoped out of the assessment.

²²⁷ IAQM (2024). Guidance on the assessment of dust from demolition and construction. <https://iaqm.co.uk/wp-content/uploads/2013/02/Construction-Dust-Guidance-Jan-2024.pdf> [accessed on 01/06/2025].

²²⁸ Ministry for the Environment, Health and Consumer Protection (2014). Light Guidelines (Leitlinie des Ministeriums für Umwelt, Gesundheit und Verbraucherschutz zur Messung und Beurteilung von Lichtimmissionen)

²²⁹ Rail Industry Standard (RIS) RIS-0737-CCS 'Signal Sighting Assessment Requirements'

²³⁰ CAA (2023). Solar photovoltaic Developments CAST Aerodrome Safeguarding Guidance Note

²³¹ Federal Aviation Administration (2021) Review of Solar Energy System Projects on Federally-Obligated Airports.

14.8 MAJOR ACCIDENTS AND DISASTERS

Given the nature of the Development and its location, the risk of a major accident or disaster is low. The design process will incorporate appropriate risk assessment procedures to identify potential hazards and ensure risks are avoided or reduced to a level that is as low as reasonably practicable through the design and construction process. This will include consideration of wind turbines, solar PV infrastructure, the Battery Energy Storage System (BESS), construction activities and associated infrastructure.

An outline Battery Safety Management Plan (BSMP) will be prepared in consultation with the relevant authorities and will form part of the operational management framework for the Development. The BSMP will include appropriate fire detection, fire prevention and emergency response measures, together with design measures to facilitate safe access to the Site by emergency services should this be required. In addition, the Development will be designed, constructed and operated in accordance with relevant legislation, industry standards and good practice guidance.

During the operational phase of the Development, routine inspection and maintenance activities will be undertaken to ensure the safe and compliant operation of all infrastructure. Embedded mitigation measures, management plans and operational procedures will further reduce the likelihood of significant effects arising from accidents or disaster events.

14.9 QUESTION TO CONSULTEES

- Do you have any comments on the proposed methodology or scope of these assessments?
- Do you agree that air quality effects during the operation phase will not be significant, in EIA terms, and can therefore be scoped out of the EIA?
- Do you agree that air quality effects from construction and decommissioning traffic generation will not be significant, in EIA terms, and can therefore be scoped out of the EIA (as long as the traffic level increases are less than the thresholds set out above)?
- Do you agree that dust effects from construction and decommissioning activities will not be significant, in EIA terms, and can therefore be scoped out of the EIA (as long as appropriate dust control measures, such as those set out above, are included in a CEMP)?

15 INTERRELATIONSHIPS

15.1 INTRODUCTION

Interrelationships (as referred to in section 3.7.2), may occur where two or more effects arise that have the potential to affect the same receptor during construction, operation or decommissioning. An effect taken in isolation may not have a significant effect on a receptor, but where several effects are considered in an interrelated manner, the resultant effect could then be considered significant.

Certain technical chapters of the EIA Report will consider interrelationship effects on receptors as part of the main body of the assessment.

Examples of such effects are noise, dust, water pollution, traffic, lighting on habitats or designations or the visual setting of a heritage asset. Interrelationships with the potential to cause effects to those particular topic-specific receptors will therefore be considered directly in those technical chapters of the EIA Report and will not be repeated in the Interrelationships Chapter.

The types of receptors not exclusively considered by the technical chapters are humans, either as road users, residents or school pupils/employees. It is these human receptors that will be the sole focus of the Interrelationships Chapter. An example of such an interrelationship effect would be a resident, living close to Development construction activity, that is subject to noise, visual effects, traffic effects and temporary closures to or diversions of Core Paths; these separate effects could all affect the resident.

15.2 ASSESSMENT METHODOLOGY

15.2.1 Legislation and Guidance

The EIA Regulations make explicit reference to the requirement for an assessment of the interrelationships between types of effect, and states that the EIA should contain a *"....description of the aspects of the environment likely to be significantly affected by the Development, including, in particular, population, fauna, flora, soil, water, air, climatic factors, material assets, including the architectural and archaeological heritage, landscape and the interrelationship between the above factors"*.

