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Hartsgarth Wind Farm

Environmental Impact Assessment (EIA) Scoping Report

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ACRONYMS AND ABREVIATIONS	
AEP	Annual Exceedance Probability
AGL	Above Ground Level
ALV	Abnormal Load Vehicles
AM	Amplitude Modulation
ANO	Air Navigation Order
AOD	Above Ordinance Datum
ATC	Automatic Traffic Counts
AWI	Ancient Woodland Inventory
BESS	Battery Energy Storage System
BNG	British National Grid
BoCC	Birds of Conservation Concern
BPM	Best Practicable Means
BT	British Telecom
CAA	Civil Aviation Authority
CAPEX	Capital Expenditure
CCIA	Climate Change Impact Assessment
CCR	Climate Change Resilience
CEMP	Construction Environmental Management Plan
CIEEM	Chartered Institute of Ecology and Environmental Management
CIRIA	Construction Industry Research and Information Association
DAS	Design and Access Statement
DIO	Defence Infrastructure Organisation
DWPA	Drinking Water Protected Area

ACRONYMS AND ABREVIATIONS	
ECU	Energy Consents Unit
EcIA	Ecological Impact Assessment
ECoW	Ecological Clerk of Works
EHO	Environmental Health Officer
EIA	Environmental Impact Assessment
ELC	European Landscape Convention
EPA	Environmental Protection Act
ERM	Environmental Resources Management Ltd.
FCS	Favourable Conservation Status
GDL	Gardens and Designed Landscapes
GHG	Greenhouse Gas
GIS	Geographic Information System
GPG	Good Practice Guide
GVA	Gross Value Added
GW	Gigawatts
GWDTE	Groundwater Dependent Terrestrial Ecosystem
GWh	Gigawatt-hours
HE	Historic England
HER	Historic Environment Record
HES	Historic Environment Scotland
HGV	Heavy Goods Vehicle
HRA	Habitats Regulations Appraisal
ICCI	In-Combination Climate Change Impacts
IEF	Important Ecological Features

ACRONYMS AND ABREVIATIONS	
IOA	Institute of Acoustics
IOF	Important Ornithological Features
JRC	Joint Radio Company
LBRSG	Lothian and Borders Raptor Study Group
LCT	Landscape Character Type
LGV	Light Goods Vehicle
LNCS	Local Nature Conservation Sites
LSE	Likely Significant Effects
LVIA	Landscape and Visual Impact Assessment
MBNL	The Mobile Broadband Network
MOD	Ministry of Defence
MW	Megawatts
NATS	National Air Traffic Services
NCN	National Cycle Network
NFM	Natural Flood Management
NHZ	Natural Heritage Zone
NMU	Non-Motorised User
NNR	National Nature Reserve
NPF4	National Planning Framework for Scotland 4
NSA	National Scenic Area
NVC	National Vegetation Classification
oBEMP	outline Biodiversity Enhancement Management Plan
oBPA	outline Borrow Pit Assessment
oCEMP	outline Construction Environmental Management Plan

ACRONYMS AND ABREVIATIONS	
OPEX	Operational Expenditure
oPMP	outline Peat Management Plan
OS	Ordnance Survey
OWPS	Onshore Wind Policy Statement
PAC	Pre-application Consultation
PLHRA	Peat Landslide Hazard and Risk Assessment
PPP	Pollution Prevention Plan
PRW	Public Right of Way
PWS	Private Water Supply
RIGS	Regionally Important Geological/geomorphological Sites
RSA	Regional Scenic Area
RSPB	Royal Society for the Protection of Birds
RTC	Road Traffic Collision
RVAA	Residential Visual Amenity Assessment
S36	Section 36
SBC	Scottish Borders Council
SBL	Scottish Biodiversity List
SEPA	Scottish Environment Protection Agency
SES	Socio-Economic Statement
SIP	Spectrum Information Portal
SLA	Special Landscape Area
SPA	Special Protection Area
SPEN	Scottish Power Energy Networks
SSSI	Site of Special Scientific Interest

ACRONYMS AND ABREVIATIONS	
SuDS	Sustainable Drainage Systems
TWIC	The Wildlife Information Centre for Lothian and the Borders
UXO	Unexploded Ordnance
VP	View Point
WFD	Water Framework Directive
WHO	World Health Organization
WLA	Wild Land Area
ZoI	Zone of Influence
ZTV	Zone of Theoretical Visibility

1. INTRODUCTION

Low Carbon UK Wind Development Company Limited (hereafter referred to as "Low Carbon" or the "Developer") proposes to develop a wind farm expected to comprise up to 18 wind turbines with a maximum tip height of 220 metres (m), and associated infrastructure. The proposed Hartsgarth Wind Farm (the "Proposed Development") will be located on land (the Site) on the eastern edge of Langholm Moor, to the north of Newcastleton village in Liddesdale The location of the Proposed Development is shown on Figure 1.1.

As the Proposed Development is anticipated to have an installed capacity in excess of 50 megawatts (MW), an application for consent will be submitted to the Scottish Government's Energy Consents Unit (ECU) to be determined by Scottish Ministers under Section 36 (S36) of the Electricity Act 1989, as well as under Section 72 (2) of the Town and Country Planning (Scotland) Act 1997.

This Scoping Report ("the Report") has been prepared by Environmental Resources Management Ltd. (ERM), with additional technical input from David Bell Planning, Pager Power, Pegasus Group, and SLR Consulting on behalf of the Developer.

The project team are competent experts with extensive experience in undertaking Environmental Impact Assessment ("EIA") work for renewable energy developments across the UK, and meeting the terms of Regulation 5(5) of the EIA Regulations.

The Report forms the Developer's written request to Scottish Ministers, under Regulation 12 of the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 as amended[1] ("the EIA Regulations"), for its opinion (i.e. "Scoping Opinion") as to the information to be provided in the Environmental Impact Assessment Report ("EIA Report")

1.1. PLANNING BACKGROUND

The Scottish Borders Council (SBC) and Energy Consents Unit (ECU) online portals have been examined, and no previous developments have been proposed on, or within the immediate vicinity of the Site. A pre-application meeting with SBC was held on the 22nd of February 2024.

1.2. THE APPLICANT

The Developer is a subsidiary of Low Carbon Limited ('Low Carbon'), a UK headquartered renewable energy company founded in 2011, developing, financing, constructing and operating renewable energy assets. It has operations in principally in the UK and Europe.

To date, Low Carbon has deployed more than £1 billion in capital into renewable infrastructure with more than 8 Gigawatts (GW) already developed. Its proprietary renewable energy pipeline currently stands at more than 16 GW, ideally positioning it to capitalise on investment opportunities as the need for green power and energy security increases.

Assets managed by Low Carbon are making a key contribution in the fight against climate change and produced more than 131 Gigawatt-hours (GWh) of renewable energy capacity globally in 2024. This is the equivalent of powering nearly 50,000 homes annually.

Low Carbon has a dedicated onshore wind team, based in Scotland, which has an established track record and a growing pipeline of commercial scale onshore wind projects currently in development. Earlier this year, Low Carbon submitted S36 planning applications for two Scottish onshore wind projects, Glen Lednock

[1] *Scottish Government (2017) The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017. [Online] Available at: http://www.legislation.gov.uk/ssi/2017/101/contents/made (Accessed 02/10/2025)*

Wind Farm and High Brenfield Wind Farm, which if built, will deliver 180 MW of renewable power to the UK grid.

Low Carbon is a long-standing certified B-Corporation and has been recognised as Best for World for their environmental impact placing them in the top 5% of B Corp globally. Being a B Corp means meeting the highest verified standards of social and environmental performance, transparency, and accountability.

Low Carbon has championed biodiversity as a critical milestone on the journey towards a low-carbon future since the commissioning of its first solar energy park in 2011 and has the ambition to include a comprehensive land and biodiversity management programme within every application for Proposed Development, aligned to the unique conditions and circumstances of each site.

1.3. ABOUT THE LANDOWNER

Oxygen Conservation is a business set up to Scale Conservation: raising private finance to acquire land and invest in the protection and restoration of the UK's natural capital assets.

Oxygen Conservation was founded to tackle the climate crisis and biodiversity collapse. Their goal is to protect and restore 250,000 acres of land by 2030 and demonstrate that people and business can live and work alongside nature. They are working to redefine what is possible in conservation and in business, delivering positive environmental and social impact first and generating a financial return as a result not as the purpose of what they do.

Each site that Oxygen Conservation own and manage is beautifully unique. The team set targets for delivering environmental and social impact that are bespoke to each landscape; working to deliver these targets through restoring natural processes, protecting biodiversity, and creating new homes and jobs. This produces a range of natural capital products and services, which generates a financial return as a result and is invested back into that very land to deliver environmental and social impact at an even greater scale.

1.4. DEFINITION OF AN EIA

An Environmental Impact Assessment (EIA) is a process aimed to ensure that permissions for particular types of developments are granted only after assessment of the likely significant environmental effects has been undertaken. The assessment must be carried out following consultation with statutory consultees, other interested bodies, and members of the public.

The EIA process follows several stages broadly in line with the following:

- Site selection and feasibility;
- Screening – to determine if an EIA is required (unless an Applicant volunteers an EIA);
- Pre-application consultation with statutory and non-statutory consultees;
- Scoping – to identify the parameters of the assessment issues on which the EIA should focus;
- Baseline studies – to establish the current environmental conditions at the Site;
- Identification of potential environmental effects, including cumulative effects;
- Mitigation to avoid or reduce the effects through iterative design process;
- Assessment of residual effects;
- Preparation of an EIA Report;
- Submission of an EIA Report;
- Consideration of application and environmental information by the Scottish Government (Scottish Ministers), the host local authority and other consultees;
- Determination of application; and
- Implementation and monitoring.

The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (the EIA Regulations) require that an EIA Report should include a range of information including: a description of the

development, a description of reasonable alternatives, baseline information, a description of the likely significant effects of the development, and mitigation measures amongst other factors.

1.5. REQUIREMENT FOR AN EIA AND SCOPING

The determination of whether a development is considered to be “an EIA development”, that is, a development for which submission of an EIA Report is required, is carried out during the screening process.

The Proposed Development falls within Category 1(1) of Schedule 2 of The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017[2] , which refers to a ‘generating station’. As the Proposed Development is listed as a Schedule 2 Development, Schedule 3 of the EIA Regulations is therefore applicable in determining the selection criteria for development which requires an EIA to be undertaken.

Best practice guidance requires that an EIA Report must be proportionate. To this end, the scoping process is undertaken in order to identify the key environmental issues related to the Proposed Development, and to define the methodologies to be used in the subsequent EIA. This process involves consultation with the determining authority, and other key statutory and non-statutory stakeholders.

1.6. PURPOSE OF THIS SCOPING REPORT

The objective of the Report is to present an initial overview of potential environmental receptors within the Site and to determine the likelihood of significant effects on these receptors caused by the Proposed Development. This allows statutory consultees to provide an informed opinion of the Proposed Development as well as provide advice and suggestions for the methodology of assessments included in, and the structure of, the EIA Report.

Where the Developer is proposing to ‘scope out’ particular elements of the EIA, sufficient information and justification has been provided within this Report.

The Report also contains a number of questions for which it would be useful to receive feedback from statutory consultees, where appropriate. Please note this is not an exhaustive list and we would welcome feedback on any issues considered to be relevant to the Proposed Development. A summary of all questions raised in the Report is also provided as Appendix A.

The Report was authored by ERM with the exception of Chapters 4, 6, 8 and 16, which were produced either wholly by, or in collaboration with other consultants, as presented in brackets below.

The Report is structured as follows:

- Chapter 1: Introduction;
- Chapter 2: Description of the Proposed Development;
- Chapter 3: EIA Methodology;
- Chapter 4: Planning and Energy Policy (David Bell Planning);
- Chapter 5: Landscape and Visual Impact (Pegasus Group);
- Chapter 6: Cultural Heritage and Archaeology;
- Chapter 7: Ornithology (SLR Consulting);
- Chapter 8: Ecology and Nature Conservation;
- Chapter 9: Geology, Peat and Soils
- Chapter 10: Hydrology and Hydrogeology;
- Chapter 11: Access, Traffic and Transport;

[2] *Scottish Government (2017) The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017. [Online] Available at: https://www.legislation.gov.uk/ssi/2017/101/contents (Accessed 03/10/2025)*

- Chapter 12: Noise;
- Chapter 13: Climate Change and Carbon Balance;
- Chapter 14: Socio-Economics, Tourism and Recreation;
- Chapter 15: Other Issues:
    - Telecommunications and Utilities (Pager Power);
    - Aviation (Page Power);
    - Shadow Flicker;
    - Human Health;
    - Major Accidents and Disasters; and,
    - Intra-Cumulative Effects;
- Chapter 16: Conclusions;
- Appendix A: Summary of Questions for Consultees;
- Appendix B: Cultural Heritage Baseline; and,
- Appendix C: Figures.

2. DESCRIPTION OF THE PROPOSED DEVELOPMENT

The Proposed Development comprises up to 18 wind turbines with a maximum tip height of 220m, and associated infrastructure. Underground power cables which would link the turbines and the on-site substation will be laid in trenches alongside access tracks. A grid connection application has not yet been applied for by the Developer, however initial discussions with the transmission system operator suggest that the new Teviot substation is the most likely point of connection. The grid connection between the on-site substation and the transmission substation will be subject to a separate application under Section 37 of the Electricity Act 1989 by Scottish Power Energy Networks (SPEN) and therefore the environmental effects shall not be assessed as part of the subsequent EIA for the Proposed Development.

2.1. NEED FOR THE PROPOSED DEVELOPMENT

In order to meet the Scottish Government's target to achieve net zero by 2045, a rapid shift to increase renewable energy generation is required. The Proposed Development would therefore provide a substantial contribution towards this goal, through the Proposed Development's generating capacity being in excess of 50 MW.

2.2. PROPOSED DEVELOPMENT LOCATION

The Site is located at British National Grid (BNG) reference 48431 92796, within the Southern Uplands, a region of hills and valleys, with scattered settlements in the valley floors. The closest village to the Site is Newcastleton approximately 2.2 km to the south. The Site is located wholly within the Scottish Borders Council administrative area, and is also wholly contained within the Blackburn and Hartsgarth Estate.

Blackburn and Hartsgarth Estate is managed by Oxygen Conservation. Low Carbon and Oxygen Conservation are both part of the wider Oxygen House group, a mix of established companies and start-ups that are scaling impact to deliver change. Oxygen Conservation's vision for the estate is to achieve positive environmental and social impact through a diverse range of activities including nature conservation and habitat restoration, organic food production, sustainable property development, ecotourism, and renewable energy generation. Within the Blackburn and Hartsgarth Estate, Low Carbon have identified an area suitable for wind farm development. The Site boundaries of the Proposed Development are shown on Figure 1.1.The Site predominantly situated on an open moorland mid-upland plateau, which has historically been managed as agricultural land and grouse moorland. The Site is crossed by several small valleys and watercourses. Topographically, the Site rises in height from east to west, with its lowest point of approx. 149m Above Ordinance Datum (AOD) in its south-eastern corner, and highest point of 328 m AOD in the northwest.

2.3. KEY COMPONENTS OF THE PROPOSED DEVELOPMENT

The Proposed Development layout is shown in Figure 2.1. The key components of the Proposed Development will include:

- Up to 18 no. turbines;
- Battery Energy Storage System (BESS) Containers;
- On-site substation and underground cabling;
- Access tracks and hardstandings;
- A temporary construction compound and a number of laydown areas;
- A permanent power performance anemometry mast; and,
- On-site borrow pit(s)

2.3.1. Turbines

The proposed locations for the turbines are shown in Figure 2.1. The final location of the turbines submitted with the application for S36 consent will be subject to a micro-siting allowance of up to 100m to allow for mitigation by design following detailed ground investigation and pre-construction environmental surveys.

The candidate turbine will not be confirmed until a later date, however for the purpose of the assessment, the "worst case" turbine will be used. This will have a maximum height to tip of 220m. As the proposed turbine heights are in excess of 149.9m, aviation lighting will likely be required, the design of which will be proposed and assessed in the EIA Report.

The layout of the Proposed Development will be subject to environmental, commercial, and technical constraints identified through the EIA process. Indicative turbine locations are presented in Table 2.1

Table 2.1: Proposed Turbine Locations

TURBINE NUMBER	TURBINE LOCATION (BRITISH NATIONAL GRID)	
	Easting	Northing
1	348003	594465
2	348525	594402
3	349113	594499
4	349578	594330
5	347662	593841
6	348649	593910
7	349447	593767
8	347959	593473
9	348828	593461
10	347793	592754
11	348375	592773
12	348208	592200
13	348580	591913
14	347914	591559
15	348408	591275
16	347551	590935
17	348064	590796
18	348514	590669

2.3.2. Battery Energy Storage System

A BESS facility will be considered as part of the Proposed Development; such systems are designed to complement renewable energy generation. The BESS facility will be composed of containerised battery storage units.

2.3.3. Access

There will be a requirement for new permanent tracks to be installed for the construction and operation of the Proposed Development, with existing tracks utilised where possible. The location of existing and new tracks will be submitted with the application for S36 consent and be subject to a micro-siting allowance of up to 100m. This is to allow for mitigation by design following detailed ground investigation, and pre-construction environmental surveys.

Where possible, to reduce the requirement for new field entrances and new access track creation, existing access points and tracks within the Site will utilise existing field entrances and trackways, although widening works will be required at these existing locations.

2.3.4. Electrical Infrastructure

An on-site substation will be constructed as part of the Proposed Development. Underground power cables linking the turbines and the on-site substation will be laid in trenches alongside access tracks.

2.3.5. Temporary Construction Compound

A temporary construction compound and a number of laydown areas will be required during the construction of the Proposed Development. These will be formed of an area of hardstanding providing space for portacabins, parking, laydown areas, and potentially concrete batching.

2.3.6. Anemometry Mast

A power performance anemometry mast will be required for the lifespan of the Proposed Development, which will be of a height similar to the hub height of the proposed wind turbines.

2.3.7. Borrow Pits

If suitable material is available, on-site borrow pits may be utilised to source aggregate for the construction of on-site access tracks, crane hardstanding areas, BESS and substation compound and concrete batching areas. Sourcing aggregate from within the Site, where possible, rather than an off-site quarry, has the advantage of reducing the number of Heavy Goods Vehicles (HGVs) on the public road network.

Following construction, the borrow pits will be restored. The restoration will include the reuse of soil and turf materials from the construction works to restore the slopes to a stable profile and allow regeneration.

2.3.8. Grid Connection

The grid connection to the electricity network falls under a separate consent process and, if required, will be subject to a separate environmental appraisal and associated consent application. As such, the grid connection will not be assessed as part of the EIA for the Proposed Development.

2.3.9. Development Phases

It is expected that the construction phase of the Proposed Development would take approximately 18 months, depending on the final design. This period is weather dependent and could be affected by on-site conditions.

It is proposed that the operational phase of the Proposed Development will be for a period of 40 years, following which the Proposed Development will be decommissioned or a new consent would be sought to extend the life of the Proposed Development or to repower the Proposed Development.

3. EIA METHODOLOGY

3.1. INTRODUCTION

The following section of this Scoping Report, sets out the proposed structure and general methodological approach to the EIA.

3.2. CONSULTATION

3.2.1. General Approach

Stakeholder consultation is crucial to the EIA process and will occur at all stages. Consultation ensures that regulators and public are kept informed with developments relating to the project and can also make the Developer aware of potential additional constraints to ensure the Proposed Development is designed in such a way that it minimizes its environmental impact, and is sensitive to the local community. Responses will be gathered from statutory, non-statutory, and public consultees as part of this Scoping Report and following submission of the EIA Report.

A Pre-application Consultation (PAC) Report summarising the consultation and responses will accompany the S36 application.

3.2.2. Consultation – Statutory Consultees

Consultation will be undertaken with statutory and non-statutory consultees including but not limited to:

- ECU;
- Scottish Borders Council (SBC);
- NatureScot;
- Scottish Environment Protection Agency (SEPA);
- Scottish Water; and
- Historic Environment Scotland (HES).

3.2.3. Consultation – PUBLIC

The public will also be consulted at two public exhibition events prior to the S36 consent application being submitted, and these will be advertised in the local newspapers in advance. These events will provide an opportunity for the local community to learn about the Proposed Development, as there will be information boards, maps and visualisations on display and to provide feedback on the proposals. Where feedback is received, this will be taken into consideration in the design and assessment of the Proposed Development, where appropriate.

3.3. EIA REPORT STRCTURE AND ASSESSMENT

3.3.1. Requirement for EIA

EIA is an iterative process aimed at minimising potential effects of the Proposed Development through design refinement during all phases, from construction, operation and decommissioning. Any potential effects would be mitigated using the mitigation hierarchy to first avoid adverse impacts; then minimise impacts that cannot be avoided; and lastly offset, or compensate for, unavoidable impacts.

Schedule 2 of the EIA Regulations lists developments for which an EIA may be required, including for certain types of development where there are likely to be significant effects on the environment by virtue of factors such as the nature, size or location of the development proposed.

The Proposed Development falls within Category 1(1) of Schedule 2 of The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 , which refers to a ‘generating station’. As the Proposed

Development is listed as a Schedule 2 Development, Schedule 3 of the EIA Regulations is therefore applicable in determining the selection criteria for development which requires an EIA to be undertaken.

Following consideration of the characteristics of the Proposed Development, the location of the Site, and the characteristics of the potential impacts, as outlined within Schedule 3 of the EIA Regulations, the Developer recognizes that this is a development which requires an EIA to be undertaken.

3.3.2. Approach to Scoping

The aim of the Scoping process is to identify potential environmental impacts at an early stage, to determine which elements of the Proposed Development are likely to result in significant effects on the receiving environment (including human receptors), and to establish the extent of baseline surveys and assessment required for the EIA. Scoping has an important role to play in achieving proportionate and effective EIA.

This Report therefore provides details of the technical areas which will be considered through the EIA process and included within the EIA Report to meet the information requirements as set out in Schedule 4 of the EIA Regulations.

3.3.3. Approach to EIA

EIA is an iterative process aimed at identifying and assessing potentially significant effects arising as a result of a proposed development. Any likely effects identified will be used to inform and refine the design of the Proposed Development. Where likely significant adverse effects are identified that cannot be avoided through embedded mitigation, suitable mitigation measures to reduce, offset or compensate likely significant effects will be proposed. Schedule 4 of the EIA Regulations details the information required to be included within the EIA Report and states:

> "*3. A description of the relevant aspects of the current state of the environment (the "baseline scenario") and an outline of the likely evolution thereof without implementation of the project as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of relevant information and scientific knowledge.*
>
> *4. A description of the factors specified in regulation 4(3) likely to be significantly affected by the development: population, human health, biodiversity (for example fauna and flora), land (for example land take), soil (for example organic matter, erosion, compaction, sealing), water (for example hydromorphological changes, quantity and quality), air, climate (for example greenhouse gas emissions, impacts relevant to adaptation), material assets, cultural heritage, including architectural and archaeological aspects, and landscape.*"

3.3.4. Baseline Data Collection

In order to evaluate the potential environmental effects, the existing environmental conditions will be recorded through field and desktop research. Prior to the fieldwork studies, desktop studies will be undertaken to gain a preliminary understanding of the study area. Where appropriate and required, site-specific baseline field surveys will be undertaken by experienced professionals to provide an understanding of the current condition of the Site and the surrounding area.

The results of these investigations will form the baseline, alongside a prediction of these conditions into the future. Such predictions can involve a high number of variables and be subject to large uncertainties, and as a result, in some cases, the current baseline condition is assumed to remain unchanged throughout the timeframe of the Proposed Development.

The baseline will be used to assess the sensitivity of receptors within the study areas defined for each individual technical discipline.

The approach to describing baseline conditions is set out in each relevant technical chapter. Baseline information is used to inform the layout of the Proposed Development.

3.3.5. Assessment of Impacts and Effects

In order to assess the potential effects arising from the Proposed Development, the significance of such effects will be determined, in accordance with the EIA Regulations. The determination of significance relates to the sensitivity of the resource or receptor being affected and the magnitude of impact. The assessment of effects will combine professional judgement together with consideration of the following:

- The sensitivity of the resource or receptor under consideration;
- The magnitude of the potential impact in relation to the degree of change which occurs as a result of the Proposed Development;
- The type of effect (i.e., adverse, beneficial or neutral);
- The probability of the effect occurring (i.e., certain, likely or unlikely); and,
- Whether the effect is temporary, permanent and/or reversible.

Each individual technical area will have a specific assessment methodology and will be described in the EIA Report. The assessment methodologies used within the EIA Report will be in line with the standards and guidance detailed in each technical chapter.

3.3.6. Mitigation and Enhancement

Where the EIA identifies likely significant adverse environmental effects, mitigation measures will be proposed. These mitigation measures may be embedded in the design of the Proposed Development or be additional. Such embedded mitigation measures would likely include the micro-siting (up to 100m limit of deviation for turbines and up to 100 m limit of deviation for access tracks are proposed) or infrastructure layout refinement through the design process, and/or management and operational measures.

In addition, enhancement measures may be incorporated into the design of the Proposed Development to maximise environmental and social benefits.

3.3.7. Assessment of Residual Effects

Taking into account the suggested mitigation and enhancement measures, the predicted effects will be re-assessed to determine whether any significant residual effects remain.

3.3.8. Assessment of Cumulative Effects

In accordance with the EIA Regulations, this EIA will also give consideration to ‘cumulative effects’. These are effects that result from incremental changes caused by past, present or reasonably foreseeable future actions together with the Proposed Development. For cumulative assessment, two types of effects will be considered:

- Intra-cumulative: The combined impact of individual effects from the same development (e.g., noise, airborne dust or traffic) on a single receptor; and,
- Inter-cumulative: The combined impact from the effects of several developments that may on an individual basis be insignificant but cumulatively may be significant.

In line with good practice, the methodology to be adopted for assessing the cumulative effects of wind energy developments will be in accordance with advice from NatureScot[3], and the Scottish Government [4, 5].

The extent of any cumulative assessment relative to each technical assessment will be agreed during the consultation process and can include both existing and proposed wind farm developments, as well as other forms of development.

At time of writing, it is known that there are other wind farms in operation, planning or that have been approved by SBC located within 10km of the Site. These developments are shown in Table 3.1.

Table 3.1: Cumulative Developments within 10 km.

Wind Farm Name	Status	Distance from Hartsgarth Wind Farm
Windy Edge (Revised)	Scoping	<5 km
Liddesdale Wind Farm	Scoping	< 5 km
Cliffhope Wind Farm	Scoping	< 10 km
Teviot Wind Fam	In Planning	< 10 km

3.3.9. Proposed Monitoring

As a result of the outcomes of some assessments, programmes of monitoring may be required to be implemented where required to measure the efficacy of mitigation measures proposed. All monitoring proposals will be detailed within the EIA Report.

3.3.10. Structure and Content of the EIA Report

The content of the EIA Report will broadly follow the specifications detailed within Schedule 4 of the EIA Regulations. The EIA Report will consist of four volumes as follows:

- Volume 1 – Non-Technical Summary;
- Volume 2 – EIA Report Text;
    - Chapter 1: Introduction;
    - Chapter 2: Development Description;
    - Chapter 3: Site Selection and Design Evolution;
    - Chapter 4: EIA Methodology;
    - Chapter 5: Planning and Energy Policy;
    - Chapter 6: Landscape and Visual Impact;

[3] NatureScot (2021) Assessing the cumulative landscape and visual impact of onshore wind energy developments [Online] Available at: https://www.nature.scot/doc/guidance-assessing-cumulative-landscape-and-visual-impact-onshore-wind-energy-developments (Accessed 03/10/2025)
[4] Scottish Government (2020) Scottish Planning Policy [Online] Available at: https://www.gov.scot/publications/scottish-planning-policy/pages/2/ (Accessed 03/10/2025)
[5] Scottish Government (2021) Environmental assessment [Online] Available at: https://www.gov.scot/policies/environmental-assessment/ (Accessed 03/10/2025)

- Chapter 7: Cultural Heritage and Archaeology;
- Chapter 8: Ornithology;
- Chapter 9: Ecology and Nature Conservation;
- Chapter 10: Geology, Peat and Soils
- Chapter 11: Hydrology and Hydrogeology;
- Chapter 12: Access, Traffic and Transport;
- Chapter 13: Noise;
- Chapter 14: Climate Change and Carbon Balance;
- Chapter 15: Socio-Economics, Tourism and Recreation;
- Chapter 16: Other Issues;
- Chapter 17: Summary of Residual Effects; and
- Chapter 18: Schedule of Mitigation.

- Volume 3a – Figures Excluding LVIA;
- Volume 3b – LVIA Figures;
- Volume 3c – Visualisations; and,
- Volume 4 – Technical Appendices.

The technical chapters of the EIA Report will present baseline conditions, details of the assessments undertaken, including any cumulative effects, required mitigation and residual effects, and will be supported by a Planning Statement, Pre-Application Consultation (PAC) Report and a Design and Access Statement (DAS).

A Biodiversity Enhancement Management Plan will be produced as part of the proposed development application which will outline habitat restoration and enhancement measures. Oxygen Conservation has developed a masterplan for the whole of the Blackburn and Hartsgarth Estate which involves large scale restoration of the natural environment through extensive native woodland creation and peatland restoration. The proposed wind farm will be integrated into this plan, with any environmental enhancement measures created through the development being tied into ongoing plans to deliver lasting environmental improvements across the Estate.

3.4. SCOPING QUESTIONS

Questions for all consultees are:

- Q3.1 - Do consultees agree with the general strategy for assessing environmental effects?
- Q3.2 - Can the consultees provide any further information on developments that they think should be included in the cumulative assessment?

4. PLANNING AND ENERGY POLICY

4.1. INTRODUCTION

This section describes the statutory framework within which the application will be submitted and outlines relevant policy and guidance documents that will be taken into consideration to help inform the design of the Proposed Development.

The EIA Report will set out the relevant policies that have been considered as part of the assessments undertaken throughout the EIA. A separate Planning Statement will provide a detailed appraisal of the Proposed Development against the relevant Development Plan policies, national planning and energy policy and other material considerations.

4.2. PLANNING POLICY AND GUIDANCE

The Proposed Development will have an installed capacity of over 50 MW. In Scotland, onshore renewable energy developments that have capacity to generate over 50 MW require consent from the Scottish Ministers under the Electricity Act 1989 (the 'Electricity Act'). In such cases the Planning Authority is a statutory consultee in the development management process and procedures.

In an application under S36 of the Electricity Act the Development Plan does not have primacy in the decision-making process.

The provisions of Schedule 9 of the Electricity Act are relevant to the assessment of the Proposed Development. The provisions of Schedule 9 of the Electricity Act set out a number of features to which regard must be had by the Scottish Ministers or a License Holder and such features will be addressed in the EIA process.

The Scottish Ministers will determine the application having regard to the statutory duties in Schedule 9 of the Electricity Act, so far as relevant, and any other relevant material considerations, one of which will be relevant aspects of the statutory Development Plan

4.3. CLIMATE CHANGE AND ENERGY POLICY

In recent years UK and Scottish Government policies have focused increasingly on concerns about climate change and the nature crisis. Each tier of Government has developed targets, policies and actions to achieve targets to deal with the climate and nature crises, to achieve emission reductions and to generate more renewable energy and electricity.

The UK Government retains responsibility for the overall direction of energy policy, although some elements are devolved to the Scottish Government. The UK Government has published a series of policy documents setting out how targets can be achieved. Onshore wind generation, located in Scotland, is identified as an important technology to achieve these various goals.

The following UK legislation and policy related documents are relevant to the Proposed Development:

- The Climate Change Act 2008;
- The UK Energy White Paper (December 2020);
- The British Energy Security Strategy (April 2022);
- Powering Up Britain: Energy Security Plan (2023); and
- The Clean Power 2030 Action Plan (2024).

The following Scottish legislation and policy related documents are relevant to the Proposed Development:

- The Climate Change (Emissions Reduction Targets) (Scotland) Act 2019;
- The Scottish Energy Strategy (2017);
- The Onshore Wind Policy Statement (2022);

- The Onshore Wind Sector Deal (2023);
- The Draft Energy Strategy and Just Transition Plan (2023); and
- The Green Industrial Strategy (2024).

4.4. PLANNING POLICY AND GUIDANCE

The LDP applicable to the Site comprises the following, and alongside NPF4 represents the Development Plan:

- Scottish Borders Local Development Plan 2 (LDP2) (2024); and

Relevant Supplementary Guidance:

- Landscape and Development (2008);
- Local Biodiversity Action Plan (2018);
- Local Landscape Designations (2012);
- Renewable Energy Supplementary Guidance (2018);
- Sustainable Urban Drainage Systems (2020); and
- Trees and Development (2020).

Relevant Supplementary Planning Guidance:

- Update of Wind Energy Landscape Capacity and Cumulative Impact Study (November 2016).

The Scottish Borders Local Development Plan (LDP2) was adopted on 22nd August 2024. LDP2 comprises the policies that will guide future development under Volume One, and the settlement profiles under Volume Two. LDP2 states that the plan promotes net zero greenhouse gas emissions by 2045.

The following policies are considered most relevant and will be considered as part of the EIA process:

- Policy PMD1 – Sustainability;
- Policy MPD2 Quality Standards;
- Policy ED9 – Renewable Energy Development;
- Policy ED10 – Protection of Carbon Rich Soil;
- Policy HD3 – Protection of Residential Amenity;
- Policy EP1 – International Nature Conservation Sites and Protected Species;
- Policy EP2 – National Nature Conservation Sites and Protected Species;
- Policy EP3 – Local Biodiversity and Geodiversity;
- Policy EP4 – National Scenic Areas;
- Policy EP5 – Special Landscape Areas:
- Policy EP7 – Listed Buildings;
- Policy EP8 – Historic Environment Assets and Scheduled Monuments;
- Policy EP9 – Conservation Areas;
- Policy EP13 – Trees, Woodlands and Hedgerows;
- Policy EP15 – Development Affecting the Water Environment;
- Policy IS5 – Protection of Access Routes;
- Policy IS8 – Flooding; and
- Policy IS9 – Waste Water Treatment Standards and Sustainable Urban Drainage

4.5. CONSULTATION AND SCOPING QUESTIONS

- Q.4.1 – Do Consultees agree with the choice of planning Legislation, Policy and Guidance presented in the preceding section?
- Q4.2 – Are there any additional legislation, policies or supplementary guidance which should be considered in the EIA process?

5. LANDSCAPE AND VISUAL IMPACT

5.1. INTRODUCTION

Scotland's Landscape Alliance published the updated version of Scotland's Landscape Charter in July 2025[6] . The updated charter reflects the increasing dependence and high value that continues to be placed on landscape in Scotland. It demonstrates a commitment to sensitively managing the landscape change needed in line with the principles of the European Landscape Convention (ELC) to continue to shape our future landscape ambitions through collaborative action.

It recognises the beauty and diversity of Scotland's landscapes and the critical contribution landscapes make to our lives and the action required to maximise the many benefits they bring. It also recognises that they have a key role to play in meeting the challenges of climate change as we strive to reduce our harmful emissions, generate clean energy, retain stored carbon and focus on creating strong, resilient communities.

Scotland's Landscape Charter sets out that Scotland is a signatory through the UK Government of the ELC, a key principle of which is that all landscapes matter and should be managed appropriately. It is also acknowledged that landscapes provide the surroundings for people's daily lives and often contribute positively to the quality of life and economic performance of an area.

Therefore, a Landscape and Visual Impact Assessment (LVIA) will be undertaken as part of the EIA and an LVIA Chapter will be included in the EIA Report. The LVIA will be guided by the Guidelines for Landscape and Visual Assessment Third Edition (GLVIA3)[7] and will be undertaken by Chartered Landscape Architects experienced in the assessment of large-scale, onshore wind energy projects and who are familiar with the landscape in the vicinity of the Site.

It is proposed that the LVIA will consider the potential effects of the proposed development upon:

- Individual landscape features and elements;
- Landscape character; and
- Visual amenity and the people who view the landscape.

This Chapter discusses the likely significant effects of the Proposed Development on the landscape and visual resource of the Site and the surrounding area. These are defined respectively within paragraph 3.21 of GLVIA3 as "the constituent elements of the landscape, its specific aesthetic or perceptual qualities and the character of the landscape", and "the people who will be affected by changes in views or visual amenity at different places".

5.2. LEGISLATION, POLICY & GUIDANCE

Relevant legislation, planning policy and guidance documents have been reviewed and will be taken into account as part of the LVIA.

[6] *Scotland Landscape Alliance. Scotland's Landscape Charter. July 2025. Available at: https://www.scotlandslandscapealliance.org/wp-content/uploads/2025/06/Scotlands-Landscape-Charter-June-2025.pdf*

[7] *Landscape Institute and the Institute for Environmental Management and Assessment (2013). The Guidelines for Landscape and Visual Impact Assessment, 3rd Edition (GLVIA3). Routledge.*

5.2.1. European Landscape Convention, Adopted 2000

The ELC is the first international convention to focus specifically on the landscape as a resource in its own right. The convention promotes landscape protection, management and planning, as well as European co-operation on landscape issues.

Signed by the UK Government in February 2006, the ELC became binding from March 2007. It applies to all landscapes, towns and villages, as well as open countryside; the coast and inland areas; and ordinary or even degraded landscapes, as well as those that are afforded protection.

The UK Government has stated that it considers the UK to be compliant with the ELC's requirements and in effect the principal requirements of the ELC are already enshrined in the existing suite of national policies and guidance on the assessment of landscape and visual effects.

The ELC defines landscape as:

"An area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors" (Council of Europe (2000))

It is important to recognise that the ELC does not require the preservation of all landscapes although landscape protection is one of the core themes of the convention. Equally important though is the requirement to manage and plan future landscape change.

The ELC highlights the importance of developing landscape policies dedicated to the protection, management and planning of landscapes. In this regard, NatureScot has a suite of landscape character assessment and landscape sensitivity studies which enables decisions to be made with due regard to landscape character as promoted by the ELC.

5.2.2. PLANNING POLICY

The following currently adopted planning policy documents were reviewed in the preparation of this scoping chapter and will inform the LVIA:

- National Planning Framework for Scotland 4 (NPF4) (2023)[8] ;
- Onshore Wind Policy Statement (OWPS) (2022)[9] ;
- Planning Advice Note 60. Planning for Natural Heritage (2000)[10] ; and
- Scottish Borders Council Adopted Local Development Plan 2 (LDP2) (2024) and relevant Supplementary Planning Guidance[11] .

There are a number of policies of particular relevance to landscape and visual matters. In particular, these include Policy 11 of NPF4 and specifically section e) which states that, "In addition, project design and mitigation will demonstrate how the following impacts are addressed:"

The policy states at e) ii:

[8] *The Scottish Government (February 2023). National Planning Policy Framework 4. Available at: https://www.gov.scot/publications/national-planning-framework-4/*
[9] *The Scottish Government (December 2022). Onshore wind: policy statement 2022. Available at: https://www.gov.scot/publications/onshore-wind-policy-statement-2022/*
[10] *The Scottish Government (January 2000). Planning Advice Note 60: Planning for Natural Heritage. Available at: https://www.gov.scot/publications/pan-60-natural-heritage/*
[11] *Scottish Borders Council (March 2024). Adopted Local Development Plan 2. Available at: https://www.scotborders.gov.uk/plans-guidance/local-development-plan*

"*significant landscape and visual impacts, recognising that such impacts are to be expected for some forms of renewable energy. Where impacts are localised and/or appropriate design mitigation has been applied, they will generally be considered to be acceptable*;"

Whilst there is no definition of 'localised' set out in NPF4, it is considered that localised may relate to not just the distance to which significant effects would occur, but also the type of landscape, the scale of the Proposed Development and the number of receptors who may be impacted by significant effects.

The OWPS states at paragraph 3.6.1 that:

"*Meeting the ambition of a minimum installed capacity of 20 GW of onshore wind in Scotland by 2030 will require taller and more efficient turbines. This will change the landscape.*" (emphasis from the OWPS)

It goes on to reaffirm at paragraph 3.6.3 that NPF4 (in draft at the time the OWPS was published, although the following policy was adopted) states:

"that significant landscape and visual impacts are to be expected for some forms of renewable energy, and makes clear that where impacts are localised and/or appropriate design mitigation has been applied, they will generally be considered to be acceptable."

The Proposed Development is located within the administrative area of Scottish Borders Council. As such, the LVIA will have regard to the Scottish Borders Council Adopted Local Development Plan 2 (SBCLDP2), and in particular to the following policies:

- Policy ED9: Renewable Energy;
- Policy EP4: National Scenic Areas;
- Policy EP5: Special Landscape Areas; and
- Policy EP10: Gardens and Designed Landscapes.

However, the appraisal of the Proposed Development against relevant planning policies will be covered in the Planning Statement.

5.2.3. GUIDANCE

The LVIA will be undertaken in accordance with the Guidelines for Landscape and Visual Impact Assessment Third Edition and with reference to the following documents:

- Landscape Institute (2024). Notes and Clarifications on Aspects of Guidelines for Landscape and Visual Impact Assessment Third Edition (GLVIA3)[12] ;
- NatureScot (2024). General pre-application advice and scoping advice for onshore wind farms[13] ;
- NatureScot (2017). Siting and Designing of Windfarms in the Landscape: Version 3a[14] ;
- NatureScot (2017). Visual Representation of Wind Farms. Version 2.2[15] ;

[12] *Landscape Institute (August 2024). Technical Guidance Note LITGN-2024-01. Notes and Clarifications on Aspects of Guidelines for Landscape and Visual Impact Assessment Third Edition (GLVIA3). Available at: https://www.landscapeinstitute.org/wp-content/uploads/2024/08/LITGN-2024-01-GLVIA3-NC_Aug-2024.pdf*

[13] *NatureScot (November 2024). General pre-application advice and scoping advice for onshore wind farms. Available at: https://www.nature.scot/doc/general-pre-application-and-scoping-advice-onshore-wind-farms*

[14] *NatureScot (2017). Siting and Designing Wind Farms in the Landscape, Version 3a. Available at: https://www.nature.scot/doc/siting-and-designing-wind-farms-landscape-version-3a*

[15] *NatureScot (February 2017). Visual Representation of Wind farms – Version 2.2. Available at: https://www.nature.scot/doc/visual-representation-wind-farms-guidance*

- NatureScot (2021). Guidance - Assessing the cumulative landscape and visual impact of onshore wind energy developments[16] ;
- NatureScot (2024). Guidance on Aviation Lighting Impact Assessment[17] ;
- Landscape Institute (2019). Technical Guidance Note 2/19 Residential Visual Amenity Assessment[18] ;
- Landscape Institute (2019). Visual representation of development proposals. Technical Guidance Note 06/19 [19]; and
- Scottish Borders Council LDP2 Renewable Energy Supplementary Guidance. Update of Wind Energy Landscape Capacity and Cumulative Impact Study (SBCWELCS) (2016)[20] .

