



West Scales Energy Park: Environmental Impact Assessment Report

Volume 1: Non-Technical Summary

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Basis of Report

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Acronyms and Abbreviations

BBPP	Breeding Bird Protection Plan
BESS	Battery Energy Storage System
BGS	British Geological Survey
CAA	Civil Aviation Authority
CAP	Civil Aviation Publication
CEMP	Construction Environmental Management Plan
CIEEMP	Chartered Institute of Ecology and Environmental Management
CO	Carbon monoxide
D&GC	Dumfries and Galloway Council
EASR	Environmental Authorisations (Scotland) Regulations
ECow	Ecological Clerk of Works
EIA	Environmental Impact Assessment
GW	Gigawatt
GWDT	Groundwater-Dependent Terrestrial Ecosystem
ha	Hectares
HER	Historic Environment Record
HES	Historic Environment Scotland
HGV	Heavy Goods Vehicle
HMP	Habitat Management Plan
IEMA	Institute of Environmental Management and Assessment
JRC	Joint Radio Company
LVIA	Landscape and Visual Impact Assessment
m	Metres
MOD	Ministry of Defence
MW	Megawatts
MWh	Megawatt Hours
NGR	National Grid Reference
NHZ	Natural Heritage Zone
NTS	Non-Technical Summary
NVC	National Vegetation Classification
OHMP	Outline Habitat Management Plan
PV	Photovoltaic
SBL	Scottish Biodiversity List
SEPA	Scottish Environment Protection Agency
SPA	Special Protection Area
SPEN	Scottish Power Energy Networks



SSSI	Site of Special Scientific Interest
UK	United Kingdom
ZTV	Zone of Theoretical Visibility



1.0 Introduction

This Non-Technical Summary (NTS) summarises the Environmental Impact Assessment (EIA) Report for the proposed West Scales Energy Park.

Eurowind Energy Limited is seeking planning permission from Dumfries and Galloway Council (D&GC) to install West Scales Energy Park near Gretna, in Dumfries and Galloway.

The project will include for up to four wind turbines, solar photovoltaic arrays and a Battery Energy Storage System (BESS). The Site location and application boundary are shown in **Figure 1** and **Figure 2**, respectively.

Based on the wind resource across the Site, the Proposed Development would produce an average of approximately 97,300 Megawatt hours (MWh) of electricity per year. This is equivalent to the annual consumption of 29,200 average UK households¹. The co-located BESS will enable energy to be stored and supplied when most needed, improving the resilience of the grid and supporting renewable integration.

The Scottish Government has set a target of achieving net zero carbon emissions by 2045. This target relies on a large increase in renewable energy generation across Scotland, which the Proposed Development would help to achieve.

This EIA identifies the likely environmental effects from construction and operation (and justifications for the scoping-out of decommissioning assessment) - and proposes mitigation to reduce or avoid impacts. The findings demonstrate that, with mitigation in place, the Proposed Development is not predicted to result in significant adverse effects on the environment.

2.0 The Proposed Development

2.1 Key Components

The Proposed Development comprises a combination of wind energy, solar power generation and battery energy storage, supported by a range of onsite infrastructure required for construction, operation and long-term maintenance.

2.1.1 Wind Turbines

The wind energy component would consist of four modern wind turbines, each with three blades and a maximum blade tip height of up to 200 metres. Each turbine would have an indicative generating capacity of approximately 6.2 MW, giving a combined wind capacity of around 24.8 MW.

Each turbine would be supported by a concrete foundation, typically approximately 27 metres in diameter and around 2.5 metres deep, designed to suit local ground conditions. Adjacent to each turbine would be a permanent hardstanding area of approximately 99 metres by 38 metres, used for construction activities and retained to allow access for inspection and maintenance. Electrical transformers would be housed within the turbines, reducing the amount of above-ground infrastructure.