However, no further guidance or requirement beyond the need for it is provided.

The European Commission (EC) has produced guidelines that, amongst other things, covers the interaction of effects. It recommends combining expert opinion with consultation to inform the assessment, with expert opinion being applied to evaluate the interacting effects. It recommends using matrices to assist with the identification of the interaction of effects. It notes the importance of avoiding double-counting. The proposed methods that will be applied in the Interrelationships Chapter of the EIA Report are consistent with these EC guidelines.

15.2.2 Identification of Effects

The assessment will be undertaken on a qualitative basis using the results of each individual technical assessment, informed by professional judgement.

Potential sources of environmental effect will not be specifically identified in the Interrelationships Chapter; this chapter will instead rely on the other technical chapters of the EIA Report for the identification of receptors, potential effects and their assessment. Mitigation, where proposed in the other technical chapters, will be assumed to be implemented before consideration of the effects in this chapter, i.e., only mitigated residual effects will be considered. Similarly, the Interrelationships Chapter of the EIA Report will draw from the other technical chapters for descriptions of aspects of the baseline environment, where this is required.

Effects with a magnitude assessed as "negligible" (described generally as "no detectable or material change", or "a barely discernible change") in other chapters will be considered not to have the potential to contribute to interrelationship effects and will not be considered in

this chapter. For the avoidance of doubt, all effects not explicitly assessed elsewhere in the EIA Report will be considered to be of 'negligible' magnitude and therefore will not be assessed. Effects will only be considered where they have been identified and assessed in other chapters of the EIA Report.

Only receptors that are predicted to be the subject of more than one potential effect will be included in the assessment. Receptors predicted to be the subject of only a single effect will be excluded because there is considered to be no potential for a cumulative interrelationship effect to take place.

A matrix will be used to detail which potential effects from different sources are predicted to affect each of the included receptors.

It should be noted that uncertainty in the assessment of effects, for most of the technical chapters in the EIA Report, will be dealt with by making conservative, or worst-case, assumptions. As the Interrelationships Chapter considers the "in-combination" effects of multiple individual effects, it will be based on multiple worst-case scenarios, which is therefore likely to be overly conservative and potentially an exaggeration of the likely effects in reality. Professional judgement will be used to moderate and interpret this.

15.2.3 Assessment of Significance

A description of the interrelationships will be undertaken for each receptor and a conclusion drawn, using experience and professional judgement, as to whether any receptor will be subject to 'significant' effects as a result, in terms of the EIA Regulations.

The interrelationship effect is the effect over and above the individual effects assessed in other chapters and is described as the difference between the change caused to a receptor from one effect alone and the change caused to the receptor from all effects combined.

Significance will be determined by qualitative consideration of the sensitivity of receptors and the magnitude of effects using the following general criteria in accordance with the Environmental Impact Assessment Chapter of the EIA Report (and section 3.4 of this Scoping Report):

- Major – a fundamental change to a location, environment or species;
- Moderate – a material, but non-fundamental change to a location, environment or species;
- Minor – a detectable but non-material change to a location, environment or species; or
- Negligible – no detectable or material change to a location, environment or species.

Effects assessed as Moderate or Major will be treated as being significant in terms of the EIA Regulations.

15.3 PROPOSED 'EFFECT INTERRELATIONSHIP MATRIX'

A matrix will be used to detail which potential residual effects are predicted to affect each of the included receptors. Receptors will be grouped at this stage to provide focus, and only receptor groups that have effects from more than one chapter will be listed.

Where recreational receptors (e.g., users of Core Paths) are included in the assessment of interrelationships it is because there may be secondary effects on local residents.