5.3. APPROACH TO CONSULTATION

No formal consultation in relation to landscape or visual matters related associated with the Proposed Development has been undertaken to date.

Key consultees will be:

- Scottish Borders Council; and
- NatureScot.

Following the receipt of the Scoping Opinion further consultation will be undertaken as required to finalise the scope of the assessment and agree the final list of the LVIA viewpoints.

5.4. BASELINE CONDITIONS AND KEY SENSITIVITIES

Initial desk-based studies have been undertaken to identify the potential landscape and visual receptors to be considered within the LVIA and to identify proposed LVIA viewpoint locations to inform the assessment.

5.4.1. The Site

The Site is located on the Blackburn and Hartsgarth Estate, approximately 2.2 km to the north of the settlement of Newcastleton, approximately 18.8 km to the south of Hawick and approximately 1.2 km to the west of the B6399. The Site is also located approximately 6.6 km to the north-west of the Scotland England border.

The Site is situated on a mid-upland plateau above the Hermitage Water valley and broadly comprises two land parcels. To the north of Hartsgarth Burn, the northern part of the Site extends across Hazelyside Rig

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[16]NatureScot (March 2021). Assessing the Cumulative Impact of Onshore Wind Energy Developments. Available at: https://www.nature.scot/doc/guidance-assessing-cumulative-landscape-and-visual-impact-onshore-wind-energy-developments

[17] NatureScot (November 2024). Guidance on Aviation Lighting Impact Assessment. Available at: https://www.nature.scot/doc/guidance-aviation-lighting-impact-assessment

[18] Landscape Institute (March 2019). Technical Guidance Note 2/19 Residential Visual Amenity Assessment (RVAA). Available at: https://landscapewpstorage01.blob.core.windows.net/www-landscapeinstitute-org/2019/03/tgn-02-2019-rvaa.pdf

[19] Landscape Institute (2019). Technical Guidance Note 06/19 Visual Representation of Development Proposals. Available at: https://landscapewpstorage01.blob.core.windows.net/www-landscapeinstitute-org/2019/09/LI_TGN-06-19_Visual_Representation.pdf

[20]Scottish Borders Council (2024). Renewable Energy Supplementary Guidance. Update of Wind Energy Landscape Capacity and Cumulative Impact Study. Available at: https://www.scotborders.gov.uk/downloads/download/659/draft_renewable_energy_supplementary_guidance

(328 m Above Ordnance Datum (AOD)) and Hartsgarth Flow. To the south of Hartsgarth Burn, the Site extends across North Birny Fell (277 m AOD) and Birny Fell.

The Site is bordered to its west by the high ground of Din Fell (529 m AOD), Hartsgarth Fell (551 m AOD), Roan Fell (568 m AOD), Watch Hill (502 m AOD) and Cooms Fell (490 m AOD).

The mid-upland plateau where the Site is located slopes from west to east from an elevation of approximately 330 m AOD at its north-western corner and 236 m AOD at its south-western corner to an elevation of approximately 207 m AOD at its north-eastern corner and approximately 149 m AOD at its south-eastern corner.

Land cover within the Site is predominantly open, rough grassland and heather moorland.

5.4.2. Landscape Character

The majority of the proposed turbines in the Scoping Layout are situated within (LCT) 4iii Southern Uplands with Scattered Forest – Cauldcleuch Head Group as defined in the SBCWELCS.

A small number of the proposed turbines are located within LCT 22(vi) Upland Valley with Pastoral Floor – Liddel Water.

Landscape character types within 20 km of the Proposed Development overlaid with the blade tip Zone of Theoretical Visibility (ZTV) are illustrated on Figure 5.1.

5.4.3. Landscape Designations

The Proposed Development is not located within an international, national or regionally designated landscape.

The Frontiers of the Roman Empire (Hadrian's Wall) World Heritage Site buffer zone is located approximately 25.7 km to the south and its Core Area is located approximately 26.8 km to the south of the Proposed Development.

The Northumberland National Park is located approximately 21.9 km to the east of the Proposed Development.

The nearest National Scenic Area (NSA) is the Eildon and Leaderfoot NSA located approximately 35.8 km to the north and the Upper Tweedale NSA is located approximately 43.5 km to the north-west.

The Langholm Hills Regional Scenic Area (RSA) situated within the Dumfries and Galloway is located approximately 2.4 km to the west of the Proposed Development. The Teviot Valleys Special Landscape Area (SLA) is located approximately 19 km to the north-east and the Cheviot Hills Special Landscape Area (SLA) is located approximately 21.7 km to the north-east of the Proposed Development.

The Tweedsmuir SLA is located approximately 33 km to the north-west, the Tweed, Ettrick and Yarrow Confluences SLA approximately 30.8 km to the north, the Tweed Valley SLA approximately 40 km to the north and the Tweed Lowlands SLA approximately 35.2 km to the north-east.

The Moffat Hills RSA is located approximately 33.3 km to the north-west. Torthorwald Ridge RSA is located approximately 40 km to the south-west and the Solway Coast RSA is located approximately 41.5 km to the south-west.

There are a number of Gardens and Designed Landscapes (GDL) located within the surrounding landscape, the nearest of which is Monteviot located approximately 31.7 km to the north-east.

Landscape designations within the initial 45 km LVIA Study Area overlaid with the blade tip ZTV are illustrated on Figure 5.2.

5.4.4. Wild Land

Wild Land Areas (WLA) are not statutory designations, however WLAs (NatureScot, 2014) are recognised as nationally important, with NPF4 noting proposals for development in wild land will only be supported where the proposal supports meeting renewable energy targets or is for small-scale development linked to rural business or croft or supports a fragile community in a rural area. NPF4 identifies the requirement for a wild land impact assessment to accompany any development proposals in areas identified as WLA. NPF4 also states that effects of development outwith WLA will not be a significant consideration.

The Proposed Development is not located within a WLA. The nearest WLA is Talla-Hart Fell (WLA 02) located approximately 35.3 km to the north-west of the Proposed Development.

5.4.5. Visual Receptors

The main visual receptors within the surrounding landscape include:

- Residents in individual properties and settlements;
- Travellers along the road network; and
- Recreational receptors including walkers, cyclists and horse riders on long distance recreational routes and core paths, as well as visitors to outdoor tourist destinations where the visitor experience incorporates a focus on the surrounding landscape or dark skies.

The nearest residential properties are located along the B6399 and B6357 to the east, and along the minor road to the north. The nearest settlement is Newcastleton to the south of the Site.

The nearest roads are the B6399 and B6357 to the east of the Site and the minor road to the north that passes along the Hermitage Water valley.

In terms of walking routes the Southern Upland Way, the Cross Borders Drove Road, the Borders Abbey Way, the Romans and Reivers Route, the Annadale Way and St Cuthbert's Way all cross through the surrounding landscape but at distances in excess of 15 km. Regarding National Trails in England, the Pennine Way passes approximately 28.5 km to the east of the Site and Hadrian's Wall Path passes approximately 26.5 km to the south of the Site.

The Borders Historic Route, a scenic drive between Carlisle and Edinburgh follows the A7 passing approximately 8.5 km to the west of the Site.

There is an extensive network of core paths within the immediate vicinity of the Site, the closest of which are core paths NEWC/BR87 and BR88 which pass through the northern part of the Site following Thief Sike.

5.5. STUDY AREA

To assist with defining the study area, a digital ZTV was produced as a starting point to illustrate the geographical area over which views of the Proposed Development are theoretically possible. This was based on a 'bare-earth' scenario, which does not account for the screening effect of areas of existing vegetation or built features in the landscape. The ZTV was modelled based on the current maximum proposed turbine blade tip height of 220 m and is presented at Figure 5.3.

With reference to NatureScot Visualisation Guidance[10], based on the preliminary blade tip height of 220 m, an initial study area of up to 45 km (from the outer-most turbines) was used for the purpose of identifying potential landscape and visual receptors. It is proposed that the LVIA will consider an initial 45 km radius LVIA study area.

However, referring to Figure 5.3, due to the topographical containment and relative limited extent of theoretical visibility, it is proposed that a detailed LVIA study area of 15 km is adopted. This is considered to represent a proportionate extent of the initial 45 km LVIA study area and the limit within which any potentially significant landscape and visual effects would occur.

The cumulative effect of the Proposed Development in association with other wind energy developments will also be considered. Consideration was initially given to a 60 km radius from the Site, accounting for NatureScot guidance16. A plan was then prepared illustrating all cumulative sites within a 45 km radius (Figure 5.5). However, following a review of the location of cumulative wind farms and the limited extent of theoretical visibility, it is proposed to adopt a 15 km detailed cumulative landscape and visual study area. This is considered to represent a proportionate extent of the study area and the limit within which any potentially significant cumulative effects might occur.

5.6. PROPOSED ASSESSMENT METHODOLOGY

The LVIA will be prepared in accordance with the principles of best practice, as outlined in published guidance documents (as set out in Section 5.2.3), notably the GLVIA3.

The methodology and assessment criteria proposed for the LVIA will be developed in accordance with the principles established in this best practice document. It should be acknowledged that GLVIA3 establishes guidelines, not a specific methodology. The preface to GLVIA3 states:

"*This edition concentrates on principles and processes. It does not provide a detailed or formulaic 'recipe' that can be followed in every situation – it remains the responsibility of the professional to ensure that the approach and methodology adopted are appropriate to the task in hand.*"

The approach has therefore been developed specifically for this assessment to ensure that the methodology is fit for purpose and has been informed by the guidance documents set out in Section 5.2.3.

5.6.1. Distinction between Landscape and Visual Effects

In accordance with GLVIA3, landscape and visual effects will be assessed separately, although the procedure for assessing each of these is similar. A clear distinction will be drawn between landscape and visual effects as described below:

- **Landscape effects** relate to the effects of the Proposed Development on the physical and perceptual characteristics of the landscape and its resulting character and quality; and
- **Visual effects** relate to the effects on specific views experienced by visual receptors and on visual amenity more generally.

5.6.2. Types of Effects Considered

The LVIA will consider the effects of the Proposed Development during its construction, during its operational lifetime and during the decommissioning phase. Effects during the construction and decommissioning phases are considered to be temporary and would have a short duration and would be largely similar in nature. Effects associated with the operational phase are considered to be long-term, reversible effects.

5.6.3. Proposed Assessment Scope

It is proposed that the main objectives of the LVIA will be as follows:

- To identify, evaluate and describe the current landscape character of the Site and its surroundings, and also any notable individual or groups of landscape features within the Site;
- To determine the sensitivity of the landscape to the type of development proposed;
- To identify potential visual receptors (i.e., people that would be able to see the Proposed Development) and evaluate their sensitivity to the type of changes proposed;
- To identify and describe any impacts of the Proposed Development in so far as they affect the landscape and/or views of it and evaluate the magnitude of change due to these impacts;
- To identify and describe any mitigation measures (including mitigation which is inherent in the design and layout of the Proposed Development) that have been adopted to avoid, reduce and compensate for landscape and visual effects;

- To identify and assess the landscape and visual effects;
- To identify and assess any cumulative landscape and visual effects;
- To evaluate the level of residual landscape and visual effects; and
- To make a professional judgement about which effects, if any, are significant.

5.6.4. Baseline Assessment

A baseline assessment will be carried out to record the existing landscape and visual baseline. The baseline assessment will identify the existing landscape features on the Site, and in the immediate vicinity, and how these elements combine to give the area a sense of landscape character.

The baseline assessment will identify different visual receptors within the study area comprising residential properties, settlements, footpath users, recognised tourist routes, cycle routes, centres for tourism and road users who have the potential to experience visual effects resulting from the Proposed Development.

5.6.5. Landscape Assessment Methodology - Daytime

The sensitivity of landscape features and landscape character to the type of development proposed will be determined with reference to published landscape character assessments.

Plans and construction details of the Proposed Development, supported by wirelines and photomontage visualisations, will be used to determine the effects of the Proposed Development on landscape features and character.

The LVIA will firstly assess how the Proposed Development may directly result in effects on the existing landscape features or elements identified in the baseline character assessment.

The LVIA will then consider effects on landscape character with reference to landscape character areas/types identified in published landscape character documents.

5.6.6. Visual Assessment Methodology- Daytime

A detailed consideration of the potential for effects to the visual amenity of receptors in the landscape surrounding the Site will be set out in the LVIA. The visual assessment will be informed by a selection of representative assessment viewpoints, which are listed below in Table 5.1, each of which will be illustrated with photomontage visualisations prepared in line with NatureScot best practice guidance[10].

The viewpoints will be used as the starting point for considering the effects on visual receptors considered within the assessment. The visual assessment will not rely solely on the viewpoint assessments to determine the significance of effects on different visual receptor groups throughout the study area. It should be recognised that the viewpoints illustrated in the LVIA simply represent a series of snapshots from a small selection of the locations within the study area from where the Proposed Development will be visible.

Following the viewpoint assessment, the LVIA will consider the effects on visual amenity throughout the study area with reference to different visual receptor groups comprising settlements, footpath users, recognised tourist routes and centres for tourism.

5.6.7. Night-time Aviation Warning Lighting Assessment Methodology

Air Navigation Order Article 222[21] requires turbines exceeding a tip height of 150m to display visible aviation lighting to indicate their presence. Dispensations for reduced lighting schemes can be agreed with the Civil

[21] *Civil Aviation Authority. Lighting and Marking of Obstacles. Available at: https://www.caa.co.uk/commercial-industry/airspace/event-and-obstacle-notification/lighting-and-marking-of-obstacles/ - :~:text=For obstacles that are not,Above Ground Level or more*

Aviation Authority (CAA), according to the guidance provided in CAP-764[22] , and it is anticipated that a reduced lighting scheme would be agreed with the CAA in due course.

It is also possible to operate the medium intensity, red visible aviation lights in a reduced intensity mode when visibility from the proposed development exceeds 5 km. Furthermore, it is also possible to attenuate the amount of light experienced by receptors at elevations above and below the lights in order to reduce the level of effects experienced.

A detailed consideration of the potential effects to landscape character and visual amenity resulting from the visible aviation warning lighting will be presented in a separate technical appendix to the LVIA chapter.

As set out NatureScot Aviation Lighting Impact Assessment Guidance[17] the components of value and susceptibility that contribute to sensitivity differ at night-time. For example, where an area has been recognised for its dark sky qualities, such as Dark Sky Parks, value will be greater.

The susceptibility of receptors at night varies depending upon the activities people are engaged in. For example, road users would have lower susceptibility due to the headlights of their vehicles or other road users. People in lit towns and villages and in residential properties may have lower susceptibility due to the presence of existing light sources such as street lighting and lights in and around properties. People hill walking at night may also be considered to have lower susceptibility as they would generally be using torches to light their route. Whereas people engaged in activities such as star gazing would have higher susceptibility.

The assessment will be informed by night-time photomontage visualisations from a limited number of the LVIA viewpoints and will be supported by ZTVs to illustrate the theoretical visibility of the lit turbines and a turbine lighting intensity ZTV.

5.6.8. Assessment Criteria

In accordance with the GLVIA3, the sensitivity of a landscape receptor (an individual landscape feature or landscape character) or visual receptor (people within an area who may be affected by changes in views and visual amenity) is assessed by combining separate judgements concerning the receptor's value and susceptibility to the change proposed to arrive at an overall judgement of the sensitivity of the receptor. Sensitivity will be described as v**ery high**, **high**, **medium**, **low** or **very low**.

The sensitivity of the receptor is combined with the magnitude of change resulting from the Proposed Development, which is also described on this same scale from **very high** to **very low**, to derive a judgement of the overall level of effect.

The level of landscape or visual effects will be described as **major**, **moderate major**, **moderate**, **minor moderate**, **minor** or **negligible**. No effect may also be recorded where the effect is so negligible it is not even noteworthy.

Professional judgement will then determine whether the effect is considered to be significant or not. Those effects described as **major**, **moderate major** and in some cases, **moderate** will be regarded as significant.

The LVIA will further determine whether effects are beneficial, neutral, or adverse.

Full details of the methodology will be provided within a technical appendix to the LVIA chapter of the EIA Report.

[22] *Civil Aviation Authority. CAP 764: Policy and Guidelines on Wind Turbines. Available at: https://www.caa.co.uk/our-work/publications/documents/content/cap-764/*

5.6.9. Proposed LVIA Viewpoints

It is proposed that the 19 viewpoint locations set out below are included as viewpoints in the LVIA. The locations are illustrated on Figures 5.3 and Figure 5.4.

The proposed viewpoint locations are located at a range of distances and directions from the Proposed Development, are at varying elevations and cover a variety of different landscape character types. Some of the viewpoints are intended to be representative of the visual experience in a general location, whereas other viewpoints illustrate the view from a specific or important vantage point. In selecting the proposed LVIA viewpoints, locations used in other wind development (either operational, consented or at planning/pre-planning stage) have also been considered.

For each of the below viewpoints, daytime visualisations will be prepared in line with NatureScot visualisation guidance[10].

Table 5.1: Proposed LVIA Viewpoints

VIEWPOINT	DISTANCE TO NEAREST PROPOSED TURBINE	OS GRID REFEFENCE	BASIS FOR SELECTION
Viewpoint 1 - Leahaugh, B6399	1,615 m	350310, 592411	SBC LCT 22(vi) Upland Valley Floor with Pastoral Floor Residents, B6399 road users
Viewpoint 2 - B6399, Netherraw	1,221 m	350718, 593898	SBC LCT 22(vi) Upland Valley Floor with Pastoral Floor Residents, B6399 road users
Viewpoint 3 - Hermitage Hall, junction of B6399 and minor road	1,435 m	350710, 595217	SBC LCT 22(vi) Upland Valley Floor with Pastoral Floor Residents, B6399 road users
Viewpoint 4 - Lady Knowe, Core Path NEWC/BR93/3	1,819 m	348923, 596307	SBC LCT 22(vi) Upland Valley Floor with Pastoral Floor Hill walkers
Viewpoint 5 - B6399, Whitrop Burn Bridge	3,587 m	350957, 597645	SBC LCT 5(ii) Southern Uplands Forest Covered B6399 road users
Viewpoint 6 - Greatmoor Hill	6,186 m	348992, 600683	SBC LCT 4(iii) Southern Uplands with Scattered Forest Hill summit, Walkers
Viewpoint 7 - B6399, Leahaugh	1,484 m	350007, 591505	SBC LCT 22(vi) Upland Valley Floor with Pastoral Floor

VIEWPOINT	DISTANCE TO NEAREST PROPOSED TURBINE	OS GRID REFEFENCE	BASIS FOR SELECTION
			Residents, B6399 road users
Viewpoint 8 - Core Path NEWC/BR87/7, Foulshiels	1,035 m	349450, 591236	SBC LCT 22(vi) Upland Valley Floor with Pastoral Floor Core path, Walkers
Viewpoint 9 - Core Path NEWC/89P/1	1,578 m	348051, 589160	SBC LCT 22(vi) Upland Valley Floor with Pastoral Floor Core path, Walkers
Viewpoint 10 - North Hermitage Street, Newcastleton Settlement	2,695 m	348566, 587974	SBC LCT 22(vi) Upland Valley Floor with Pastoral Floor Settlement, Residents, B6357 road users
Viewpoint 11 - B6357, Byreholm	2,294 m	350565, 589640	SBC LCT 22(vi) Upland Valley Floor with Pastoral Floor Residents, B6357 road users
Viewpoint 12 - Core Parth NEWC/115/1	2,895 m	351377, 591098	SBC LCT 22(vi) Upland Valley Floor with Pastoral Floor Core path, Walkers
Viewpoint 13 - Minor road at junction of core paths HAWI/114R/1 and HAWI/126/12	3,662 m	353205, 593831	SBC LCT 22(vi) Upland Valley Floor with Pastoral Floor Core path, Walkers, users of the minor road
Viewpoint 14 - Larriston Fells Summit, Scottish Borders	7,661 m	356908, 592095	SBC LCT 5(ii) Southern Uplands Forest Covered Hill walkers
Viewpoint 15 - Deadwater Fell	13,184 m	362453, 597173	Northumberland LCA 19a Kielder and Redesdale Forests – Moorland Forestry Mosaic Hill summit, Hill walkers

VIEWPOINT	DISTANCE TO NEAREST PROPOSED TURBINE	OS GRID REFEFENCE	BASIS FOR SELECTION
Viewpoint 16 - Caplestone Fell	10,830 m	358912, 587644	Northumberland LCA 19a Kielder and Redesdale Forests – Moorland Forestry Mosaic Hill summit, Hill walkers
Viewpoint 17 - Grindstone Sike	10,426 m	347226, 580323	Cumbria LCT 9c: Intermediate Moorland and Plateau – Forests Road users
Viewpoint 18 - Roan Fell Hill	2,524 m	345193, 593316	LCT 4(iii) Southern Uplands with Scattered Forest Hill summit, Walkers
Viewpoint 19 - Rubers Law	22,813 m	358061, 615512	LCT 11(ii) Grassland Hills – Rubers Law Hill summit, Hill walkers

The associated infrastructure comprising access tracks, crane pads, hardstandings and substation will be modelled into the photomontage visualisations from viewpoints located within 5 km of the Proposed Development where such elements would be visible.

5.6.10. Residential Visual Amenity Assessment

There are a number of residential properties located within the vicinity of the Proposed Development and the LVIA will also consider the visual effects likely to be experienced by receptors in individual properties located within 2 km of the Proposed Development. The visual amenity of these properties will be assessed as part of a Residential Visual Amenity Assessment (RVAA) to determine whether any properties would experience a significant visual effect from their dwelling, curtilage or principal access. A professional judgement will then be provided to determine whether residents would experience such an overbearing effect on visual amenity that the property would become an unattractive place in which to live. The findings of the RVAA will be presented in a technical appendix to the LVIA Chapter within the EIA Report.

5.6.11. Aviation Lighting / Night-Time Assessment

The assessment of landscape character and visual amenity effects of the visible aviation warning lighting will be informed by a ZTV of the lit turbines to 15 km, a turbine lighting intensity ZTV to 15 km and dark sky visualisations from a selection of the LVIA viewpoints, illustrating the proposed aviation warning lighting.

In accordance with NatureScot Visualisation Guidance, the viewpoints selected represent locations from where people are most likely to experience the Proposed Development at night.

It is proposed that the following night-time visualisations will be produced:

- Viewpoint 1 – Leahaugh, B6399;
- Viewpoint 2 – B6399, Netherraw;
- Viewpoint 10 – North Hermitage Street, Newcastleton Settlement; and

- Viewpoint 15 – Dead Water Fell (due to its location in an area of predicted turbine hub visibility within the Northumberland Dark Sky Park).

The viewpoints will be used to inform consideration of the potential visual effects on key visual receptors in nearby residential properties, settlements and users of the road network.

Photographic examples of existing aviation lighting in similar light conditions will be presented in a separate appendix as a 'control mechanism'.

The assessment of the visual effects of the aviation lighting will be guided by NatureScot's Guidance on Aviation Lighting Impact Assessment[12] and will be presented in a separate technical appendix to the LVIA chapter of the EIA Report.

5.6.12. Cumulative Effects

Consideration will be given in the LVIA to cumulative effects caused by the Proposed Development in conjunction with other sites which are either operational, under construction, consented, or the subject of a full planning application. NatureScot best practice guidance identifies two principal types of cumulative visual impact:

- Combined visibility – where the observer is able to see two or more developments from one viewpoint; and
- Sequential visibility – where two or more sites are not visible at one location but would be seen as the observer moves along a linear route, for example, a road or public right of way.

The guidelines state that 'combined visibility' may either be 'in combination' (where two or more sites are visible from a fixed viewpoint in the same arc of view) or 'in succession' (where two or more sites are visible from a fixed viewpoint, but the observer is required to turn to see the different sites). Each of the above types of cumulative effect will be considered in the LVIA.

The assessment will also consider the potential cumulative effects of wind turbine aviation lighting, with reference to other wind farms that are either operational, under construction, consented, or the subject of a full planning application (that also have visible aviation warning lighting).

For the cumulative assessment to remain focused on other developments that have the greatest potential to give rise to significant cumulative effects, it is necessary at the outset to decide which developments need to be considered in detail, as to consider all developments within 45 km of the Proposed Development would detract attention from the key issues relating to the application. In this landscape and visual context, wind farms over a 15 km distance from the Site are highly unlikely to give rise to significant cumulative effects. It is also considered appropriate and proportionate to scope out all turbines under 50 m, and any turbines between 50 m and 80 m which are located over 10 km distance from the Proposed Development. Cumulative sites are illustrated in Figure 5.5.

Ongoing cumulative research will be undertaken and a scope of assessment and 'cumulative cut-off date' agreed prior to submission of the application to ensure the most up-to-date information available is included.

With reference to Figure 5.5, there are a number of other schemes in the vicinity of the Proposed Development that are at the scoping stage. A separate section will be included at the end of the cumulative effects section that deals within the potential cumulative landscape and visual effects of these scoping stage schemes.

5.7. MITIGATION

The primary mitigation that will be adopted to reduce potential landscape and visual effects will be embedded within the design and relates to the consideration given to avoiding and minimising landscape and visual effects.

Based on general good practice design principles (as set out in NatureScot guidelines[14]), a review of the SBCWELCS and an analysis of site-specific opportunities and constraints, the Proposed Development layout will be evolved to take into consideration landscape and visual constraints whilst maintaining an optimal development and seeking to maximise renewable generation and carbon reduction.

The design rationale adopted will seek to avoid inconsistent turbine spacing, large gaps, outliers or excessive overlapping of turbines, to reduce visual effects and ensure a balanced / compact array from key views.

The turbines themselves would be painted semi-matt white or light grey with a low reflectivity finish (or similar as agreed). Such a finish is widely regarded to be the least intrusive in the landscape when seen against the sky in a host of weather conditions typically experienced within the UK.

In order to reduce the visual effects of aviation lighting during the hours of darkness, a reduced lighting scheme will be agreed with the CAA in order to reduce the number of visible aviation warning lights required and the need to intermediate tower lighting. Mitigation of visible turbine lighting will be embedded into the design of the lighting scheme to reduce the intensity of lighting in certain atmospheric conditions and reduce the amount of vertical downwards lighting in order to reduce the visual effects experienced by receptors below the lights.

5.8. PROPOSED SCOPE OF THE EIA CHAPTER

In order that the assessment remains proportionate and focuses on the key matters that have the potential to bring about significant effects, it is proposed that the following matters are scoped in/out of the assessment:

Table 5.2: Matters Scoped into and Out of the LVIA

ENVIRONMENTAL RECEPTOR, ASSESSMENT OR EFFECT	SCOPED IN / OUT	RATIONALE
Landscape features within the Site	Scoped In.	Due to the potential direct effects of the Proposed Development.
Landscape character within the 15 km detailed LVIA study area and within the predicted zone of theoretical visibility.	Scoped In.	It is anticipated that the potential for significant effects upon landscape character would occur within 15 km due to the relatively contained zone of theoretical visibility as illustrated by Figure 5.3 and Figure 5.4.
Visual amenity within the 15 km detailed LVIA study area and within the predicted zone of theoretical visibility.	Scoped In.	It is anticipated that the potential for significant effects upon visual amenity would occur within 15 km due to the relatively contained zone of theoretical visibility as illustrated by Figure 5.3 and Figure 5.4.
Effects on visual receptors including the Northumberland Dark Sky Park resulting from the proposed aviation lighting within the 15 km detailed LVIA study area and within the predicted zone of theoretical visibility.	Scoped In.	Due to the potential visual effects of the proposed aviation lighting during the hours of darkness.

ENVIRONMENTAL RECEPTOR, ASSESSMENT OR EFFECT	SCOPED IN / OUT	RATIONALE
Cumulative landscape and visual effects within the 15 km detailed LVIA study area	Scoped In.	Due to the location of cumulative schemes relative to the Proposed Development illustrated on Figure 5.5 and the relatively contained zone of theoretical visibility as illustrated by Figure 5.3and Figure 5.4 the area within which potentially significant cumulative landscape and visual effects may occur is limited to within 15 km.
Residential visual amenity within 2 km	Scoped In.	As set out in Landscape Institute Technical Guidance Note TGN 2/19 the purpose of RVAA is not to determine whether or not a residential property will experience a significant visual effect. RVAA is a stage beyond LVIA and its purpose is to determine whether the Residential Visual Amenity Threshold is reached and the effect could be considered overbearing. The guidance suggests a preliminary RVAA study area of 1.5 to 2 km. Therefore, 2 km RVAA study area is considered to be a proportionate extent within which potentially overbearing effects on nearby residential properties may occur.
Effects on receptors located outside of the ZTV	Scoped Out.	The Proposed Development would not result in any effects where there is no predicted visibility.
Effects on LCTs outside of the proposed detailed 15 km LVIA study area	Scoped Out.	There would be no potential for indirect significant effects due to the distance from the Proposed Development and the limited theoretical visibility beyond this distance as illustrated by Figure 5.3 and Figure 5.4.
Effects on landscape character resulting from the proposed aviation lighting	Scoped Out.	It has been established in recent appeal decisions that the effects of visible aviation lighting is “wholly a visual concern” and that “without being able to see and fully appreciate the features of the landscape and the composition of views it is not possible to carry out a meaningful landscape character assessment.” (The Scottish Government. Crystal Rig IV Report to the Scottish Ministers. (2021) page 8.)
Effects on settlements beyond 10 km	Scoped Out.	Due to the distance from the Proposed Development and the very limited theoretical visibility, there is no potential for receptors in these settlements to experience significant visual effects.

ENVIRONMENTAL RECEPTOR, ASSESSMENT OR EFFECT	SCOPED IN / OUT	RATIONALE
Effects on core paths beyond 10 km	Scoped Out.	Due to the distance from the Proposed Development and the very limited theoretical visibility, there is no potential for users of these core paths to experience significant visual effects.
Effects on Scotland's Great Trails and English National Trails	Scoped Out.	Due to the distance from the Proposed Development and the very limited theoretical visibility, there is no potential for users of these routes to experience significant visual effects.
Effects on The Frontiers of the Roman Empire (Hadrian's Wall) World Heritage Site	Scoped Out.	Due to the distance from the Proposed Development and the very limited theoretical visibility, there is no potential for significant effects.
Effects on the Northumberland National Park	Scoped Out.	Due to the distance from the Proposed Development and the very limited theoretical visibility, there is no potential for significant effects.
Effects on the Eildon and Leaderfoot NSA and the Upper Tweedale NSA	Scoped Out.	Due to the distance from the Proposed Development and the very limited theoretical visibility, there is no potential for significant effects.
Effects on all RSAs/SLAs	Scoped Out.	Due to the very limited theoretical visibility, or the distance from the Proposed Development there is no potential for significant effects.
Effects on Wildland	Scoped Out.	At over 35 km from the Proposed Development and the very limited theoretical visibility, there is no potential for significant effects on wild land qualities.
Effects on all Gardens and Designed Landscapes or Registered Parks and Gardens	Scoped Out.	Due to the distance from the Proposed Development and the very limited theoretical visibility, there is no potential for significant visual effects.
Effects on receptors located outside of the ZTV	Scoped Out.	The Proposed Development would not result in any effects where there is no predicted visibility.
Effects on LCTs outside of the proposed detailed 15 km LVIA study area	Scoped Out.	There would be no potential for indirect significant effects due to the distance from the Proposed Development and the limited theoretical visibility beyond this distance as illustrated by Figure 5.3 and Figure 5.4.

5.9. CONSULTATION AND SCOPING QUESTIONS

As set out in Section 5.3 no formal consultation in relation to landscape or visual matters has been undertaken to date. Key consultees will be Scottish Borders Council and NatureScot.

Following receipt of the Scoping Opinion further consultation will be undertaken with relevant consultees as required to finalise the scope of the assessment and agree the final list of the LVIA viewpoints.

5.9.1. Questions for Consultees

Referring to Figure 5.3 and Figure 5.4, do you agree with the extent of the proposed detailed LVIA study area?

- Q5.1 – Do you agree with the proposed daytime viewpoint locations listed in Table 5.1?
- Q5.2 – Do you agree with the proposed night-time visualisation locations listed in Section 5.6.11?
- Q5.3 – Do you agree that the proposed scope of the assessment is appropriate?
- Q5.4 – Do you agree with the receptors/matters scoped into further assessment listed in Table 5.2?
- Q5.5 – Do you agree with the receptors/matters proposed to be scoped out of further assessment listed in Table 5.2?
- Q5.6 – Are there any other wind farms you are aware of within the 15 km detailed cumulative study area to be included the cumulative assessment?

6. CULTURAL HERITAGE AND ARCHAEOLOGY

6.1. INTRODUCTION

This chapter outlines the scope of the cultural heritage assessment for the Proposed Development. It provides a summary of legislation, policy and guidance, an overview of baseline conditions, likely effects and mitigation and a summary of the proposed methodology.

It also outlines the proposed approach to the technical scope of this chapter and determines the specific elements that are scoped in and out of each assessment, aligning with the requirements of the EIA Regulations.

The cultural heritage assessment will consider direct physical impacts, indirect physical impacts, setting impacts and cumulative impacts upon cultural heritage.

The chapter is supported by the following figures:

- Figure 6.1 Site Layout and Cultural Heritage Study Areas;
- Figure 6.2 Designated and Non-designated Assets within 1 km; and
- Figure 6.3 Designated Assets within 15 km.

6.2. LEGISLATION, POLICY & GUIDANCE

This section identifies the relevant legislation, planning policy and guidance that will apply to, and be observed in preparing, the EIA Report chapter.

6.2.1. Legislation

- The Ancient Monuments and Archaeological Areas Act 1979[23];
- The Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997 as amended;[24] and
- The Historic Environment Scotland Act 2014.[25]

6.2.2. Policy

- Scotland's Fourth National Planning Framework (NPF4)[26];
- Historic Environment Policy for Scotland (HEPS) (2019);[27]

[23] *UK Government (1979) Ancient Monuments and Archaeological Areas Act. Online. Available at https://www.legislation.gov.uk/ukpga/1979/46/2022-02-01 [Accessed 11/09/2025]*
[24] *UK Government (1997) Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997. Online. Available at http://www.legislation.gov.uk/ukpga/1979/46/pdfs/ukpga_19790046_en.pdf [Accessed 11/09/2025]*
[25] *UK Government (2014) Historic Environment Scotland Act 2014. Online. Available at https://www.legislation.gov.uk/asp/2014/19/contents [Accessed 11/09/2025]*
[26] *Scottish Government (2022) Scottish Planning Policy. Online. Available at https://www.gov.scot/publications/national-planning-framework-4-revised-draft/pages/3/ [Accessed 11/09/2025]*
[27] *HES. Historic Environment Policy for Scotland (2019). Available at https://www.historicenvironment.scot/advice-and-support/planning-and-guidance/historic-environment-policy-for-scotland-heps/ . [Accessed 11/09/2025]*

- Our Past, Our Future: The Strategy for Scotland's Historic Environment;[28] and
- The Scottish Borders Local Development Plan (LDP2) (2024)[29].

For the purpose of heritage setting assessments, Dumfries and Galloway[30] , Cumberland[31] and Northumberland[32] Local Development Plans will also be considered due to the location of the Proposed Development.

6.2.3. Guidance

- Planning Advice Note 2/2011: Planning and Archaeology;[33]
- HES: Environmental Impact Assessment Handbook;[34]
- HES: Managing Change in the Historic Environment Series; [35]
- HES: Managing Change in the Historic Environment – Setting;[36]
- HES: Managing Change in the Historic Environment – Gardens and Designed Landscapes;[37]
- HES: A Guide to Climate Change Impacts on Scotland's Historic Environment;[38]

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[28]HES. Our Past, Our Future (2023). Available at Our Past, Our Future | Historic Environment Scotland | History. [Accessed 11/09/2025]
[29] The Scottish Borders Council (2024) Local Development Plan. Available at: https://www.scotborders.gov.uk/downloads/download/1656/adopted-ldp2---volume-2 [Accessed 11/09/2025]
[30] Dumfries and Galloway Council, Local Development Plan 2 (2019). Available at: https://www.dumfriesandgalloway.gov.uk/sites/default/files/2024-07/Adopted_LDP2_OCTOBER_2019_web_version.pdf [Accessed 11/09/2025]
[31] Cumberland Council, Cumberland Local Development Scheme (2025). Available at: https://www.cumberland.gov.uk/sites/default/files/2025-04/Cumberland%20Local%20Development%20Scheme%202025.pdf [Accessed 11/09/2025]
[32] Northumberland Council, Local Plan 2016-2036 (2022). Available at: https://www.northumberland.gov.uk/NorthumberlandCountyCouncil/media/Planning-and-Building/planning%20policy/Local%20Plan/Northumberland-Local-Plan-Adopted-March-2022.pdf [Accessed 11/09/2025]
[33] Scottish Government. Planning Advice Note 2/2011: Planning and archaeology (2011). Available at https://www.gov.scot/publications/pan-2-2011-planning-archaeology/. [Accessed 11/09/2025]
[34] HES (2018). Environmental Impact Assessment Handbook. Available at https://www.historicenvironment.scot/archives-and-research/publications/publication/?publicationId=6ed33b65-9df1-4a2f-acbb-a8e800a592c0. [Accessed 11/09/2025]
[35] HES (2016) Managing Change in the Historic Environment. Online. Available at: https://www.historicenvironment.scot/advice-and-support/planning-and-guidance/legislation-and-guidance/managing-change-in-the-historic-environment/ [Accessed 11/09/2025]
[36] HES. Managing Change in the Historic Environment: Setting (2020). Available at https://www.historicenvironment.scot/archives-and-research/publications/publication/?publicationId=80b7c0a0-584b-4625-b1fd-a60b009c2549. [Accessed 11/09/2025]
[37] HES. Managing Change in the Historic Environment: Gardens and Designed Landscapes (2016). Available at https://www.historicenvironment.scot/archives-and-research/publications/publication/?publicationId=83214207-c4e7-4f80-af87-a678009820b9. [Accessed 11/09/2025]
[38]HES. Managing Change in the Historic Environment: Gardens and Designed Landscapes (2016). Available at https://www.historicenvironment.scot/archives-and-

- CIfA Standards and Guidance for Desk-Based Assessments;[39] and
- ALGAO Scotland: Delivery of Public Benefit and Social Value for Archaeology in the Planning Process.[40]

6.3. APPROACH TO CONSULTATION

Consultation will be undertaken with the relevant consultees for cultural heritage as detailed in Section 6.12. Further consultation may be required throughout the assessment in relation to any notable findings.

6.4. STUDY AREA

In order to inform our understanding of the Site's archaeological potential and enable an assessment of potential setting impacts and cumulative impacts on heritage assets outside the Site, the following study areas will be utilised:

- 1 km Study Area;
- 5 km Study Area; and
- 15 km Study Area.

6.4.1. 1 km Study Area

The 1 km Study Area (Figure 6.1) will be used to inform the heritage baseline against which potential direct impacts and effects to known and currently unknown heritage assets will be assessed. This Study Area takes in the land within a 1 km radius of the Proposed Development.

6.4.2. 5 km Study Area

The 5 km Study Area (Figure 6.1) will take in the land between 1 km and 5 km from the Proposed Development. The Study Area will be used to identify Setting effects to designated assets as well as selected non-designated assets identified through consultation with the Local Planning Authority (LPA)s surrounding the Proposed Development.

6.4.3. 15 km Study Area

The 15 km Study Area (Figure 6.1) will take in the land between 5 km and 15 km from the Proposed Development. The Study Area will be used to identify Setting effects to designated assets as well as selected non-designated assets identified through consultation with the LPAs surrounding the Proposed Development.

The 15 km Study Area will not be used as an arbitrary cut-off point for assessing these impacts. Due consideration will be given to heritage receptors beyond 15 km that fall within the bare earth ZTV of the

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research/publications/publication/?publicationId=83214207-c4e7-4f80-af87-a678009820b9 . [Accessed 11/09/2025]

[39] CIFA (2014). Standards and Guidance for historic environment desk-based assessment. Available at https://www.archaeologists.net/sites/default/files/CIfAS%26GDBA_4.pdf#:~:text=This%20guidance%20seeks%20to%20define%20good%20practice%20for,key%20section%20of%20this%20document%20is%20the%20Standard . [Accessed 11/09/2025]

[40] ALGAO Scotland 2023. Delivery of Public Benefit and Social Value for Archaeology in the Planning Process. Available at ALGAO Delivery of Public Benefit and Social Value Guidance v1-3.pdf. [Accessed 11/09/2025

Proposed Development, as well as heritage receptors specifically identified for inclusion within any cumulative assessment by HES, Historic England (HE) and the LPAs.

The 15 km Study Area will also serve as the initial extent of any assessment of Cumulative Impacts.

Any other assets located beyond these search areas but that are considered relevant to establishing the Proposed Development's historic landscape context or that are identified as potentially susceptible to impact, will also be considered.

6.5. BASELINE CONDITIONS AND KEY SENSITIVITIES

A full list of designated and non-designated assets within the 15km Study Area is available in Appendix B: Cultural Heritage Baseline. A summary of the assets located within all three Study Areas is provided below.

A preliminary setting assessment of designated assets within 15 km has been conducted and a summary provided below. A full setting assessment of assets within the 15 km Study Area will be provided in the EIA.

6.5.1. Key Sensitivities

6.5.1.1. Within the Proposed Development

There are no designated Assets located within the Site. There are 10 non-designated assets located within the Proposed Development, comprising:

- Two Prehistoric assets (a Neolithic chambered cairn and later settlement (Collie Sike, CanID 162094) and hut circles with associated cultivation terraces (Thief Sike, CanID 162552));
- Three Medieval assets (all relating to farming and agriculture (CanID 162060, 162065, 162537);
- Four Post-Medieval assets (comprising of two sheepfolds (CanID 162062, 162044) a possible bomb crater (CanID 162093) and a farmstead (Can ID 162095)); and

One asset of unknown date (a sheepfold (CanID 167264).

6.5.1.2. Within 1 km

There are no designated Assets located within the 1 km Study Area. An additional 77 non-designated assets are located within the 1 km Study Area.

6.5.1.3. Within 5 km

Within the 5 km Study Area, there are 22 designated assets. There are no Battlefields, Gardens and Designed Landscapes (GDL), or World Heritage Sites (WHeS) within the 5 km Study Area.

Prehistoric

Within the 5 km Study Area there are four Prehistoric Scheduled Monuments (SM), located to the north and the south of the Proposed Development, along the Hermitage Water river valley. Including, a Neolithic stone circle (SM1688), an enclosure (SM2149), a scooped settlement (SM13775) and a standing stone (SM13778).