¹ Calculated using the most recent statistics from Department of Energy Security and Net Zero (DESNZ) showing that annual GB average domestic household consumption is 3,449 kWh



2.1.2 Solar Photovoltaic (PV) Arrays

The Proposed Development includes three solar PV array areas covering a combined area of approximately 11.1 hectares. The arrays would comprise around 14,326 solar panels, mounted on metal frames with a single-axis tracking system to follow the sun from east to west. At their maximum tilt, the panels would reach a height of up to 4.5 metres.

The solar element of the development would have an indicative installed capacity of approximately 12 MW, with associated electrical equipment, such as inverters and transformers, located within or adjacent to the solar array areas.

2.1.3 Battery Energy Storage System

A Battery Energy Storage System (BESS) with a power capacity of up to 12 MW forms part of the Proposed Development. The system would be located within the onsite substation compound and is anticipated to comprise approximately five containerised battery units, each measuring around 6.1 metres long, 2.5 metres wide and 2.9 metres high.

The batteries would allow electricity generated onsite to be stored temporarily and exported when required, supporting efficient use of renewable energy.

2.1.4 Substation and Electrical Infrastructure

An onsite substation compound, measuring approximately 75 metres by 100 metres, would act as the operational and electrical hub of the development. This would include a single-storey control building of approximately 16 metres by 11 metres and up to 5 metres in height, along with high-voltage electrical equipment and the battery storage units.

Electricity generated by the wind turbines and solar arrays would be conveyed to the substation via underground cabling, generally routed alongside access tracks to minimise land disturbance.

2.1.5 Access Tracks and Site Access

Approximately 5.9 kilometres of new internal access tracks would be constructed to connect the wind turbines, solar PV arrays, substation and construction areas. This would include around 2.9 kilometres of tracks associated with the wind turbines and approximately 3.0 kilometres associated with the solar PV arrays. Track widths would typically be around 6 metres for wind turbine access and around 4 metres for solar access.

Access to the Site would be taken from the A75 trunk road via a new purpose-designed entrance. The internal track network would remain in place during operation to allow maintenance access.

2.1.6 Construction Compound

Up to two temporary construction compounds would be established during the construction phase. Each compound would have a footprint of approximately 45 metres by 75 metres and would include site offices, welfare facilities, storage and parking. These compounds would be removed once construction is complete and the land reinstated.

2.1.7 Wind Monitoring Mast

A wind monitoring (anemometry) mast with a height of up to 122.5 metres would be installed to measure wind and weather conditions. This information would be used to support the safe and efficient operation of the wind turbines over the lifetime of the development.



2.2 Design Evolution (EIA Report Chapter 2)

The design evolution of the Proposed Development involved an iterative process aimed at refining the layout of the energy park to minimise environmental, technical and visual impacts while optimising energy generation. The process included several key stages, each informed by constraints mapping, environmental assessments and stakeholder feedback.

A number of parameters and considerations informed the Site selection and design of the Proposed Development, which are described in the full separate **Design and Access Statement** and summarised in **Chapter 2: Site Description and Design Evolution** of the EIA Report. In terms of the Site selection the factors included the presence of a strong wind resource, absence of statutory ecological and landscape designations within the Site, suitable topography, viable access from the A75, proximity to existing grid infrastructure, and the availability of land used predominantly for agriculture.

2.3 Proposed Infrastructure / Works (EIA Report Chapter 3)

The Proposed Development is described in detail in **Chapter 3: Description of Development** of the EIA Report. An outline Construction and Environmental Management Plan (CEMP), which is intended to be a key document during the construction of the Proposed Development in order to minimise the risk of environmental incidents occurring, is contained in the EIA Report as **Technical Appendix 3.1. Technical Appendix 3.2** provides a Battery Safety Statement, which explains how the design and operation of the Battery Energy Storage System (BESS) manage safety and fire risk.