It is acknowledged that while cultural heritage assets are protected, and effects on them assessed, in their own right, individual people having relationships with those heritage assets (e.g., listed buildings or conservation areas) may experience appreciation effects associated with changes to these assets. Non-negligible effects on heritage receptors will therefore be included in the matrix, where the people experiencing the effect are local residents.

It is noted that noise effects stated in the Noise Chapter of the EIA Report, will not be sub-categorised into Negligible, Minor, Moderate and Major, and hence "not significant" effects could potentially contribute to interrelationship effects, and those assessed as requiring mitigation will therefore also be included in the proposed matrix.

Table 15.1 shows a proposed matrix to identify potential interrelationship effects that would require specific assessment.

Table 15.1 Proposed Matrix of Non-Negligible Magnitude Effects Arising in Two or More Chapters

Effect Type	Receptor Group		
	Residents	School	Road Users
Landscape and visual			
Cultural heritage			
Noise			
Recreation			
Traffic and access			
Shadow flicker			

Specific receptors in each of these six chapters (above) will then be detailed in additional Tables. Table 15.2 provides a template of a table for construction phase effects and Table 15.3 provides a template for operational phase effects. Decommissioning effects are expected and assumed to be similar to, though of lesser magnitude than, construction phase effects, and will not therefore be explicitly assessed within the Interrelationships Chapter.

Table 15.2 Template Table presenting Non-Negligible Magnitude Construction Phase Effects Arising in Two or More Chapters

Chapter / Effect Type	Receptor	Magnitude
Visual		
Cultural Heritage		
Noise		
Recreation		
Shadow flicker		

Table 15.3 Template Table presenting Non-Negligible Magnitude Operation Phase Effects Arising in Two or More Chapters

Chapter/ Effect Type	Receptor	Magnitude
Visual		
Noise		
Recreation		
Traffic		

The above effects will then be set out for each individual receptor in an additional table, summarising the overall combined effects on that receptor during each of the construction and operation phases, a simple fictional example of which is provided in Table 15.4.

Table 15.4 Example (Fictional) Table presenting Non-Negligible Interrelationship Effects by Receptor

Receptor	Construction Phase Effects	Operation Phase Effects
Users of the Church of St Mary's (fictional).	Visual (cumulative) – slight.	Visual (cumulative) – slight.
	Traffic delay – minor.	
River View House (fictional).	None.	Visual – major.
		Shadow flicker – possible.
The Three Horseshoes Inn (fictional).	Visual – moderate.	Visual – moderate.
	Traffic delay – minor.	
Residents of Glasgow Road (fictional).	Traffic delay – minor.	Church of St Mary's Conservation Area appreciation – low.
	Community severance – minor.	Listed building appreciation – low.

15.4 ASSESSMENT OF EFFECTS

The effects of the interrelationship between the individual effects identified in Tables 14.4 will be assessed for each receptor or receptor group.

Moderate and Major effects, which are considered significant in terms of the EIA Regulations, will be highlighted.

15.5 MITIGATION MEASURES AND RESIDUAL EFFECTS

The effects assessed as per Section 14.4 will be based on the post-mitigation residual effects identified in the other chapters. Further mitigation for any interrelationship effects identified in this chapter could be achieved by applying further mitigation of individual effects in the relevant technical chapters.

A list of any receptors assessed as being likely to receive significant effects during the construction phase or operation phase, as a result of the interrelationships between individual assessments made in other chapters in this EIA Report, will be provided. The design of the Development should minimise the number of significant effects on individual receptors.

15.6 CUMULATIVE EFFECT ASSESSMENT

The assessment of interrelationship effects (detailed above) will include consideration of non-negligible cumulative effects identified in the other technical chapters of the EIA Report, so the potential effects associated with the cumulative developments identified in the EIA will already have been considered.

15.7 MATTERS AND ASPECTS TO BE SCOPED OUT OF THE ASSESSMENT

The Interrelationships assessment will include an assessment of potential multi-aspect effects on the human receptors that are described in this section.

15.8 QUESTIONS TO CONSULTÉES

- Do you have any comments on the proposed methodology?