Medieval

Within the 5 km Study Area there are four Medieval Scheduled Monuments, located to the north and south of the Proposed Development, predominantly in defensive locations or settlement areas overlooking water sources such as Liddel Burn and Riccarton Water. Medieval monuments comprise two castles (SM90161 and SM1716), a tower (SM4007) and a cemetery (SM2188).

Notably, the closest Scheduled Monument to the Proposed Development is Hermitage Castle (SM90161) located approximately 1.4 km away. Hermitage Castle is an upstanding stone building with associated earthworks. The castle, located approximately 30 m north of the Hermitage Water, is the focus of a complex manorial residence which spans from the 12th to the 19th centuries.

Post-Medieval

Within the 5 km Study Area there are 13 Post-Medieval Listed Buildings (LB). Listed Buildings are predominantly clustered around nearby small settlements such as Sandholm where category B listed Castleton Old Parish Church (LB6624) is located. Category B listed Dinlabyre Aisle (LB4238) is located to the east near Liddel Water.

One Post-Medieval Conservation Area has been identified within 5 km, Newcastleton (CA619) located approximately 2.3 km to the south of the Proposed Development. Newcastleton was originally a planned village founded in 1793 by the third Duke of Buccleuch with handloom weaving being the main source of employment. It is considered to be the best example of a late 18th century planned village in the Borders.

6.5.1.4. Within 15 km

The 15 km Study Area extends across the Scottish and English border and as such 199 designated assets have been identified from HES datasets and 54 designated assets have been identified from, HE datasets. These are summarised below. They can be found in detail in **Appendix B: Cultural Heritage Baseline** and their locations are depicted on Figure 6.3: Designated assets within 15 km.

Within the 15 km Study Area, there are 253 designated assets consisting of:

- 110 Scheduled Monuments;
- 142 Listed Buildings (five category A, 76 category B, 36 category C, two grade II* and 23 grade II); and
- one Conservation Area.

Designated assets within the 15 km Study Area range in date from the Prehistoric – Post-Medieval periods. These are widely distributed throughout the landscape with Prehistoric assets clustered along water courses and on the slopes and summits of hills and later Medieval-Post-Medieval settlements clustered around watercourses and modern towns and villages such as Newcastleton and Langholm.

There are a large number of Prehistoric Scheduled Monuments located within the 15 km Study Area to the north of the Proposed Development around Penchrise Pen.

Further information on designated and non-designated assets within all Study Areas can be found in **Appendix B: Cultural Heritage Baseline**.

6.6. PROPOSED ASSESSMENT METHODOLOGY

The assessment will be conducted with reference to the relevant statutory and planning frameworks for cultural heritage as detailed in Section 6.2. The results of the assessment will be presented in the cultural heritage chapter of the EIA.

6.6.1. Baseline Data Collection

6.6.1.1. Data Sources

The following key data sources have been used to inform this Scoping Report:

- HES datasets including National Record of the Historic Environment (Canmore/Trove Catalogue) and databases of; World Heritage Sites , Scheduled Monuments , Listed Buildings , Inventoried Garden and Designed Landscapes , Inventoried Battlefields and Historic Marine Protected Areas (HMPA);
- Historic England datasets including databases of; World Heritage Sites, Scheduled Monuments , Listed Buildings , Registered Parks and Gardens (RPG) and Registered Battlefields;
- National Landscape Character Assessment data;
- Regional and national research framework assessments and strategies;
- Readily accessible published sources, historic mapping and grey literature (e.g. previous investigation reports) for information on non-designated heritage assets;

- Cartographic evidence from the Ordnance Survey (OS) and historic maps;
- The Statistical Accounts for Scotland;
- The National Records of Scotland (NRS);
- Archaeological Data Service (ADS) for heritage data including grey literature reports, archaeological journals, and the Excavation Index for Scotland;
- the local authority's website for information on Conservation Areas; and
- Aerial and Satellite Photography.

6.6.1.2. Walkover Survey

A walkover survey will be completed as part of the EIA.

6.6.1.3. Settings Assessment

Setting Impacts will be assessed in accordance with 'Managing Change in the Historic Environment: Setting' (HES 2016) and Appendix 1 of HES guidance (Scottish Natural Heritage (now known as NatureScot) and Historic Environment Scotland (HES) EIA Handbook). In accordance with the latter, setting impacts are generally viewed as direct effects resulting from the Proposed 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. Setting Impacts may also occur indirectly at some distance from the Proposed Development, for example as a result in changes in both pedestrian and vehicular traffic. Setting impacts may be permanent, reversible or temporary.

To aid the assessment of setting impacts, reference will be made to the extent of the potential visual changes in setting as determined through the use of bare earth ZTV.

A sieving exercise will be used to determine which designated/non-designated assets are to be included within the final setting assessment. For inclusion, assets will need to meet the following criteria:

- The asset must lie within the bare earth ZTV;
- The asset must have potential for views of the Proposed Development;
- An asset must derive part of its setting and therefore cultural significance, from either a historic relationship to the Proposed Development site or through views from the asset, taking in the uplands of the Proposed Development site or views across the Site; and
- An asset's setting, and cultural significance, is partly derived from views towards that asset from the wider landscape or directly on the approach to the asset. The Proposed Development must have the potential to erode these views.

6.7. POTENTIAL SIGNIFICANT IMPACTS AND EFFECTS

6.7.1. Assessment of Impacts

The following potential impacts on cultural heritage and archaeology receptors may result from the Proposed Development without appropriate mitigation; these will be considered within the EIA:

- Direct physical impacts;
- Indirect physical impacts;
- Setting impacts; and
- Cumulative impacts.

6.7.2. Direct/Indirect Physical Impacts

6.7.2.1. Assets within the Proposed Development.

As noted, there are 87 non-designated cultural heritage assets located within the 1 km Study Area, dating from the Early Prehistoric to Modern periods. Of these, 10 are located within the Proposed Development, specifically:

- Two Prehistoric assets;
- Three Medieval assets;
- Four Post-Medieval assets; and
- One asset of unknown date.

Within the Proposed Development, Prehistoric assets are located near water courses, Thief Sike and Collie Syke, while Medieval and Post-Medieval assets are more widely distributed.

6.7.2.2. Potential Sources & Extent of Direct/Indirect Physical Impact

Direct and/or indirect physical impacts would not be anticipated to occur wholesale across the full extent of the Proposed Development but are expected to be limited to areas of ground disturbance associated with construction and/or landscaping. As such, the occurrence of these types of impacts is typically limited to the construction phase of any development.

Direct physical impacts are physical alterations, e.g. truncation, removal, structural damage etc., which may affect either known or potential or unrecorded assets, both buried and above ground. These impacts are usually permanent and irreversible.

Indirect physical impacts are physical alterations occurring as a result of construction and associated activity, but not from direct physical contact between plant machinery and other forms of construction personnel or equipment. Instead, they result from, for example, vibration caused by the movement of plant machinery, delivery vehicles etc., harmful desiccation or saturation of assets due to changes in groundwater level as a result of groundworks elsewhere, and other remote construction activities.

6.7.3. Settings Impacts

While some temporary setting impact may result during construction, setting impacts are considered to derive primarily from the operational phase of the Proposed Development. This is due to setting impacts having maximum visual and experiential impact following the completion of all above ground infrastructure. As such, for purposes of the EIA Chapter, impacts resulting from change to setting will be considered operational.

There is a potential for setting impacts to occur. At this stage, there is considered to be the potential for setting impacts upon 11 designated heritage assets (Table 6.1) as a result of the Proposed Development. The final number of assets considered for assessment relating to changes in setting will be finalised following consultation with HES, HE and the LPA.

No significant setting impacts are anticipated in relation to non-designated heritage assets at this stage.

Table 6.1: Heritage assets potentially susceptible to adverse changes in setting.

Designation	Reference	Name	Grade	Rationale	Study Area
Listed Building	LB6624	Castleton Old Parish Church	B	Proximity to development and potential to backdrop views to and from congregation.	Within 5 km
Scheduled Monument	SM90161	Hermitage Castle, castle, chapel, enclosures, deer trap, park boundary and farmstead	N/A	Proximity to development and potential for presence of turbines in immediate view south.	Within 5 km
Scheduled Monument	SM1716	Liddel Castle, Newcastleton	N/A	Proximity to development and potential for presence of turbines in long distance views.	Within 5 km
Scheduled Monument	SM13778	Buck Stone, standing stone 470m NNE of Hermitage Farm Cottage	N/A	Proximity to development and potential for presence of turbines in long distance views.	Within 5 km
Scheduled Monument	SM13775	Scooped settlement, 1025m NW of Roughley	N/A	Proximity to development and potential for presence of turbines in long distance views.	Within 5 km
Scheduled Monument	SM1688	Nine Stones, stone circle, Ninestone Rig	N/A	Proximity to development and potential for presence of turbines in long distance views.	Within 5 km
Scheduled Monument	SM2149	Kirk Hill, enclosure	N/A	Proximity to development and potential for presence of	Within 5 km

Designation	Reference	Name	Grade	Rationale	Study Area
				turbines in long distance views.	
Scheduled Monument	SM4007	Riccarton Tower	N/A	Proximity to development and potential for presence of turbines in long distance views.	Within 5 km
Conservation Area	CA619	Newcastleton	N/A	Proximity to development and potential for encroachment on rural setting.	Within 5 km
Scheduled Monument	SM2296	Penchrise Pen, fort 635m SW of Penchrise Farm Cottage	N/A	Potential for development presence in long distance views.	Within 15 km
Scheduled Monument	SM2297	Blakebillend, fort	N/A	Potential for development presence in long distance views.	Within 15 km

6.7.4. CUMULATIVE IMPACTS

Cumulative Effects typically occur during the construction and operational phases of a project. There is the potential for cumulative impacts as a result of Direct and Indirect / Setting Impact interactions with other projects.

A list of projects which may generate cumulative impacts to heritage assets will be supplied to and agreed with HES, and relevant LPAs during the production of the Cultural Heritage and Archaeology EIA chapter.

6.8. MITIGATION

6.8.1. Direct And Indirect Physical Impact

Known archaeology, as identified within the historic and archaeological baseline, will be avoided during the Proposed Development's design process, where possible, within the limits of other on-site constraints.

Where it is not possible to avoid impacts, consultation will be undertaken with the LPA Archaeology Officer and, if required, HES to formulate a suitable mitigation strategy. Any mitigation strategy would aim to reduce the magnitude of any identified effects through archaeological recording in advance of or during construction.

Mitigation may include archaeological excavation, watching brief, historic building recording and historic landscape recording and the dissemination of the results of these works. The agreed scope, methodology and timing of any mitigation works would be formalised within a Written Scheme of Investigation (WSI), approved by the Archaeology Officer.

6.8.2. Setting Impacts

The production of the EIA Report will be an iterative process, whereby in the first instance mitigation of any Setting Impacts will be made by changes to Layout and Design, where this is possible within the limits of other site constraints. Consultation with the LPA, HES and HE regarding setting impacts and possible mitigation measures will be conducted periodically as required throughout the production of the EIA Report.

6.9. OPPORTUNITIES FOR ENHANCING THE ENVIRONMENT

While this technical discipline provides no direct opportunity for the enhancement of the environment, the iterative design process undertaken as part of the EIA will ensure that any potential adverse effects are minimised.

6.10. PROPOSED SCOPE OF THE EIA CHAPTER

Table 6.2 sets out those factors relating to cultural heritage and archaeology that are proposed to be scoped in to the EIA

Table 6.2: Aspects of the Cultural Heritage and Archaeology Assessment Proposed to be Scoped in to the EIA.

ENVIRONMENTAL RECEPTOR, ASSESSMENT OR EFFECT	SCOPED IN / OUT	RATIONALE
Direct Physical Impacts to Heritage Assets within the Proposed Development.	Scoped In.	Direct physical impacts to heritage assets as a result of the Proposed Development are considered possible and might have a significant impact.
Indirect Physical Impacts to Heritage Assets within and immediately adjacent to the Proposed Development.	Scoped In.	Indirect physical impacts to heritage assets as a result of the Proposed Development are considered possible, albeit these would be considered unlikely to result in significant impact.
Setting Impacts to designated assets (and any non-designated heritage assets of equivalent significance) within the 15 km Study Area.	Scoped In.	Assets within 15 km will undergo a sieving assessment to determine extent of setting assessment. Assets beyond 15 km may also be scoped in if: They fall within the bare earth ZTV; They have been requested for assessment by stakeholders; and/or They have the potential to be impacted by the Proposed Development.

ENVIRONMENTAL RECEPTOR, ASSESSMENT OR EFFECT	SCOPED IN / OUT	RATIONALE
The cumulative effect of the Proposed Development in conjunction with other developments within 15 km.	Scoped In.	Additional developments beyond 15 km may be included for assessment where: Bare earth ZTVs overlap; They have been requested for assessment by stakeholders; and/or, They have the potential to impact the setting of assets in conjunction with the Proposed Development.

Table 6.3 sets out those factors relating to cultural heritage and archaeology that are proposed to be scoped out of the EIA.

Table 6.3: Aspects of the Cultural Heritage and Archaeology Assessment Proposed to be Scoped Out of the EIA

ENVIRONMENTAL RECEPTOR, ASSESSMENT OR EFFECT	SCOPED IN / OUT	RATIONALE
Assessment of the direct physical impacts to heritage assets outside the Proposed Development.	Scoped Out.	Significant, direct physical impacts to such heritage assets are not anticipated to occur.
Indirect physical impacts to heritage assets outside the Proposed Development and its immediate vicinity.	Scoped Out.	Significant, indirect physical impacts to such heritage assets are not anticipated to occur.
Setting impacts to non-designated heritage assets (unless specifically requested by stakeholders).	Scoped Out.	Significant setting impacts to such non-designated heritage assets are not anticipated to occur.

6.11. ASSUMPTIONS, LIMITATION AND UNCERTAINTIES

Key limitations to the Scoping Report are anticipated to be as follows:

- The information provided in HES and HE datasets and other secondary sources may be inaccurate or incomplete, thereby not a complete record of the historic environment. Also, this does not preclude the potential for hitherto unidentified archaeological remains or deposits to be encountered within the Site.
- At this stage, HER data has not been acquired, and as such, consultation with the LPA may uncover additional heritage assets that have not been detailed in this report.
- A walkover survey has not been completed, as such, future ground investigation may uncover additional heritage assets that have not been detailed in this report.

6.12. CONSULATION AND SCOPING QUESTIONS

6.12.1. Consultees

Consultation will be undertaken and may include, but is not limited to:

- HES;
- HE;
- Scottish Borders Historic Environment Team;
- Dumfries and Galloway Historic Environment Team;
- Northumberland Historic Environment Team; and
- Cumbria Historic Environment Team;

6.12.2. Questions for Consultees

Questions for consultees are as follows:

- Q6.1 – Do Consultees agree with the proposed methodology and scope of assessment?
- Q6.2 – Do Consultees have any information regarding current or recent archaeological work or projects being undertaken within or in the vicinity of the Proposed Development, particularly those whose results may not yet be recorded in the local HER or HES datasets?
- Q6.3 – Are Consultees aware of any further sites with statutory protection within the wider landscape whose settings may be affected by the Proposed Development?
- Q6.4 – Do Consultees have details of any cultural heritage sites in the vicinity of the Proposed Development which it considers may raise significant issues within the EIA process for this Development?
- Q6.5 – Are Consultees aware of any additional stakeholders who will require consultation or where consultation would be desirable?

7. ORNITHOLOGY

7.1. INTRODUCTION

This section of the Scoping Report considers the scope of work required to assess potential significant effects associated with ornithology during the construction, operational and decommissioning phases of the Proposed Development. Non-avian, terrestrial ecological effects are considered separately in Chapter 8.

In accordance with standard Chartered Institute of Ecology and Environmental Management (CIEEM) (2018, updated 2024) guidelines, this ornithology scoping exercise aims to:

- Establish an initial understanding of the baseline ornithological conditions following the first year of bird survey work and identify potential significant effects that could arise;
- Determine and agree the Zone of Influence (ZoI) of the Proposed Development and which important ornithological features could be significantly affected;
- Determine and agree the surveys and methods for survey (currently being continued into a second survey year), evaluation and assessment; and
- Determine and agree the content of the Ornithological Impact Assessment.

7.2. LEGISLATION, POLICY & GUIDANCE

7.2.1. Legislation & Conservation Strategy

- Relevant legislation, guidance and conservation strategy documents will be considered throughout the ornithological assessment. Of particular relevance are:
- Council Directive 2009/147/EC on the conservation of wild birds (i.e. the Birds Directive");
- The Ramsar Convention on Wetlands (1975);
- The Conservation (Natural Habitats &c.) Regulations 1994 (as amended);
- The Wildlife and Countryside Act (WCA) 1981 (as amended in Scotland);
- The Wildlife and Natural Environment (Scotland) Act 2011 (as amended);
- The Nature Conservation (Scotland) Act 2004 (as amended);
- The Scottish Biodiversity Strategy to 2045 (Scottish Government, 2024); and
- Scottish Borders Local Biodiversity Action Plan 2018 (Scottish Borders Council, 2018).

7.2.2. Planning Policy

Planning policy and associated advice notes of relevance to the ornithology chapter are:

- Scottish Borders Council Local Development Plan (Scottish Borders Council, 2024);
- National Planning Framework (NPF) 4 (Scottish Government, 2023);
    - Policy 3 (Biodiversity) intends to protect biodiversity, reverse biodiversity loss, deliver positive effects and strengthen nature networks;
- Onshore Wind: Policy Statement (OWPS) 2022 (Scottish Government, 2022);
- Planning Advice Note (PAN) 60: Planning for Natural Heritage (amended in 2008).

7.2.3. Best Practice Ornithological Guidance

As well as detailed consultation with NatureScot, current best practice guidance and reference material on assessing ornithological interests in relation to onshore wind farm developments will be followed, of particular relevance to ornithology are the following:

- Stanbury et al. (2021), Birds of Conservation Concern (BoCC) 5: The Population Status of Birds in the UK, Channel Islands and the Isle of Man.
- Band, W.M., Madders, Whitfield, D, P. (2007). Developing field and analytical methods to assess avian collision risk at wind farms.
- Chartered Institute of Ecology and Environmental Management (CIEEM) (2018, updated 2024). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Version 1.3.
- Gilbert, G., Gibbons, D.W. & Evans, J. (1998) Bird Monitoring Methods. RSPB, Sandy
- 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.
- Hardey, J., Crick, H.Q.P., Wernham, C., Riley, H., Etheridge, B., Thompson, D. (2013). Raptors: A field guide for surveys and monitoring (3rd Edition). The Stationery Office, Edinburgh.
- NatureScot (2024). Guidance on using an updated collision risk model to assess bird collision risk at onshore wind farms.
- Scottish Renewables et al. (2019). Good Practice during Wind Farm Construction, Version 4.
- Scottish Natural Heritage (SNH) (now NatureScot) (2016). Assessing Connectivity with Special Protection Areas (SPAs).
- SNH (2016). Environmental Statements and Annexes of Environmentally Sensitive Bird Information
- SNH (2017, updated 2025). Recommended bird survey methods to inform impact assessment of onshore wind farms: version 2. SNH, Inverness.
- SNH (2018). Assessing Significance of Impacts from Onshore Wind Farms on Birds Outwith Designated Areas, Version 2.
- SNH (2018). Assessing the Cumulative Impact of Onshore Wind Energy Developments.
- Stanbury et al. (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.
- Stanbury et al. (2024). The Status of the UK's breeding seabirds: an addendum to 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.
- 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.

7.3. APPROACH TO CONSULTATION

The following consultees will be engaged with as part of the assessment process:

- NatureScot;
- Royal Society for the Protection of Birds (RSPB);
- Lothian and Borders Raptor Study Group (LBRSG); and
- South of Scotland Golden Eagle Project.

7.4. BASELINE CONDITIONS AND KEY SENSITIVITIES

7.4.1. Desk Study

A desk-based study for the Proposed Development and wider ornithology study area will be undertaken to review the local, regional and national planning framework and other sources of information sources/guidance (in line with CIEEM, 2024),

The desk study seeks to identify records of protected or notable bird species within 2 km of the Site for species of raptor and owl listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended). This

external data consultation buffer will be extended out to 6km specifically in the case of eagle records. The intention is to obtain external data from The Wildlife Information Centre for Lothian and the Borders (TWIC) and the LBRSG, as well as the RSPB Scotland.

As part of the pre-feasibility work for the Site a search for nature based designated sites for ornithological features was undertaken. A single Special Protection Area (SPA) (Langholm and Newcastleton Hills) is located directly adjacent to the west of the Site and was the only SPA within 10km of the Site. The next closest SPA, the Solway Firth SPA, is designated in part for goose species but is located over 20km from the Site boundary. As such it is not considered functionally linked to the Site. A single national designation, the Langholm and Newcastleton Hills Sites of Special Scientific Interest (SSSI) underpins the SPA designation and so is also located adjacent to the west of the Site.

There are no ornithological non-statutory designations were found within 5 km of the Site.

Results of the designated site search are presented in Table 7.1 and shown in Figure 7.1

Table 7.1: Designated Sites – Ornithology

Site Name	Designation	Qualifying Features	Distance from Site Boundary
Langholm and Newcastleton Hills	SPA	Breeding hen harrier (Circus cyaneus)	Adjacent to the west of the Site
	SSSI	Breeding hen harrier;	

7.4.2. Field Surveys

Table 7.2 summarises the ornithology surveys undertaken at the Site between April 2023 and March 2024. Figure 7.2 presents the vantage point (VP) locations, viewsheds and relevant survey areas.

After being temporarily stopped for one year, baseline ornithological surveys are continuing again from September 2025 and are scheduled to continue through until the end of August 2026.

Table 7.2: Ornithology surveys undertaken to date

Survey	Time Period	Methodology	Comments	Continuing to Year 2
Vantage Point	Apr 2023 -Mar 2024	NatureScot (2017, updated 2025)	One full year completed	Yes
Breeding Birds	Apr - Jul 2023	Brown and Shepherd (1993), NatureScot (2017, updated 2025)	One full breeding season completed.	Yes
Breeding Raptor	Apr - Jul 2023	Hardey et al. (2013), Gilbert et al. (2011), NatureScot (2017, updated 2025)	One full breeding season completed	Yes

Survey	Time Period	Methodology	Comments	Continuing to Year 2
Black Grouse	Apr - May 2023	Gilbert et al. (2011), NatureScot (2017, updated 2025)	One full breeding season completed.	Yes
Wintering Birds	Oct 2023 -Mar 2024	Gilbert et al. (2011), (SNH, 2017).	One full non-breeding season completed.	No

7.4.2.1. Vantage Point Surveys

As per the recommended guidance, it was identified that VP surveys would be required to account for the potential presence of 'scarce' diurnal raptors, waterfowl and wading bird species within and adjacent to the Site. Three VPs were established using GIS software combined with Ordnance Survey digital data. Figure 7.2 shows the vantage point locations and viewsheds. Table 7.3 shows the hours of survey already completed to date from each VP.

Surveys at the Site commenced in April 2023, during which information on bird flight activity was collected throughout timed watches using recommended guidance and methods as outlined by NatureScot (2017, updated 2025). To date, a total of one year of VP survey data has been gathered to inform a future Ecological Impact Assessment (EcIA) for the Proposed Development Table 7.3)

Surveyors undertook the surveys in such a way as to minimise the potential for disturbance impacts on bird behaviour associated with their presence near the Site, including arriving at the survey point a minimum of 15 minutes prior to the commencement of each VP watch. All surveys were stratified, where possible, across three daylight periods (termed 'dawn', 'day' and 'dusk') to allow for diurnal variation in activity rates. All surveys comprised watches lasting no more than three hours in duration and a minimum of 30 minutes break was observed by the surveyor between subsequent watches.

Table 7.3: Survey hours per VP 2023-2024

Year / Month		VP1	VP2	VP3
2023	April	6	6	6
	May	6	6	6
	June	6	6	6
	July	6	6	6
	August	12	12	12
	September	6	6	6
	October	6	6	6
	November	6	6	6

Year / Month		VP1	VP2	VP3
	December	6	6	6
	February	6	6	6
	March	6	6	6
Total		**72**	**72**	**72**

All surveys were undertaken by a single observer in a wide range of weather conditions, but mainly in conditions of good ground visibility (>2 km) and timings were adjusted to account for changes in sunrise and sunset times within each survey season. During each VP watch, two methods of recording were used comprising focal sampling of target species and activity summaries of secondary species. Observations were recorded using five different height bands in order to allow for multiple potential turbine specification, the height bands will be merged together once a finalised specification has been approved.

The following five height bands used were:
- HB1: < 15 m;
- HB2: 15 ≥ < 30 m;
- HB3: 30 ≥ < 50 m;
- HB4: 50 ≥ < 200 m ("Potential Collision Height" (PCH));
- HB5: ≥ 200 m

NatureScot guidance (2017, updated 2025) recommends that primary target species are those which are afforded a higher level of legislative protection, particularly those on the following lists:

- Annex I of the European Council (EC) Birds Directive; and
- Schedule 1 of the Wildlife and Countryside Act (WCA) 1981.

Some species are also selected as primary target species as a result of their behaviour which makes them more likely to be subject to impact from wind farms. Consideration is therefore also given to species identified as of conservation concern (i.e. Birds of Conservation Concern (BoCC) red list, and on the Scottish Biodiversity List (SBL).

The following primary target species were selected at Hartsgarth:

- Annex I and Schedule 1 raptor and owl species;
- Breeding and migratory wildfowl (excluding feral geese e.g. Canada goose);
- Breeding and migratory waders; and
- Black grouse.

Results to Date

Table 7.4 summarises the results for target species from the VP surveys between April 2023 – March 2024.

Table 7.4: Target species results from VP surveys April 2023 – March 2024

Species	No. of Flights	No. of Birds	Sum of Recorded Flight Seconds				
			HB1 (0-15m)	HB2 (15-30m)	HB3 (30-50m)	HB4 (50-200m)	HB5 (>200m)
Black grouse	8	14	30	285	236	0	0
Curlew	10	16	277	125	4	0	0
Hen harrier	33	33	4504	539	0	0	0
Merlin	14	15	1301	312	100	0	0
Peregrine	1	1	0	30	137	0	0
Pink-footed goose	4	189	0	0	60	451	84

7.4.2.2. Breeding Bird Survey

A modified Brown and Shepherd (1993) survey method, which is designed for surveying moorland/upland habitats, was followed for the breeding bird survey. NatureScot guidance (2017, updated 2025) recommends that this survey follows a four-visit approach, carried out between April to July, with a minimum of two weeks between survey visits. A walked transect was followed, visiting all the areas (where access was permitted) of suitable habitat within a 500 m survey buffer around the Site boundary aiming to survey for birds within 100 m of all points inside the Site boundary.

Within visits, duplicate records of waders separated by less than a threshold distance of 500 m were considered to correspond to birds of the same pair, while those separated by more than the threshold distance were considered to be from different pairs. Exceptions to this occurred when recorded birds were seen within the threshold distance of each other as definitely representing different pairs. Following the four visits, all survey data was considered together, along with the noted behaviour observed, and territories of breeding birds are defined as either; confirmed, probable, possible or non-breeding.

Results to date

A total of three wader species were recorded displaying breeding behaviour during BBS surveys: curlew (Numenius arquata), dunlin (Calidris alpina), and golden plover (Pluvialis apricaria).

7.4.2.3. Breeding Raptors

Surveys for Schedule 1 breeding raptors were completed following methods as described in Hardey et al. (2013). A four-visit walkover survey approach was used, with survey visits being spaced between April and July 2023 and covering the Site and a 2 km survey buffer around the Site (where access permissions allowed) and extended to 6 km to search for breeding eagle. The survey area was continuously scanned for target species during the walkover. This included stops at “mini” vantage points where the view was scanned for a period (usually 15-20 minutes) across suitable habitat for target species.

The first survey visit was primarily to detect displaying birds and/or territory occupancy by the various target species. A second visit was then used to identify active nests. The third visit was carried out to check for the presence of young birds, and the final fourth visit was used to record fledged young (Hardey et al., 2013).

Results to date

No breeding activity was recorded for any Schedule 1 raptor during surveys within the Site or 2 km survey buffer. Hen harrier (Circus cyaneus) and merlin (Falco columbarius) were recorded throughout the breeding season, and it is considered that there is suitable breeding habitat for both species within the Study Area. A single golden eagle flight was recorded within 6 km of the Site, assumed to relate to an individual from the South of Scotland Golden Eagle Project release. No other golden eagle sightings or signs of nesting were recorded.

7.4.3. Black Grouse

Due to the presence of suitable habitat for breeding black grouse (Tetrao tetrix), dedicated black grouse surveys were undertaken covering all suitable habitat within the Site and a 1.5 km survey buffer. The survey methods followed those recommended by Gilbert et al. (2012).

Results to date

Two small leks were recorded during black grouse surveys in 2023. Both leks consisted of 1-2 male birds

7.4.4. Wintering Bird Survey

A winter walkover survey was undertaken across the winter of 2023-24, consisting of three survey visits: November 2023, and then January and February 2024. The survey method followed that as outlined in Gilbert et al. (2012). Due to the potential presence of roosting hen harrier, the winter walkover surveys include a dusk watch at each of the three visits.

Results to date

Although between two and three hen harrier flights were registered, no birds were identified as roosting within the Study Area.

7.5. STUDY AREA

The Site is characterised predominantly by upland grassland, heath, mire and wetland habitats with small pockets of conifer plantation. The Site is bisected in two, north and south, by the Hartsgarth Burn and associated riparian woodland valleys. Land use across the Site is allocated to forestry and livestock grazing. There are currently no buildings or permanent built structures within the Site.

The Study Areas specific to ornithology are as follows:

- Vantage Point (VP) flight activity surveys – areas within a 500m buffer of the outermost turbine locations;
- Breeding bird surveys – 0.5 km buffer around the Proposed Development;
- Breeding raptor surveys – 2 km buffer around the Proposed Development;
- Black grouse surveys - 1.5 km buffer around the Proposed Development,
- Wintering bird survey – 0.5 km buffer around the Proposed Development; and
- Designated and non-designated sites – the Proposed Development plus a 20 km buffer.

The Site Boundary, ornithological Study Areas, VP locations and viewsheds are illustrated in Figure 7.1. Statutory and non-statutory designated sites within 20 km of the Proposed Development are illustrated in Figure 7.2.

7.6. PROPOSED ASSESSMENT METHODOLOGY

7.6.1. Ecological Impact Assessment

The ornithology chapter will assess the potential significant effects on ornithology during the construction, operational and decommissioning phases of the Proposed Development. The ornithology chapter of the EIA Report will present the following:

- A summary of consultation responses;
- A description of the existing ornithological baseline for the Proposed Development site and wider ornithological study area between 500 m and 2 km (out to 6 km for eagle) from the boundary of the site ZoI;
- A description of international, national and local sites designated for their species and habitats, such as SPAs, SSSIs, National Nature Reserves (NNRs) and Local Nature Conservation Sites (LNCSs) will be undertaken within 20 km of the Proposed Development, as well as a desk study review of historical records of specially protected or otherwise notable species;
- An assessment of potential significant ornithological impacts associated with the Proposed Development (including collision risk);
- Proposals for appropriate mitigation to ameliorate identified potential impacts (where appropriate), and
- An assessment of the residual potential significant impacts following the implementation of mitigation.

7.6.2. POTENTIAL SIGNIFICANT IMPACTS AND EFFECTS

The key ornithological issues relating to the Proposed Development are the potential to adversely affect the conservation status of bird species with statutory protection (through inclusion in Annex I of the Birds Directive and/or Schedule 1 of the Wildlife & Countryside Act 1981 (as amended)), or otherwise those of high conservation concern.

These impacts can occur through habitat loss, disturbance, displacement, barrier effects and collisions with the turbines. Potential negative impacts (direct or indirect) on ornithology could arise during the construction and operation stages. These are defined as follows.

7.6.2.1. Land Take Impacts

Direct land take for the installation of the Proposed Development infrastructure (turbine bases, substation, access tracks, etc.) could result in the long-term temporary and / or permanent loss of habitat for birds within the Site, albeit such losses are likely to be relatively small in the context of the Site as a whole.

7.6.2.2. Construction Impacts

Disturbance caused by construction may directly displace birds from breeding territories, directly affecting breeding success, or may temporarily displace birds from foraging areas, affecting their breeding success and winter survival.

In addition to these possible impacts on individuals and populations, any wind farm construction work undertaken during the bird breeding season (March to July / August, inclusive) carries a risk of illegal destruction, damage or disturbance to occupied bird nests.

The EIA Report will address and propose measures to reduce or eliminate this impact through potential mitigation such as, pre-construction surveys and the employment of an Ecological Clerk of Works (ECoW) during construction.

7.6.3. Operational Impacts

Disturbance / Displacement and Barrier Effects

The operation and maintenance of turbines has the potential to cause disturbance and displace certain bird species from the Site. During the lifetime of the Proposed Development, some species of birds may habituate to the presence of operational turbines. However, this impact may decline in the long-term.

Collision with Turbines

There is potential for impacts presented to Annex 1 and Schedule 1 species, including raptors and waders, to be displaced by the Proposed Development or suffer direct mortality through collision with turbines. Key target species identified for the Site that may need considered in terms of collision risk include; hen harrier, merlin and black grouse, although flight activity at collision height is currently considered to be low.

Analysis of data, including collision mortality modelling, if required, will be undertake for those target species with sufficient flight activity within the collision risk zone (NatureScot, 2024; Band, 2007).

7.6.3.1. Potential Impacts on Protected Sites

Consideration of potential impacts presented to qualifying species of the Langholm and Newcastleton Hills SPA and SSSI will be required.

The proximity to the SPA means that there is likely to be connectivity between the Site and the European protected SPA site. Given this likely connectivity, it is considered that a shadow Habitats Regulations Appraisal (HRA) will be needed to assess whether the Proposed Development presents 'likely significant effects' (LSE) on the SPA qualifying features and the designation's conservation objectives.

7.6.3.2. Cumulative Impacts

It is also important to assess the cumulative impacts of the Proposed Development and other operational and consented wind farms that may affect the broader populations of birds identified as target species in the survey area.

NatureScot guidance (SNH, 2012) states that the concept of favourable conservation status (FCS) should be used outside designated Sites to determine whether an impact on a sensitive species is likely to be significant. A species' conservation status is favourable where:

- A species' population dynamics indicate that the species is maintaining itself on a long-term basis as a viable component of its habitats; and
- A species' natural range is not being reduced, nor is it likely to be reduced for the foreseeable future; and
- There is (and will probably continue to be) a sufficiently large habitat to maintain its population(s) on a long-term basis.

A cumulative effect will be judged as significant where it would negatively affect the favourable conservation status of a sensitive species, whether exacerbating an existing decline or preventing a sensitive species that is recovering from reaching favourable conservation status.

The premise here is that impacts from a number of developments, when assessed cumulatively, may exceed some threshold value (e.g. for loss of habitat or loss of breeding birds from collision), beyond which the impact becomes unacceptable.

Additional wind farm Site search would also be undertaken; this would identify Sites with more than three wind turbines where turbine tip height is more than 50 m.

7.6.3.3. Decommissioning Impacts

A high-level assessment of the decommissioning of the Proposed Development will be undertaken as part of the EIA, as at this stage the future baseline conditions cannot be predicted accurately and both the proposals for repowering/decommissioning and the future regulatory context are unknown.

However, it can be assumed that the process of decommissioning will likely result in similar impacts to that of the construction phase but with a lesser magnitude and of a shorter period.

7.6.4. Assessment of Effects

The assessment and reporting process will follow CIEEM guidelines (CIEEM, 2018, updated 2024) with reference to relevant NatureScot guidance as appropriate. The intended process is set out below:

- Further desk studies and collation of existing material, including all baseline survey data collected, raptor study group data and information from other nearby wind farm developments;
- Identification of the Important Ornithological Features (IOFs) at the Proposed Development;
- Evaluation of the potential impacts of the Proposed Development during construction and operation and the effects these could have on the IOFs;
- Ornithological features will be considered within a defined geographical context. The following geographic frame of reference will be used:

    - International;
    - National (i.e. Scotland);
    - Regional (i.e. Natural Heritage Zone (NHZ) 20, Border Hills);
    - Local (i.e. the Site plus circa 10 km); and
    - Less than local.

- Analysis of data including collision mortality modelling, if required, for those IOFs with sufficient flight activity within the collision risk zone (NatureScot, 2024; Band, 2007), and assessing the potential displacement of IOFs with significant populations within the Site;
- Evaluation of the significance of effects by considering the impacts on the IOFs by employing appropriate guidance and professional judgement. When describing impacts, in accordance with CIEEM guidelines, reference will be made to the following:

    - Magnitude (area or number of individuals to be impacted);
    - Extent;
    - Duration; and
    - Reversibility, i.e., will the impact be permanent or reversible over a given timescale.

- Incorporating measures to avoid and mitigate (reduce) potentially significant effects;
- Assessing the significance of any residual effects after mitigation;
- Identifying appropriate compensation measures to offset significant residual effects (if required);
- Identifying opportunities for biodiversity enhancement; and
- Cumulative effects assessment along with other developments.

7.7. POTENTIAL SIGNIFICANT IMPACTS AND EFFECTS

From review of desk-based information and field survey work completed to date, the following IOFs have been identified and are considered likely to be assessed:

- Hen harrier (a qualifying feature of the adjacent Langholm and Newcastleton Hills SPA/SSSI recorded within the Study Area);

- Merlin (although not confirmed as breeding within the Study Area, levels of flight activity and suitable habitat indicate);
- Breeding wader assemblage: golden plover, curlew and dunlin (due to wide distribution within the Study Area);
- The Langholm and Newcastleton Hills SPA (due to proximity to the Proposed Development); and
- Black grouse (due to lekking within the Study Area).

Matters to be scoped out of the EIA with respect to Ornithology include:

- Effects on species whose populations are below a certain geographic level of importance. In accordance with CIEEM (2018, updated 2024) guidelines, detailed assessment is only required for species with a certain level of importance or above. For the Proposed Development, it is proposed to assess only species of local importance and above (as defined in Section 'Assessment of Effects').
- Impacts on species/ groups not susceptible to significant effects from wind farms. As specified in current NatureScot guidance (SNH 2017, updated 2025), impacts on species groups such as passerines (songbirds) which are not considered vulnerable to significant effects from wind farm developments are proposed to be scoped out.

7.8. MITIGATION

If it is considered that mitigation is necessary to reduce any significant adverse effects on bird populations, mitigation will be proposed in the ornithological chapter to reduce the significance of these effects to an acceptable level. During the Proposed Development design process mitigation measures will seek to follow the recognised hierarchy of: avoidance, reduction, enhancement, and compensation.

All ornithological mitigation will be incorporated into an outline Construction Environmental Management Plan (oCEMP) and associated outline Biodiversity Enhancement Management Plan (oBEMP). The oCEMP will describe all required mitigation and provide details on timelines for undertaking mitigation for each identified ornithological receptor. The oCEMP will also detail a timetable of actions and form part of the contract documents to ensure delivery of mitigation specified in the chapter. In addition, the oCEMP should incorporate the provision of an ECoW to oversee the implementation of recommended mitigation and any required pre-construction surveys.

The oBEMP that will be submitted as part of the Ecological Impact Assessment (EcIA) Report chapter. Further details are provided in Chapter 7 of this scoping report.

7.9. OPPORTUNITIES FOR ENHANCING THE ENVIRONMENT

Opportunities for enhancing the environment, with respect to Ornithological Receptors will be considered throughout the iterative during design development process. Where the provision of any such opportunities is considered to be appropriate, these will be embedded within the Proposed Development

7.10. PROPOSED SCOPE OF THE EIA CHAPTER

ENVIRONMENTAL RECEPTOR, ASSESSMENT OR EFFECT	SCOPED IN / OUT	RATIONALE
Langholm and Newcastleton Hills SPA/SSSI	Scoped In.	Scoped in due to the proximity of the designation and ecological connectivity with the Proposed Development.
Hen harrier	Scoped In.	Scoped in as a qualifying feature of the Langholm and Newcastleton Hills SPA/SSSI and recorded within the Study Area.
Merlin	Scoped In.	Scoped in due to observed levels of flight activity and the presence of suitable breeding and foraging habitat within the Study Area.
Breeding Wader Assemblage	Scoped In.	Scoped in owing to the wide distribution of wader species within the Study Area.
Black Grouse	Scoped In.	Scoped in following the identification of two leks within the Study Area.
Passerines	Scoped Out.	Scoped out, as passerine species are not considered vulnerable to significant effects from wind farm developments.

7.11. CONSULTATION AND SCOPING QUESTIONS

Questions for consultees are as follows:

- Q7.1 – Please confirm that the scope set out above and that, based on current information and the ongoing second year of baseline surveys, the surveys cited are adequate to inform a future impact assessment.
- Q7.2 – Do consultees have any knowledge of published or unpublished research papers or data sets that may be of relevance to ornithological features that would be of assistance when completing the impact assessment?
- Q7.3 – Are there any developments or infrastructure schemes which should be taken into account when considering potential cumulative ornithological impacts?
- Q7.4 – Please confirm if the approach for Cumulative Assessment is suitable or if consultees wish any other developments to be considered in this assessment.

8. ECOLOGY AND NATURE CONSERVATION

8.1. INTRODUCTION

The Ecology and Nature Conservation chapter of the EIA Report will be supported by appropriate figures and will be prepared by a chartered ecologist with experience in the assessment of wind energy developments in the UK.

The Ecology Scoping chapter is supported by the following figures:

- Figure 8.1 Designated Sites; and
- Figure 8.2 Protected or Priority Habitats

This chapter does not include ornithological interests, which are addressed in Chapter 7.