The layout of the Proposed Development is shown in **Figure 3**. In summary the Proposed Development is comprised of the following main elements:

- **Wind Turbines**
 - Four wind turbines including internal transformers, with blade tip heights of up to 200m.
- **Turbine Foundations and Crane Hardstandings**
 - Four turbine foundations, each approximately 27m in diameter;
 - Associated crane hardstandings approximately 99m x 38m and 1m in depth, with additional areas for boom supports and blade storage trestles.
- **Access Tracks**
 - Approximately 5.1 km of new access track would be required to provide access to the wind turbines, Solar PV arrays, substation, and temporary construction compounds. This includes:
 - 2.05 km of track for wind turbine construction;
 - 3.05 km of track for Solar PV arrays.
 - Tracks would have a typical running width of 6 m for wind turbine access and 4 m for Solar PV access, with up to 3 m either side for drainage and cabling.
- **Underground Cabling**
 - Underground cabling would run alongside the access tracks to connect the wind turbines, Solar PV arrays and the onsite electrical substation..
- **Substation Compound**
 - One onsite substation which would accommodate 33kV Switchgear to collect electricity from different parts of the Site. The substation compound would



have an area of 100m x 75m and would include a control and metering building (approximately 16m x 30m and 8m high);

- Up to 12 MW of battery storage within approximately five battery storage units, each 6.1 m (l) × 2.5 m (w) × 2.9 m (h)..

In addition to the above operational components of the Proposed Development, construction of the Proposed Development will also require:

- **Temporary Construction Compounds**
 - Two temporary construction compounds, both with an area of 45m x 75m.
- **Forest Felling**
 - Felling of approximately 0.62ha of trees
 - Compensatory planting of approximately 1.2 ha of new native woodland.

The grid connection for the Proposed Development has yet to be determined and does not form part of this application. A separate application under Section 37 of the Electricity Act 1989 will be required for the connection route. A route between the onsite substation and the point of grid connection at Chapelcross appears to be the most appropriate, but the Applicant does not have confirmation that this will indeed be the point of connection. SPEN, who is the network owner and operator in the area of the Proposed Development would own the assets beyond the Site substation. The precise route of the grid connection cabling (and form that will take, i.e. whether overhead lines, underground cables or a combination of both) has not been determined by the grid operator, meaning that its effects are not identifiable / assessable as yet.

2.4 Operational Life

It is anticipated that the Proposed Development would have an operational life of 40 years. At the end of this period, the Proposed Development would be decommissioned, or an application may be submitted to extend the project life or repower the Site.

2.5 Habitat Management / Enhancements

A range of habitat management and enhancement measures form part of the Proposed Development. These measures have been developed in response to the ecological baseline identified during surveys and are secured through design, embedded mitigation and post-construction management commitments.

Ecological surveys undertaken across the Site in 2024–2025 (including UK Habitat Classification, National Vegetation Classification surveys and protected species surveys) informed areas of sensitivity and opportunities for habitat enhancement. Key ecological considerations included existing woodland, hedgerows, wet meadow habitats, bat foraging areas and reptile habitat features.

To ensure that habitat value is maintained and enhanced, the Proposed Development includes the following measures:

2.5.1 Native Woodland Planting

Approximately 1.19ha of new native woodland planting will be delivered to compensate for the 0.62ha of tree removal required during construction. The new woodland will strengthen habitat connectivity, support biodiversity and provide screening for infrastructure such as Solar PV arrays and the substation compound.



2.5.2 Wet Meadow Enhancement

A total of 19.31ha of wet meadow habitat will be enhanced through grazing management, maintenance of appropriate water levels, and control of scrub encroachment. If monitoring identifies a need to restore pre-construction water levels following track installation, localised ditch blocking may be undertaken.

2.5.3 Bat Habitat Measures

In line with bat protection guidance, turbines have been sited at least 50m from woodland edges to avoid high-risk commuting and foraging routes. Additional bat enhancements include the installation and long-term maintenance of bat roost and hibernation boxes at appropriate locations across the Site.

2.5.4 Reptile Habitat Provision

The Proposed Development includes the creation and maintenance of reptile habitat and encouraging local reptile population resilience.

2.5.5 Hedgerow and Vegetation Management

The layout has been designed to avoid removal of large stretches of hedgerow wherever possible, retaining existing vegetation that provides ecological connectivity. Where hedgerow loss cannot be avoided, replacement hedgerow planting is included to maintain habitat function.