8.2. LEGISLATION, POLICY & GUIDANCE

Legislation, policy and guidance that have been considered within this chapter of the Scoping Report comprise the following:

8.2.1. Legislation

- The Ramsar Convention on Wetlands of International Importance (the 'Ramsar Convention')[41] ;
- Council Directive 92/43/EEC (the 'Habitats Directive')[42] ;
- Council Directive 2000/60/EC ('Water Framework Directive')[43] ;
- Conservation (Natural Habitats, &c.) Regulations 1994 (the 'Habitats Regulations')[44] ;
- Wildlife and Countryside Act 1981[45] ;
- Protection of Badgers Act 1992 [46];
- Nature Conservation (Scotland) Act 2004[47] ;
- Wildlife and Natural Environment (Scotland) Act 2011[48] ; and

[41] JNCC (2019). The Ramsar Convention. Available at: https://jncc.gov.uk/our-work/ramsar-convention/. Accessed October 2025.
[42]European Commission (1992) Council Directive 92/43/EEC the Conservation of Natural Habitats and of Wild Fauna and Flora. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:31992L0043&from=EN. Accessed October 2025.
[43]European Commission (2000) Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 Establishing a Framework for Community Action in the Field of Water Policy. Available at: https://eur-lex.europa.eu/resource.html?uri=cellar:5c835afb-2ec6-4577-bdf8-756d3d694eeb.0004.02/DOC_1&format=PDF. Accessed October 2025.
[44] Scottish Government (1994) The Conservation (Natural Habitats, &c.) Regulations 1994. Available at: http://www.legislation.gov.uk/uksi/1994/2716/contents/made. Accessed October 2025.
[45] UK Government (1981) Wildlife and Countryside Act 1981, Chapter 69. Part 1. Available at: http://www.legislation.gov.uk/ukpga/1981/69/section/1. Accessed October 2025.
[46] UK Government (1992) Protection of Badger Act 1992. Available at: http://www.legislation.gov.uk/ukpga/1992/51/contents. Accessed October 2025.
[47] Scottish Government (2014) Nature Conservation (Scotland) Act 2004. Available at: http://www.legislation.gov.uk/asp/2004/6/contents. Accessed October 2025.
[48] Scottish Government (2011) Wildlife and Natural Environment (Scotland) Act 2011. Available at: http://www.legislation.gov.uk/asp/2011/6/contents/enacted. Accessed October 2025.

- Salmon and Freshwater Fisheries (Consolidation) (Scotland) Act 2003[49] .

8.2.2. Policy

- The Scottish National Planning Framework 4 (NPF4)[50] ;
- European Union (EU) Biodiversity Strategy for 2030[51] ;
- Scotland's Biodiversity: A Route Map to 2020[52] ; and
- Scottish Biodiversity List (SBL)[53] .

8.2.3. Guidance

- Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine (v1.3, September 2024)[54] ;
- NatureScot Pre-application Guidance for Onshore Wind Farms[55] ;
- Decommissioning and Restoration Plans for Wind Farms[56] ;
- Good Practice During Wind Farm Construction[57] ;
- Guidance on Assessing the Impacts of Developments on Groundwater Dependent Terrestrial Ecosystems[58];
- Planning Guidance on On-shore Windfarm Developments[59] ;

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[49] Scottish Government (2003) Salmon and Freshwater Fisheries (Consolidation) (Scotland) Act 2003. Available at: http://www.legislation.gov.uk/asp/2003/15/contents. Accessed October 2025.
[50] Scottish Government (2023) National Planning Framework 4. Available at: https://www.gov.scot/publications/national-planning-framework-4/pages/3/. Accessed October 2025.
[51].European Commission (2020) Biodiversity Strategy for 2030. Available at: https://environment.ec.europa.eu/strategy/biodiversity-strategy-2030_en. Accessed October 2025
[52] Scottish Government (2015) Scotland's Biodiversity, a Route Map to 2020. Available at: https://www.gov.scot/publications/scotlands-biodiversity-route-map-2020/ Accessed October 2025.
[53] Scottish Government (2020) Scottish Biodiversity List. Available at: https://www.nature.scot/scotlands-biodiversity/scottish-biodiversity-strategy/scottish-biodiversity-list. Accessed October 2025.
[54] CIEEM (2024) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine, version 1.3.
[55] NatureScot (2024) NatureScot pre-application guidance for onshore wind farms. Available at: https://www.nature.scot/doc/naturescot-pre-application-guidance-onshore-wind-farms. Accessed October 2025.
[56] NatureScot (2016) Decommissioning and Restoration Plans for Wind Farms. Available at: https://www.nature.scot/guidance-decommissioning-and-restoration-plans-wind-farms-february-2016. Accessed October 2025.
[57] Scottish Renewables, NatureScot, SEPA, Forestry Commission Scotland, Historic Environment Scotland (2024). Good Practice during Wind Farm Construction. Available at: https://www.nature.scot/guidance-good-practice-during-wind-farm-construction. Accessed October 2025.
[58] SEPA (2024) Guidance on Assessing the Impacts of Developments on Groundwater Dependent Terrestrial Ecosystems. Land Use Planning System SEPA Guidance Note 31. Version 3. Available at: https://www.sepa.org.uk/media/a1yh0blq/guidance-on-assessing-the-impacts-of-developments-on-groundwater-dependent-terrestrial-ecosystems.docx. Accessed October 2025.
[59] SEPA (2014) Planning guidance on on-shore windfarm developments. Land Use Planning System SEPA Guidance Note 4. Version 9. Available at: https://www.dpea.scotland.gov.uk/Document.aspx?id=954215. Accessed October 2025.

- Guidance on Advising on peatland, carbon-rich soils and priority peatland habitats in development management[60].

8.3. APPROACH TO CONSULTATION

Consultation with NatureScot would be undertaken to agree the proposed approach and timings for ecological surveys (as described in Section 8.5). Consultation with NatureScot at the earliest opportunity would seek to confirm that the scope of proposed ecological surveys is sufficient to identify and robustly assess potential effects on important ecological features from the Proposed Development.

As required, further consultation with NatureScot and other relevant consultees/stakeholders (e.g. Scottish Borders Council, Galloway Fisheries Trust, etc.) would be undertaken to discuss responses to previous consultations, desk study results, survey findings and proposed mitigation; as well as opportunities for biodiversity enhancements.

8.4. BASELINE CONDITIONS AND KEY SENSITIVITIES

A desk-based study was completed to identify key ecological sensitivities that may be affected by the Proposed Development, based on a review of publicly available data sources including NatureScot Sitelink[61] , Scotland's Environment Webmap[62], Ordnance Survey (OS) mapping and satellite imagery.

The desk-based study was completed using guidance, professional judgement and ecological zones of influence considered to be proportionate to the biophysical changes that could arise from the Proposed Development; as described in the sections below.

8.4.1. Designated Sites

No statutory designated sites have been identified within the Site; and one statutory designated site within 5 km of the Site; as shown on Figure 8.1 and summarised in Table 8.1.

Langholm-Newcastleton Hills SSSI is the only statutory designated site identified within 5 km of the Site. The SSSI is directly adjacent to the Site between Hartsgarth Burn and the Ralton Burn. Habitats along the eastern edge of the SSSI are typically characterised by extensive mosaics of M25 *Molinia caerulea – Potentilla erecta* mire interspersed with varying amounts of M23 J*uncus effusus/acutiflorus – Galium palustre* rush-pasture, H12 *Calluna vulgaris – Vaccinium myrtillus* heath, U5 *Nardus stricta–Galium saxatile* grassland and U20 *Pteridium aquilinum–Galium saxatile* community. These plant communities are indicative of the upland assemblage SSSI notified feature. Potential implications on the breeding bird assemblage and breeding hen harrier SSSI notified features are discussed in Chapter 7 (Ornithology); and the Carboniferous-Permian Igneous SSSI notified feature are discussed in Chapter 10 (Hydrology and Hydrogeology).

No non-statutory designated sites have been identified within 2 km of the Site.

[60] NatureScot (2023) Advising on peatland, carbon-rich soils and priority peatland habitats in development management. Available at: https://www.nature.scot/doc/advising-peatland-carbon-rich-soils-and-priority-peatland-habitats-development-management. Accessed October 2025.
[61] https://sitelink.nature.scot/home
[62] https://map.environment.gov.scot/sewebmap/

Table 8.1: Summary of Sites Designated for Nature Conservation within 5 km of the Site

Designation	Name	Proximity	Notified features
SSSI	Langholm-Newcastleton Hills	0 m west of the Site	Upland assemblage Breeding bird assemblage Breeding hen harrier Carboniferous-Permian Igneous.

8.4.2. Vegetation and Habitats

8.4.2.1. Habitats

A review of EUNIS Scotland Land Cover Map[63] indicates that raised and blanket bogs are present in the north of the Site at Thinside Hill and Hazelyside Rig, and in the south at North Birny Fell. Seasonally wet and wet grasslands, and dry grasslands appear to be the most abundant habitats on the Site and are present throughout. Valley mires, poor fens and transitional mires, and temperate shrub heath habitats are present in small areas throughout the Site, mostly alongside raised and blanket bog. Broadleaved deciduous woodland habitat is present along Hartsgarth Burn, of which a small section runs through the centre of the Site. Woodland fringes and clearings and tall forb stands are present across the Site but are concentrated along Hartsgarth Burn and at Hazelyside. On the basis of the above, there is potential for protected or priority habitat to be present within the Site, which may be connected to moorland habitats within the adjoining SSSI.

The NBN Atlas provides records of both Japanese knotweed (Fallopia japonica) and Giant hogweed (*Heracleum mantegazzianum*) within 2 km of the Site; therefore there is potential for non-native invasive species of plant to the present within the Site.

8.4.2.2. Priority Peatlands

A review of the Cabon and Peatland Map[64] indicates the presence of Class 3 and Class 5 peatland across much of the Site; as shown in Figure 8.2. Whilst carbon-rich soils and deep peat may be locally present, the prevailing vegetation is not considered to be representative of extensive priority peatland habitat. Class 1 peatland was identified approximately 350 m north-west of the Site towards Dinley Fell, which is connected to more extensive blanket bog habitat within Langholm-Newcastleton Hills SSSI. On the basis of the above, there is potential for priority peatland habitat to be present within or adjoining the Site.

8.4.2.3. Ancient Woodlands

No Ancient Woodland Inventory (AWI) sites have been identified within 500 m of the Site.

8.4.3. Fauna

A search of the NBN Atlas was conducted for records of protected or priority species over the last 10 years and within 2 km of the Site, extending up to 5 km for bat species; as summarised in Table 8.2.

[63] *Scotland Land Cover Map 2022, NatureScot – EUNIS Level 1, accessed October 2025.*
[64] *Carbon and peatland 2016 map – SpatialData.gov.scot, accessed October 2025.*

Table 8.2: Records of protected or priority species within 2 km of the Site (5 km for bats)

Common name	Scientific name	Number of records
Atlantic salmon	Salmo salar	4
Common lizard	Zootoca vivipara	4
Common pipistrelle	Pipistrellus pipistrellus	382
Common toad	Bufo bufo	8
Daubenton's bat	Myotis daubentonii	19
European adder	Vipera berus	1
Natterer's bat	Myotis nattereri	1
Red squirrel	Sciurus vulgaris	113
Soprano pipistrelle	Pipistrellus pygmaeus	67

Habitats within and adjoining the Site are dominated by extensive areas of open moorland. There is potential for widespread species of reptiles to be present in these areas, including adder, where they occur in proximity to suitable hibernation features.

Woodland and tree cover within the Site is extremely limited. Woodland belts are present along bankside areas of the Black Burn, Hartsgarth Burn and Hermitage Water. In addition, small coniferous plantations are present near Raltonside, Foulshiels Wood, Leahough Bridge, Nether Row Plantation and Toftsholm Moss. There is potential for tree-dwelling species (bats, pine marten, red squirrel) to utilise suitable habitat features in these areas; particularly those that are connected to, or in close proximity to, more extensive woodland habitats. In addition, there is potential for protected mammal species (badger, otter) to utilise suitable habitat features in these areas. Furthermore, there is potential for these species to utilise woodland and scrub habitats to commute to other suitable habitats in the locality.

There are no dwelling houses within the Site. A former agricultural building may be present at Hazelyside near Hartsgarth Burn; therefore, there is potential for roosting bats or pine marten in the locality to utilise suitable features at Hazelyside for roosting or denning respectively.

There are a number of watercourses running across the Site and surrounding area including Tarras water, Hermitage Water, Twistlehope Burn, Billhope Burn, Ralton Burn, Liddel Water, Black Burn, and Tinnis Burn. There is potential for migratory fish, including Atlantic salmon, to be present within accessible in-stream aquatic habitat within or downstream of the Site. In addition, a number of drains appear to be present across much of the Site, which could be utilised permanently (or seasonally) by any water vole in the locality.

In addition, the NBN Atlas provided records of American mink (Neogale vison) within 2 km of the Site. Therefore, there is potential for this species to be present along bankside habitats where there is sufficient cover available and prey availability (namely rabbit) in areas adjoining watercourses.

8.5. PROPOSED ASSESSMENT METHODOLOGY

8.5.1. Desk Study

An updated desk-based study will be completed to identify protected and priority ecosystems, habitats and species in relation to the Proposed Development. The desk-based study will include a review of relevant information including:

- NatureScot's SiteLink to identify statutory designated sites within 5 km of the Site;
- NatureScot's SiteLink to identify non-statutory designated sites within 2 km of the Site;
- NatureScot's SiteLink to identify protected or priority habitats (including ancient woodland inventory sites) within 500 m of the Site; and
- Aerial imagery and OS mapping to identify waterbodies and watercourses within 250 m of the Site.

A data request will be submitted to the South West Scotland Environmental Information Centre (SWSEIC) and The Wildlife Information Centre (TWIC) to obtain records of locally important sites; as well as protected or priority habitats and species within 2 km of the Site, extending up to 5 km for records of bats.

8.5.2. Baseline Surveys

The scope of ecological surveys will be agreed with NatureScot; as described in Section 8.3. Fieldwork will be undertaken by professional ecologists in accordance with current guidance; as well as the Chartered Institute for Ecology and Environmental Management (CIEEM) Code of Professional Conduct and the Chartered Institute's Competency Framework.

8.5.2.1. Ecology Walkover Survey

A habitat survey of accessible areas within, and up to 250 m from, the Proposed Development will be undertaken (i.e. Site boundary relating to all requisite infrastructure, temporary works areas, landscape planting and biodiversity enhancement areas). The habitat survey will classify and map broad habitats in accordance with the UKHab classification system, to help determine the presence and extent of important natural, semi-natural and wetland habitats; and to confirm the need for further detailed botanical surveys (e.g. NVC). As far as practicable, habitat surveys will be carried out during suitable weather conditions and within the main growing season (April to September inclusive). Target Notes will be recorded to provide detail about botanical features of particular interest, management considerations and incidental sightings of protected or priority species of plant. The location of non-native invasive species of plant encountered during the survey will also be recorded to inform the need for further surveys and/or management (e.g. giant hogweed, Indian balsam and Japanese knotweed). The use of BNG Metric Assessments in Scotland is not mandatory; however, habitat condition assessments will be completed should a BNG Metric Assessment be required.

8.5.2.2. Habitat Assessment for Protected Species

In accordance with current CIEEM guidelines and NatureScot standing advice, the survey will assess the suitability of habitats to support protected species including bats, red squirrel, pine marten, badger, otter, water vole, amphibians, reptiles and in-stream aquatic ecology. Target Notes will be recorded to provide details on habitat features of particular interest (e.g. structures or places used by a protected species for shelter or protection) to inform the need for further surveys; as well as any incidental sightings or signs of other priority species.

8.5.2.3. Bat Activity Survey

A bat survey of the Site will be completed to identify and characterise bat habitats and bat activity levels in accordance with current NatureScot guidelines. The bat activity survey will comprise deployment of full-spectrum bat acoustic detectors (e.g. Anabat Swift) as close as possible to each proposed wind turbine generator (WTG) to record ultrasonic bat echolocation calls for a minimum of 10 consecutive nights in

conditions suitable for bats during spring (April to May inclusive), summer (June to mid-August inclusive) and autumn (late-August to October inclusive). Where the locations of WTGs have yet to be established, full-spectrum bat acoustic detectors should be distributed across the Site according to a system of stratified sampling based on the availability of different habitats and topographical features on the Site. On the assumption that the Proposed Development could accommodate up to 18 WTGs, the deployment of 13 full-spectrum bat acoustic detectors would be required at the Site each season. This equates to monitoring bat activity for a minimum of 30 consecutive nights at each WTG location within a single calendar year (e.g. total of 390 nights covering 13 WTGs).

8.5.3. Ecological Impact Assessment

Following establishment of the ecology baseline, an ecological impact assessment (EcIA) will be completed in accordance with current CIEEM guidelines, and delivered as the Ecology Chapter to the EIA Report. The EcIA will cover the following:

- Description of baseline conditions: presenting the baseline survey information and determining Important Ecological Features (IEFs) within the Proposed Development's ecological zone of influence;
- Prediction and assessment of potential effects (including cumulative effects) on IEFs, taking into account any embedded mitigation;
- Identification of mitigation measures to avoid, reduce or remedy potential significant effects; and
- Assessment of residual impacts.

In line with the latest CIEEM guidance, rather than using a matrix approach to determine significant effects, the approach used for the assessment will be to consider the importance and sensitivity of the important ecological features, and the characteristics and severity of the impact, and applying professional judgement as to whether the integrity of the feature would be affected. For the purposes of the assessment, an effect that threatens the integrity of an important ecological feature will be considered significant. IEFs that are unlikely to be affected by the Proposed Development will be scoped out of the assessment.

Where appropriate, these construction, operational and decommissioning impacts will also be considered in a cumulative assessment.

8.5.4. Habitats Regulations Appraisal

In line with current guidance, a Habitats Regulations Appraisal (HRA) Stage 1 screening assessment will be undertaken to determine the potential for likely significant effects on European Sites, including those that are hydrologically connected to watercourses within the Site (e.g. Solway Firth Special Area of Conservation).

8.6. POTENTIAL SIGNIFICANT IMPACTS AND EFFECTS

Potential likely significant effects on ecology and nature conservation have been identified that may occur during the construction and operation (including maintenance) phases of the Proposed Development.

8.6.1. During Construction and Decommissioning

8.6.1.1. Designated Sites

There is potential for the Proposed Development to affect the upland assemblage SSSI notified feature of the adjoining Langholm-Newcastleton Hills SSSI. This could result from incidental damage from construction and decommissioning activities; as well as further indirect loss from compaction and dewatering of peatland habitats from temporary works, excavations and drainage. In addition, there is potential for plant, machinery and vehicles to cause non-native invasive species to spread in the wild; resulting in the loss of native flora and damage to SSSI notified features.

8.6.1.2. Vegetation and Habitats

There is potential for the Proposed Development to result in the loss of important moorland habitats (including peatlands) within and adjoining the Site. This could result from direct loss to development infrastructure and/or incidental damage from construction and decommissioning activities; as well as further indirect loss from compaction and dewatering of peatland habitats from temporary works, excavations and drainage. In addition, there is potential for plant, machinery and vehicles to cause non-native invasive species to spread in the wild; resulting in the loss of native flora and important moorland habitats.

8.6.1.3. Fauna

There is potential for the Proposed Development to kill, injure or disturb protected or priority species through direct loss of habitat features regularly utilised by affected species, entrapment within deep excavations and increased animal road mortality from collisions with vehicle on access tracks. Temporary elevations in noise, vibration, temporary lighting (and increased human presence) have the potential to disturb protected or priority species from features used for shelter or protection (including for breeding and hibernation). Construction and decommissioning activities have the potential to cause temporary reductions in water quality from pollution to the water environment (e.g. sedimentation, fuel spills, etc.). In addition, there is potential for new or replacement watercourse crossings (and new drainage) to result in the loss of in-stream and bankside habitats.

8.6.2. During Operation

8.6.2.1. Designated Sites

There is potential for the Proposed Development to have lasting effects on the upland assemblage SSSI notified feature of the adjoining Langholm-Newcastleton Hills SSSI whereby permanent hydrological changes could result in further habitat degradation (e.g. recurring desiccation or flooding of habitats leading to erosion and/or succession from changes to plant communities).

8.6.2.2. Vegetation and Habitats

There is potential for the Proposed Development to have lasting effects on important moorland habitats within and adjoining the Site whereby permanent hydrological changes could result in further habitat degradation (e.g. recurring desiccation or flooding of habitats leading to erosion and/or succession from changes to plant communities).

8.6.2.3. Fauna

Operational wind turbines present a risk of collision mortality, barotrauma and other injuries to bat populations within and adjoining the Site. There is also potential for the Proposed Development to have lasting effects on protected or priority species within and adjoining the Site whereby the combination of habitat loss and habitat degradation (along with permanent elevations in noise, vibration and lighting) could result in displacement. New or replacement watercourse crossings could result in fragmentation or isolation of habitats through severance; and affect natural sediment transfer/ processes. In addition, new drainage provisions could result in localised flooding and erosion of bankside habitats, scour of in-stream habitats and temporary reductions in water quality.

8.7. MITIGATION

Specific mitigation required to reduce and/or offset any significant ecological effects will be dependent on the findings of ecological surveys. Mitigation measures will be developed through the EIA process; and detailed in the EIA Report. None-the-less, measures that could help avoid and/or reduce potential effects on important ecological features have been identified to inform design development and to be embedded in the Proposed Development.

The mitigation hierarchy will be applied throughout each stage of design development (i.e. outline and detailed design) to avoid and reduce potential likely significant effects on important ecological features (e.g.

designated sites, qualifying interest features, nationally important carbon-rich soils, protected or priority habitats (including Annex I habitats); as well as habitats supporting protected or priority species).

In accordance with NatureScot guidelines, the design will seek to incorporate a 50 m buffer between turbine blade tip and key bat habitats (e.g. woodlands, trees, hedgerows, watercourses, wetlands). Woodland regeneration within the 50 m buffer zone will be avoided to minimise the potential for foraging or commuting bats to collide with turbines.

All construction, maintenance and decommissioning activities will be planned and undertaken in accordance with a Construction Environmental Management Plan (CEMP), including any associated species protection, habitat management and/or peatland restoration plans; that will enable the Proposed Development to be delivered in accordance with existing (and future) policy and legal requirements. This will include the appointment of an Ecological Clerk of Works to monitor ecological aspects of the CEMP; and to provide additional advice and support during construction and decommissioning works.

Outline Species Protection Plans (oSPP) will be prepared to identify good practice and specific mitigation measures identified through EIA-related documentation to avoid, reduce and/or mitigate for potential likely significant effects on protected species during construction and decommissioning works; as well as identifying opportunities for biodiversity enhancements. It is anticipated that the oSPP will be developed into final Species Protection Plans (SPPs) prior to any construction or decommissioning works being undertaken at the Site. The final SPP will also set out any additional mitigation or licensing requirements relating to protected species based on the findings of pre-construction surveys.

8.8. OPPORTUNITIES FOR ENHANCING THE ENVIRONMENT

Opportunities for enhancing the environment should be considered throughout the iterative during design development process. A number of opportunities that may be appropriate to the Site are described below. Where the provision of any such opportunities is considered to be appropriate, these should be embedded within the Proposed Development:

- Peatland restoration required to compensate for the direct and indirect loss of peatland habitats affected by the Proposed Development would help improve the quality (and contribute to the overall resilience) of existing peatland ecosystems within and adjoining the Site;
- Where new or replacement watercourse crossings are required, the design (and temporary works) will seek to maintain ecological permeability as far as practicable;
- Incorporating two levels of SuDS treatment for new (or changes to existing) drainage will seek to improve the quality of discharge to the water environment, benefiting in-stream biodiversity within (or downstream of) receiving watercourses;
- Drainage design will consider opportunities to create permanent ponds and/or ephemeral wetland features in suitable areas to create specific habitats features to benefit local biodiversity, particularly invertebrates; and,
- Opportunities to create discrete butterfly bunds in suitable areas will be explored, which could provide functional habitats to benefit local pollinators and nectaring invertebrates.

8.9. PROPOSED SCOPE OF THE EIA CHAPTER

Table 8.3: Effects scoped into and out of EIA Assessment

ENVIRONMENTAL RECEPTOR, ASSESSMENT OR EFFECT	SCOPED IN / OUT	RATIONALE
During construction		
Potential loss of notified features within the habitats from within Langholm-Newcastleton Hills SSSI.	Scoped In.	The Proposed Development adjoins one SSSI. At this preliminary stage, possible effects include habitat loss and degradation and loss of irreplaceable habitats.
Potential loss, damage and disturbance to protected and priority habitats, including priority peatlands.	Scoped In.	The Proposed Development is located within and in close proximity to areas that could contain protected or priority habitats including peatland habitats. Whilst there is potential for the Proposed Development to result in the loss of protected or priority habitats in overlapping areas, the location of development infrastructure within the Site will be refined during design development phases to minimise habitat loss. Where practicable, disturbed ground will be reinstated to avoid any potential indirect loss protected or priority habitats. The Proposed Development also presents an opportunity to restore and enhance protected and priority habitats within the Site through appropriate management and monitoring.
Potential for killing, injuring, disturbing and/or displacing protected or priority species, and loss of supporting terrestrial and aquatic habitat features.	Scoped In.	The Proposed Development may affect structures or places that could be used by protected species for shelter or protection; as well as for breeding and hibernation. Whilst there is potential for the Proposed Development to affect protected or priority species in the locality, the location of development infrastructure and the Site will be refined during design development phases to minimise loss of habitat features and important foraging/commuting pathways. Where practicable, disturbed ground will be reinstated to avoid any potential indirect loss protected or priority habitats. The Proposed Development also presents an opportunity to restore and enhance protected and priority habitats within the Site through

ENVIRONMENTAL RECEPTOR, ASSESSMENT OR EFFECT	SCOPED IN / OUT	RATIONALE
		appropriate management and monitoring, which could seek to avoid any lasting damage or disturbance to habitats supporting protected or priority species.
Operation		
Potential loss of notified habitat features within Langholm-Newcastleton Hills SSSI.	Scoped In.	Potential loss of notified habitat features within Langholm-Newcastleton Hills SSSI.
Potential loss, damage and disturbance to protected and priority habitats, including priority peatlands.	Scoped In.	The location of ancillary infrastructure within the Site is yet to be established; and the presence and extent of protected or priority habitats that could be affected by the Proposed Development are not known.
Potential for killing, injuring, disturbing and/or displacing protected or priority species, and loss of supporting terrestrial and aquatic habitat features.	Scoped In.	The location of ancillary infrastructure within the Site is yet to be established; and the presence and extent of habitat features and important foraging/commuting pathways utilised by protected or priority species, that could be affected by the Proposed Development, is not known.
Decommissioning		
All potential receptors described above.	Scoped Out.	Potential effects during the decommissioning are likely to be similar to or less than construction-stage effects, decommissioning effects are considered to be not significant and scoped out from further consideration.

8.10. CONSULTATION AND SCOPING QUESTIONS

Questions for consultees are as follows:

- Q8.1 – Do you agree that the data sources identified are sufficient to inform the ecological baseline for the EIA (and therefore that no further baseline data collection is merited)?
- Q8.2 – Have all ecological receptors and potential likely significant effects that could result from the Project been identified?
- Q8.3 – Do you agree with the proposed assessment methodology (scoped in or out) for each of the potential effects in Table 8.3 for ecology and nature conservation?
- Q8.4 – Do you agree that mitigation measures described provide a suitable means for managing and mitigating the potential likely significant effects of the Proposed Development in relation to ecology and nature conservation?
- Q8.5 – Are you aware of any other management or development activities that could affect the proposed assessment approach, particularly in relation to the establishment of the ecological baseline?

- Q8.6 – Do you have any information that can be shared in relation to protected or priority ecosystems, habitats or species in relation to the Site?

9. GEOLOGY, PEAT AND SOILS

9.1. INTRODUCTION

This chapter of the Scoping Report sets out the baseline conditions of the Site in relation to Geology, Peat and Soils, proposed methodology to be used in the EIA, and the scope of the assessment that will be covered in the Geology, Peat and Soils chapter of the EIA Report. The Geology, Peat, and Soils chapter of the EIA Report will be supported by appropriate figures and will be prepared by a chartered geologist with experience in the assessment of wind energy developments in the UK.

The Geology, Peat and Soils Scoping chapter is supported by the following figure:

- Figure 9.1: Interpolated Peat Map

9.2. LEGISLATION, POLICY, AND GUIDANCE

The following legislation, policy and guidance were used in the preparation of this chapter, and will be used throughout the peat, geology and soils assessment:

- Scottish Government (2023) National Planning Framework 4 (NPF4)[65] ;
- NatureScot (formerly Scottish Natural Heritage (SNH)) (2024), Good Practice During Wind Farm Construction[66] ;
- The Scottish Government (2017) Peat Landslide Hazard and Risk Assessments – Best Practice Guide for Proposed Electricity Generation Developments[67] ;
- Scottish Government, SNH, Scottish Environment Protection Agency (SEPA) (2017) Peatland Guidance on Development on Peatland, on-line-version-only[68] ;
- SEPA and Scottish Renewables (2012) Guidance on the Assessment of Peat Volumes, Reuse of Excavated Peat and Minimisation of Waste[69] ;

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[65] Scottish Government (2023) National Planning Framework 4. [Online] Available at: https://www.gov.scot/publications/national-planning-framework-4/ (Accessed September 2025)

[66] NatureScot (2024). Guidance – Good Practice During Wind Farm Construction. 4th Edition. [Online] Available at: https://www.nature.scot/doc/good-practice-during-wind-farm-construction (Accessed September 2025)

[67] Scottish Government (2017) Peat Landslide Hazard and Risk Assessments: Best Practice Guide for Proposed Electricity Generation Developments (Second Edition) [Online] Available at: https://www.gov.scot/binaries/content/documents/govscot/publications/advice-and-guidance/2017/04/peat-landslide-hazard-risk-assessments-best-practice-guide-proposed-electricity/documents/00517176-pdf/00517176-pdf/govscot%3Adocument/00517176.pdf (Accessed September 2025)

[68]Scottish Government, Scottish National Heritage, Scottish Environment Protection Agency (2017) Peatland Guidance on Development on Peatland. [Online] Available at: https://www.gov.scot/binaries/content/documents/govscot/publications/advice-and-guidance/2018/12/peatland-survey-guidance/documents/peatland-survey-guidance-2017/peatland-survey-guidance-2017/govscot:document/Guidance+on+developments+on+peatland+-+peatland+survey+-+2017.pdf (Accessed September 2025)

[69] Scottish Environment Protection Agency (SEPA) and Scottish Renewables (2012). Guidance on the Assessment of Peat Volumes, Reuse of Excavated Peat and Minimisation of Waste [Online] Available at: https://www.gov.scot/binaries/content/documents/govscot/publications/advice-and-guidance/2014/07/assessment-of-peat-volumes-reuse-of-excavated-peat-and-minimisation-of-waste-guidance/documents/guidance-on-the-assessment-of-peat-volumes-reuse-of-excavated-peat-and-the-minimisation-of-waste/guidance-on-the-assessment-of-peat-volumes-reuse-of-excavated-peat-and-the-

- SEPA (2017) Developments on Peat and Off-Site Uses of Waste Peat[70] ;
- NatureScot (2023) Advising on peatland, carbon-rich soils and priority peatland habitats in development management[71] ;
- The Scottish Government (2009) The Scottish Soil Framework[72] ;
- The Scottish Office (1996) Planning Advice Note (PAN) 50 – Controlling the Environmental Effects of Surface Mineral Workings[73] ; and
- The Construction Industry Research and Information Association (CIRIA) (2015) Environmental Good Practice on Site (C741)[74] .

9.3. APPROACH TO CONSULTATION

Consultation will be undertaken with the relevant consultees for geology, peat and soils, as detailed in Section 9.2. Further consultation may be required throughout the assessment in relation to any notable findings.

9.4. STUDY AREA

The Study Area will include all of the Proposed Development infrastructure locations and the entirety of the area within the Site boundary. No additional buffers beyond the Site boundary have been applied since geology, peat and soils are localised receptors.

9.5. BASELINE CONDITIONS AND KEY SENSITIVITES

This section outlines the baseline geological environmental conditions across the Study Area. The following data sources have been reviewed as part of scoping:

- Google Earth and Bing Maps Aerial Imagery;
- National Soil Map of Scotland[75] ;

minimisation-of-waste/govscot%3Adocument/Guidance%2Bon%2Bthe%2Bassessment%2Bof%2Bpeat%2Bvolumes%252C%2Breuse%2Bof%2Bexcavated%2Bpeat%252C%2Band%2Bthe%2Bminimisation%2Bof%2Bwaste.pdf (Accessed September 2025)

[70] Scottish Environment Protection Agency (2017) Developments on Peat and Off-Site Uses of Waste Peat [Online] Available at: https://www.sepa.org.uk/media/287064/wst-g-052-developments-on-peat-and-off-site-uses-of-waste-peat.pdf (Accessed September 2025)

[71] NatureScot (2023) Advising on peatland, carbon-rich soils and priority peatland habitats in development management [Online] Available at: https://www.nature.scot/doc/advising-peatland-carbon-rich-soils-and-priority-peatland-habitats-development-management (Accessed September 2025)

[72] Scottish Government (2009). The Scottish Soil Framework. [Online] Available at: The Scottish Soil Framework (fao.org) (Accessed September 2025)

[73]Scottish Government (1996). Planning Advice Note 50: controlling the environmental effects of surface mineral workings [Online] Available at: https://www.gov.scot/publications/planning-advice-note-pan-50-controlling-environmental-effects-surface-mineral/ (Accessed September 2025)

[74] The Construction Industry Research and Information Association (CIRIA) (2015) Environmental Good Practice on Site (C741).

[75] Scotland's Environment (2025) National soil map of Scotland [online] Available at: https://soils.environment.gov.scot/maps/soil-maps/national-soil-map-of-scotland/ (Accessed: September 2025)

- The 2016 Carbon and Peatland Map[76];
- British Geological Survey (BGS) Superficial and Bedrock Geology maps[77] ;
- NatureScot SiteLink[78] ;
- National Library of Scotland Historical Maps[79] ;
- Zetica Unexploded Ordnance (UXO) data[80] ; and
- The Mining Remediation Authority Map Viewer[81] .

9.5.1. Statutory Designations

From review of the NatureScot SiteLink[78], there are no statutory designated sites across the Study Area relating to geology, peat and soils.

9.5.2. Superficial Soils

BGS 1:50k Superficial Geology Mapping[77] indicates that the Study Area is predominantly underlain by peat deposits. Glacial till is mapped in the south and central areas of the Study Area. These deposits are comprised of a heterogeneous mixture of clay, sand, gravel and boulders with varying shapes and sizes. In addition, mapped superficial deposits are absent across localised areas of the Study Area, indicative of potential bedrock at or near surface level.

9.5.3. Bedrock Geology

BGS 1:50k Bedrock Geology mapping[77] indicates that the majority of the Study Area is underlain by the Border Group. This formation is comprised of sedimentary rocks, including sandstones, siltstones and mudstones.

The Whita Sandstone Beds are mapped in the northwestern extents of the Study Area. This formation is comprised of sedimentary rocks, including sandstones and minor siltstones. In addition, localised areas in the northern section of the Study Area are underlain by the Southern Scotland Dinantian Plugs and Vents Suite. This formation is comprised of igneous rocks, including agglomerates which are pyroclastic rocks formed from the accumulation of large blocks of volcanic material.

9.5.4. National Soils Mapping

The National Soils Map of Scotland[75] indicates that the Study Area is underlain by the following soil types:

- Noncalcareous gleys;
- Noncalcareous gleys with humic gleys;
- Peaty gleys with dystrophic blanket peat; and

[76] Scotland's Environment (2025) Carbon and Peatland 2016 Mapping [online] Available at: https://soils.environment.gov.scot/maps/thematic-maps/carbon-and-peatland-2016-map/ (Accessed: September 2025)
[77] BGS (2025) GeoIndex Onshore [online] Available at: https://mapapps2.bgs.ac.uk/geoindex/home.html (Accessed: September 2025)
[78].Nature Scot SiteLink, available at https://sitelink.nature.scot/home (Accessed: September 2025)
[79] National Library of Scotland (2025) Side by Side Georeferenced Maps. Available at: https://maps.nls.uk/geo/explore/side-by-side/#zoom=14.8&lat=55.21755&lon=-2.81908&layers=6&right=osm (Accessed: September 2025)
[80] Zetica UXO (2025), available at: https://zeticauxo.com/guidance/risk-maps/ (Accessed: September 2025)
[81] Mining Remediation Authority (2025), available at: https://datamine-cauk.hub.arcgis.com/ (Accessed: September 2025)

- Dystrophic blanket peat.

The majority of the Study Area is underlain by peaty gleys with dystrophic blanket peat. Noncalcareous gleys are mapped locally in the central and western area of the Study Area. In addition, dystrophic blanket peat is mapped locally in the northwestern extents of the Study Area.

9.5.5. Carbon and Peatland Map 2016

The NatureScot Carbon and Peatland 2016 Map indicates that there is no Class 1 or Class 2 priority peatland across the Study Area.

The majority of the north and northeast of the Study Area is underlain by Class 3 peatland. Class 3 peat is predominantly peaty soil with some peat soil where dominant vegetation cover is associated with wet and acidic type instead of priority peatland habitats. Class 3 peat soils are carbon-rich and deep peat may be present.

The entirety of the south of the Study Area and a localised area of the north is underlain by Class 5 peatland. Class 5 is indicative of peat soils where no peatland habitats are recorded. In addition, soils are carbon-rich, and deep peat and bare soil may be present.

In addition, Class 0 soils are recorded in the central area of the Study Area, comprised of mineral soils where peatland habitats are absent.

9.5.6. Contaminated Land

The National Library of Scotland 1:10,000 scale historical maps[79] have been reviewed across the Study Area. The viewer includes historical maps from the mid-1800s, through the 1900s to present day. The maps indicate that there are no potential contaminated sources across the Study Area and that it has been undeveloped moorland since earliest available mapping.

9.5.7. Unexploded Ordnance (UXO)

The UXO mapping[80] indicates that the Study Area is situated within a low-risk area, in terms of UXO as a result of WWII bombing.

9.5.8. Mining and Quarrying

The Mining Remediation Authority Map Viewer[81] indicates that the Study Area is not within a coal mining reporting areas and is therefore not considered to be at risk from coal mining activities.

In addition, BGS GeoIndex[77] Mines and Quarries dataset indicates that there are no current or historic mines or quarries across the Study Area.

9.5.9. Peat Probing Surveys

Phase 1 peat depth surveys were conducted across the entirety of the Study Area over a 100 m grid, in accordance with Scottish Government guidance5, to provide an initial understanding of peat depths across the Study Area and to inform the Proposed Development design.

The results of the Phase 1 peat probing surveys are detailed in Table 9.1, and shown in Figure 9.1.

Table 9.1: Phase 1 Peat Probing Survey depths

PEAT DEPTH RANGE (m)	NUMBER OF PROBES	PERCENTAGE OF PROBES (%)
0 – 0.5	321	44.80
0.51	– 1.0	255
1.01 – 1.5	68	9.48
1.51 – 2.0	33	4.60
2.01 – 3.0	26	3.63
3.01 – 4.0	13	1.81
>4.01	1	0.14
TOTAL	**717**	**100**

A total of 717 peat probes were recorded during the surveys, with depths ranging from 0.05 to 4.1 m. The data indicates that soil depths of 0.5m or less are present across approximately 48% of the Study Area and that peat >0.5 m depth is present across approximately 52% of the Study Area. Deep peat (>1m) was recorded at approximately 16% of peat probe points and these depths were predominantly recorded in the north and west of the Study Area.

In addition, the underlying substrate was recorded at each peat probe point, detailed below in Table 9.2. This was determined by the nature of the refusal at the base of the soil/peat.

Table 9.2: Phase 1 Peat Probing Substrate Results

SUBSTRATE	NUMBER OF PROBES	PERCENTAGE OF PROBES (%)
ROCK	387	54.00
GRAVEL	111	15.50
CLAY	78	10.9
SILT	71	9.90
SAND	34	4.74
GRITTY SILT	20	2.79
SILTY CLAY	4	1.67
UNKNOWN/OTHER	12	0.56
TOTAL	**717**	**100**

The majority of the probe points (54%) recorded rock underlying the peat and soils across the Study Area.

9.6. PROPOSED ASSESSMENT METHODOLOGY

The assessment methodology will be informed by prior experience of carrying out such assessments for a range of wind farm and other renewable energy and electrical transmission developments. In addition, the assessment will be informed by a detailed desk study, background knowledge of the geological and peat characteristics across Scotland and cognisance of good practice measures.

9.6.1. Desk Study

Initial desk-based studies will be undertaken to determine baseline conditions through the review and collation of available and relevant information relating to geology and soils. This would include review of published geological maps, Ordnance Survey (OS) maps, aerial photographs and site-specific data such as available site investigation data, habitat mapping, digital terrain models and geological reports and literature.

The desk study will identify sensitive geological features which may potentially be affected by the Proposed Development.

9.6.2. Peat Surveys

A series of peat surveys and site walkovers will be undertaken for this assessment to:

- Collect additional peat and soil data to further gauge an understanding of peat depths and characteristics across the Study Area;
- Inspect the bedrock geology across the Study Area, where outcropping is present;
- Determine and inspect the underlying superficial geology substrates across the Site to inform the peat assessments; and
- Identify any areas of potential instability across the Study Area.

As detailed above in Section 9.5, Phase 1 peat probing has been conducted across the Site to inform the Proposed Development design. Once an initial design has been determined, Phase 2 peat surveys will be undertaken which will comprise detailed peat probing at proposed infrastructure locations, in accordance with best practice guidance4. Proposed access tracks will be probed at 50 m intervals along the centre line with offsets at 25 m on either side of the proposed track. This includes proposed tracks for cut or fill, tracks to be floated and upgrades to existing tracks. Across all other infrastructure locations (including turbines, hardstandings, construction compounds and the substation), peat probing will be undertaken across a 10 x 10 m grid with some additional data points outwith infrastructure footprints to allow for potential micro-siting. Data collected during the Phase 2 peat probing surveys will be used to inform design changes during the later stages of the Proposed Development design phase and to site infrastructure out of areas of deep peat (>1m) where possible.

9.6.3. Assessment and Reporting

The significance of the impacts on the baseline environment will be defined as a function of the sensitivity of receptors and the magnitude of impact.

9.6.3.1. Sensitivity of Receptors

The sensitivity of a receiving environment is defined as its ability to absorb an effect without noticeable change and can be classified as either very high, high, medium, low, or negligible. The receptor classification is determined by a series of factors, including: the nature and extent of peat, associated habitats, soil characteristics, geology, and land use. Peat soils of high moisture content, such as those found in blanket bog, are considered to be highly sensitive receptors.

Table 9.3 details the different classifications of receptor sensitivity that are used to inform the assessment of the geology and peat present within the Study Area, assessing whether the effects would be significant in the context of the EIA Regulations.

Table 9.3: Receptor Sensitivity classification

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. This includes very deep peat, where peat depths are >3.0 m.
High	Soil types and associated land uses that are highly sensitive (e.g. peat/blanket bog). These include: Class 1 or 2 priority peatland, carbon-rich and peaty soils, which cover >20% of the Project area; Deep peat (>1.0 m), which is present in areas of blanket bog; Nationally important carbon rich soils, which are also present; Areas containing geological or geomorphological features considered to be of national importance (e.g. geological SSSIs); and Receptors containing areas of regionally important economic mineral deposits
Medium	Soil types and associated land uses that are moderately sensitive (e.g. commercial forestry). These include: Class 1 or 2 priority peatland, carbon-rich and peaty soils, which cover <20% of the Development Area; Class 3 and 5 peatland areas, carbon rich and peaty soils; Deep peat (>1.0 m) that is present outside of areas of blanket bog; Receptors containing areas of locally important economic mineral deposits; and Areas containing geological features of designated regional importance, including Regionally Important Geological/geomorphological Sites (RIGS), considered worthy of protection for their historic or aesthetic importance

SENSITIVITY OF RECEPTOR	DEFINITION
Low	Geological features or geology not protected and not considered worthy of specific protection; Soil types and associated land uses not sensitive to change in hydrological regime (e.g. intensive grazing); and Receptors containing Class -2, -1, 0 and 4 non-peatland areas, with no carbon-rich and/or peaty soils
Negligible	The receptor is resistant to change and is of little environmental value.

For this assessment, the main sensitive geological receptors which could potentially be affected by the Proposed Development are:

- Highly sensitive soil types and associated land use (e.g. peat and carbon-rich soils/blanket bog); and
- Highly sensitive soils that have peat deposits (greater than 1.0m depths).

9.6.3.2. Magnitude of Impact

The magnitude of potential impacts on geology and soils will be identified through consideration of the Proposed Development, the degree of change to baseline conditions predicted as a result of the Proposed Development, the duration and reversibility of an effect, and professional judgement, best practice guidance and legislation. The criteria for assessing the magnitude of impact are presented in Table 9.4.

Table 9.4: Magnitude of Impact Definitions

MAGNITUDE OF IMPACT	DEFINITION
High	Major or total loss of or alteration to peatland resource such that post development characteristics or quality will be fundamentally or irreversibly changed; Long term/permanent change to human or environmental health; Catastrophic failure of site infrastructure due to ground instability; Long term/permanent change to baseline resource; and Major or total loss of a geological site or mineral deposit, where the value of the Study Area would be severely affected.
Medium	Loss of, or alteration to the baseline resource such that post development characteristics or quality will be partially changed;

MAGNITUDE OF IMPACT	DEFINITION
	Mid-term/permanent change to human or environmental health; Ground failure that requires remediation but does not cause catastrophic failure of site infrastructure; Mid-term/permanent change to baseline resource; and Partial loss of a geological site or mineral deposit, with major effects to the settings, or where the value of the Study Area would be affected.
Low	Small loss of soils or peatland, or where soils will be disturbed but the value will not be impacted; Short-term change to human or environmental health; Ground settlement/subsidence that does not adversely affect site infrastructure or require remedial action; Short-term change to baseline resource; and Small effect on a geological site or mineral deposit, such that the value of the Study Area would not be affected.
Negligible	Minimal or no change to soils or peatland deposits; Minimal or no change to human or environmental health; Minimal or no change to ground stability; A very slight change from the baseline conditions; The change is barely distinguishable, and approximates to the 'no-change' situation; and Minimal or no change to a geological site or mineral deposit.

9.6.3.3. Significance of Effects

The sensitivity of the receptor and the magnitude of impact will be used as a guide, in addition to professional judgement, to predict the significance of the likely effects on the geology, peat, and soils resource as a result of the Proposed Development. Table 9.5 summarises guideline criteria for assessing the significance of effects.

Table 9.5: Significance of Effect Matrix

MAGNITUDE OF IMPACT	SENSITIVITY OF RESOURCE / 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 of 'Major' or 'Moderate' significance are considered to be 'significant' in the context of the EIA Regulations.

9.7. POTENTIAL SIGNIFICANT IMPACTS AND EFFECTS

The main aspects of the Proposed Development construction that could potentially impact geology and soils are:

- Potential for disturbance of deep peat and the subsequent effects from excavated peat and management of peat and peaty soils;
- Potential for the loss and compaction of peat or soils; and
- Potential for peat destabilisation and peat slide risk.

9.7.1. Construction Phase

9.7.1.1. Disturbance of Deep Peat

If construction activities occur where peatland is present, this will lead to the disturbance of peat. Phase 1 peat depth data collected across the Study Area has identified areas of peat greater than 1m in depth. This data will be used to inform the design of the Proposed Development and further peat data will be collected during Phase 2 surveys to further inform the design and, as a result, proposed infrastructure will avoid areas of deep peat (>1m) where possible.

9.7.1.2. Loss and Compaction of Peat and Soils

The loss and compaction of peat and soils may occur as a result of the Proposed Development construction. Even with the avoidance of peat, construction activities could lead to the compaction of soils which can reduce soil permeability and increase run-off and erosion.

9.7.1.3. Peat Stability

Peat instability is generally the result of a combination of causative factors. Several construction activities have the potential to increase the likelihood of peat slides in areas where peat is present at a sufficient depth and where gradients are sufficiently steep to result in a peat slide event.

9.7.2. Operational Phase

9.7.2.1. Peat Stability

There are maintenance activities that have the potential to increase the likelihood of peat slides in areas where peat is present at a sufficient depth and where gradients are sufficiently steep to result in a peat slide event.

9.8. ISSUES SCOPED OUT

Risks relating to historic coal mining activities, UXO and contaminated land are scoped out of the assessment due to the absence of coal mining and other potentially contaminative sources across the Study Area.

There are no statutory designated sites across the Study Area relating to geology, peat and soils. Therefore, this has been scoped out of further assessment.

Whilst there will be effects arising from rock extraction for Proposed Development infrastructure, these are limited in area and do not extend beyond the immediate development footprint. No sensitive geological features have been identified within the Study Area that require specific protection. For these reason, effects on bedrock geology have been scoped out of this assessment.

Furthermore, cumulative effects have been scoped out of this assessment. Construction and decommissioning activities where soils and peat are excavated or loaded will be localised to the Site and will only have an impact on the soils and peat across the Proposed Development. Therefore, cumulative developments outwith the Study Area will not impact this assessment.

9.9. MITIGATION

The Proposed Development will undergo an iterative design process and evolution to account for constraints identified as part of the baseline studies and to ensure that potential effects on sensitive receptors are avoided or minimised, where possible. For example, it is expected that the following potential mitigation measures will be considered throughout the design of the Proposed Development:

- Phase 2 peat probing will be undertaken to identify areas of potential deep peat at proposed infrastructure locations and to ensure that impacts to areas of peat are avoided or minimised where possible;
- Where routing of access tracks cannot avoid crossing areas of deeper peat, floating tracks will be utilised;
- A site-specific Peat Landslide Hazard and Risk Assessment (PLHRA) will be prepared to identify any potential areas of peat instability based on the current ground conditions;
- A site-specific outline Peat Management Plan (oPMP) will be prepared to estimate potential excavated peat volumes as a result of the Proposed Development, outlining best practices for its handling and detailing potential methods for its reuse e.g. peatland restoration;
- An outline Borrow Pit Assessment (oBPA) will be prepared if suitable material is available across the Study Area to allow for on-site borrow pits that may utilise local aggregate for the construction of the Proposed Development and to limit the environmental impacts by utilising local resources, limiting external imports and HGV movement; and
- Outline Construction Environmental Management Plan will be prepared as part of this application to establish the framework for managing environmental impacts throughout the construction of the Proposed Development, detailing good construction practice measures, mitigation measures and outlining key roles and responsibilities.

9.10. OPPORTUNITIES FOR ENHANCING THE ENVIRONMENT

There is no Class 1 or Class 2 peat present across the Study Area and areas of deep peat (>1m) will be avoided by design, where possible. However, areas of peat and wet acidic type habitats will be disturbed throughout the construction phase of the Proposed Development. Therefore, it is important to counteract this disturbance by restoring peatland habitats and aiding biodiversity across the Study Area and in the surrounding area.

Peatland restoration is proposed in the north, west and south of the Site.

9.11. PROPOSED SCOPE OF THE EIA CHAPTER

ENVIRONMENTAL RECEPTOR, ASSESSMENT OR EFFECT	SCOPED IN / OUT	RATIONALE
Disturbance of Deep Peat	Scoped In.	Deep peat (>1m) is present across the Site and may be disturbed during the construction phase of the Proposed Development.
Loss and Compaction of Peat and Soils	Scoped In.	The loss and compaction of soils may occur across the Proposed Development due to construction activities.
Peat Stability	Scoped In.	Construction activities have the potential to increase the likelihood of peat slides across areas of peat of a sufficient depth and where gradients are sufficiently steep.
Contaminated Land	Scoped Out.	From review of publicly available data sources, there are no potentially contaminative sources across the Study Area.
Statutory Designations	Scoped Out.	From review of publicly available data sources, there are no statutory designations relating to geology and soils across the Study Area.
Bedrock Geology	Scoped Out.	There are no sensitive geological features across the Study Area and excavation of bedrock will be localised across the Site.
Cumulative Effects	Scoped Out.	Geology and soils are considered localised receptors within the Study Area and will not be affected by any potential cumulative developments adjacent to the Study Area.

9.12. CONSULTATION AND SCOPING QUESTIONS

Consultation, in regards to geology and soils, will be conducted with the following bodies:

- Scottish Borders Council;
- SEPA; and
- NatureScot.

Questions for Consultees are as follows:

- Q9.1 – Do consultees agree that the scope of the proposed assessment is appropriate?
- Q9.2 – Do you have any information that will be useful in the preparation of the Geology and Peat assessment, such as information on local quarrying, or infilled land?

10. HYDROLOGY AND HYDROGEOLOGY

10.1. INTRODUCTION

This chapter of the Scoping Report sets out the baseline conditions of the Site in relation to hydrology and hydrogeology, proposed methodology to be used in the EIA, and the scope of the assessment that will be covered in the hydrology and hydrogeology chapter of the EIA Report.

This hydrology and hydrogeology scoping chapter is supported by the following figures:

- Figure 10.1: Surface Water Hydrology;
- Figure 10.2: Groundwater Bodies;
- Figure 10.3: Hydrogeology;
- Figure 10.4: SEPA Flood Map: Rivers;
- Figure 10.5: SEPA Flood Map: Surface Water and Small Watercourses; and
- Figure 10.6: Designated Sites.

10.2. LEGISLATION, POLICY & GUIDANCE

10.2.1. Legislation

The Water Framework Directive (WFD) (2000/60/EC)[82] establishes a framework for the protection, improvement, and sustainable use of all water environments through setting ecological targets and environmental objectives. The WFD was transposed into Scottish Law by The Water Environment and Water Services (Scotland) Act 2003[83] (WEWS Act), which gave Scottish Ministers powers to include regulatory controls over activities to protect and improve Scotland's water environment. Since Brexit the WFD is still applicable through the WEWS Act and also the EU Continuity Act 2020[84] which preserves EU regulations in certain instances, including environmental protection.

Other legislation relevant to hydrology and hydrogeology are as follows:

- The Flood Risk Management (Scotland) Act 2009[85] ;
- The Water Environment (Controlled Activities) Regulations 2011 (CAR) (as amended 2013 and 2017)[86];
- The Pollution Prevention and Control (Scotland) Regulations 2012[87];

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[82] European Parliament (2000) 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 ("The Water Framework Directive") [online]. Available at: http://ec.europa.eu/environment/water/water-framework/index_en.html . Accessed: October 2025

[83] Scottish Government (2003) Water Environment and Water Services (Scotland) Act 2003 [online]. Available at: https://www.legislation.gov.uk/asp/2003/3/contents . Accessed: October 2025

[84] Scottish Parliament (2021). UK withdrawal from the European Union (Continuity) (Scotland) Bill. [online] Available at: https://www.parliament.scot/bills-and-laws/bills/s5/uk-withdrawal-from-the-european-union-continuity-scotland-bill Accessed: October 2025

[85] Scottish Government (2009) Flood Risk Management (Scotland) Act 2009 [online]. Available at: https://www.legislation.gov.uk/asp/2009/6/contents . Accessed: October 2025

[86] Scottish Government (2011) The Water Environment (Controlled Activities) (Scotland) Regulations 2011 [online]. Available at: https://www.legislation.gov.uk/ssi/2011/209/contents . Accessed: October 2025

[87] Scottish Government (2012) The Pollution Prevention and Control (Scotland) Regulations 2012 [online]. Available at: https://www.legislation.gov.uk/ssi/2012/360/contents . Accessed: October 2025

- The Water Environment (Drinking Water Protected Areas) (Scotland) Order 2013[88] ;
- The Water Environment (River Basin Management Planning: Further Provision) (Scotland) Regulations 2013 [89];
- The Private and Public Water Supplies (Miscellaneous Amendments) (Scotland) Regulations 2015[90] ;
- The Water Intended for Human Consumption (Private Water Supplies) (Scotland) Regulations 2017[91] ;
- The Water Environment (Miscellaneous) (Scotland) Regulations 2017[92] ; and
- The Water Environment (Register of protected areas) (Scotland) Regulations 2004[93].

10.2.2. National Policy

The National Planning Framework (NPF4)[94] was published in February 2023 and sets out the principles and policies which direct development and infrastructure planning in Scotland.

10.2.3. Local Policy

This assessment has also been made with consideration of the following regional and local policy:

- Scottish Borders Council Local Development Plan 2024[95] ;
- Scottish Borders Council Strategic Flood Risk Assessment[96] ;
- Solway Local Plan District (LPD 14): Flood risk management plan 2022-2028[97] ; and

[88] Scottish Government (2013) The Water Environment (Drinking Water Protected Areas) (Scotland) Order 2013 [Online]. Available at: https://www.legislation.gov.uk/ssi/2013/29/made. Accessed: October 2025
[89] Scottish Government (2013) The Water Environment (River Basin Management Planning: Further Provision) (Scotland) Regulations 2013. [online] Available at: https://www.legislation.gov.uk/ssi/2013/323/contents Accessed: October 2025
[90] Scottish Government (2015) The Private and Public Water Supplies (Miscellaneous Amendments) (Scotland) Regulations 2015. [online] Available at: https://www.legislation.gov.uk/ssi/2015/346/contents Accessed October 2025
[91] Scottish Government (2017) The Water Intended for Human Consumption (Private Supplies) (Scotland) Regulations 2017 Available at: https://www.legislation.gov.uk/ssi/2017/282/contents. Accessed: October 2025
[92] Scottish Government (2017) The Water Environment (Miscellaneous) (Scotland) Regulations 2017. [online] Available at: https://www.legislation.gov.uk/ssi/2017/389/contents/made Accessed: October 2025
[93] Scottish Government (2004) The Water Environment (Register of protected areas) (Scotland) Regulations 2004. [online] Available at: https://www.legislation.gov.uk/ssi/2004/516/body Accessed: October 2025
[94] Scottish Government (2024) National Planning Framework 4. Available at: https://www.gov.scot/publications/national-planning-framework-4/. Accessed: October 2025
[95] Scottish Borders Council (2024) Local Development Plan 2024. [online] Available at: https://www.scotborders.gov.uk/downloads/file/12939/adopted-ldp2-volume-1-policies Accessed: October 2025
[96]Scottish Borders Council (2020) Strategic Flood Risk Assessment. [online] Available at: https://www.scotborders.gov.uk/downloads/file/7558/strategic_flood_risk_assessment.pdf Accessed: October 2025
[97] Scottish Borders Council (2022) Solway Local Plan District (LPD 14): Flood risk management plan 2022-2028. [online] Available at: https://www.dumfriesandgalloway.gov.uk/sites/default/files/2024-12/Solway-Local-Flood-Risk-Management-Plan-Cycle-2.pdf Accessed: October 2025

- Tweed Local Plan District: Local Flood Risk Management Plan (2022)[98] .

10.2.4. Guidance

In addition to specific legislative and planning policy requirements, a range of guidance documents have been published to provide information on statutory responsibilities and good environmental practices. These will inform the EIA and final Construction Environmental Management Plan (CEMP).

- Construction Industry Research and Information Association (CIRIA) Control of Water Pollution from Construction Sites (C532) 2001[99] ;
- CIRIA (C741) Environmental good practice on site guide[100] ;
- CIRIA The SuDS Manual (C753)[101] ;
- CIRIA Culvert, screen and outfall manual (C786F) 2019[102] ;
- CIRIA (C624) Development and flood risk guidance: guidance to the construction industry 2004[103] ;
- British Standard Code of Practice for Earthworks BS 6031 200928[104] ;
- SEPA Engineering in the Water Environment Good Practice Guide – River Crossings 2010[105] ;
- SEPA Guidance on Assessing the Impacts of Development on Groundwater Abstractions 2024[106] ;
- SEPA Controlled Activities Regulations (CAR) – A Practical Guide 2024[107] ;

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[98] Scottish Borders Council (2022) Tweed Local Plan District: Local Flood Risk Management Plan 2022. [online] Available at: https://www.scotborders.gov.uk/downloads/file/2257/tweed-local-flood-risk-management-plan Accessed: October 2025

[99] CIRIA (2001) Control of water pollution from construction sites: Guidance for consultants and contractors Available at: https://www.ciria.org/CIRIA/CIRIA/Item_Detail.aspx?iProductCode=C532&Category=BOOK. Accessed: October 2025

[100]CIRIA (2023) Environmental good practice on site guide (fifth edition). Available at: https://www.ciria.org/ci/iCore/Store/StoreLayouts/Item_Detail.aspx?iProductCode=C811&Category=BOOK

[101] CIRIA (2015) The SuDS Manual (C753) [online]. Available at: https://www.susdrain.org/resources/SuDS_Manual.html. Accessed: October 2025

[102] CIRIA (2019) Culvert, screen and outfall manual (C786F) [online]. Available at: https://www.ciria.org/ItemDetail?iProductCode=C786F&Category=FREEPUBS. (Accessed October 2025).

[103] CIRIA (2004) Development and flood risk – guidance for the construction industry (C624) [online]. Available at: https://www.ciria.org/CIRIA/CIRIA/Item_Detail.aspx?iProductCode=C624. (Accessed October 2025).

[104] The British Standards Institute (BSI) (2009) BS 6031:2009 Code of practice for earthworks [online]. Available at: https://knowledge.bsigroup.com/products/code-of-practice-for-earthworks?version=standard. (Accessed October 2025).

[105] SEPA (2010) Engineering in the water environment: good practice guide – River crossings Available at: https://www.sepa.org.uk/media/151036/wat-sg-25.pdf. Accessed: October 2025

[106] SEPA (2024) Guidance on Assessing the Impacts of Development on Groundwater Abstractions Available at: https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fwww.sepa.org.uk%2Fmedia%2Fmfzpnjwb%2Fguidance-on-assessing-the-impacts-of-developments-on-groundwater-abstractions.docx&wdOrigin=BROWSELINK Accessed: October 2025

[107] SEPA (2020) The Water Environment (Controlled Activities) (Scotland) Regulations. A Practical Guide v9.4 [online]. Available at: https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fwww.sepa.org.uk%2Fmedia%2Fcd3doeli%2Fcar-a-practical-guide.docx&wdOrigin=BROWSELINK (Accessed October 2025).

- Guidance for Pollution Prevention (GPPs)[108] ;
- Scottish Government, Planning Advice Note 79: Water and Drainage[109] ;
- Highways England. Road drainage and the water environment (2020)[110] ;
- SEPA Supporting Guidance (WAT-SG-75) Sector Specific Guidance: Water Runoff from Construction Sites 2021[111] ;
- SEPA Engineering guidance - SEPA supporting guidance: good practice guides, including WAT-SG-25: River Crossings and WAT-SG-26: Sediment Management[112];
- CAR Flood Risk Standing Advice for Engineering, Discharge and Impoundment Activities 2011[113] ;
- NatureScot Good practice guidance during wind farm construction 2024[114] ;
- SEPA Guidance on Assessing the Impacts of Developments on Groundwater Dependent Terrestrial Ecosystems 2024[115] ;
- SEPA Flood Risk and Land Use Vulnerability Guidance 2024[116] ;
- SEPA WAT-PS-06-02: Culverting of Watercourses – Position Statement and Supporting Guidance 2015[117] ;
- SEPA Climate changes allowances for flood risk assessment in land use planning Version 6 2025[118] ;

[108] Pollution Prevention Guidelines and Guidance on Pollution Prevention [online]. Available at: https://www.netregs.org.uk/environmental-topics/guidance-for-pollution-prevention-gpp-documents/. (Accessed October 2025).
[109] Scottish Government (2006) Planning Advice Note 79: Water and Drainage [online]. Available at: https://www.gov.scot/publications/planning-advice-note-pan-79-water-drainage/. (Accessed October 2025).
[110] Highways England (2020). LA 113. Road drainage and the water environment. Revision 1. Available at: https://www.standardsforhighways.co.uk/tses/attachments/by-attachment-id/02e8dce4-f853-4f27-8ea4-a83c57343c12?inline=true
[111] SEPA (2021) Supporting Guidance (WAT-SG-75) Sector Specific Guidance: Water Runoff from Construction Sites [online]. Available at: https://www.sepa.org.uk/media/340359/wat-sg-75.pdf. (Accessed October 2025).
[112] SEPA supporting guidance: Good practice guides (various) [online]. Available at: Engineering guidance | Scottish Environment Protection Agency (SEPA). (Accessed October 2025).
[113] SEPA (2011) CAR Flood Risk Standing Advice for Engineering, Discharge and Impoundment Activities [online]. Available at: https://www.sepa.org.uk/media/94134/car-flood-risk-standing-advice-for-engineering-discharge-and-impoundment-activities.pdf. (Accessed October 2025).
[114] NatureScot (2024) Good practice during wind farm construction. Version: July 2024 [online]. Available at: https://www.nature.scot/doc/good-practice-during-wind-farm-construction. (Accessed October 2025).
[115] SEPA (2024) Guidance on Assessing the Impact of Developments on Groundwater Dependent Terrestrial Ecosystems [online]. Available at: https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fwww.sepa.org.uk%2Fmedia%2Fa1yh0blq%2Fguidance-on-assessing-the-impacts-of-developments-on-groundwater-dependent-terrestrial-ecosystems.docx&wdOrigin=BROWSELINK. (Accessed October 2025).
[116] SEPA (2024) Flood Risk and Land Use Vulnerability Guidance [online]. Available at: https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fwww.sepa.org.uk%2Fmedia%2Fnvnotwqd%2Fland-use-vulnerability-guidance.docx&wdOrigin=BROWSELINK. (Accessed October 2025).
[117] SEPA (2015) WAT-PS-06-02: Culverting of Watercourses – Position Statement and Supporting Guidance [online]. Available at: https://www.sepa.org.uk/media/150919/wat_ps_06_02.pdf. (Accessed October 2025).
[118]SEPA (2025) Climate change allowances for flood risk assessment in land use planning – Version 6 [online]. Available at: https://www.sepa.org.uk/media/jjwpxuso/climate-change-allowances-guidance_v6.pdf. (Accessed October 2025).

- Planning Advice Note (PAN) 61: Planning and Sustainable Urban Drainage Systems[119] ;
- Planning Advice Note (PAN) 79: water and drainage[120] ;
- Botanaeco Decision Tool[121] ;
- The Water Intended for Human Consumption (Private Supplies) (Scotland) Regulations 2017 – Guidance for Local Authorities Version 3[122] ; and
- SEPA Recommended Riparian Corridor Layer for use in Land Use Planning[123] .

10.3. APPROACH TO CONSULTATION

Consultation will be undertaken with the relevant consultees for hydrology and hydrogeology, as detailed in Section 10.11. Further consultation may be required throughout the assessment as the design progresses.

10.4. STUDY AREA

There is no set guidance for defining hydrological study areas for EIAs in the UK. As such, the study area has been defined based on professional judgment and experience on projects of a similar nature and scale.

The hydrology and hydrogeology study area (the 'Study Area') is defined as a 1 km buffer from the Site to assess potential effects on water receptors hydrologically connected to watercourses and waterbodies within the Site. It is considered that concentrations of any contaminant or sediment loading, or alterations to flow rates, beyond 1 km would not be detectable due to dilution effects as they flow through the wider hydrological catchment.

10.5. BASELINE CONDITIONS AND KEY SENSITIVITIES

10.5.1. Hydrology

The Study Area is situated within the River Esk (Solway) catchment as defined by SEPA's Main River and Coastal Catchment dataset and within the Solway Tweed River basin district[124]. The hydrology in the Study Area is shown in Figure 10.1: Surface Water Hydrology.

There is one WFD designated watercourse within the Study Area44, the Hermitage Water. It flows from north to south through the eastern section of the Study Area and is classified as having an overall Good WFD

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[119] Scottish Government (2001) Planning Advice Note 61: Planning and Sustainable Urban Drainage Systems [online]. Available at: https://www.gov.scot/binaries/content/documents/govscot/publications/advice-and-guidance/2001/07/pan-61-sustainable-urban-drainage-systems/documents/planning-advice-note-pan-61-sustainable-urban-drainage-systems-pdf/planning-advice-note-pan-61-sustainable-urban-drainage-systems-pdf/govscot%3Adocument/Planning%2BAdvice%2BNote%2BPAN%2B61%2BSustainable%2Burban%2Bdrainage%2Bsystems.pdf. (Accessed October 2025).

[120] Scottish Government (2006) Planning Advice Note 79: water and drainage [online]. Available at: https://www.gov.scot/publications/planning-advice-note-pan-79-water-drainage/. (Accessed October 2025)

[121] Botanaeco (n.d.) Groundwater Dependent Terrestrial Decision Tool [online]. Available at: https://botanaeco.co.uk/gwdte. (Accessed October 2025).

[122] Scottish Government (2018) The Water Intended for Human Consumption (Private Supplies) (Scotland) Regulations 2017 – Guidance for Local Authorities Version 3 [online]. Available at: https://dwqr.scot/media/wg5lu4yt/the-water-intended-for-human-consumption-private-supplies-scotland-guidance-for-local-authorities.pdf. (Accessed October 2025).

[123] SEPA (2024). SEPA Recommended Riparian Corridor Layer for use in Land Use Planning. Available at: recommended-riparian-corridor-note.docx (Accessed October 2025).

[124] Scotland Environment (n.d.) Web Map. Available online at: https://map.environment.gov.scot/sewebmap/ (Accessed October 2025)

status. Multiple watercourses within the Site discharge into the Hermitage Water including the Thief Sike, Collie Sike and Hartsgarth Burn which drain the north of the Site, and the Ryedale Burn and Ralton Burn which drain the southern half of the Site. The Hermitage Burn flows into the Liddel Water, another WFD watercourse, 1.1 km southeast of the Site.

10.5.2. Hydrogeology

The Study Area is underlain by the Newcastleton groundwater body which is classified by SEPA as having an overall Good WFD status44. The WFD status is shown in Figure 10.2: Groundwater Bodies.

British Geological Survey (BGS) Hydrogeology 1:625,000[125] scale mapping indicates the Study Area is underlain predominantly by both the Inverclyde Group and the Border Group. They are both moderately productive aquifers and groundwater flow is virtually all through fractures and other discontinuities. The Inverclyde Group aquifer is multi-layered with fracture flow yielding up to 10 l/s, and the Border Group aquifer is multi-layered and locally important with variable yields up to 6 l/s.

There is a small unnamed igneous intrusion in the middle of the Site. This is a low productivity aquifer and groundwater flow is virtually all through fractures and other discontinuities. This aquifer can provide small amounts of groundwater in the near surface weathered zone and secondary fractures, there are also rare springs. The very fringes of the northwestern and eastern boundaries of the Study Area are underlain by unnamed extrusive rocks which are also low productivity aquifers and the groundwater flow here is virtually all through fractures and other discontinuities. This aquifer can provide small amounts of groundwater in the near surface weathered zones and secondary fractures, with up to 2 l/s from rare springs.

The hydrogeology in the Study Area is shown in Figure 10.3: Hydrogeology.

10.5.3. Water Resources

No information is available at the time of writing on private water supplies (PWS) in the area.

There are no surface water drinking water protected areas (DWPA) within the Study Area. However, the Study Area is underlain by a groundwater DWPA[124]. It is noted the whole of Scotland is a groundwater protected area.

No information is available at the time of writing this report on public water assets in the area.

10.5.4. Groundwater Dependent Terrestrial Ecosystems

No information on groundwater dependent terrestrial ecosystems (GWDTEs) is available at the time of writing.

10.5.5. Flood Risk

The SEPA Fluvial Flood Maps[126] show the flood extents for rivers with a contributing catchment of 3 km2 or greater. The flood maps represent the Low (0.1% Annual Exceedance Probability (AEP) or 1 in 1000 year chance of flooding each year), Medium (0.5% AEP or 1 in 200 year probability) and High (10% AEP or 1 in 10 year probability) events.

A review of the SEPA Flood Maps indicates the only flood risk within the Site is from the Hartsgarth Burn in the centre of the Site which has a High likelihood (10% AEP) of flooding. The Hermitage Water which flows

[125] BGS (n.d.) Geoindex – Hydrogeology. Available online at: https://mapapps2.bgs.ac.uk/geoindex/home.html (Accessed October 2025)
[126] SEPA (n.d.) SEPA Flood Maps. Available online at: https://map.sepa.org.uk/floodmaps/FloodRisk/Risk (Accessed October 2025)

in the east of the Study Area also has a High likelihood of flooding, as well as the Ralton Burn in the south of the Study Area. River flooding in the Study Area is shown in Figure 10.4 SEPA Flood Map: Rivers.

The SEPA Flood Maps also show the Site is at High likelihood of flooding from surface water and small watercourses. The flood extents generally follow mapped watercourses and small tributaries that feed into named watercourses. The surface water and small watercourses flood map is shown in Figure 10.5 SEPA Flood Map: Surface Water and Small Watercourses.

The SEPA fluvial and surface water and small watercourses flood maps also includes a 'Future Flood Map' scenario which is the 0.5% AEP event up to 2080. The mapping accounts for increases in rivers flows and rainfall intensities under the IPCC High emissions[127] scenario as a result of climate change. This is considered the critical design event for planning purposes. Under this scenario the Site is still not at risk of fluvial flooding. However, there is a much more extensive risk of surface water and small watercourses flooding across the Site.

10.5.6. Designated Sites

A review of NatureScot datasets[128] shows that Langholm – Newcastle Hills Special Protection Area (SPA)[129] and Site of Special Scientific Interest (SSSI)[130] runs parallel and is adjacent to the entire western edge of the Site. It is protected as an SPA for its Hen Harrier population and as a SSSI for its breeding bird assemblage, carboniferous rocks, hen harrier breeding and upland habitat. The hydrology of the Site is such that all watercourses flow east or south from the Site, and as such the SPA and SSSI are not hydrologically connected to the Site. Designated sites within the Study Area are shown in Figure 10.6 Designated Sites.

10.6. PROPOSED ASSESSMENT METHODOLOGY

10.6.1. Desk Study

The hydrology and hydrogeology chapter of the EIA will be supported by appropriate figures and will be prepared by a hydrologist with experience in the assessment of wind energy developments in the UK.

The baseline set out in this report will be built upon in the EIA through the review and collation of available opensource datasets including Ordnance Survey (OS) maps, digital terrain models, SEPA environmental datasets, SEPA Flood Maps, Scotland's Environment Web-based maps, BGS Geoindex mapping, and aerial photography. In addition, further data will be collated including private water supply information. The desk study will identify the key hydrological and hydrogeological receptors that could be impacted by the Proposed Development. Any relevant consultation will also be undertaken.

10.6.2. Field Surveys

A hydrological site survey will be conducted to:

- Ground-truth the desk-based study;
- Visually examine the surface water hydrology of the Site;
- Identify any additional hydrological features;

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[127] SEPA. About the future flood maps. Available online at: https://map.sepa.org.uk/floodmaps/FloodRisk/FutureFloodMaps (Accessed October 2025).
[128] NatureScot (n.d.) SiteLink Map Search. Available online at: https://sitelink.nature.scot/map (Accessed October 2025)
[129] NatureScot (n.d.) Langholm – Newcastleton Hills SPA. Available online at: https://sitelink.nature.scot/site/8523 (Accessed October 2025)
[130] NatureScot (n.d.) Lanholm -Newcastleton Hills SSSI. Available online at: https://sitelink.nature.scot/site/906 (Accessed October 2025)

- Understand the local topography and drainage patterns of the Site;
- Characterise watercourses at proposed crossing locations; and
- Visit any private water supplies (if relevant).

The results of the site-based survey will be used to identify possible constraints and to inform the design of the Proposed Development.

An Extended Phase 1 Habitat Survey and corresponding National Vegetation Classification (NVC) Survey will be undertaken as part of the EIA. The results of the NVC survey will be used to identify if there are any groundwater dependent terrestrial ecosystems (GWDTEs) within the Site.

10.6.3. Assessment And Report

A Hydrology and Hydrogeology chapter will be produced as part of the EIA Report. The Study Area will be as set out in Section 10.4 of this report. Once the baseline environment has been described and the hydrological receptors of interest identified, the sensitivity of each receptor will be defined. The magnitude of change (impact) on receptors will be determined by considering the intensity (or scale), spatial coverage, and longevity of an impact. The magnitude assigned will use professional judgement to take into consideration the application of statutory standards and non-statutory standards or guidelines. The significance of effect is determined by assessing the potential magnitude of impact on the receptors against the sensitivity of the receptor.

Supporting technical appendices to the main chapter will be produced where relevant. This will include a schedule of watercourse crossings outlining the proposed watercourse crossings required as part of the Proposed Development. It may also include a Private Water Supply Risk Assessment and GWDTE Assessment.

10.7. POTENTIAL SIGNIFICANT IMPACTS AND EFFECTS

The Proposed Development may impact hydrological and hydrogeological receptors during the construction and operational phases through:

- A reduction in surface water quality as a result of chemical pollution from spills, vehicles, and stored materials; and an increase in erosion and therefore sedimentation due to removal of vegetation, soil compaction, and excavation activities;
- Changes to surface water quantity as a result of changes to surface water flowpaths and runoff and decrease in infiltration due to increased areas of impermeable hard standing during both construction and operation;
- Flood risk both to the Proposed Development and on off-site flood risk;
- Impacts to groundwater (quality and quantity) as a result of borrow pit excavation and dewatering activities during construction, and areas of permanent foundations during operation;
- Impacts to water resources (PWS, DWPAs, and public water supplies) as a result of reduced quality or quantity of water supply, or direct impacts to infrastructure; and
- Cumulative effects to hydrological resources as a result of the Proposed Development in combination with other developments.

10.8. MITIGATION

A Construction Environmental Management Plan will be produced by the appointed contractor prior to construction, incorporating specific measures based on the recommendations of the EIA Report and best practice guidance to minimise impacts on hydrology and hydrogeology.

In line with SEPA guidance[123], a 50 m buffer zone around OS mapped watercourses on-Site will be used to ensure no infrastructure, except watercourse crossings, is located within those areas during the design

process. In addition, all infrastructure, with the exception of watercourse crossings, will be located outwith the indicative flood extents shown in the SEPA Flood Maps.

The design of the Proposed Development will seek to avoid and / or reduce the number of watercourse crossings needed. Where new watercourse crossings are required, the final detailed design of watercourse crossings will be the responsibility of the appointed contractor. All watercourse crossings will be designed in accordance with Construction Industry Research and Information Association (CIRIA) Culvert Design and Operation Guide (C689)[131] , CIRIA Culvert, Screen and Outfall Manual (C786)[132] and SEPA guidance[133] ,[134] , incorporating the appropriate climate change and freeboard allowances to ensure sufficient capacity and thus reduced potential for flooding. In addition, the crossings will be designed to maintain free passage for wildlife. Any new watercourse crossing will also be subject to registration under The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended) (CAR)[135] and Water Environment (Miscellaneous) (Scotland) Regulations 2017[136] .

The EIA process will identify what PWSs are within 2 km of the Site. The design of the Proposed Development will seek to maintain a 250 m buffer from all groundwater fed PWS and not impact the catchment area of surface water supplies. Should this not be possible through the design process a detailed PWS impact assessment will be completed as part of the EIA which will outline the specific mitigation measures needed during the pre-construction, construction, and operational phases.

The design of the Proposed Development will also seek to maintain a 250 m buffer from GWDTE. If this is not possible a detailed risk assessment of GWDTE habitats will be completed as part of the EIA which will determine the groundwater dependency of the habitats, and outline the mitigation measures needed during the pre-construction, construction, and operational phases.

The final detailed design of the Proposed Development will include sustainable drainage systems (SuDS) to control runoff including water quality and quantity from the Site.

10.9. OPPORTUNITIES FOR ENHANCING THE ENVIRONMENT

Opportunities for Natural Flood Management (NFM) within the Site may be considered during the next stages of the design process. NFM seeks to work with nature to reduce the risk of flooding to downstream communities, as well as improving biodiversity, using techniques which restore or mimic the natural functions of rivers.

The use of SuDS will seek to improve the quality of runoff from the Site post-construction benefiting in-stream biodiversity within (or downstream of) receiving watercourses.

Opportunities for riparian planting within the Site will be explored to act as a natural sediment trap, improve biodiversity, and increase the roughness of the floodplain.

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[131] CIRIA (2010) Culvert Design and Operation Guide (C689). Environment Agency, UK.
[132] CIRIA (2019) Culvert, Screen and Outfall Manual (C786). Environment Agency, UK.
[133] SEPA. Engineering in the water environment: good practice guide. River crossings. Second edition, November 2010. [Online] Available at: River crossings - good practice guide (Accessed October 2025)
[134] SEPA WAT-PS-06-02: Culverting of watercourses – Position statement and supporting guidance. [Online] Available at: WAT-PS-06-02 (Accessed October 2025)
[135] Scottish Government (2011) The Water Environment (Controlled Activities) (Scotland) Regulations 2011. [Online] Available at: https://www.legislation.gov.uk/ssi/2011/209/contents/made (Accessed October 2025)
[136] Scottish Government (2017) Water Environment (Miscellaneous) (Scotland) Regulations 2017. [Online] Available at: https://www.legislation.gov.uk/ssi/2017/389/contents/made (Accessed October 2025)

10.10. PROPOSED SCOPE OF THE EIA CHAPTER

Table 10.1 contains a list of all environmental factors relating to water resources and flood risk that will be scoped in and scoped out of the assessment.

Table 10.1: Effects Scoped into /Out of Assessment

ENVIRONMENTAL RECEPTOR, ASSESSMENT OR EFFECT	SCOPED IN / OUT	RATIONALE
Hydrology	Scoped In.	Watercourses within the Site have the potential to be impacted by the Proposed Development as a result of changes to water quality and quantity, and are hydrologically linked to WFD waterbodies.
Hydrogeology	Scoped In.	The Site is underlain by a WFD groundwater body which is also a DWPA. It may be impacted by the Proposed Development through excavations and construction of foundations.
Water Resources	Scoped In.	No information is currently known about PWSs in the area. Scottish Borders Council will be contacted to obtain a list of known supplies and PWS surveys will be issued to residents within a 2 km buffer of the Site. Should any PWSs be within the Study Area and at risk from the Proposed Development, a detailed PWS assessment will be carried out.
GWDTEs	Scoped In.	The NVC survey to be conducted by the ecology team will identify the presence of any GWDTEs. If there are GWDTEs, they will be screened to identify if any of the habitats are within 250 m of the Proposed Development. If they are, a detailed GWDTE assessment will be carried out.
Standalone Flood Risk Assessment	Scoped Out.	The SEPA Flood Maps indicate the only flood risk within the Site is from the Hartsgarth Burn in the centre of the Site. The design of the Proposed Development will ensure no infrastructure, with the exception of watercourse crossings, is within the indicative SEPA flood extents. In addition, the final design of the Proposed Development will incorporate SuDS to manage surface water runoff from the Site.
WFD Assessment	Scoped Out.	The Hermitage Water is the only WFD watercourse within the Study Area and is hydrologically connected to the Site but is not within it. Surface water hydrology will be assessed as part of the EIA and as set out in Section 10.8 of this report, the design will seek to maintain a 50

ENVIRONMENTAL RECEPTOR, ASSESSMENT OR EFFECT	SCOPED IN / OUT	RATIONALE
		m watercourse buffer. Further mitigation to protect water quality will also be set out in the hydrology and hydrogeology chapter. Therefore, a standalone WFD assessment is not considered necessary.
Watercourse Crossing Schedule	Scoped In.	The design of the Proposed Development will seek to avoid and / or reduce the number of watercourse crossings needed. However, where crossings are required, a watercourse crossing schedule will be provided outlining the location of all crossings, photos and details of the crossing locations, and the type of crossing type that may be required. However, the final detailed design and types of crossing will be the responsibility of the appointed contractor at the detailed design stage. The guidance to be followed by the contractor will be set out in the EIA.
Designated Sites	Scoped Out.	The Site is not in hydrological connectivity to any designated sites, as such impacts to these areas as a result of the impacts to hydrology or hydrogeology are scoped out.

10.11. CONSULTATION AND SCOPING QUESTIONS

Consultation will be conducted with the following consultees:

- Scottish Borders Council; and
- SEPA.

Questions for Consultees are as follows:

- Q10.1 – Are consultees content with the proposed methodology and scope of the assessment of the hydrology and hydrogeology chapter?
- Q10.2 - Do you agree that a standalone Flood Risk Assessment can be scoped out?
- Q10.3 – Can Scottish Water confirm if there are any drinking water protected areas or any public water assets within the Study Area?
- Q10.4 - Does the Council, SEPA, Scottish Water or other consultees have any information that would be useful in the preparation of the hydrology and hydrogeology chapter?

11. ACCESS, TRAFFIC AND TRANSPORT

11.1. INTRODUCTION

This section of the Scoping Report sets out the proposed methodology and approach to be undertaken for the access, traffic and transport assessment that will be included within the EIA Report. Vehicle movements to the Site consist of abnormal load vehicles (ALVs), heavy goods vehicles (HGVs), light goods vehicles (LGVs) and cars. The potential effects of the construction, operation and decommissioning phase of the development on the surrounding transport network are detailed along with a proposed assessment methodology. In addition, this section details how proposed mitigation measures will be presented.

11.2. LEGISLATION, POLICY & GUIDANCE

The access, traffic and transport assessment will be undertaken in line with the following policy and guidance:

- The Scottish Government: The National Planning Framework 4 (2023)[137] ;
- The Scottish Government: National Transport Strategy[138] ;
- The Scottish Government: Planning Advice Note 75 (PAN 75) – Planning for Transport[139] ;
- The Institute of Environmental Management and Assessment (IEMA), Guidelines for the Environmental Assessment of Traffic and Movement (2023)[140] ;
- Scottish Borders Council Local Access and Transport Strategy (2015)[141] ; and
- Scottish Borders Council Local Development Plan (2024)[142].