2.5.6 Embedded Mitigation During Construction

Embedded mitigation during construction forms an integral part of the Proposed Development, with measures incorporated into the design and construction approach to minimise environmental effects. These include adhering to good practice construction methods outlined in the Outline CEMP, such as timing vegetation clearance and tree felling to avoid the bird breeding season and implementing appropriate pollution prevention measures.

A 50m buffer from watercourses is maintained wherever practicable, reducing potential impacts on the water environment, while an Environmental Clerk of Works (EnvCoW) will oversee compliance with environmental requirements and advise on micrositing decisions. Micrositing allowances of up to 50m for wind turbines and up to 75m for all other infrastructure provide flexibility to relocate components onsite to avoid sensitive habitats, areas of deeper peat, or unforeseen ground constraints identified during construction. Together, these embedded measures ensure that construction activities are undertaken in a manner that avoids or reduces significant effects wherever possible.

3.0 Benefits of Development

3.1 Contribution Towards Government Targets

The Proposed Development would:

- Contribute up to 44.8MW of renewable electricity generation capacity (comprising approximately 24.8MW of wind and 12MW of Solar PV, supported by up to 12MW of battery storage) towards meeting the renewable energy generation targets set out by the Scottish Government, such as the goal for Scotland to have an overall installed onshore wind capacity of 20GW by 2030.
- Contribute towards the Scottish Government's goal for Scotland to have a fully decarbonised energy system by 2045.



- Make a valuable contribution towards UK generation targets and the reduction in emissions of greenhouse gases, principally carbon dioxide, in becoming carbon neutral by 2050.
- Make Scotland, and therefore the UK, less reliant on imported and price-volatile fuels.
- Support employment during the construction phase, with the construction workforce varying over the programme and peaking at approximately 30 jobs on site, including roles in civil engineering, electrical works, plant operation and environmental management. Where possible, local contractors and suppliers would be utilised, supporting the local economy.
- In addition to contributing to national climate and energy targets, the Proposed Development would deliver measurable economic benefits at local and national levels. During construction, it is estimated to generate approximately £3 million of Gross Value Added (GVA) in Dumfries and Galloway and £12 million across Scotland, with ongoing operational activity generating around £0.4 million of GVA per year locally and £1.0 million per year at the national level, alongside employment, supply-chain opportunities and contributions to public finances.

3.2 Community Shared Ownership

The applicant would explore potential models for part community ownership of the Proposed Development, whereby the local communities would have the opportunity to invest into the project in line with the Scottish Government's Good Practice Principles.

3.3 Community Benefit Fund

Should the Proposed Development gain consent, a Community Benefit Fund would be made available to the community of interest. This is offered on the basis of a payment per MW of installed capacity at the Scottish Government recommended rate at the time of commissioning the Proposed Development. At present, the recommended rate is £5,000 per MW. With the Proposed Development's installed wind capacity of 24.8MW, this would equate to an annual Community Benefit Fund of approximately £124,000, resulting in a total contribution of around £4.96 million over the 40-year operational life of the energy park.

4.0 Renewable Energy and Planning Policy

This section summarises the renewable energy, climate change and planning policy framework within which the Proposed Development is being considered. It provides an overview of the key international, UK, Scottish and local planning policies that inform the determination of the planning application and set the context for the Environmental Impact Assessment (EIA).

4.1 Climate Change and Renewable Energy Policy

At an international level, governments have recognised the urgent need to address climate change through coordinated action to reduce greenhouse gas emissions and limit global temperature rise. Successive global climate conferences have reinforced the requirement for rapid emissions reductions and a substantial increase in renewable energy generation worldwide, including wind and solar power, alongside measures to strengthen electricity networks and energy storage.

Within the UK, these international commitments have been translated into domestic legislation requiring the achievement of net zero greenhouse gas emissions by 2050. Independent advice to Government has consistently concluded that meeting this target will



require a major expansion of low-carbon electricity generation and a significant increase in onshore wind, solar power and supporting energy storage capacity. UK energy policy recognises that renewable electricity generation represents one of the most cost-effective and scalable means of decarbonising the energy system while improving energy security and reducing reliance on imported fossil fuels.