11.3. APPROACH TO CONSULTATION

Consultation will be undertaken with the relevant consultees for access, traffic and transport, as detailed in Section11.11. Further consultation may be required throughout the assessment in relation to any notable findings.

11.4. STUDY AREA

The Study Area has been defined by the public road network in the vicinity of the Proposed Development and potential delivery corridors to be used during construction by ALVs and general construction traffic, including HGVs, LGVs and staff vehicles (cars and vans). The geographic scope will be determined through a review and assessment of both the sources of labour and the potential sources of construction materials,

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[137] The Scottish Government (2023) National Planning Framework 4 [Online] Available at: National Planning Framework 4 (www.gov.scot) (Accessed 30/09/2025)
[138] The Scottish Government (2020) – Scottish National Transport Strategy 2 [Online] Available at: https://www.transport.gov.scot/publication/national-transport-strategy-2/ (Accessed 30/09/2025)
[139] The Scottish Executive (2005). Planning Advice Note, PAN 75, Planning for Transport. Available at: https://www.gov.scot/binaries/content/documents/govscot/publications/publication/2005/08/planning-advice-note-pan-75-planning-transport/documents/0016795-pdf/0016795-pdf/govscot%3Adocument. (Accessed 30/09/2025)
[140] Institute of Environmental Assessment – Guidelines for the Environmental Assessment of Traffic and Movement (2023)
[141]Scottish Borders Council, Local Access and Transport Strategy 2015. Available at: https://www.scotborders.gov.uk/downloads/file/90/local_access_and_transport_strategy_mir (Accessed 30/09/2025)
[142] Scottish Borders Council, Local Development Plan (2024). Available at: https://www.scotborders.gov.uk/plans-guidance/local-development-plan (Accessed 30/09/2025)

including stone and concrete from local quarries. The A7, A68, A6088, B6399 and B6357 are all anticipated to be included in the Study Area. However, the extent of the Study Area will be agreed in consultation with Scottish Borders Council and Transport Scotland as appropriate and further details will be provided in the EIA Report.

11.5. BASELINE CONDITIONS AND KEY SENSITIVITIES

11.5.1. Data Sources

The following data sources have been used to inform this chapter and will be used to inform the assessment in the EIA Report:

- OS and mapping data from Google Earth;
- The Department for Transport Traffic Counts Website[143] ;
- Scottish Borders Council Public Rights of Way map[144] ; and
- Sustrans Website, the custodian for the National Cycle Network.[145]

11.5.2. Site Access

Access to the Site is currently via an existing farm access junction off the B6399 which will require to be upgraded. Any suitable new access arrangement will be designed in accordance with the appropriate guidance and would meet abnormal load geometric requirements.

Within the Site, the Applicant would endeavour to follow existing onsite tracks as far as possible.

11.5.3. Non-Motorised User Network

There are sections of Public Right of Way (PRoW) BR88 which traverse through the northern section of the Site. There are no National Cycle Network (NCN) routes within the vicinity of the Site. As noted above, the sections of road network likely to be included in the Study Area have no footway provision and are generally unlit.

11.5.3.1. Key Sensitivities

The following sensitive receptors have been identified and will be considered within the EIA Report:

- Motorised users of the surrounding road network, including vehicle drivers and public transport users;
- Non-motorised users of the surrounding road network, core path networks and non-designated public routes, including pedestrians, cyclists, and vulnerable groups; and
- Residents within the settlements along the roads outlined above.

11.6. PROPOSED ASSESSMENT METHODOLOGY

11.6.1. Baseline Survey Methodology

The main data considered fundamental to the assessment of traffic and transport effects will be traffic flow data and Road Traffic Collision (RTC) accident data. RTC data will be obtained for the most recent five-year

[143] Dft (2023). Road Traffic Statistics. Available online at: https://roadtraffic.dft.gov.uk/#6/55.254/-6.053/basemap-regions-countpoints. [Accessed on 30/09/2025]
[144] Scottish Borders Council, Public Rights of Way map. Available at: https://www.scotborders.gov.uk/parks-outdoors/countryside-access-rights-way/2
[145] Sustrans Website. Available Online at: https://www.sustrans.org.uk/ [Accessed 29/09/2025]

period which will provide information on each collision including severity as well as factors which attributed the collision.

With respect to traffic flow data, baseline traffic data will be obtained through independent Automatic Traffic Counts (ATC) surveys of the road network within the Study Area and augmented with data from publicly available data sources where possible. If required, additional surveys in the form of Non-Motorised User (NMU) counts will be undertaken to provide a snapshot of the usage of the NMU network with the Study Area.

The timings and locations of the surveys will be agreed with Scottish Borders Council, however the locations selected will provide a basis for the analysis and incorporate local routes within the corridor close to potential sensitive receptors and routes along key strategic links to provide a robust baseline for assessment.

The traffic flow data collected will be used to assess the predicted impact on traffic flows resulting from the proposed traffic associated with the Proposed Development.

11.6.2. Criteria for the Assessment of Effects

The assessment would be undertaken in accordance with the IEMA 2023 Guidelines[140]. The guidance notes two rules to be used as a screening process to the appropriate extent of the assessment area and the likelihood of potentially significant environmental effects occurring. These are:

- Rule 1 - Road links where traffic flows will increase by more than 30% as result of the Proposed Development (or where the number of heavy goods vehicles is predicted to increase by more than 30%) must be assessed; and,
- Rule 2 - Road links of high sensitivity where traffic flows have increased by 10% or more.

Any change in traffic flow which is greater than the thresholds outlined above would be subject to further detailed assessment. It is acknowledged that in areas where traffic flow is lower than the IEMA Guidelines thresholds, the significance of the effects can be considered low or not significant with no further detailed assessments warranted.

The IEMA 2023 Guidelines however noted that the Rule 1 and Rule 2 criteria process is not appropriate for some impacts, and it is generally accepted by regulators and practitioners that it should not be applied to assessments of road user and pedestrian safety as well as road vehicle driver and passenger delay. These impacts can be potentially significant for lower changes in traffic flow when high baseline traffic flows are evident. Full details of the methodology adopted for these effects are set out later in this chapter.

The process for determining significance where Rules 1 or 2 are triggered is undertaken on a site-specific basis and the framework for determining the magnitude of change in traffic flow as well as the methodology for assessing the significance of an effect is described in detail in the sections below.

Where existing traffic levels are generally low (e.g., rural roads and some unclassified roads), any increase in traffic flow may result in a predicted increase that would be higher than the IEMA (2023) guidelines thresholds. In these situations, it is important to consider any increase in terms of overall traffic flow in relation to the capacity of the road, before making a conclusion on whether the effect is significant in the context of the EIA Regulations.

11.6.3. 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 line with best practice guidance, legislation, statutory designations and / or professional judgement. Table 11.1 outlines the framework for determining the sensitivity of receptors.

Table 11.1: Framework for determining sensitivity of receptor

RECEPTOR SENSITIVITY	DESCRIPTION
Very High	The receptor has no ability to absorb change without profoundly altering its present character, is of high strategic value, or of national importance, would include receptors such as populated areas where existing traffic levels are high and there is no capacity to absorb additional traffic flow on adjacent routes; and strategic nationally important routes with no capacity to absorb additional traffic flow.
High	The receptor has little ability to absorb change without fundamentally altering its present character, is of high strategic value, or of national importance. These would include receptors such as populated areas where existing traffic levels are high and there is little capacity to absorb additional traffic flows on adjacent routes. Accident hotspots would also be considered, as well as locations where pedestrian crossing facilities are informal, where a significant change in traffic flow level might induce significant pedestrian crossing delay, and where children/elderly people might regularly cross an informal or priority crossing.
Medium	Areas where the transport network has moderate capacity to change, without significantly altering its state. These would include routes with existing moderate traffic levels which have some additional traffic flow capacity, receptors such as populated areas where existing traffic levels are moderate and there is some capacity to absorb additional traffic flow on adjacent routes, slight accident hotspots where an increase in traffic flow may increase the likelihood or severity of accidents, locations where pedestrian crossing facilities are informal or substandard, and where a significant change in traffic flow level might induce a moderate pedestrian crossing delay.
Low	Areas where the transport network is tolerant to change without detriment to its state. These would include routes with existing low traffic levels which have additional traffic flow capacity, areas such as trunk road or A class roads constructed to accommodate significant HGV volumes, receptors such as populated areas where existing traffic levels are low and there is capacity to absorb additional traffic flow on adjacent routes, routes with a low level of historical accident data where a

RECEPTOR SENSITIVITY	DESCRIPTION
	change in traffic flow or composition would have a low effect on the likelihood or severity of accidents, and locations where pedestrian crossing facilities are formal but priority, or pedestrian flows are sufficiently low that changes to traffic flow or composition are unlikely to cause a significant pedestrian delay.
Negligible	Areas where the transport network is tolerant to change without detriment to its state. These would include routes with existing low traffic levels which have a lot of additional traffic flow capacity, areas such as trunk road or A class roads constructed to accommodate significant HGV volumes, receptors such as populated areas where existing traffic levels are very low and there is capacity to absorb additional traffic flow on adjacent routes, routes with a very low level of historical accident data where a change in traffic flow or composition would have a negligible effect on the likelihood or severity of accidents, and locations where pedestrian crossing facilities are formal and controlled, or pedestrian flows are negligible (i.e. where there are no footways) such that changes to traffic flow or composition would not result in a change to pedestrian delay. This would also refer to receptors that are sufficiently distant from the affected roads and junctions.

11.6.4. Magnitude of Change

The magnitude of change is a function of the existing volumes of traffic, the percentage increase and degree of change to baseline conditions predicted as a result of the Proposed Development, the duration and reversibility of an effect, and professional judgement, best practice guidance (the IEMA 2023 Guidelines) and relevant legislation.

The criteria for assessing the magnitude of change on receptors is presented in Table 11.2.

Table 11.2: Framework for determining the magnitude of change

TYPE OF IMPACT	MAGNITUDE OF CHANGE			
	NEGLIGIBLE	SMALL	MEDIUM	LARGE
Severance of Communities	Change in total traffic flow of <30%	Change in total traffic flow of 31% to 60%	Change in total traffic flow of 61% to 90%	Change in total traffic flow of >91%
Non-Motorised User Amenity	Change in traffic flow (or HGV component) <50%	Change in traffic flow (or HGV component) of 51% to 100%	Change in traffic flow (or HGV component) of 101% to 150%	Change in traffic flow (or HGV component) of >151%
Non-Motorised User Delay	Change in total traffic flow of <30%	Change in total traffic flow of 31% to 60%	Change in total traffic flow of 61% to 90%	Change in total traffic flow of >90%
Fear and Intimidation	No change in step changes	One step change in level, with <400 vehicles increase in average 18hr AV two-way all vehicle flow; and/or <500 HGV increase in total 18hr HGV flow	One step change in level, but with >400 vehicles increase in average 18hr AV two-way all vehicle flow; and/or >500 HGV increase in total 18hr HGV flow.	Two step changes in level
Road User and Pedestrian Safety	Magnitude of change derived using professional judgment informed by the frequency and severity of collisions within the Study Area and the forecast increase in traffic.			
Road Vehicle Driver and Passenger Delay	Magnitude of change derived in conjunction with a Transport Assessment, consultation with the roads authority and professional judgment informed by the increase in vehicle delay and whether a junction or road link is at, or close to capacity, particularly on the weekday peak hour periods when baseline traffic flows are at their highest.			
Abnormal Loads	Defined by an assessment of the suitability of the access routes to accommodate abnormal load vehicles.			

11.6.5. Significance Effects

Table 11.3 presents guideline criteria for assessing the significance of effects. The sensitivity of the receptor and the magnitude of change will be used as a guide, in addition to professional judgement, to predict the significance of effects. Moderate and Major effects are considered to be Significant in the context of the EIA Regulations.

Table 11.3: Framework for determining magnitude of effect

MAGNITUDE OF CHANGE	SENSITIVITY OF RECEPTOR				
	VERY HIGH	HIGH	MEDIUM	LOW	NEGLIGIBLE
Large	Major	Major	Moderate	Moderate	Minor
Medium	Major	Moderate	Moderate	Minor	Negligible
Small	Moderate	Moderate	Minor	Negligible	Negligible
Negligible	Minor	Minor	Negligible	Negligible	Negligible

11.6.6. Abnormal Load Route Assessment

An initial Abnormal Load Route feasibility study has been undertaken to identify and appraise potential routes for the delivery of wind turbine components. Two likely route corridors were considered in the feasibility study, and are shown in Figure 11.1. The first option is from the north via the A68, A6088, B6357, and B6399 towards the proposed Site entrance. The second option is from the south via the A7 and B7201 through Canonbie, before joining the B6357 and the B6399 to access the Site from the south. A third further route from the southeast that was not assessed in the feasibility study, using the A68 and A6088, before joining the previously discussed northern route to site at the B357 will be considered alongside the other potential routes. This potential route is also shown in Figure 11.1. A detailed Abnormal Load Route Assessment (ALRA) will be undertaken to confirm that the preferred route can accommodate the abnormal load vehicles and that their transportation will not have any detrimental effect on the proposed haulage route. This will also identify any additional off-site improvements which are required in order to make the route viable.

11.7. POTENTIAL SIGNIFICANT IMPACTS AND EFFECTS

11.7.1. Potential Effects of Proposed Development

In accordance with the IEMA 2023 Guidelines, the following effects on access, traffic and transport receptors have the potential to result from the Proposed Development and shall be considered in the undertaking of further assessment:

- Severance of communities;
- Road Vehicle and Passenger Delay;
- Non-motorised Delay;
- Non-motorised Amenity;
- Fear and intimidation on and by Road Users;
- Road user and Pedestrian Safety; and
- Hazardous and Large Loads (Abnormal Loads).

The IEMA 2023 Guidelines also necessitate the consideration of traffic related noise and vibration and visual impact effects. The need to assess the impact of traffic on these effects will be addressed within the Landscape and Visual Impact chapter and Noise chapter, respectively, of the EIA Report.

11.7.2. Cumulative Effects

A cumulative effects assessment will also be undertaken, taking into account other nearby proposed schemes that may affect the same traffic and transport receptors.

11.8. MITIGATION

The Access, Traffic and Transport chapter of the EIA Report will provide details of standard mitigation where appropriate in the form of an Outline Construction Traffic Management Plan (oCTMP). Additional mitigation may be included should the assessment reveal effects that are significant following the application of standard mitigation measures.

Any suitable new access arrangement will be designed in accordance with the appropriate guidance with full consideration given to the road safety of all road users.

11.9. OPPORTUNITIES FOR ENHANCING THE ENVIRONMENT

It is not anticipated that the Proposed Development would provide specific opportunities for environmental enhancement in relation to traffic, as its operation is expected to result in only negligible traffic impacts. However, in line with the policy aims of NPF4, the Proposed Development will, where practicable, incorporate mitigation measures to minimise short-term increases in construction traffic and reduce potential effects on sensitive receptors.

11.10. PROPOSED SCOPE OF THE EIA CHAPTER

Table 11.4: Environmental factors to be scoped in or out of the assessment

ENVIRONMENTAL RECEPTOR, ASSESSMENT OR EFFECT	SCOPED IN / OUT	RATIONALE
Severance of Communities	Scoped In.	In line with the IEMA 2023 Guidelines, traffic movements associated with the construction of the Proposed Development have the potential to result in this effect and as such will be scoped in to the assessment.
Road Vehicle Driver and Passenger Delay	Scoped In.	In line with the IEMA 2023 Guidelines,2 traffic movements associated with the construction of the Proposed Development have the potential to result in this effect and as such will be scoped in to the assessment.
Non-motorised User Delay	Scoped In.	In line with the IEMA 2023 Guidelines,2 traffic movements associated with the construction of the Proposed Development have the potential to result in this effect and as such will be scoped in to the assessment.
Non-motorised Amenity	Scoped In.	In line with IEMA Guidelines,5 traffic movements associated with the construction of the Proposed Development have the potential to result in this effect and as such will be scoped in to the assessment.
Fear and Intimidation on and by Road Users	Scoped In.	In line with the IEMA 2023 Guidelines,2 traffic movements associated with the construction of the Proposed Development have the potential to

ENVIRONMENTAL RECEPTOR, ASSESSMENT OR EFFECT	SCOPED IN / OUT	RATIONALE
		result in this effect and as such will be scoped in to the assessment.
Road User and Pedestrian Safety	Scoped In.	In line with the IEMA 2023 Guidelines,2 traffic movements associated with the construction of the Proposed Development have the potential to result in this effect and as such will be scoped in to the assessment.
Hazardous and Large Loads	Scoped In.	In line with the IEMA 2023 Guidelines,2 traffic movements associated with the construction of the Proposed Development have the potential to result in this effect and as such will be scoped in to the assessment.
Transport Assessment	Scoped Out.	It is not proposed to submit a formal Transport Assessment (TA) to accompany the planning application for the Proposed Development, as TAs principally relate to developments that generate a significant permanent increase in traffic as a direct consequence of function (e.g. retail parks). Traffic associated with the operational phase of the Proposed Development is anticipated to be below the required threshold for a formal TA. All traffic and transport matters can be covered by the EIA Report access, traffic and transport chapter.
Operational Traffic	Scoped Out.	Traffic associated with the operation of the Proposed Development is limited to maintenance and is expected to be insignificant in comparison to traffic generated during construction. General maintenance and Site monitoring visits will be undertaken by car and LGVs and can be expected to be in the region of one visit per week on average, although there may be an occasional need for an HGV delivery (and other larger size vehicles) to access the Site during the operational phase to replace any of the components if required. This level of traffic associated with this phase will be insufficient to trigger the threshold for assessment as set out in the IEMA 2023 Guidelines2 and is expected to be minimal and negligible in terms of existing traffic flow levels on routes within the vicinity of the Proposed Development. Assessment of operational impacts has therefore been scoped out of this chapter.

ENVIRONMENTAL RECEPTOR, ASSESSMENT OR EFFECT	SCOPED IN / OUT	RATIONALE
Decommissioning Effects	Scoped Out.	Traffic associated with decommissioning of the Proposed Development will be less than that experienced during construction. It is not possible to accurately forecast baseline traffic flow levels >40 years into the future. For these reasons, prior to the decommissioning of the Proposed Development, a traffic assessment should be undertaken, and appropriate traffic management procedures agreed with the relevant authorities at the time. As the construction phase represents a worst-case assessment, the decommissioning phase has been scoped out of this assessment.
Air Quality	Scoped Out.	The IEMA 2023 Guidelines2 advise that significant impacts to local air quality may occur if changes to LGVs are more than 100 Annual Average Daily Traffic (AADT) within or adjacent to an Air Quality Management Area (AQMA) and more than 500 AADT elsewhere. For HGVs, the criteria are more than 25 AADT within or adjacent to an AQMA, and more than 100 AADT elsewhere. Based on the expected volume of construction traffic, none of the above criteria will be met or exceeded. In addition, the Proposed Development is not located within an AQMA and, due to the temporary nature of the increase in vehicles using the proposed access route, any effects on local air quality will be short term and reversible.

11.11. CONSULTATION AND SCOPING QUESTIONS

Consultation will be conducted with the following consultees:

- Scottish Borders Council; and
- Transport Scotland.

Questions for Consultees are as follows:

- Q11.1 – Are consultees content with the proposed methodology and scope of the traffic and transport assessment?
- Q11.2 – Are the council / statutory consultees aware of any specific access restrictions or limitations on the proposed abnormal loads route?
- Q11.3 – Are consultees content to scope out operational and decommissioning traffic from further assessment?
- Q11.4 – Are you aware of any relevant policies or guidance documents not specifically mentioned in this chapter of the report?

12. NOISE

12.1. INTRODUCTION

This section of the Scoping Report defines the proposed methodology and approach to be undertaken for the noise assessment that will be included within the EIA Report.

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.

During construction, noise and vibration could arise from the movement of construction related traffic both on-site and travelling on public roads to and from the Site.

The effects of noise from the Proposed Development will be assessed in consultation with the Council's Environmental Health Officer (EHO).

12.2. LEGISLATION, POLICY & GUIDANCE

The following legislation, policy, and guidance are pertinent to the assessment of wind turbine noise:

Legislation

- Environmental Protection Act 1990 (EPA) [146]; and
- Control of Pollution Act 1974[147] .

Policy

- The Scottish Government's planning information on onshore wind turbines[148] ;
- National Planning Policy Framework 4 (NPF4)[149] ; and
- PAN 1/2011: Planning and Noise[150] .

[146] Environmental Protection Act 1990. https://www.legislation.gov.uk/ukpga/1974/40 [Cited: 1 October 2025].
[147] Control of Pollution Act 1974. https://www.legislation.gov.uk/ukpga/1990/43 [Cited: 1 October 2025].
[148] The Scottish Government. Planning information on onshore wind turbines. https://www.gov.scot/policies/renewable-and-low-carbon-energy/onshore-wind/ [Cited: 1 October 2025].
[149] The Scottish Government. National Planning Framework 4 (NPF4). https://www.gov.scot/publications/national-planning-framework-4/ [Cited: 1 October 2025].
[150] The Scottish Government. Planning Advice Note (PAN) 1/2011: Planning and Noise. Published 3 March 2011. Available at: https://www.gov.scot/publications/planning-advice-note-1-2011-planning-noise/ [Accessed 1 October 2025].

Guidance

- ETSU-R-97: The Assessment and Rating of Noise from Wind Farms[151] ;
- A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise[152] ;
- British Standard (BS) 5228-1[153] ;
- Calculation of Road Traffic Noise (CRTN)[154] ; and
- Design Manual for Roads and Bridges (DMRB LA111)[155] .

12.2.1. Environmental Protection Act 1990 (EPA)

The Environmental Protection Act 1990 sets out the duty for local authorities to investigate and, where identified, take abatement action against noise nuisance. The Act provides the definition of BPM to minimise noise (including vibration), the basis for defence against noise abatement action taken by a local authority (Section 80). The Act also provides for individuals to seek abatement action to be taken by a magistrate's court against noise nuisance (Section 82).

12.2.2. Control of Pollution Act 1974

The Control of Pollution Act 1974 (CoPA) provides the definition of Best Practicable Means (BPM) to minimise noise (including vibration), the basis for defence against noise abatement action taken by a local authority (Section 60). The Act also provides for persons responsible to seek prior consent for works on construction sites (Section 61) including BPM steps to minimise noise, and the basis for defining codes of practice (applies to BS 5228:2009+A1:2014 'Code of practice for noise and vibration control on construction and open sites, Part 1: Noise and Part 2: Vibration')

12.2.3. Scottish Government Planning Information on Onshore Wind

The Scottish Government's Online Renewables Planning Advice states that ETSU-R-97 should be used to assess and rate noise from wind energy developments, together with the Institute of Acoustics' Good Practice Guide.

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[151] Department of Trade and Industry. ETSU-R-97: The Assessment and Rating of Noise from Wind Farms. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/49869/ETSU_Full_copy__Searchable_.pdf [Cited: 1 October 2025].

[152] Institute of Acoustics. A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise. May 2013. Available at: https://www.ioa.org.uk/sites/default/files/IOA%20Good%20Practice%20Guide%20on%20Wind%20Turbine%20Noise%20-%20May%202013.pdf [Accessed 1 October 2025].

[153] BSI. BS 5228-1:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites – Part 1: Noise. [online] Available at: https://www.warrington.gov.uk/sites/default/files/2020-08/cf53_bs_5228_pt1-2009a1-2014.pdf [Cited: 1 October 2025]

[154] Department of Transport and Welsh Office. Calculation of Road Traffic Noise. London: Her Majesty's Stationery Office, 1988. Available at: https://n-somerset.gov.uk/sites/default/files/2022-11/CD13.02%20Department%20of%20Transport%20and%20Welsh%20Office%20%281988%29.%20Calculation%20of%20Road%20Traffic%20Noise.pdf [Accessed 1 October 2025].

[155] Highways England. Design Manual for Roads and Bridges, LA 111 Noise and Vibration. Revision 2. London: Highways England, 2020. [Online] Available at: https://gat04-live-1517c8a4486c41609369c68f30c8-aa81074.divio-media.org/filer_public/54/ab/54abf4a1-0a58-4050-a4ae-21417342dc7e/cd71_-_design_manual_for_roads_and_bridges_la_111_noise_and_vibration_505764740_1.pdf [Accessed July 2025].

12.2.4. National Planning Policy Framework 4 (NPF4)

NPF4 sets out in Policy 11(a) that 'development proposals for all forms of renewable, low carbon and zero emissions technologies will be supported', with Policy 11(e) requiring that:

'*…project design and mitigation will demonstrate how the following impacts are addressed:*

i. impacts on communities and individual dwellings, including, … noise …'

12.2.5. PAN 1/2011: Planning and Noise

PAN 1/2011 provides advice on the role of the planning system in helping to prevent and limit the adverse effects of noise. It promotes the principles of good acoustic design and the appropriate location of new potentially noisy development. An associated Technical Advice Note offers advice on the assessment of noise impact and includes details of the legislation, technical standards and codes of practice appropriate to specific noise issues.

Appendix 1 of the Technical Advice Note: Assessment of Noise describes the use of ETSU-R-97 in the assessment of wind turbine noise.

12.2.6. ETSU-R-97

ETSU-R-97 provides a framework for the assessment and rating of noise from wind turbine installations. It is the accepted standard for wind farm developments in the UK as supported by national guidance.

The aim of ETSU-R-97 is to provide:

"Indicative noise levels thought to offer a reasonable degree of protection to wind farm neighbours, without placing unreasonable restrictions on wind farm development or adding unduly to the costs and administrative burdens on wind farm developers or local authorities".

ETSU-R-97 makes it clear from the outset that any noise restrictions placed on a development must balance the environmental impacts of the development against the national and global benefits which would arise through the development of renewable energy sources.

Both background noise and noise from wind turbines typically vary with wind speed. According to ETSU-R-97, wind farm noise assessments should therefore consider the site-specific relationship between wind speed and background noise, along with the particular noise emission characteristics of the proposed wind turbines.

ETSU-R-97 specifies the use of the LA90,10min descriptor for both background and wind turbine noise. Therefore, unless otherwise specified, all references to noise levels within this section relate to this descriptor. Similarly, all wind speeds referred to relate to a height of 10 m Above Ground Level (AGL) at the location of the Development, standardised in accordance with current good practice guidance or BS EN (IEC) 61400-11:2003 as appropriate, unless otherwise stated.

The document recommends the application of external noise limits at the nearest noise sensitive properties, to protect outside amenities and prevent sleep disturbance inside dwellings. These limits take the form of a 5 dB margin above the prevailing background noise level, except where background noise levels are lower than certain thresholds, where fixed lower limits apply. Separate limits apply for quiet daytime and night-time periods, as outlined below.

During daytime, the guidance specifies limits designed to protect the amenity of residents whilst enjoying the external garden areas of their properties. The limits are based on the prevailing background noise level for 'quiet daytime' periods, defined in ETSU-R-97 as:

- 18:00 – 23:00 every day;
- 13:00 – 18:00 on Saturday; and
- 07:00 – 18:00 on Sundays.

ETSU-R-97 recommends that the fixed lower noise limit for quiet daytime should be set within the range 35 to 40 dB, LA90,10min, with choice of value dependent on the following factors:

- The number of dwellings in the neighbourhood of the development;
- The effect of the noise limits on the number of kWh (kilowatt hours) generated; and
- The duration and level of exposure.

Different limits apply at night, where potential sleep disturbance is the primary concern rather than the requirement to protect outdoor amenity. Night-time is considered to be all periods between 23:00 and 07:00. A limit of 43 dB LA90,10min is recommended for night-time at wind speeds or locations where the prevailing wind speed-related night-time background noise level is lower than 38 dB LA90,10min. At other times, the limit of 5 dB above the prevailing wind speed-related background noise level applies. The value of night-time fixed lower limit was selected in order to ensure that internal noise levels remained below those considered to have the potential to cause sleep disturbance, taking account of the attenuation of noise when passing from outdoors to indoors, and making allowance for the presence of open windows.

Where the occupier of the property has a financial interest in a development, ETSU-R-97states that the fixed lower noise limit for both daytime and night-time can be increased to 45 dB(A) and that “consideration should be given to increasing the permissible margin above background”.

12.2.7. The Good Practice Guide

The Good Practice Guide (GPG) was published by the Institute of Acoustics (IOA) in May 2013 and has been endorsed by the Scottish Government as current industry good practice (IOA, 2013). The GPG presents current good practice in the application of ETSU-R-97 assessment methodology for wind turbine developments at the various stages of the assessment and will be followed throughout the assessment.

12.2.8. British Standard (BS) 5228-1

BS 5228-1 refers to the need for the protection against noise for persons living and working in the vicinity of and those working on construction and open sites. It provides examples of noise control in respect of construction activities, including guidance on noise control targets, example criteria, and methods of calculating the levels of noise resulting from construction activities, along with sound data for various types of plant and equipment.

12.2.9. Calculation of Road Traffic Noise (CRTN)

Calculation of Road Traffic Noise (hereafter referred to as CRTN) is a guidance document issued by the Department of Transport and it outlines standardised procedures for estimating noise levels generated by road traffic. The methodology incorporates several input variables, including traffic flow rates, average speeds, proportions of heavy goods vehicles, road surface types, site geometry, and the presence of acoustic barriers or absorptive ground surfaces. Using these parameters, the guidance enables predictions of LA10,18hour or LA10,1hour noise levels at specified receptor points, extending up to 300 meters from the roadway.

12.2.9.1. Design Manual for Roads and Bridges (DMRB LA111)

The DMRB issued by National Highways provides noise assessment guidance relating to the construction of infrastructure projects that have the potential to produce changes in noise and vibration levels in the surrounding environment due to new or changes to existing roads. This relates to traffic on the existing road network during the construction phase of the development.

12.3. APPROACH TO CONSULTATION

Scottish Borders Council will be consulted on the proposed assessment methodology and the baseline monitoring positions. Following initial consultation, noise monitoring locations will be developed further as

understanding of the local noise environment improves. Any responses will be logged in the consultation log following any formal response the applicant receives.

12.4. BASELINE CONDITIONS AND KEY SENSITIVITIES

The Site is located in a rural area, with several individual farmhouses or other noise-sensitive dwellings located within 1 to 2 km from the Site Boundary, with the closest settlements of size being approximately 1 km southeast of the Site.

The assessment will consider noise sensitive residential locations in the vicinity of the Proposed Development. Data such as OS Addressbase and opensource mapping will be reviewed to consider noise sensitive receptors located close to the Proposed Development.

The noise environment in the surrounding area is likely to be mostly characterised by 'natural' sources, such as wind disturbed vegetation, birds, farm animals and (in some cases) watercourses. Other sources of noise will include road traffic, particularly in proximity to the A or B-roads, as well as agricultural vehicle movements and activities.

Cumulative operational noise is likely to be a key consideration within the EIA. In addition to the requirement to assess cumulative effects set out in ETSU-R-97 and the GPG, ETSU-R-97 also states that noise from any existing wind turbines should not be considered as background noise. Due to the potential presence of operational wind farms in the cumulative study area, it will be necessary to ensure that noise from these turbines does not affect any measured background noise. The GPG provides a number of options for measures that can be taken to ensure this, including using previous measured background noise levels, directional filtering or correcting the measured levels for the influence of the existing turbines. These measures will be considered during the assessment and agreement sought with the EHO as to the most appropriate.

12.5. STUDY AREA

The Study Area for the assessment of operational noise from the Proposed Development will be the area within which noise levels are predicted to be at least 35 dB, $LA_{90,10min}$, in accordance with ETSU-R-97.

The Cumulative Noise Study Area will be defined as described in the IOA Good Practice Guide. This states that cumulative noise should be considered for all receptors in areas where the predicted cumulative noise levels from the Proposed 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 35 dB, $LA_{90,10min}$ and the difference between the predicted noise level for the Proposed Development and those for the other turbines is less than 10 dB.

12.6. PROPOSED ASSESSMENT METHODOLOGY

12.6.1. Baseline

ETSU-R-97 requires the baseline environment within the study area to be characterised by measuring background noise levels as a function of site wind speed at the nearest neighbours (or, at a representative sample of the nearest neighbours). ETSU-R-97 also requires that any such measurements are not significantly influenced by existing operational turbines, to prevent unreasonable cumulative increases. Where existing operational turbines exist within the area of interest, downwind contributions from these turbines will be directionally filtered and excluded from the baseline data.

The potential implication of wind shear (a change in wind speed with height) effects of the Proposed Development will be taken into account in line with best practice set out in the IOA GPG. This would consist of utilising at least one sufficiently high wind speed reference when correlating with the proposed background noise measurements. Hub height wind data will be re-expressed using the standardised 10 m wind reference in accordance with the IOA GPG using the 'log law' equation and a ground roughness of 0.05 m.

The survey methods and selection of noise sensitive receptors would be discussed in consultation with the Environmental Health Departments of Scottish Borders Council. The assessment methodology, in particular with regard to cumulative impacts, will also be discussed with the Council. Representatives of the Council will be invited to attend during setup of the equipment for these surveys to agree measurement positions. The methodology employed for the baseline noise monitoring will be in accordance with current best practice found in the IOA GPG. Scottish Borders Council will also be consulted with regards to cumulative impacts.

12.6.2. Assessing Noise

The specific methodologies involved in applying ETSU-R-97 will be detailed in full in the EIA Report but, in summary, these provide recommendations for noise limits relating to the existing levels of background noise for quiet day-time and night-time periods.

To carry out a noise assessment in accordance with ETSU-R-97, the following steps are required:

- Specify the number and locations of the wind turbines;
- Identify the locations of the nearest, or most noise sensitive, neighbours;
- If necessary, determine the background noise levels as a function of site wind speed at the nearest neighbours, or a representative sample of the nearest neighbours, and derive noise limits;
- Specify the type and noise emission characteristics of the wind turbines proposed for the site;
- Calculate the noise emission levels due to the operation of the wind turbines as a function of site wind speed at the closest and/or most noise sensitive properties; and
- Compare the calculated noise emission levels with the noise limits and assess accordingly.

12.6.3. Cumulative

ETSU-R-97 and the GPG state that the noise limits that ETSU-R-97 recommends apply to the cumulative effect of noise from all wind turbines that may affect a particular location. A search of potential cumulative developments associated with the Proposed Development, will be undertaken in consultation with the Council to identify any wind energy developments either operational, consented or in planning which may also require consideration in the assessment process. Known wind farms to be considered in the cumulative assessment are shown in Table 3.1.

Cumulative noise levels will be established in line with the requirements of the GPG and assessed against the ETSU-R-97 noise limits to determine the level of headroom present (i.e., the level of noise which may be generated by the Proposed Development, after taking all relevant cumulative developments into account).

Noise due to the Proposed Development will then be assessed against the remaining headroom to determine compliance with ETSU-R-97.

12.6.4. Construction Traffic Noise

Consideration will also be given to the potential impact of construction traffic on sensitive receptors in the area. Depending upon the outcome of the assessment of traffic, the impact of traffic along the Proposed Development's access route will be assessed based on the methodology within BS 5228-1, CRTN and DMRB LA111 where appropriate.

12.7. POTENTIAL SIGNIFICANT IMPACTS AND EFFECTS

Operational noise impacts are associated primarily with the aerodynamic noise generated by the movement of the turbine blades through the air, and to a lesser extent by the operation of mechanical components housed within the turbine itself. Operational noise impacts are assessed on the basis of the level of noise produced by the Proposed Development relative to ETSU-R-97 noise limits (or an apportionment thereof).

Construction traffic noise may result in effects given the rural context of the Site, therefore, construction traffic noise is included in the assessment. Likewise, the effects of decommissioning traffic will be included in the assessment.

12.7.1. Scoped In Effects

The following could potentially result in significant effects and are therefore scoped in:

- Wind farm operational noise;
- Construction/decommissioning traffic noise; and
- Cumulative operational noise, resulting from wind farm noise, will be assessed independently to the standards required for each type of technology.

12.7.2. Scoped Out Effects

12.7.2.1. Low Frequency Noise and Infrasound

A study, published in 2006 by acoustic consultants Hayes McKenzie, 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 in fact, most likely due to a phenomenon known as Amplitude Modulation (AM).

In February 2013, the Environmental Protection Authority of South Australia published the results of a study into in infrasound levels near wind farms. This study measured infrasound levels at urban locations, rural locations with wind turbines close by, and rural locations with no wind turbines in the vicinity. It found that infrasound levels near wind farms are comparable to levels away from wind farms in both urban and rural locations. Infrasound levels were also measured during organised shut-downs 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) concludes that:

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

12.7.2.2. 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.

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 allowance for normal AM or blade swish.

A study 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 wind farms and whether these were associated with AM. This report 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 increased AM (OAM) 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 OAM 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 OAM were not well understood and that prediction of the effect was not then currently possible.

This research has recently been supported by an in-depth study undertaken by RenewableUK which has 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, the research concludes that 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 or the IOA.

In 2016, the IOA proposed a measurement technique to quantify the level of AM present in any particular sample of wind farm noise. This technique is supported by BEIS who have published guidance, 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 unvalidated, remains in a draft form and would require site-specific legal advice on its appropriateness to a specific development.

In 2018, the World Health Organization (WHO) Regional Office for Europe published “Environmental Noise Guidelines for European Region”, which found that the current evidence available in relation to the health effects of noise from wind turbines, other than annoyance, is either absent or of poor quality.

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”*.

12.7.2.3. Ground-Borne Vibration

Research undertaken by Snow 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 BS6472:1992 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 University. This report clearly shows that, although detectable using highly sensitive instruments, the magnitude of the vibration is orders of magnitude below the human level of perception and does not pose any risk to human health.

12.7.2.4. Construction and Decommissioning Noise

Noise during the Proposed Development’s construction phase will consist of that generated by on-site activities and noise due to construction traffic on public roads. Whilst the precise location of construction works has yet to be established, the closest noise-sensitive receptor is likely to be located to the southeast of the Proposed Development, situated approximately 1 km from the closest turbine location by this stage of the development.

By virtue of the large separation distances and low number of residential receptors in the locality, noise impacts generated by construction activities on the Site are anticipated to be minimal, and will therefore be scoped out of the assessment. However, the effect of noise generated by construction traffic moving to/from the site is scoped into the assessment. Notwithstanding this, the assessment will include a discussion of construction noise guidance, and detail best practice methods for minimising construction noise impact in line with the requirements of BS5228:2009+A1:2014 Code of Practice for Noise and Vibration Control on Construction and Open sites.

The effects of noise during decommissioning of the Proposed 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.

12.8. MITIGATION

All necessary mitigation will be determined and incorporated into the design of the Proposed Development as part of the noise assessment for the EIA.

The following details would be detailed within the EIA:

- Any mitigation required for the final turbine layout to meet the identified ETSU-R-97 limits, including the associated wind directions and speeds; and
- Mitigation measures that reflect Best Practicable Means as defined in the Control of Pollution Act (CoPA) 1974 for the proposed activities during construction and decommissioning.

12.9. OPPORTUNITIES FOR ENHANCING THE ENVIRONMENT

It is not expected that there would be opportunities for enhancing the environment with respect to noise as a result of the Proposed Development, as the introduction of the Proposed Development would only have the potential to increase noise. However, where practicable, and in keeping with policy aims in NPF4 and PAN 1/2011, the Proposed Development will incorporate mitigation to limit increases in noise for noise sensitive receptors.

12.10. PROPOSED SCOPE OF THE EIA CHAPTER

ENVIRONMENTAL RECEPTOR, ASSESSMENT OR EFFECT	SCOPED IN / OUT	RATIONALE
Wind farm operational noise	Scoped In.	Assessing operational noise impacts is essential to ensure that the noise generated by turbine blades and internal mechanical components remains within acceptable limits.
Cumulative operational noise	Scoped In.	Existing wind turbines in the study area can influence background noise measurements and must be accounted for.
Construction/decommissioning noise	Scoped Out.	Minimal noise impact expected due to the large distance (approx. 1 km) from the nearest noise sensitive receptor.
Construction/decommissioning traffic noise	Scoped In.	Construction and decommissioning noise from traffic to and from the site will be evaluated, due to the rural setting of the site.
Low Frequency Noise and Infrasound	Scoped Out.	No significant difference in noise levels when wind turbines are operating compared to shut down.
Ground-Borne Vibration	Scoped Out.	Far below levels that affect human health or comfort standards.
Amplitude Modulation	Scoped Out.	Unvalidated, current practice does not require specific planning conditions to address AM.

12.11. CONSULTATION AND SCOPING QUESTIONS

Questions for consultees are as follows:

- Q12.1 – Do the Consultees agree with the proposed methodology and scope of assessment?

- Q12.2 – Do the Consultees have details of any further cumulative developments in the locality?
- Q12.3 – Are you aware of any relevant policies or guidance documents not specifically mentioned in this section of the Report?

13. CLIMATE CHANGE AND CARBON BALANCE

13.1. INTRODUCTION

It is proposed that a separate climate change and carbon balance chapter will be included in the EIA Report. The chapter will assess the potential impact of the Proposed Development on climate change, and the potential impacts of climate change on the Proposed Development. Where future climate change will impact the baseline environment (the emerging baseline), the effects of this will be considered in each individual EIA Chapter for the different topics.

Climate Change Impact Assessment (CCIA) is a relatively new form of environmental assessment required by the amended EC Directive 2014/52/EU[156] , as transposed into the EIA Regulations, but there is limited guidance to suggest how this should be assessed.

13.2. LEGISLATION, POLICY & GUIDANCE

The policy and legislation relevant to this chapter supports developments that rapidly increase electricity generation from renewable sources. The policy and legislation requires developments to reduce and minimise as far as it is possible the impact they have on the climate. The key policy and legislation is detailed below:

Climate Change legislation:

- The Climate Change Act 2008[157] is the UK Government's legislation for addressing climate change. In relation to climate change mitigation, it commits the UK to GHG emissions reductions and reporting. The Climate Change Act 2008 (2050 Target Amendment) Order 2019[158] sets the UK's net zero target by 2050; and
- The Climate Change Act (Emissions Reduction Targets) (Scotland) Act 2019 amends the Climate Change (Scotland) Act 2009[159] and sets a legally binding target for Scotland to reach net zero by 2045. The Climate Change (Emissions Reduction Targets) (Scotland) Act 2024 introduces a carbon budget-based approach for setting emissions reduction targets in Scotland.

National planning legislation:

- Paragraph 5 of Schedule 4 of the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017[160] ('the EIA Regulations') sets out the requirement to consider climate change within EIA assessment and decision-making processes: "*A description of the likely significant effects of the development on the environment resulting from… the impact of the project on climate (for example the nature and magnitude of greenhouse gas emissions)*"; and

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[156] European Commission (2014) Directive 2014/52/EU on the assessment of the effects of certain public and private projects on the environment [Online] Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32014L0052 (Accessed 28/02/2025)
[157] UK Government, Climate Change Act 2008, https://www.legislation.gov.uk/ukpga/2008/27/contents
[158] The Climate Change Act 2008 (2050 Target Amendment) Order 2019, https://www.legislation.gov.uk/ukdsi/2019/9780111187654
[159] Climate Change Act (Emissions Reduction Targets) (Scotland) Act 2019 https://www.legislation.gov.uk/asp/2019/15 and Climate Change (Scotland) Act 2009 https://www.legislation.gov.uk/asp/2009/12/contents
[160] Schedule 4 of The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017, https://www.legislation.gov.uk/ssi/2017/101/contents

- The National Planning Framework 4 (2023)[161] guides spatial planning development in Scotland by setting out national planning policies, designating national developments and highlighting spatial priorities. The Proposed Development falls into the third category (Strategic Renewable Electricity Generation and Transmission Infrastructure) of NPF4 as it will support Scotland to meet its net zero emissions targets by supporting the rapid increase in electricity generation from renewable sources. NPF4 requires that the Proposed Development be considered against national planning policies. The Policy statements relevant to the Proposed Development involve Policy 1 'tackling the climate and nature crises' by providing renewable electricity generation; and Policy 2 'climate mitigation and adaptation' which requires the Proposed Development to minimise GHG emissions.

Local planning policy:

- Scottish Borders Local Development Plan 2024[162] promotes net zero GHG emissions by 2045 by supporting renewable energy developments as well as infrastructure that promotes sustainability and the protection, enhancement and conservation of nature and biodiversity, historic environment and archaeological heritage and other environmental impacts.

13.3. APPROACH TO CONSULTATION

While no direct consultation on Climate Change matters is being sought, any relevant responses received from consultees to this Scoping Report will be considered as part of the EIA.

13.4. BASELINE CONDITIONS AND KEY SENSITIVITIES

The State of the UK Climate 2024[163] provides the latest report on observed climate data for the UK. The climate parameters considered most relevant to the assessments referenced within this chapter are wind speed, temperature, and precipitation. Key findings for this assessment are therefore as follows:

- Recent decades in the UK have been warmer, wetter, and sunnier than in the 20th century, with UK temperature extremes being more affected than the average temperature;
- 2024 continued the trend of near record setting temperature, with it being the fourth warmest year in the UK series from 1884. 2024 was 0.65°C above the 1991–2020 average (2022 was 0.83°C above the 1991–2020 average), and 1.48°C above the 1961-1990 average.;
- The decade 2015-2024 has been on average 0.41°C warmer than the 1991-2020 average and 1.24°C warmer than 1961-1990.
- It has been found that the temperature extremes for summer and winter (e.g. the warmest summer days and coldest winter nights) have increased at double the rate of the average for these parameters.
- 2024 rainfall was 109% of the average, and was the thirteenth wettest year on record for the UK in the series from 1836;
- The most recent decade (2015-2024) has been 2% wetter than 1991-2020, and 10% wetter than 1961-1990;
- There was a clear temporal disparity between winter (October – March) and summer (April – September) rainfall, with summer rainfalls being recorded as being little different from average, whilst recorded winter

[161] The National Planning Framework 4 (2023), https://www.gov.scot/publications/national-planning-framework-4/
[162] Scottish Borders Local Development Plan 2024, https://www.scotborders.gov.uk/plans-guidance/local-development-plan
[163] Kendon et al. (2025). State of the UK Climate 2024. International Journal of Climatology. 45 (S1). [Online] Available at: https://rmets.onlinelibrary.wiley.com/doi/10.1002/joc.70010 (Accessed 09/09/2025)

rainfall was up 6% compared to the 1991-2020 average, and up 16% compared to the 1961 – 1990 average.
- There have been few occurrences of maximum gust speeds exceeding 40/50/60 Knots (Kt) in the last two decades compared to the 1980s and 1990s; and,
- The UK annual mean wind speed from 1969 to 2022 shows a downward trend, consistent with that observed globally, although it is highlighted that this series must be interpreted with some caution.

13.5. STUDY AREA

The study area for assessment of climate change is confined to the Site boundary

13.6. PROPOSED ASSESSMENT METHODOLOGY

There are no recognised standards or legislative requirements for assessing climate change; therefore, a combination of professional judgement, established EIA best practice, and relevant legislation, policy and guidance will be used to form the approach to this assessment.

The methodology will focus on the following elements:

- Greenhouse Gas (GHG) Assessment - Assessment of the Proposed Development's effects on climate change (calculation of its carbon footprint). The GHG assessment will identify and calculate the GHG emissions and savings associated with the construction, operation, and decommissioning of the Proposed Development;
- Climate Change Resilience (CCR) Assessment - Assessment of the Proposed Development's vulnerabilities and resilience in the context of climate change; and,
- In-Combination Climate Change Impacts (ICCI) - Assessment of the Proposed Development's effects upon identified environmental receptors in the context of the emerging baseline.

The GHG assessment will be prepared in accordance with the UK Government's environment reporting guidelines[164] and the Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (revised edition)[165] developed by the World Resources Institute and the World Business Council for Sustainable Development. The methodology used in the GHG assessment will be guided by the Environmental Impact Assessment Guide to: Assessing Greenhouse Gas Emissions and Evaluating their Significance[166] . For the wind farm aspect of the Proposed Development, it is likely that the Scottish Government's Carbon Calculator Tool[167] will be utilised to assess the carbon balance of the proposed wind turbines.

The climate change resilience assessment will analyse climate data by UK Met Office climate projections for the UK in 2018 (UKCP18)[168] , Environment Agency Flood maps, and climate data generated by the

[164] *UK Government (2019) Environmental Reporting Guidelines [Online] Available at: https://assets.publishing.service.gov.uk/media/67161e8696def6d27a4c9ab3/environmental-reporting-guidance-secr-march-2019.pdf (Accessed 10/09/2025)*
[165] *World Resources Institute & World Business Council for Sustainable (2004). The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Standard). [Online] Available at: https://ghgprotocol.org/sites/default/files/standards/ghg-protocol-revised.pdf (Accessed 10/09/2025)*
[166] *IEMA (2022) Assessing Greenhouse Gas Emissions and Evaluating their Significance, 2nd Edition [Online] Available at: https://www.iema.net/resources/blog/2022/02/28/launch-of-the-updated-eia-guidance-on-assessing-ghg-emissions (Accessed 10/09/2025)*
[167] *Scottish Government (2018) Carbon Calculator Tool v1.8.1. [Online] Available at: https://informatics.sepa.org.uk/CarbonCalculator/index.jsp (Accessed 10/09/2025)*
[168] *Met Office (2018) UK Climate Projections (UKCP). [Online] Available at: https://www.metoffice.gov.uk/research/approach/collaboration/ukcp (Accessed 28/02/2025)*

Intergovernmental Panel on Climate Change (IPCC). The climate resilience assessment will draw on industry guidance including the Institute of Environment Management and Assessment (IEMA) Environmental Impact Assessment Guide to Climate Change and Resilience and Adaptation[169] .

13.7. POTENTIAL SIGNIFICANT IMPACTS AND EFFECTS

The following effects have the potential to result from the Proposed Development and shall be considered in the undertaking of further assessment:

- Effects of the Proposed Development on climate change throughout all phases of the Proposed Development;
- Effects of climate change on the Proposed Development throughout all phases of the Proposed Development; and,
- Effects of climate change on assessments made in other topics of the Proposed Development's EIA Report.

13.8. MITIGATION

The Proposed Development aims to mitigate climate change by using renewable energy to offset Carbon Dioxide (CO2) production. This aligns with global and national emission reduction targets. The EIA Report will include a literature review on Scotland's climate goals and the Proposed Development's contribution to these efforts.

13.9. OPPORTUNITIES FOR ENHANCING THE ENVIRONMENT

This chapter will quantify the level of displacement of fossil fuel emissions from the Proposed Development. Displacement of carbon intensive energy sources provides a direct enhancement to the wider environment.

13.10. PROPOSED SCOPE OF THE EIA CHAPTER

Table 13.1 contains a list of all environmental factors relating to climate change and carbon balance that will be scoped in and scoped out of the assessment.

Table 13.1: Environmental Effects Scoped into / out of the assessment.

ENVIRONMENTAL RECEPTOR, ASSESSMENT OR EFFECT	SCOPED IN / OUT	RATIONALE
Effects of the Proposed Development on Climate Change	Scoped In.	It is possible that the Proposed Development will have a significant positive effect on climate change, and therefore this will be scoped into the EIA to assess the potential effect and align with National Planning Framework policy relating to carbon balance.
Effects of Climate Change on Assessments Made	Scoped In.	This effect cannot be entirely scoped out, as effects of climate change may impact baseline receptors that have been assessed in other EIA Chapters, thereby affecting their resilience or response to

[169] *IEMA (2020) Environmental Impact Assessment Guide to: Climate Change Resilience & Adaptation. [Online] Available at: https://www.iema.net/media/mabhqino/iema-eia-climate-change-resilience-june-2020.pdf (Accessed 28/02/2025)*

ENVIRONMENTAL RECEPTOR, ASSESSMENT OR EFFECT	SCOPED IN / OUT	RATIONALE
in Other Topics of the Proposed Development's EIA Report		the changes associated with the Proposed Development. Therefore, this will be scoped in for further assessment.
Vulnerabilities and Resilience of the Proposed Development to Climate Change	Scoped In.	Out of the general climate change trends, an increase in temperature, precipitation, wind speed, and potential frequency and severity of flooding, water stress, and wildfires, could potentially affect the Proposed Development. It is therefore proposed to consider the impact of these changes on the Proposed Development within the EIA, and this topic is scoped in for further assessment.

13.11. CONSULTATION AND SCOPING QUESTIONS

Consultation will be conducted with the following consultees:

- SEPA; and,
- SBC.

Questions for Consultees are as follows:

- Q13.1 – Are consultees content with the proposed scope for the climate change and carbon balance EIA for the Proposed Development?
- Q13.2 – Are consultees content with the proposed method of assessment for the effect of the Proposed Development on climate change?
- Q13.3 – Can consultees share any guidance or expectations for the carbon balance assessment of the wind farm and BESS aspects of the Proposed Development?

14. SOCIO-ECONOMICS, TOURISM AND RECREATION

14.1. INTRODUCTION

This chapter will consider the potential socioeconomic impacts of the Proposed Development during the construction, operation and maintenance, and decommissioning phases. The following categories of impacts are relevant to this socioeconomic chapter:

- Socioeconomic impacts (employment and economic productivity);
- Wider socioeconomic effects (economic structure, qualifications, earnings);
- Sociocultural effects (population and demographics, housing and social infrastructure); and
- Tourism and recreation impacts.

This scoping chapter outlines the legislation, policy and guidance identified as relevant to the socioeconomic impact assessment. It defines the study area for socioeconomic impacts, based on where impacts are most likely to occur. The chapter summarises baseline socioeconomic conditions and sensitivities which inform the impacts that are proposed to be scoped in or out of the socioeconomic impact assessment for the EIA Report. Finally, the chapter outlines the methodology for the socioeconomic impact assessment and scoping questions.

14.2. LEGISLATION, POLICY & GUIDANCE

The following relevant legislation, policy and guidance will be considered in the socioeconomic impact assessment:

- Wellbeing and Sustainable Development (Scotland) Bill, Proposed[170] ;
- National Planning Framework 4 (NPF4) 2023[171] ;
- Onshore Wind Policy Statement 2022[172] ;
- National Strategy for Economic Transformation 2022[173] ;
- Planning (Scotland) Act 2019[174] ;
- Environmental Impact Assessment (Scotland) 2017[175] ;
- Land Reform Act (Scotland) 2016[176] ; and

[170] *Scottish Parliament (Proposed) Wellbeing and Sustainable Development (Scotland) Bill. Available at Wellbeing and Sustainable Development (Scotland) Bill | Scottish Parliament Website*
[171] *Scottish Government. (2023). National Planning Framework 4. Available at: National Planning Framework 4 - gov.scot*
[172] *Scottish Government. (2022). Onshore Wind Policy Statement. Available at: Onshore wind: policy statement 2022 - gov.scot*
[173] *Scottish Government (2022) Scotland's National Strategy for Economic Transformation. Available at: Scotland's National Strategy for Economic Transformation - gov.scot*
[174] *Scottish Parliament (2019). Planning (Scotland) Act 2019. Online. Available at Planning (Scotland) Act 2019*
[175] *Scottish Government. (2017). Environmental Impact Assessment (Scotland) Regulations 2017. Available at: The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017*
[176] *Scottish Government. (2016). Land Reform (Scotland) Act 2016. Available at: Land Reform (Scotland) Act 2016*

- Scottish Borders Economic Strategy 2023[177] .

NPF4 was published in 2023 and outlines Scotland's spatial strategy through to 2045, with key policies including:

- Policy 11 – Energy:
    - Part A: Supports development of all renewable, low carbon and zero-emission technology; and
    - Part C: Endorses proposals that maximise net economic impact, including local employment and supply chain benefits.
- Policy 20 – Green and Blue Infrastructure:
    - Development that fragments or reduces existing infrastructure is only supported if it does not worsen deficits and maintains network integrity.
- Policy 25 – Productive Places and Community Wealth Building:
    - Supports proposals aligned with local/regional wealth-building strategies, including community resilience, local spending, job creation and community-led ownership.
- Policy 30 - Tourism:
    - Encourages sustainable tourism that benefits locals, aligns with net zero and nature goals, and promotes Scotland's cultural and environmental assets.
- The Planning (Scotland) Act 2019 supports economic growth, community wellbeing, and sustainable development, and outlines a number of socioeconomic impacts relating to developments in Scotland.

14.3. APPROACH TO CONSULTATION

No direct consultation on Socio-economic matters is proposed, however should consultees have specific queries regarding this subject, they will be addressed in the EIA Report

14.4. STUDY AREA

The Proposed Development is located in the Hawick and Hermitage ward within the Scottish Borders local authority (Shown in Figure 14.1).

Socio-economic impacts are likely to occur at different spatial levels. For example, employment and productivity growth are likely to have greater influence on the local and national economies than the neighbourhood, but sociocultural effects are much more likely to impact the local neighbourhood. This scoping report considers socioeconomic impacts at the following spatial levels:

- The neighbourhood study area is the Hawick and Hermitage ward;
- The local study area is the Scottish Borders Council local authority area;
- The national study area is Scotland; and

[177] *Scottish Borders Council (2013) Scottish Borders Economic Strategy 2023. Available at: Microsoft Word - Scottish Borders Economic Strategy 2023 _without 0_.doc*

- For tourism and recreation, a 5 km buffer of the Site is used as receptors could experience amenity effects in this area.

Table 14.1 summarises the proposed study areas for each category of impact in the socio-economic impact assessment.

Table 14.1: Proposed Study Areas

IMPACTS	5km OF SITE BOUNDARY	NEIGHBOURHOOD HAWICK AND HERMITAGE WARD	LOCAL SCOTTISH BORDERS	NATIONAL SCOTLAND
Socio-economic			✓	✓
Wider socio-economic		✓	✓	
Socio-cultural		✓	✓	
Tourism and recreation	✓			

14.5. BASELINE CONDITIONS AND KEY SENSITIVITIES

The following data sources were used to identify the key receptors and baseline characteristics of the neighbourhood, local and national study areas:

- Census, 2022[178] ;
- Annual Population Survey (APS) 2025[179] ;
- Business Register and Employment Survey (BRES) 2024[180] ;
- Annual Survey of Hours and Earnings (ASHE) 2024[181] ; and
- Scottish Index of Multiple Deprivation (IMD) 2019[182] .

The datasets provided insights into population characteristics, labour market structure and relative deprivation. Assessing these sources led to the identification of key sectors and vulnerable groups and their potential of being affected by the Proposed Development.

The latest data available has been used for each dataset. Baseline datasets are not always available at the spatial level defined for each study area. Where data is not available for the defined study area level, data for the larger area has been used as a proxy.

[178] *NRS (2022) Census*
[179] *ONS (2025) Annual Population Survey*
[180] *ONS (2024) Business Register and Employment Survey*
[181] *ONS (2024) Annual Survey of Hours and Earnings*
[182] *Scottish Government (2022) Scottish Index of Multiple Deprivation*

14.5.1. Socio-Economic Impacts

Socioeconomic impacts will be assessed at the neighbourhood (Hawick and Hermitage Ward), local (Scottish Borders), and national (Scotland) study areas. The Proposed Development will create jobs and contribute to Gross Value Added (GVA), a measure of economic productivity, during the construction, operation and maintenance, and decommissioning phases.

Hawick and Hermitage Ward has a lower GVA per working age person (£27,500) compared to Scottish Borders (£39,027) and Scotland as a whole (£48,255), indicating lower productivity locally. The proportion of economically active local residents (77%) is greater than the Scottish average (72%), and those of working age (16 – 64) who are unemployed (1.9%) is slightly lower than Scotland (2.6%). However, the local area has a higher proportion of economically inactive retired people (71.7% of all those economically inactive) compared to Scotland (60%), and a lower proportion of students (6.5% vs. 12.4%), reflecting the age profile of the population (discussed under 14.5.3 below).

The Proposed Development could safeguard existing jobs and attract new workers to the local area. It could also help to increase local productivity by creating higher value jobs[183] and supporting economic growth. As unemployment is relatively low, however, there is the potential that employment created by the Proposed Development could lead to displacement of employment from existing industries.

14.5.2. Wider Socio-Economic Effects

Onshore wind developments typically require a larger workforce during the construction phase than in either the ongoing operations or decommissioning phases. This can create wider socio-economic effects, such as the knock-on effects upon existing local industries and labour markets, which could occur during the construction phase.

Jobs created or safeguarded during construction are expected to be in the construction and manufacturing sectors. In Hawick and Hermitage Ward, construction jobs account for 8% of employment, which is higher than the share for Scottish Borders (6%) and Scotland as a whole (5%). Manufacturing also represents 8% of neighbourhood jobs, slightly below the local average (9%) but above the national average (7%).

It is expected that some construction jobs will be taken up by local workers because there is above average employment in construction and manufacturing in the neighbourhood and local study areas. However, it is likely that the construction phase will require some labour from outside the local study area, which could result in construction workers either travelling from neighbouring areas or moving into the area temporarily.

Almost half of all employment in the neighbourhood economy is in the following sectors; health (20%), retail (17%), and education (10%). The Proposed Development has the potential to diversify the local economy and create new opportunities for local workers. Specifically, it can support the Economic Strategy[184] by enhancing competitive advantages in sectors such as construction and manufacturing, promoting further economic diversification, and enabling more opportunities for higher-value employment.

The wider socioeconomic effects of the Proposed Development on the neighbourhood and local study areas will be assessed during construction phase only. The jobs created and safeguarded during the operational phases will be measured although they are not likely to be significant enough to create wider socio-economic change.

[183] *Renewable UK (2025) Wind Industry Skills Intelligence Report. Available at ruk-owic-offshore-wind-skills-report_2025.pdf*
[184] *Scottish Borders Council (2013) Scottish Borders Economic Strategy 2023*

14.5.3. Socio-Cultural

Socio-cultural effects will be assessed at the neighbourhood level. Hawick and Hermitage Ward is a rural area with a relatively small population of just over 8,550 people[185] . Galashiels, which is approximately an hour's drive away, is the nearest settlement with a population of over 10,000. The population aged over 65 in the neighbourhood is nearly 10 percentage points (ppt) higher than the local and national average.

As noted above, the Proposed Development may create a substantial number of jobs during construction. This could result in a sizeable construction workforce travelling into the area, requiring temporary accommodation (see tourism effects below). It could create potential for temporary population change and sociocultural effects as a result of the Proposed Development. This could include impacts on the local housing market and wider social infrastructure, such as health and education services.

The local study area (Scottish Borders) has relatively low levels of deprivation[186] . The 2020 Scottish Index of Multiple Deprivation (Figure 14.2) shows that the Scottish Borders has just over 6% of its data zones ranking in the top 20% most deprived in Scotland. This is the 8th lowest out of the 32 local authorities in Scotland. Despite this, the nearby town of Hawick has pockets of deprivation with some parts of the Burnfoot area of the town[187] ranking in the top 10% most deprived nationally. Therefore, it is important to consider how socioeconomic and sociocultural impacts are distributed because the Proposed Development is located near to areas of deprivation.

While there are likely to be temporary workers moving into the area during the construction phase, there is likely to be a much smaller number of workers moving permanently to the area for jobs during the operation phase. Therefore, there are unlikely to be significant long-term impacts on the local housing market and wider social infrastructure.

14.5.4. Tourism and Recreation

The Scottish Borders has an average of 290,000 overnight visits by international and domestic visitors annually[188] . Tourism is also outlined in the Economic Strategy as an area of competitive advantage. The neighbourhood tourism sector supports around 12% of all jobs in Hawick and Hermitage Ward[189] . The nearby village of Newcastleton is a popular outdoor activity destination, offering start points for hiking and walking and cycling and mountain biking. Additionally, the area offers sea and brown trout fishing and close proximity to Kielder Water, across the border in England, which is Northern Europe's largest manmade lake[190] .

The tourism impacts of the Proposed Development have the potential to be significant for receptors within 5 km from the Proposed Development. Table 14.2 shows tourism and recreation receptors that have been identified within 5 km of the site based on a desk-based study. The Proposed Development is located in a sparsely populated area with relatively few tourism and recreation receptors, however there are a number of core paths adjacent to the site which could be impacted by construction traffic or changes in amenity for users.

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[185] NRS (2022) Census
[186] Scottish Government (2020) Scottish Index of Multiple Deprivation
[187] Data Zone: S01012359y
[188] Visit Scotland (2024) Research and insight on tourism in the Scottish Borders. Online. Available at < Scottish Borders - Research \| VisitScotland.org >
[189] ONS (2023) BRES & ONS (2016) Workers in the tourism sector: examining their private pension savings. Online. Available at < Workers in the tourism sector - Office for National Statistics >
[190] Visit Newcastleton. Online. Available at < Kielder Water & Forest Park - Visit Newcastleton >

Increased demand for tourism accommodation from non-local workers will also be considered, reflecting the remoteness of the Proposed Development and limited accommodation. The temporary construction workforce may place pressure on local tourism accommodation if temporary accommodation is not provided for the workforce.

Table 14.2: Tourism and Recreational Receptors

TOURIST / RECREATION SITE	DISTANCE FROM PROPOSED DEVELOPMENT	DESCRIPTION
BR88	Goes through the Site Boundary	Core Path
BR87	Adjacent to the Site Boundary	Core Path
BR89	Adjacent to the Site Boundary	Core Path
89P	1.3 km from Site Boundary	Core Path
BR91	1.5 km from Site Boundary	Core Path
BR93	1.8 km from Site Boundary	Core Path
114R	2.7 km from Site Boundary	Core Path
Hermitage Castle	1.7 km from Site Boundary	Castle
Rock UK Whithaugh Park	2.1 km from Site Boundary	Adventure Sports Centre
7Stanes: Newcastleton	2.2 km from Site Boundary	Mountain Biking Trails
Liddesdale Heritage Centre	2.8 km from Site Boundary	Museum

Source: Distances taken from Google Maps

14.6. PROPOSED ASSESSMENT METHODOLOGY

There is little published guidance for assessing the socio-economic and tourism impacts and effects of proposed onshore wind developments. However, the NatureScot Environmental Impact Assessment Handbook[191] provides guidance on outdoor access impact assessments, including recreational activities. Notably the guidance outlines potential impacts of wind farms and that they can: alter how the area and paths are perceived due to visual and noise impacts; access tracks may disrupt public access and either deter or attract visitors. The assessment will also draw upon published research around the impacts of onshore wind farms on tourist behaviour.

The assessment will therefore be based on professional judgement and established industry best practice (including NatureScot guidance), informed by relevant policy and legislation and the approach taken for other

[191] *NatureScot (2018) Environmental Impact Assessment Handbook. Online. Available at < Environmental Impact Assessment | NatureScot >*

comparable developments. Appropriate sensitivity and magnitude criteria will be determined and applied to assess the significance of effects.

This section describes the methodology that will be used to assess each category of effect.

14.6.1. Economic Effects

An economic model will be built to estimate the jobs and GVA associated with the construction and operation and maintenance phases of the Proposed Development. The model will be based on the estimated capital expenditure (CAPEX) and operational expenditure (OPEX) for the Proposed Development and will apply industry standard best practice to estimate the direct, indirect, and induced effects of construction and operation on the local (Scottish Borders) and national (Scotland) economy and supply chain.

14.6.2. Wider Socio-Economic Effects

Wider socio-economic effects, such as structural economic change or disruption to established local industries, will be assessed based on the findings of the economic assessment. It will also take into account baseline data in relation to the structure of the local economy, its existing strengths and growth areas.

14.6.3. Socio-Cultural Effects

The assessment of socio-cultural effects will consider the potential effects on local demographics associated with an incoming construction workforce, and the effect on local service provision and availability from any increase in demand. The assessment will be qualitative and will take into account the size of the estimated workforce and baseline data relating to the age profile of the population and existing service provision.

14.6.4.Tourism and Recreation

- The assessment of direct effects on tourism and recreation receptors will be based on the design of the Proposed Development and the findings of the Traffic and Transport assessment which will consider the impact of increased traffic during the construction period. The assessment of indirect effects on tourism and recreation receptors will consider the findings of;
- Noise chapter - While Noise impacts will not affect the core path directly, they can impact users of the path as well as the noise impact on residential properties nearby;
- Access, Traffic and Transport chapter – will assess the effects of any increased traffic on the road vehicle and passenger delays; and
- Landscape and Visual Impact chapter – The chapter will consider the visual impacts from the core paths as well as the outlined local tourist and recreation attractions.

It will assess the potential for significant effects reported in these chapters to result in effects on amenity and changes in tourism and recreation activity for users of tourism and recreation receptors within 5 km of the site.

14.7. POTENTIAL SIGNIFICANT IMPACTS AND EFFECTS

Potential socio-economic, tourism and recreation impacts and effects that could occur from the construction and operation of the Proposed Development are likely to include:

- Employment and supply chain effects (construction and operation). The construction and operation of the Proposed Development will create jobs directly and in the supply chain which could have the potential for a positive effect;
- GVA effects (construction and operation). The construction and operation of the Proposed Development will generate GVA in the local and national economy which could have the potential for a positive effect;
- Wider socioeconomic effects (construction only). The construction of the Proposed Development could have wider and knock-on socioeconomic effects including structural economic change or disruption to established local industries which could have the potential for significant positive or negative effects;

- Sociocultural effects (construction only). Changes to local demographics and the local place associated with construction activity and the presence of an incoming construction workforce could result in increased demand for social infrastructure and changes in community identity and way of life. This could have the potential for negative effects;
- Impacts on tourism and recreation receptors (construction only). Direct impacts on tourism and recreation receptors, such as any temporary diversion of core paths could have the potential for significant negative effects. Additionally, there is potential for positive effects which may arise from upgrades to access tracks;
- Amenity effects for users of tourism and recreation receptors (construction only). Effects on amenity for users of core paths or sensitive visitor attractions from a combination of noise, visual or traffic effects could have the potential for negative effects; and
- Effects on tourism accommodation (construction only). There may be an increase in demand for tourist accommodation associated with the presence of an incoming construction workforce. This has the potential to result in positive or negative effects.

Effects from decommissioning are expected to be comparable to, or less than, those arising during construction, and will be assessed qualitatively based on estimated construction effects.

14.8. MITIGATION

The assessment will consider embedded mitigation and mitigation measures identified in other relevant topic chapters, including Noise, Access, Traffic and Transport, and Landscape and Visual Impact. It will also consider the need for any further mitigation measures to address any significant adverse effects on socio-economics, tourism and recreation.

14.9. OPPORTUNITIES FOR ENHANCING THE ENVIRONMENT

The assessment will also recommend measures that could be put in place to support the delivery of positive effects for the local economy and supply chain. The assessment will consider where there may be the potential to enhance beneficial effects, for example, by increasing access to jobs and training opportunities for local workers and the supply chain.

14.10. PROPOSED SCOPE OF THE EIA CHAPTER

Table 14.3 provides an assessment of potential socio-economic impacts of the Proposed Development. For each, a recommendation for whether they should be scoped in or out for the EIA chapter is provided on the basis of whether significant impacts are likely. For impacts that are scoped in, the table also identifies at which spatial scale and for which stage impacts will be assessed.

Table 14.3: Socioeconomic Factors to be Scoped In or Out of the Assessment

FACTORS TO BE SCOPED IN /OUT		SCOPE AND JUSTIFICATION	
POTENTIAL SIGNIFICANT EFFECTS	**RECEPTORS**	**SCOPED IN/ OUT**	**RATIONALE**
Socio-economic impacts			
Direct and indirect jobs and GVA created during construction phase	Workforce Employers Economy	Scoped In.	The construction phase is expected to safeguard and create temporary jobs and contribute GVA to the local and national economies.

FACTORS TO BE SCOPED IN /OUT		SCOPE AND JUSTIFICATION	
POTENTIAL SIGNIFICANT EFFECTS	**RECEPTORS**	**SCOPED IN/ OUT**	**RATIONALE**
Direct and indirect jobs and GVA created during operation phase	Workforce Employers Economy	Scoped In.	The operation phase is expected to create permanent jobs and contribute GVA to the local and national economies.
Wider socio-economic effects			
Potential knock-on socio-economic effects including structural economic change or disruption to established local industries during construction phase	Employers Neighbourhood population	Scoped In.	The is potential for construction labour demand to create temporary disruption, distortion and displacement which could affect existing local industries.
Potential knock-on socio-economic effects including structural economic change or disruption to established local industries during operation phase	Employers Neighbourhood population	Scoped Out.	Number of jobs during operation and decommissioning phases is expected to be much lower than the construction phase and unlikely to cause disruption to the local and national economy. This is proposed to be scoped out of further assessment.
Potential knock-on socio-economic effects including structural economic change or disruption to established local industries during decommissioning phase	Employers Neighbourhood population	Scoped Out.	Number of jobs during operation and decommissioning phases is expected to be much lower than the construction phase and unlikely to cause disruption to the local and national economy. This is proposed to be scoped out of further assessment.
Socio-cultural effects			
Influx of construction workers increasing demand for social	Population	Scoped In.	Likelihood of substantial temporary workforce during construction could create population change, potential for additional demand on

FACTORS TO BE SCOPED IN /OUT		SCOPE AND JUSTIFICATION	
POTENTIAL SIGNIFICANT EFFECTS	**RECEPTORS**	**SCOPED IN/ OUT**	**RATIONALE**
infrastructure/ services/ affecting community way of life and culture, during the construction phase			social infrastructure and wider socio-cultural effects. This is more likely to be significant at a localised population level than nationally. The number of people moving to the area to fill permanent operations jobs, and temporary decommissioning jobs, is expected to be insignificant. Therefore, socio-cultural effects during these phases are scoped out.
Housing market impacts arising from new workforce creating additional demand for housing during the construction phase could create pressure on housing supply or price rises which displace local communities.	Neighbourhood Housing market	Scoped Out.	A temporary construction workforce is unlikely to create impacts on the housing market given the low population density in the local area and limited supply. This is proposed to be scoped out of further assessment. Effects are more likely to be observed for short-term holiday lets (see below). Permanent operation jobs are anticipated to be relatively small, therefore, housing market impacts from permanent workers are not likely to be significant. This is proposed to be scoped out of further assessment.
Tourism and recreation effects			
Impacts on amenity value, access to or usage of tourism and recreation receptors	Tourism and recreation receptors	Scoped In.	Potential impacts up to 5 km from the site boundary. Tourism impacts not anticipated beyond this distance.
Increased demand on local tourism accommodation from temporary	Tourism accommodation	Scoped In.	The temporary construction workforce may place pressure on local tourism accommodation if temporary accommodation is not provided for the workforce. There is potential for disruption during

FACTORS TO BE SCOPED IN /OUT		SCOPE AND JUSTIFICATION	
POTENTIAL SIGNIFICANT EFFECTS	RECEPTORS	SCOPED IN/ OUT	RATIONALE
construction workforce			peak season. Although a potential benefit to tourism accommodation outside of peak season.

14.11. CONSULTATION AND SCOPING QUESTIONS

Questions for consultees are as follows:

- Q14.1 – Do consultees have any recommendations for additional legislation, policy and guidance that should be considered?
- Q14.2 – Are consultees content with the proposed methodology, scope and study areas for the assessment of socioeconomics, tourism and recreation?
- Q14.3 – Can consultees provide information of any further tourism or recreation receptors within the 5 km study area?
- Q14.4 – Do consultees have any other information that would be useful in the preparation of the socioeconomics, tourism and recreation assessment?

15. OTHER ISSUES

15.1. TELECOMMUNICATIONS AND UTILITIES

This section of the report has been written by Pager Power and focuses on the potential for interference upon telecommunications infrastructure as a result of the Proposed Development.

Wind farms have the potential to cause a variety of effects on telecommunications infrastructure systems by introducing new physical structures.

Large structures such as wind turbines can affect fixed link path infrastructure, predominantly in two ways:

- The blocking of radio signals from telecommunications infrastructure; and/or
- The reflection of radio signals from telecommunications infrastructure.

15.1.1. Baseline Conditions and Key Sensitivities

An initial review of the Ofcom Spectrum Information Portal (SIP) suggests there is no telecommunication infrastructure within or in close proximity to the Proposed Development.

A full review of known telecommunications infrastructure present in the vicinity of the Proposed Development will be completed and presented in the EIA Report.

15.1.2. Proposed Assessment Methodology

15.1.2.1. Guidance, Policy, and Legislation

There is no legislation or formal policy with comprehensive or quantitative methodologies for the management of telecommunications issues. The documents below represent the guidance and industry best-practice for the topic in respect of wind energy developments:

- International Telecommunications Union (1992), Assessment of impairment caused to television reception by a wind turbine, Recommendation ITU-R BT805;
- International Telecommunications Union (2010), ITU-R BT.2142-1;
- Bacon (2002), A proposed method for establishing an exclusion zone around a terrestrial fixed radio link outside of which a wind turbine will cause negligible degradation of the radio link performance;
- Joint Radio Company (JRC) (2014): Calculation of Wind Turbine clearance zones for JRC Ultra High Frequency (UHF) (460 MHz) Telemetry Systems when turbine sizes and locations are accurately known – Issue 4.2.

Scottish guidance related to telecommunications specifically is detailed below:

- Onshore wind: policy statement 2022. Version dated 21 December 2022; and
- Onshore wind turbines: planning advice - Planning advice relating to onshore wind turbines. Scottish Government version dated 28 May 2014.

The proposed methodology will follow Pager Power's typical assessment methodology and is detailed within the associated technical assessment report. The assessment of effects of the proposed turbines will be based upon the guidance set out above.

15.1.2.2. Scope of Assessment

A desk-based assessment and consultation with the relevant stakeholders will be conducted to identify any existing infrastructure constraints. No survey is initially proposed as part of the assessment methodology as consultation is the most reliable way to identify telecommunication infrastructure in the vicinity of the Proposed Development.

Consultation with relevant telecommunication link operators is a routine part of wind farm development and consultees will include telecommunications providers as appropriate and include the following:

- Vodafone;
- Atkins Realis;
- The Joint Radio Company (JRC);
- Arqiva;
- British Telecom (BT);
- Virgin O2;
- The Mobile Broadband Network (MBNL);
- Airwave;
- MLL Telecom.

A detailed review of the Ofcom SIP will also be carried out to identify any additional links in the vicinity of the Proposed Development.

Identified point-to-point links that cross the Site will be taken forward for technical assessment in accordance with the recommended methodology from the JRC (UHF links) and/or Ofcom (Microwave links) to predict potential impacts.

15.1.3. Potential Impacts and Effects

Wind farms have the potential to interfere indirectly with electro-magnetic signals passing above ground, and physically with existing utilities infrastructure below ground. This can therefore potentially affect fixed telecommunication links and other utilities during the construction and operational phases of the development.

The telecommunications and utilities impact assessment will identify links through consultation with operators. Calculations of relevant exclusion zones will be carried out to identify potential impacts as a result of the Proposed Development.

15.1.4. Mitigation

The Proposed Development will be designed to avoid impacts on telecommunication infrastructure where possible. Technical solutions are likely to be available if significant impacts cannot be avoided.

Any technical mitigation will be implemented prior to construction through ongoing consultation with the relevant stakeholders. A record of these consultations will be included in the project consultation log, and any design changes will be documented in the EIA Report Chapter 3: Site Selection and Design Evolution.

15.1.5. Proposed Scope of EIA Chapter

It is proposed that telecommunications and utilities infrastructure during the construction, operation, and decommissioning phases be Scoped Out of the EIA based upon the commitment to mitigate any identified significant effects, either through mitigation by design or a planning condition, such that no significant residual effects are predicted.

15.2. AVIATION

This section of the report has been written by Pager Power and focuses on the potential for interference upon aviation activity and infrastructure as a result of the Proposed Development.

Any wind farm has the potential to cause a variety of effects on aviation activity and infrastructure by introducing new physical structures (e.g. wind turbines) which cause a physical obstruction risk and/or interference to wireless signals used for radar and radio systems.

15.2.1. Baseline Conditions and Key Sensitivities

- An initial aviation risk assessment was carried out in July 2023 which identified the following sensitives:
- An area of military low flying is located above the location of the Proposed Development;
- The Spadeadam military Danger Area is located above the location of the Proposed Development;
- Potential visibility of the turbines from NATS En-route Radar;
- Potential visibility of the turbines from MOD Radar;
- The Proposed Development is located within the consultation zone of the Eskdalemuir Seismic Array.

An updated review of aviation infrastructure has been carried out at the time of writing and correlates with the sensitivities presented above.

15.2.2. Proposed Assessment Methodology

15.2.2.1. Guidance, Policy, and Legislation

Guidance in relation to aviation and radar is dictated primarily by the Civil Aviation Publications (CAP) produced by the Civil Aviation Authority (CAA). There is also further policy provided by the International Civil Aviation Organization (ICAO), the Ministry of Defence (MOD), and NATS (formerly National Air Traffic Services).

The UK statutory requirements for the lighting of en–route obstacles (i.e. those away from the vicinity of a licensed aerodrome) are set out in Article 222 of the UK Air Navigation Order (ANO) 2016. A reduced lighting scheme will be produced, in accordance with the ANO, CAP 764, and other relevant requirements / stakeholders, if required with respect to LVIA.

With respect to national policy within Scotland, Chapter 6: Onshore Wind and Aviation Considerations the Onshore Wind Policy Statement (OWPS) (Scottish Government, 2022) and Part 2 – National Planning Policy of the National Planning Framework 4 (NPF4) (Scottish Government, 2023) contain policies relevant to aviation and radar. These emphasize the need for appropriate technical assessment of the potential impact upon aviation infrastructure of proposed wind turbines including the Eskdalemuir Seismic Array, and reiterates the requirement for aviation lighting for obstacles as per the ANO.

The assessment of effects of the proposed turbines will be based upon the guidance set out above.

15.2.2.2. Scope of Assessment

It is necessary to take into account the aviation and air defence activities of the MOD as safeguarded by the Defence Infrastructure Organisation (DIO). The types of issues that will be addressed in the EIA include:

- Licensed and unlicensed aerodromes within the relevant safeguarding distances;
- MOD Airfields, both radar and non-radar equipped;
- MOD remote ATC radars;
- MOD air defence radars;
- UK Met Office meteorological radars; and,
- Military low flying.

It is also necessary to take into account the possible effects of turbines upon NATS En Route Ltd (NERL) Communication, Navigation, and Surveillance (CNS) systems which are a network of primary and secondary radars and navigation facilities around the country.

As well as examining the technical impact of turbines on ATC facilities, it is also necessary to consider the physical safeguarding of ATC operations using the criteria set out in CAP 168 Licensing of Aerodromes[192] to determine whether the Proposed Development will breach obstacle clearance criteria.

Pager Power's aviation database and assessment software will be used to identify potential aviation effects of the Proposed Development as its design evolves. The results will then be used as a basis for consultation and liaison with relevant aviation bodies, which may include nearby aerodromes, DIO, and NATS.

No on-site survey is proposed as part of the assessment methodology as desk-based resources and consultation are the most reliable way to identify potential impacts resulting from the Proposed Development.

15.2.3. Potential Impacts and Effects

A full aviation impact assessment will be carried out as part of the EIA which identify and detail potential impacts upon aviation activity and infrastructure. Further analysis of the baseline sensitivity noted in Section 15.2.1 will be carried out alongside consultation with relevant aviation stakeholders such as NATS and the MOD DIO.

15.2.4. Mitigation

Any technical mitigation will be implemented prior to construction where required, as informed by the aviation impact assessment and consultation to be carried out as part of the EIA, in accordance with the relevant policy, legislation, and guidance. A list of applicable mitigation strategies will be presented within the body of the technical assessment.

15.2.5. Proposed Scope of EIA Chapter

It is proposed that aviation is Scoped In to the EIA for further assessment in the first instance due to the potential significance of any impact and the potential implications upon planning and aviation safety.

15.3. SHADOW FLICKER

Under certain combinations of geographical position and time of day, the sun may pass behind the rotors of a wind turbine and cast 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.

15.3.1. Baseline Conditions and Key Sensitivities

Due to the lack of explicit guidance in Scotland, guidance within the UK is considered to be material for assessing shadow flicker effects. Guidance produced by the UK Government, "Planning Practice Guidance for Renewable and Low Carbon Energy"[193] states that "only properties within 130 degrees either side of north, relative to the turbines can be affected at these latitudes in the UK – turbines do not cast long shadows on their southern side" In addition, the Online Scottish Planning Guidance Note on onshore wind provides information on shadow flicker. It states: " where separation is provided between wind turbines and nearby dwellings (as a general rule 10 rotor diameters), shadow flicker should not be a problem"

[192] *Civil Aviation Authority (2019) Licensing of Aerodromes. Version 11. CAP168. [Online] Available at: https://www.caa.co.uk/publication/download/14796 (Accessed 10/07/2025)*

[193] *UK Government Department for Communities and Local Government (2013) Planning Practice Guidance for Renewable and Low Carbon Energy. [Online] Available at: https://data.parliament.uk/DepositedPapers/Files/DEP2013-1395/Planning_Practice_Guidance_for_Renewable_and_Low_Carbon_Energy.pdf (Accessed 161/3/2025)*

While it is acknowledged that the layout of the Proposed Development will evolve through the EIA process, based on the information detailed in Chapter 2 a maximum height to tip of 220 m is expected, with maximum rotor diameter of up to 200 m. This would therefore imply a maximum study area for shadow flicker effects of 2000 m. From initial baseline analysis, there are several properties that fall within this study area and could have the potential to experience shadow flicker effects.

15.3.2. Proposed Assessment Methodology

An assessment will be undertaken to determine whether or not there will be any impacts on surrounding properties and the results of the assessment will be included in the EIA Report. This will examine all properties which lie within 10 rotor diameters and 130 degrees either side of north from each turbine. Should any properties be located within this area, Resoft WindFarm, a computer modelling programme, will be used to model the potential effects at surrounding properties to quantify the potential effects.

It is proposed that the industry recognised limits are applied for the purposes of the assessment:

- Worst case scenario – 30 hours per year or 30 minutes per day; and
- Realistic scenario – 8 hours per year

15.3.3. Mitigation

Should the limits set out above be exceeded at any property the Developer would consider implementation of appropriate mitigation measures, such as screening or installing a sensor which can “turn off” the turbine in the event of conditions being aligned for effects to be experienced. These measures, if required, would reduce shadow flicker effects below the recommended limits, or eliminate all shadow flicker effects completely.

15.3.4. Proposed Scope of EIA Chapter

ENVIRONMENTAL RECEPTOR, ASSESSMENT OR EFFECT	SCOPED IN / OUT	RATIONALE
Residential Properties within 10 rotor diameters of the Proposed Development	Scoped Out	Per guidance, potential shadow flicker effects are possible within 10 rotor diameters from the Proposed Development. However, due to the commitment to ensure that any significant shadow flicker effects are appropriately mitigated no significant effects are anticipated, and this topic is considered to be scoped out of the EIA.
Residential Properties further than 10 rotor diameters of the Proposed Development	Scoped Out	Per guidance, potential shadow flicker effects are not anticipated to occur beyond 10 rotor diameters from the Proposed Development

15.4. HUMAN HEALTH

15.4.1. Baseline Conditions and Key Sensitivities

Please refer to Section 2.2 of this Report for details on the general Site context.

15.4.2. Proposed Assessment Methodology

Aspects which have potential to affect human health during construction and operation include land contamination, pollution of water supplies, noise and vibration, air quality, traffic, and socio-economics. All of these aspects are covered by other chapters including:

- Chapter 9: Geology, Peat, and Soils;
- Chapter 10: Hydrology and Hydrogeology;
- Chapter 12: Access, Traffic and Transport;
- Chapter 13: Noise;
- Chapter 14: Climate Change and Carbon Balance; and,
- Chapter 15: Socio-Economics, Tourism and Recreation

15.4.3. Potential Impacts and Effects

Methodologies proposed to assess potential impacts and effects on human health are included in the chapters noted in Section 15.4.2.

15.4.4. Mitigation

Mitigation proposed to address any likely significant adverse effects on human health are included in the chapters noted in Section 15.4.2

15.4.5. Proposed Scope of EIA Chapter

ENVIRONMENTAL RECEPTOR, ASSESSMENT OR EFFECT	SCOPED IN / OUT	RATIONALE
Effects on Human Health resulting from the Proposed Development	Scoped Out	There are unlikely to be potentially significant effects to human health as a result of the Proposed Development that are not adequately covered by other chapters, as noted in Section 15.4.2. It is therefore proposed that Human Health as a topic in its own right is scoped out of the EIA.

15.5. MAJOR ACCIDENTS AND DISASTERS

The EIA Regulations state that an EIA must identify, describe, and assess in an appropriate manner, the expected effects deriving from the vulnerability of the Proposed Development to risks presented by unplanned events, such as major accidents and natural disasters[194] .

15.5.1. Baseline Conditions and Key Sensitivities

Please refer to Section 2.2 of the Report for details on general Site Context.

The Proposed Development is not located within an area known for natural disasters such as wildfires, floods, hurricanes, tornadoes, volcanic eruptions, earthquakes, or tsunamis. As climate change progresses, however, weather events are becoming more extreme and it is possible that Scotland will see an increase in summer temperatures, and/or large storms with high rainfall events and flooding at any time of the year.

As the most probable of natural disasters to affect the Proposed Development, flood risk will be assessed in Chapter 10: Hydrology, Hydrogeology, and Flood Risk of the EIA Report.

There are areas of peatland habitat within the Site. As such, there is an increasing risk of wildfires due to climate change, especially as summers become hotter and drier.

15.5.2. Proposed Assessment Methodology

Relevant information pertaining to the definition and management of major accidents, which may include chemical spills and infrastructure failure which results in serious bodily harm, will be obtained pursuant to the legislation of the European Union, such as Directive 2012/18/EU of the European Parliament on the control of major-accident hazards involving dangerous substances[195],[196]

15.5.3. Potential Impacts and Effects

During all phases of the Proposed Development there is a risk of environmental incidents such as accidental leaks/spills of oil, fuel chemicals or waste material, and of major accidents resulting from infrastructure failure.

There is a risk of a major accident and/or infrastructure failure caused by natural disasters which may increase as a result of climate change. This should be considered during the preparation of major accident scenarios. However, as stated in Section 15.5.1, natural disasters are unlikely at this Site and are therefore unlikely to have a bearing on the risk of major accidents and disasters.

Flooding is not expected to pose a significant risk to the operation of the wind farm, and the construction of a wind farm at this location is unlikely to contribute to flooding elsewhere. For further details of flooding impacts associated with the Proposed Development, see Chapter 10: Hydrology and Hydrogeology.

15.5.4. Mitigation

Incidents during the construction phases will be managed by the Principal Contractor via a Pollution Prevention Plan (PPP) and CEMP, which is usually provided to consultees prior to commencement of

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[194] Scottish Government (2017) The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017. [Online] Available at: http://www.legislation.gov.uk/ssi/2017/101/contents/made (Accessed 16/10/2025)
[195] European Union (2012) Directive 2012/18/EU [Online] Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32012L0018 (Accessed 16/10/2025)
[196] UK Government and Health and Safety Executive (2015) The Construction (Design and Management) Regulations 2015. [Online] Available at: https://www.hse.gov.uk/construction/cdm/2015/index.htm (Accessed 16/10/2025)

construction under condition of S36 consent. During the operational phase, an inspection and maintenance regime shall be implemented which would identify potential equipment failures to prevent leaks occurring. The storage and handling of oils, fuels and waste shall be controlled by standard operational procedures, as well as ongoing audits and inspections.

Brake mechanisms installed on turbines allow them to be operated only under specific wind speeds and, should severe windstorms be experienced, then the turbines would be shut down to prevent any infrastructure failure or collapse. The Proposed Development is not located within an area prone to such disasters and the likelihood of such an event is extremely rare. Safety regulations and measures will be in place throughout the lifetime of the Proposed Development, and all turbines will be located at a minimum 1 km distance from any residential properties, so it is very unlikely that structural failure will impact upon human health. Any BESS included, will be installed in accordance with good practice guidance, with suitable buffers from potential flammable materials and woodland, therefore minimising the risk of BESS failure causing forest fires. Appropriate fire safety precautions will be put in place, and all members of staff will be briefed on what to do in case of a fire breaking out at the Proposed Development.

Health and safety during the construction and operation phases of the Proposed Development is of utmost importance to the Developer and is subject to relevant legislation including, but not limited to, The Construction (Design and Management) Regulations 2015[197] , and good practice.

15.5.5. Proposed Scope of EIA Chapter

ENVIRONMENTAL RECEPTOR, ASSESSMENT OR EFFECT	SCOPED IN / OUT	RATIONALE
Natural Disasters	Scoped Out	The area is not known for hurricanes, tornadoes, or volcanoes, and thus these natural disasters can be scoped out of assessment.
Natural Disasters Related to Climate Change	Scoped Out	Natural disasters related to climate change can be scoped out of the EIA, as none of the identified climate change trends are likely to significantly affect the Proposed Development, with the exception of increased windstorms and potential wildfires caused by infrastructure failure. The potential for these latter natural disasters will be sufficiently mitigated that the likelihood of them occurring is minimal to negligible.
Accidental leaks/spills of oil, fuel, chemicals, and wastes	Scoped Out	Potential effects resulting from accidental leaks/spills of oil, fuel, chemicals, and wastes will be scoped out of any further assessment of Major Accidents and Disasters, as this will be covered in the Hydrology and Hydrogeology assessment, and suitable mitigation will be provided prior to construction, as per standard construction mitigation practice, within the PPP and CEMP.

[197] *UK Government and Health and Safety Executive (2015) The Construction (Design and Management) Regulations 2015. [Online] Available at: https://www.hse.gov.uk/construction/cdm/2015/index.htm (Accessed 16/10/2025)*

ENVIRONMENTAL RECEPTOR, ASSESSMENT OR EFFECT	SCOPED IN / OUT	RATIONALE
Health and Safety Matters	Scoped Out	Health and safety matters will be covered by Health and Safety legislation and therefore there is no further requirement for health and safety to be assessed within the EIA and it is scoped out of further assessment.

15.6. CUMULATIVE EFFECTS ASSESSMENT

In accordance with the EIA Regulations, the EIA Report will consider cumulative effects.

15.6.1. Baseline Conditions and Key Sensitivities

Please refer to Section 2.2 of the Report for details on general Site Context.

15.6.2. Proposed Assessment Methodology

There is currently no standard EIA methodology for assessing cumulative effects, however IEMA recognises two types of cumulative assessment in their guidance, which are:

- Intra-project effects - These effects occur where a single receptor is affected by more than one source of effect arising from different aspects of the project. An example of an intra-project effect would be where a local resident is affected by dust, noise, and traffic disruption during the construction of a scheme, with the combined result being the potential for a greater impact than each individual effect alone; and,
- Inter-project effects – These effects occur as a result of a number of developments, which individually might not be significant, but when considered together could create a significant cumulative effect on a shared receptor and will include developments separate from and related to the project.

15.6.3. Potential Impacts and Effects

Detailed consideration of inter-project effects will be undertaken for all relevant technical assessments and will be included in the relevant EIA Report chapters.

The methodology for assessing intra-project effects involves the identification of impact interactions associated with the construction and operation phases of the Proposed Development upon one or more receptors. This is undertaken using a qualitative appraisal process.

A receptor with multiple effects which have been individually assessed as being above the level of perceptibility (i.e., Minor or above), could still be affected significantly due to the combination of one or more other perceptible effects. The intra-project assessment considers all effects (adverse and beneficial) which have been assessed as Minor (which, taken individually, is not significant in the context of the EIA Regulations), Moderate, or Major.

The approach to be adopted for the intra-project assessment will be to examine in turn each residual effect for each individual receptor. These are presented as the Stage 1 assessment. It is then identified if multiple effects are experienced at an individual receptor and if so, using professional judgement, whether this could give rise to a significant intra-project effect to that receptor. This is presented as the Stage 2 assessment.

15.6.4. Proposed Scope of the EIA Chapter

ENVIRONMENTAL RECEPTOR, ASSESSMENT OR EFFECT	SCOPED IN / OUT	RATIONALE
Intra-Cumulative Effects	Scoped In	The potential for intra-cumulative effects cannot be ruled out based on the information available. As such, intra-cumulative effects will be scoped in to the EIA.

15.7. SCOPE OF EIA REPORT

The environmental factors relating to the topics discussed in Chapter 15: Other Issues of the Report that will be scoped in and scoped out of the assessment are as follows:

Table 15.1: Factors Scoped in to / out of Assessment in Other Issues EIA Chapter

ENVIRONMENTAL RECEPTOR, ASSESSMENT OR EFFECT	SCOPED IN / OUT	RATIONALE
Telecommunications	Scoped Out	Based upon the commitment to mitigate any identified significant effects, either through mitigation by design or a planning condition, such that no significant residual effects are predicted
Aviation	Scoped In	Due to the potential significance of effects and the potential implications upon aviation safety.
Shadow Flicker	Scoped Out	Based on the commitment to ensure that any significant shadow flicker effects as a result of the Proposed Development are sufficiently mitigated.
Human Health	Scoped Out	There are unlikely to be significant effects to human health as a result of the Proposed Development that are not adequately covered by other chapters (see Section 16.6.2), and a standalone chapter regarding Human Health is considered not to be necessary.
Major Accidents and Natural Disasters	Scoped Out	No significant effects will arise due to major accidents and natural disasters as long as suitable and sufficient mitigation measures are put in place.
Intra-Cumulative Effects	Scoped In	Cumulative effects must be considered in accordance with the EIA Regulations.

15.8. CONSULTATION AND SCOPING QUESTIONS

Consultation will be conducted with the following consultees:

- SBC;
- Relevant telecommunication and utilities providers;
    - Vodafone;
    - Atkins;
    - The Joint Radio Company;
    - Arqiva;
    - BT;
    - Virgin O2;
    - MBNL;
    - MLL;
    - Airwave (Motorola Solutions);
- Ministry of Defence;
- Edinburgh Airport;
- Carlisle Lake District Airport
- Unlicensed Aerodromes (if applicable); and
- NATS;

Questions for Consultees are as follows:

- Q15.1 – Are any consultees aware of any additional telecommunication links or utilities stakeholders that should be taken into account?
- Q15.2 – Are consultees content that effects upon television reception and utilities can be scoped out of the EIA based on the commitment that attributable impacts will be suitably mitigated?
- Q15.3 – Do consultees agree with the suggested approach regarding the proposed assessment of Aviation within the EIA Report
- Q15.4 - Do consultees have any comment on mitigation (such as infra-red lighting) required in relation to impacts on the Spadeadam military Danger Area and military low fly area?
- Q15.5 – Do consultees agree with the suggested approach regarding the proposed assessment of shadow flicker within the EIA Report?
- Q15.6 – Are consultees content that effects upon Human Health can be scoped out of the EIA based key potential health impacts being assessed in other chapters of the EIA Report?
- Q15.7 – Are consultees content that effects upon Major Accidents and Natural Disasters can be scoped out of the EIA based on the commitment that attributable impacts will be suitably mitigated?
- Q15.8 - Do consultees agree with the proposed approach for the intra-cumulative assessment?

16. CONCLUSIONS

Responses to this Report will be considered in the EIA Report. A compilation of the Questions for Consultees listed throughout this Report is provided in Appendix A. A summary of the environmental factors to be scoped in to the EIA Report is presented in Table 16.1. A summary of the environmental factors to be scoped out of the EIA Report is presented in Table 16.2.

Table 16.1: Environmental Effects Scoped Into the EIA

CHAPTER	RECEPTOR / ASSESSMENT / EFFECT	RATIONALE / OTHER COMMENTS
5	Landscape features within the Site	Due to the potential direct effects of the Proposed Development
5	Landscape character within the 15 km detailed LVIA study area and within the predicted zone of theoretical visibility.	It is anticipated that the potential for significant effects upon landscape character would occur within 15 km due to the relatively contained zone of theoretical visibility as illustrated by Figure 5.1 and Figure 5.2.
5	Visual amenity within the 15 km detailed LVIA study area and within the predicted zone of theoretical visibility.	It is anticipated that the potential for significant effects upon visual amenity would occur within 15 km due to the relatively contained zone of theoretical visibility as illustrated by Figure 5.1 and Figure 5.2.
5	Effects on visual receptors including the Northumberland Dark Sky Park resulting from the proposed aviation lighting within the 15 km detailed LVIA study area and within the predicted zone of theoretical visibility.	Due to the potential visual effects of the proposed aviation lighting during the hours of darkness.
5	Cumulative landscape and visual effects within the 15 km detailed LVIA study area	Due to the location of cumulative schemes relative to the Proposed Development illustrated on Figure 5.5 and the relatively contained zone of theoretical visibility as illustrated by Figure 5.1 and Figure 5.2 the area within which potentially significant cumulative landscape and visual effects may occur is limited to within 15 km.
5	Residential visual amenity within 2 km	As set out in Landscape Institute Technical Guidance Note TGN 2/19 the purpose of RVAA is not to determine whether or not a residential property will experience a significant visual effect. RVAA is a stage beyond LVIA and its

CHAPTER	RECEPTOR / ASSESSMENT / EFFECT	RATIONALE / OTHER COMMENTS
		purpose is to determine whether the Residential Visual Amenity Threshold is reached and the effect could be considered overbearing. The guidance suggests a preliminary RVAA study area of 1.5 to 2 km. Therefore, 2 km RVAA study area is considered to be a proportionate extent within which potentially overbearing effects on nearby residential properties may occur.
6	Direct Physical Impacts to Heritage Assets within the Proposed Development.	Direct physical impacts to heritage assets as a result of the Proposed Development are considered possible and might have a significant impact.
6	Indirect Physical Impacts to Heritage Assets within and immediately adjacent to the Proposed Development.	Indirect physical impacts to heritage assets as a result of the Proposed Development are considered possible, albeit these would be considered unlikely to result in significant impact.
6	Setting Impacts to designated assets (and any non-designated heritage assets of equivalent significance) within the 15 km Study Area.	Assets within 15 km will undergo a sieving assessment to determine extent of setting assessment. Assets beyond 15 km may also be scoped in if: They fall within the bare earth ZTV; They have been requested for assessment by stakeholders; and/or They have the potential to be impacted by the Proposed Development.
6	The cumulative effect of the Proposed Development in conjunction with other developments within 15 km.	Additional developments beyond 15 km may be included for assessment where: Bare earth ZTVs overlap; They have been requested for assessment by stakeholders; and/or, They have the potential to impact the setting of assets in conjunction with the Proposed Development.
7	Langholm and Newcastleton Hills SPA/SSSI	Scoped in due to the proximity of the designation and ecological connectivity with the Proposed Development.

CHAPTER	RECEPTOR / ASSESSMENT / EFFECT	RATIONALE / OTHER COMMENTS
7	Hen harrier	Scoped in as a qualifying feature of the Langholm and Newcastleton Hills SPA/SSSI and recorded within the Study Area.
7	Merlin	Scoped in due to observed levels of flight activity and the presence of suitable breeding and foraging habitat within the Study Area.
7	Breeding Wader Assemblage	Scoped in owing to the wide distribution of wader species within the Study Area.
7	Black Grouse	Scoped in following the identification of two leks within the Study Area.
8	Potential loss of notified habitat features within Langholm-Newcastleton Hills SSSI.during Construction Phase	The Proposed Development adjoins one SSSI. At this preliminary stage, possible effects include habitat loss and degradation and loss of irreplaceable habitats.
8	Potential loss, damage and disturbance to protected and priority habitats, including priority peatlands during Construction Phase	The Proposed Development is located within and in close proximity to areas that could contain protected or priority habitats including peatland habitats. Whilst there is potential for the Proposed Development to result in the loss of protected or priority habitats in overlapping areas, the location of development infrastructure within the Site will be refined during design development phases to minimise habitat loss. Where practicable, disturbed ground will be reinstated to avoid any potential indirect loss protected or priority habitats. The Proposed Development also presents an opportunity to restore and enhance protected and priority habitats within the Site through appropriate management and monitoring.
8	Potential for killing, injuring, disturbing and/or displacing protected or priority species, and loss of supporting terrestrial and aquatic	The Proposed Development may affect structures or places that could be used by protected species for shelter or protection; as well as for breeding and hibernation.

CHAPTER	RECEPTOR / ASSESSMENT / EFFECT	RATIONALE / OTHER COMMENTS
	habitat features during Construction Phase	Whilst there is potential for the Proposed Development to affect protected or priority species in the locality, the location of development infrastructure and the Site will be refined during design development phases to minimise loss of habitat features and important foraging/commuting pathways. Where practicable, disturbed ground will be reinstated to avoid any potential indirect loss protected or priority habitats. The Proposed Development also presents an opportunity to restore and enhance protected and priority habitats within the Site through appropriate management and monitoring, which could seek to avoid any lasting damage or disturbance to habitats supporting protected or priority species.
8	Potential loss of notified habitat features within Langholm-Newcastleton Hills SSSI.durring operation phase.	The location of ancillary infrastructure within the Site is yet to be established; and the presence and extent of notified features that could be affected by the Proposed Development are not known.
8	Potential loss, damage and disturbance to protected and priority habitats, including priority peatlands.during Operation Phase	The location of ancillary infrastructure within the Site is yet to be established; and the presence and extent of protected or priority habitats that could be affected by the Proposed Development are not known.
8	Potential for killing, injuring, disturbing and/or displacing protected or priority species, and loss of supporting terrestrial and aquatic habitat features during operation phase	The location of ancillary infrastructure within the Site is yet to be established; and the presence and extent of habitat features and important foraging/commuting pathways utilised by protected or priority species, that could be affected by the Proposed Development, is not known.
9	Disturbance of Deep Peat	Deep peat (>1m) is present across the Site and may be disturbed during the construction phase of the Proposed Development.

CHAPTER	RECEPTOR / ASSESSMENT / EFFECT	RATIONALE / OTHER COMMENTS
9	Loss and Compaction of Peat and Soils	The loss and compaction of soils may occur across the Proposed Development due to construction activities.
9	Peat Stability	Construction activities have the potential to increase the likelihood of peat slides across areas of peat of a sufficient depth and where gradients are sufficiently steep.
10	Hydrology	Watercourses within the Site have the potential to be impacted by the Proposed Development as a result of changes to water quality and quantity, and are hydrologically linked to WFD waterbodies.
10	Hydrogeology	The Site is underlain by a WFD groundwater body which is also a DWPA. It may be impacted by the Proposed Development through excavations and construction of foundations.
10	Water Resources	No information is currently known about PWSs in the area. Scottish Borders Council will be contacted to obtain a list of known supplies and PWS surveys will be issued to residents within a 2 km buffer of the Site. Should any PWSs be within the Study Area and at risk from the Proposed Development, a detailed PWS assessment will be carried out.
10	GWDTEs	The NVC survey to be conducted by the ecology team will identify the presence of any GWDTEs. If there are GWDTEs, they will be screened to identify if any of the habitats are within 250 m of the Proposed Development. If they are, a detailed GWDTE assessment will be carried out.
10	Watercourse Crossing Schedule	The design of the Proposed Development will seek to avoid and / or reduce the number of watercourse crossings needed. However, where crossings are required, a watercourse crossing schedule will be provided outlining the location of all crossings, photos and details of the crossing locations, and the type of

CHAPTER	RECEPTOR / ASSESSMENT / EFFECT	RATIONALE / OTHER COMMENTS
		crossing type that may be required. However, the final detailed design and types of crossing will be the responsibility of the appointed contractor at the detailed design stage. The guidance to be followed by the contractor will be set out in the EIA.
11	Severance of Communities	In line with the IEMA 2023 Guidelines, traffic movements associated with the construction of the Proposed Development have the potential to result in this effect and as such will be scoped in to the assessment.
11	Road Vehicle Driver and Passenger Delay	In line with the IEMA 2023 Guidelines, traffic movements associated with the construction of the Proposed Development have the potential to result in this effect and as such will be scoped in to the assessment.
11	Non-motorised User Delay	In line with the IEMA 2023 Guidelines, traffic movements associated with the construction of the Proposed Development have the potential to result in this effect and as such will be scoped in to the assessment.
11	Non-motorised Amenity	In line with IEMA Guidelines, traffic movements associated with the construction of the Proposed Development have the potential to result in this effect and as such will be scoped in to the assessment.
11	Fear and Intimidation on and by Road Users	In line with the IEMA 2023 Guidelines, traffic movements associated with the construction of the Proposed Development have the potential to result in this effect and as such will be scoped in to the assessment.
11	Road User and Pedestrian Safety	In line with the IEMA 2023 Guidelines, traffic movements associated with the construction of the Proposed Development have the potential to result

CHAPTER	RECEPTOR / ASSESSMENT / EFFECT	RATIONALE / OTHER COMMENTS
		in this effect and as such will be scoped in to the assessment.
11	Hazardous and Large Loads	In line with the IEMA 2023 Guidelines, traffic movements associated with the construction of the Proposed Development have the potential to result in this effect and as such will be scoped in to the assessment.
12	Wind farm operational noise	Assessing operational noise impacts is essential to ensure that the noise generated by turbine blades and internal mechanical components remains within acceptable limits.
12	Cumulative operational noise	Existing wind turbines in the study area can influence background noise measurements and must be accounted for.
12	Construction/decommissioning traffic noise	Construction and decommissioning noise from traffic to and from the site will be evaluated, due to the rural setting of the site.
13	Effects of the Proposed Development on Climate Change	It is possible that the Proposed Development will have a significant positive effect on climate change, and therefore this will be scoped into the EIA to assess the potential effect and align with National Planning Framework policy relating to carbon balance.
13	Effects of Climate Change on Assessments Made in Other Topics of the Proposed Development's EIA Report	This effect cannot be entirely scoped out, as effects of climate change may impact baseline receptors that have been assessed in other EIA Chapters, thereby affecting their resilience or response to the changes associated with the Proposed Development. Therefore, this will be scoped in for further assessment.
13	Vulnerabilities and Resilience of the Proposed Development to Climate Change	Out of the general climate change trends, an increase in temperature, precipitation, wind speed, and potential frequency and severity of flooding, water stress, and wildfires, could potentially affect the Proposed Development. It is therefore

CHAPTER	RECEPTOR / ASSESSMENT / EFFECT	RATIONALE / OTHER COMMENTS
		proposed to consider the impact of these changes on the Proposed Development within the EIA, and this topic is scoped in for further assessment.
14	Direct and indirect jobs and GVA created during construction phase	The construction phase is expected to safeguard and create temporary jobs and contribute GVA to the local and national economies.
14	Direct and indirect jobs and GVA created during operation phase	The operation phase is expected to create permanent jobs and contribute GVA to the local and national economies.
14	Direct and indirect jobs and GVA created during decommissioning phase	The decommissioning phase is expected to safeguard or create temporary jobs and GVA to the local and national economies. This will be assessed qualitatively.
14	Potential knock-on socio-economic effects including structural economic change or disruption to established local industries during construction phase	The is potential for construction labour demand to create temporary disruption, distortion and displacement which could affect existing local industries.
14	Influx of construction workers increasing demand for social infrastructure/ services/ affecting community way of life and culture, during the construction phase	Likelihood of substantial temporary workforce during construction could create population change, potential for additional demand on social infrastructure and wider socio-cultural effects. This is more likely to be significant at a localised population level than nationally. The number of people moving to the area to fill permanent operations jobs, and temporary decommissioning jobs, is expected to be insignificant. Therefore, socio-cultural effects during these phases are scoped out.
14	Impacts on amenity value, access to or usage of tourism and recreation receptors	Potential impacts up to 5 km from the site boundary. Tourism impacts not anticipated beyond this distance.
14	Increased demand on local tourism accommodation from temporary construction workforce	The temporary construction workforce may place pressure on local tourism accommodation if temporary accommodation is not provided for the workforce. There is potential for disruption

CHAPTER	RECEPTOR / ASSESSMENT / EFFECT	RATIONALE / OTHER COMMENTS
		during peak season. Although a potential benefit to tourism accommodation outside of peak season.
15	Aviation	Due to the potential significance of effects and the potential implications upon aviation safety.
15	Intra-Cumulative Effects	Cumulative effects must be considered in accordance with the EIA Regulations.

Table 16.2: Environmental Effects Scoped Out of the EIA

CHAPTER	RECEPTOR / ASSESSMENT / EFFECT	RATIONALE / OTHER COMMENTS
5	Effects on receptors located outside of the ZTV	The Proposed Development would not result in any effects where there is no predicted visibility.
5	Effects on LCTs outside of the proposed detailed 15 km LVIA study area	There would be no potential for indirect significant effects due to the distance from the Proposed Development and the limited theoretical visibility beyond this distance as illustrated by Figure 5.1 and Figure 5.2.
5	Effects on landscape character resulting from the proposed aviation lighting	It has been established in recent appeal decisions that the effects of visible aviation lighting is “wholly a visual concern” and that “without being able to see and fully appreciate the features of the landscape and the composition of views it is not possible to carry out a meaningful landscape character assessment.” (The Scottish Government. Crystal Rig IV Report to the Scottish Ministers. (2021) page 8.)
5	Effects on settlements beyond 10 km	Due to the distance from the Proposed Development and the very limited theoretical visibility, there is no potential for receptors in these settlements to experience significant visual effects.
5	Effects on core paths beyond 10 km	Due to the distance from the Proposed Development and the very limited

CHAPTER	RECEPTOR / ASSESSMENT / EFFECT	RATIONALE / OTHER COMMENTS
		theoretical visibility, there is no potential for users of these core paths to experience significant visual effects.
5	Effects on Scotland's Great Trails and English National Trails	Due to the distance from the Proposed Development and the very limited theoretical visibility, there is no potential for users of these routes to experience significant visual effects.
5	Effects on The Frontiers of the Roman Empire (Hadrian's Wall) World Heritage Site	Due to the distance from the Proposed Development and the very limited theoretical visibility, there is no potential for significant effects.
5	Effects on the Northumberland National Park	Due to the distance from the Proposed Development and the very limited theoretical visibility, there is no potential for significant effects.
5	Effects on the Eildon and Leaderfoot NSA and the Upper Tweedale NSA	Due to the distance from the Proposed Development and the very limited theoretical visibility, there is no potential for significant effects.
5	Effects on all RSAs/SLAs	Due to the very limited theoretical visibility, or the distance from the Proposed Development there is no potential for significant effects.
5	Effects on Wildland	At over 35 km from the Proposed Development and the very limited theoretical visibility, there is no potential for significant effects on wild land qualities.
5	Effects on all Gardens and Designed Landscapes or Registered Parks and Gardens	Due to the distance from the Proposed Development and the very limited theoretical visibility, there is no potential for significant visual effects.
6	Assessment of the direct physical impacts to heritage assets outside the Proposed Development.	Significant, direct physical impacts to such heritage assets are not anticipated to occur.
6	Indirect physical impacts to heritage assets outside the Proposed	Significant, indirect physical impacts to such heritage assets are not anticipated to occur.

CHAPTER	RECEPTOR / ASSESSMENT / EFFECT	RATIONALE / OTHER COMMENTS
	Development and its immediate vicinity.	
6	Setting impacts to non-designated heritage assets (unless specifically requested by stakeholders).	Significant setting impacts to such non-designated heritage assets are not anticipated to occur.
7	Passerines	Scoped out, as passerine species are not considered vulnerable to significant effects from wind farm developments.
8	Effects on ecological receptors during decommissioning phase	Potential effects during the decommissioning are likely to be similar to or less than construction-stage effects, decommissioning effects are considered to be not significant and scoped out from further consideration
9	Contaminated Land	From review of publicly available data sources, there are no potentially contaminative sources across the Study Area.
9	Statutory Designations	From review of publicly available data sources, there are no statutory designations relating to geology and soils across the Study Area.
9	Bedrock Geology	There are no sensitive geological features across the Study Area and excavation of bedrock will be localised across the Site.
9	Cumulative Effects	Geology and soils are considered localised receptors within the Study Area and will not be affected by any potential cumulative developments adjacent to the Study Area.
10	Standalone Flood Risk Assessment	The SEPA Flood Maps indicate the only flood risk within the Site is from the Hartsgarth Burn in the centre of the Site. The design of the Proposed Development will ensure no infrastructure, with the exception of watercourse crossings, is within the indicative SEPA flood extents. In addition, the final design of the Proposed Development will incorporate

CHAPTER	RECEPTOR / ASSESSMENT / EFFECT	RATIONALE / OTHER COMMENTS
		SuDS to manage surface water runoff from the Site.
10	WFD Assessment	The Hermitage Water is the only WFD watercourse within the Study Area and is hydrologically connected to the Site but is not within it. Surface water hydrology will be assessed as part of the EIA and as set out in Section 10.8 of this report, the design will seek to maintain a 50 m watercourse buffer. Further mitigation to protect water quality will also be set out in the hydrology and hydrogeology chapter. Therefore, a standalone WFD assessment is not considered necessary.
10	Designated Sites	The Site is not in hydrological connectivity to any designated sites, as such impacts to these areas as a result of the impacts to hydrology or hydrogeology are scoped out.
11	Transport Assessment	It is not proposed to submit a formal Transport Assessment (TA) to accompany the planning application for the Proposed Development, as TAs principally relate to developments that generate a significant permanent increase in traffic as a direct consequence of function (e.g. retail parks). Traffic associated with the operational phase of the Proposed Development is anticipated to be below the required threshold for a formal TA. All traffic and transport matters can be covered by the EIA Report access, traffic and transport chapter.
11	Operational Traffic	Traffic associated with the operation of the Proposed Development is limited to maintenance and is expected to be insignificant in comparison to traffic generated during construction. General maintenance and Site monitoring visits will be undertaken by car and LGVs and can be expected to be in the region of one visit per week on average, although there may be an occasional need for an HGV delivery (and other larger size vehicles) to access the Site during the operational

CHAPTER	RECEPTOR / ASSESSMENT / EFFECT	RATIONALE / OTHER COMMENTS
		phase to replace any of the components if required. This level of traffic associated with this phase will be insufficient to trigger the threshold for assessment as set out in the IEMA 2023 Guidelines and is expected to be minimal and negligible in terms of existing traffic flow levels on routes within the vicinity of the Proposed Development. Assessment of operational impacts has therefore been scoped out of this chapter.
11	Decommissioning Effects	Traffic associated with decommissioning of the Proposed Development will be less than that experienced during construction. It is not possible to accurately forecast baseline traffic flow levels >35 years into the future. For these reasons, prior to the decommissioning of the Proposed Development, a traffic assessment should be undertaken, and appropriate traffic management procedures agreed with the relevant authorities at the time. As the construction phase represents a worst-case assessment, the decommissioning phase has been scoped out of this assessment.
11	Air Quality	The IEMA 2023 Guidelines advise that significant impacts to local air quality may occur if changes to LGVs are more than 100 Annual Average Daily Traffic (AADT) within or adjacent to an Air Quality Management Area (AQMA) and more than 500 AADT elsewhere. For HGVs, the criteria are more than 25 AADT within or adjacent to an AQMA, and more than 100 AADT elsewhere. Based on the expected volume of construction traffic, none of the above criteria will be met or exceeded. In addition, the Proposed Development is not located within an AQMA and, due to the temporary nature of the increase in vehicles using the proposed access route, any effects on local air quality will be short term and reversible.

CHAPTER	RECEPTOR / ASSESSMENT / EFFECT	RATIONALE / OTHER COMMENTS
12	Construction/decommissioning noise	Minimal noise impact expected due to the large distance (approx. 1 km) from the nearest noise sensitive receptor.
12	Low Frequency Noise and Infrasound	No significant difference in noise levels when wind turbines are operating compared to shut down.
12	Ground-Borne Vibration	Far below levels that affect human health or comfort standards.
12	Amplitude Modulation	Unvalidated, current practice does not require specific planning conditions to address AM.
14	Potential knock-on socio-economic effects including structural economic change or disruption to established local industries during operation phase	Number of jobs during operation and decommissioning phases is expected to be much lower than the construction phase and unlikely to cause disruption to the local and national economy. This is proposed to be scoped out of further assessment.
14	Potential knock-on socio-economic effects including structural economic change or disruption to established local industries during decommissioning phase	Number of jobs during operation and decommissioning phases is expected to be much lower than the construction phase and unlikely to cause disruption to the local and national economy. This is proposed to be scoped out of further assessment.
14	Housing market impacts arising from new workforce creating additional demand for housing during the construction phase could create pressure on housing supply or price rises which displace local communities.	A temporary construction workforce is unlikely to create impacts on the housing market given the low population density in the local area and limited supply. This is proposed to be scoped out of further assessment. Effects are more likely to be observed for short-term holiday lets (see below). Permanent operation jobs are anticipated to be relatively small, therefore, housing market impacts from permanent workers are not likely to be significant. This is proposed to be scoped out of further assessment.
15	Telecommunications and Utilities	Based upon the commitment to mitigate any identified significant effects, either

CHAPTER	RECEPTOR / ASSESSMENT / EFFECT	RATIONALE / OTHER COMMENTS
		through mitigation by design or a planning condition, such that no significant residual effects are predicted
15	Shadow Flicker	Based on the commitment to ensure that any significant shadow flicker effects as a result of the Proposed Development are sufficiently mitigated.
15	Human Health	There are unlikely to be significant effects to human health as a result of the Proposed Development that are not adequately covered by other chapters in the EIA Report), and a standalone chapter regarding Human Health is considered not to be necessary.
15	Major Accidents and Natural Disasters	No significant effects will arise due to major accidents and natural disasters as long as suitable and sufficient mitigation measures are put in place.

APPENDIX A – SUMMARY OF QUESTIONS FOR CONSULTEES

Chapter 3

- Q3.1 - Do consultees agree with the general strategy for assessing environmental effects?
- Q3.2 - Can the consultees provide any further information on developments that they think should be included in the cumulative assessment?

Chapter 4

- Q.4.1 – Do Consultees agree with the choice of planning Legislation, Policy and Guidance presented in the preceding section?
- Q4.2 – Are there any additional legislation, policies or supplementary guidance which should be considered in the EIA process?

Chapter 5

- Q5.1 – Do you agree with the proposed daytime viewpoint locations listed in Table 5.1?
- Q5.2 – Do you agree with the proposed night-time visualisation locations listed in section 5.6.4?
- Q5.3 – Do you agree that the proposed scope of the assessment is appropriate?
- Q5.4 – Do you agree with the receptors/matters scoped into further assessment listed in Table 5.2?
- Q5.5 – Do you agree with the receptors/matters proposed to be scoped out of further assessment listed in Table 5.2?
- Q5.6 – Are there any other wind farms you are aware of within the 15 km detailed cumulative study area to be included the cumulative assessment?

Chapter 6

- Q6.1 – Do Consultees agree with the proposed methodology and scope of assessment?
- Q6.2 – Do Consultees have any information regarding current or recent archaeological work or projects being undertaken within or in the vicinity of the Proposed Development, particularly those whose results may not yet be recorded in the local HER or HES datasets?
- Q6.3 – Are Consultees aware of any further sites with statutory protection within the wider landscape whose settings may be affected by the Proposed Development?
- Q6.4 – Do Consultees have details of any cultural heritage sites in the vicinity of the Proposed Development which it considers may raise significant issues within the EIA process for this Development?
- Q6.5 – Are Consultees aware of any additional stakeholders who will require consultation or where consultation would be desirable.

Chapter 7

- Q7.1 – Please confirm that the scope set out above and that, based on current information and the ongoing second year of baseline surveys, the surveys cited are adequate to inform a future impact assessment.
- Q7.2 – Do consultees have any knowledge of published or unpublished research papers or data sets that may be of relevance to ornithological features that would be of assistance when completing the impact assessment?
- Q7.3 – Are there any developments or infrastructure schemes which should be taken into account when considering potential cumulative ornithological impacts?

- Q7.4 – Please confirm if the approach for Cumulative Assessment is suitable or if consultees wish any other developments to be considered in this assessment.

Chapter 8

- Q8.1 – Do you agree that the data sources identified are sufficient to inform the ecological baseline for the EIA (and therefore that no further baseline data collection is merited)?
- Q8.2 – Have all ecological receptors and potential likely significant effects that could result from the Project been identified?
- Q8.3 – Do you agree with the proposed assessment methodology (scoped in or out) for each of the potential effects in Table 8.3 for ecology and nature conservation?
- Q8.4 – Do you agree that mitigation measures described provide a suitable means for managing and mitigating the potential likely significant effects of the Proposed Development in relation to ecology and nature conservation?
- Q8.5 – Are you aware of any other management or development activities that could affect the proposed assessment approach, particularly in relation to the establishment of the ecological baseline?
- Q8.6 – Do you have any information that can be shared in relation to protected or priority ecosystems, habitats or species in relation to the Site?

Chapter 9

- Q9.1 – Do consultees agree that the scope of the proposed assessment is appropriate?
- Q9.2 – Do you have any information that will be useful in the preparation of the Geology and Peat assessment, such as information on local quarrying, or infilled land?

Chapter 10

- Q10.1 – Are consultees content with the proposed methodology and scope of the assessment of the hydrology and hydrogeology chapter?
- Q10.2 - Do you agree that a standalone Flood Risk Assessment can be scoped out?
- Q10.3 – Can Scottish Water confirm if there are any drinking water protected areas or any public water assets within the Study Area?
- Q10.4 - Does the Council, SEPA, Scottish Water or other consultees have any information that would be useful in the preparation of the hydrology and hydrogeology chapter?

Chapter 11

- Q11.1 – Are consultees content with the proposed methodology and scope of the traffic and transport assessment?
- Q11.2 – Are the council / statutory consultees aware of any specific access restrictions or limitations on the proposed abnormal loads route?
- Q11.3 – Are consultees content to scope out operational and decommissioning traffic from further assessment?
- Q11.4 – Are you aware of any relevant policies or guidance documents not specifically mentioned in this chapter of the report?

Chapter 12

- Q12.1 – Do the Consultees agree with the proposed methodology and scope of assessment?
- Q12.2 – Do the Consultees have details of any further cumulative developments in the locality?

- Q12.3 – Are you aware of any relevant policies or guidance documents not specifically mentioned in this section of the Report?

Chapter 13

- Q13.1 – Are consultees content with the proposed scope for the climate change and carbon balance EIA for the Proposed Development?
- Q13.2 – Are consultees content with the proposed method of assessment for the effect of the Proposed Development on climate change?
- Q13.3 – Can consultees share any guidance or expectations for the carbon balance assessment of the wind farm and BESS aspects of the Proposed Development?

Chapter 14

- Q14.1 – Do consultees have any recommendations for additional legislation, policy and guidance that should be considered?
- Q14.2 – Are consultees content with the proposed methodology, scope and study areas for the assessment of socioeconomics, tourism and recreation?
- Q14.3 – Can consultees provide information of any further tourism or recreation receptors within the 5 km study area?
- Q14.4 – Do consultees have any other information that would be useful in the preparation of the socioeconomics, tourism and recreation assessment?

Chapter 15

- Q15.1 – Are any consultees aware of any additional telecommunication links or utilities stakeholders that should be taken into account?
- Q15.2 – Are consultees content that effects upon television reception and utilities can be scoped out of the EIA based on the commitment that attributable impacts will be suitably mitigated?
- Q15.3 – Do consultees agree with the suggested approach regarding the proposed assessment of Aviation within the EIA Report
- Q15.4 - Do consultees have any comment on mitigation (such as infra-red lighting) required in relation to impacts on the Spadeadam military Danger Area and military low fly area?
- Q15.5 – Do consultees agree with the suggested approach regarding the proposed assessment of shadow flicker within the EIA Report?
- Q15.6 – Are consultees content that effects upon Human Health can be scoped out of the EIA based key potential health impacts being assessed in other chapters of the EIA Report?
- Q15.7 – Are consultees content that effects upon Major Accidents and Natural Disasters can be scoped out of the EIA based on the commitment that attributable impacts will be suitably mitigated?
- Q15.8 - Do consultees agree with the proposed approach for the intra-cumulative assessment?

APPENDIX B – CULTURAL HERITAGE BASELINE

APPENDIX C – FIGURES