Scotland has adopted an even more ambitious climate change framework, with a statutory target of achieving net zero emissions by 2045. Scottish Government policy makes clear that meeting this target will depend on a rapid and sustained increase in renewable energy deployment over the coming decade. Onshore wind, solar power and energy storage are identified as key technologies in delivering a secure, resilient and low-carbon energy system, alongside broader measures to decarbonise heat, transport and industry.

Scottish energy strategies and policy statements also highlight the wider benefits of renewable energy development, including improved energy security, economic investment, job creation and opportunities for local communities to benefit through community benefit funding and shared ownership arrangements.

4.2 National Planning Policy

The planning application is considered within the framework of National Planning Framework 4 (NPF4), which was adopted in 2023 and now forms part of the statutory Development Plan. NPF4 places tackling the climate and nature crises at the centre of planning decision-making and requires significant weight to be given to development proposals that support the delivery of climate change targets.

NPF4 explicitly identifies the need for a large and rapid increase in electricity generation from renewable sources if Scotland is to meet its climate commitments. Renewable energy developments, including onshore wind, solar power and energy storage, are supported in principle, provided that environmental, community and technical impacts are appropriately assessed and mitigated.

National planning policy recognises that some landscape, visual and amenity effects are to be expected from renewable energy development. Where impacts are localised and design mitigation has been applied, decision-makers are directed to place significant weight on the contribution a proposal makes to renewable energy generation and greenhouse gas emissions reduction. NPF4 also confirms support for energy storage infrastructure, such as battery energy storage systems, recognising their role in enabling a flexible, resilient and efficient energy system.

4.3 Local Planning Policy

At the local level, the statutory Development Plan includes the Dumfries and Galloway Local Development Plan 2 (LDP2). LDP2 supports renewable energy development, including wind and solar energy, where proposals are appropriately sited and designed and do not result in unacceptable impacts. A range of other local policies are relevant to the Proposed Development, including those relating to landscape, biodiversity, cultural heritage, flooding and design quality.

While LDP2 continues to form part of the Development Plan, national planning policy set out in NPF4 carries significant weight where there is any conflict, reflecting its more recent adoption and national status. The emerging Local Development Plan 3 remains at an early stage and does not yet carry material weight in decision-making.



5.0 Environmental Impact

5.1 Landscape and Visual (EIA Report Chapter 7)

EIA Report **Chapter 7: Landscape and Visual** contains an assessment of the potential impacts of the Proposed Development on Landscape and Visual receptors and designations.

5.1.1 Existing Environment

The Proposed Development lies within a gently undulating agricultural landscape between Eastriggs, Gretna and Annan. The area is dominated by open arable and pastoral farmland with scattered woodland blocks, hedgerows and farmsteads that create a mix of open and contained views. This landscape forms part of the wider Solway Basin, a low-lying area that enables long distance views toward the Solway Firth, the Cumbrian hills, the Langholm hills and the North Pennines. Major transport corridors, including the A75, as well as nearby local roads such as the B721 and the B6357, cross the area and contribute to a sense of movement. The surrounding land provides a transition from farmland to the extensive coastal flats and tidal waters of the Solway Firth, which is valued for its natural character and scenic qualities.

Several settlements are located within the study area including Eastriggs, Kirkpatrick-Fleming, Gretna, Creca, Annan, Port Carlisle and Bowness on Solway, with varying degrees of visibility toward the Site depending on landform and vegetation. Recreational routes such as NCR7, NCR72 and the Hadrian's Wall Path pass through the area alongside several local core paths, providing opportunities to experience open coastal views and more enclosed inland scenes. Although the broader region contains nationally designated landscapes, the Site itself is not designated, and local screening from woodland and field boundaries helps shape how the development area is perceived within the wider open and rural Solway landscape.

5.1.2 Methodology Assessment Overview

The assessment follows GLVIA3 and NatureScot guidance and considers a study area extending 45km from the Site, with a detailed 20km area used to identify where significant effects may occur. It combines desk-based analysis, field survey, computer generated visualisations and Zone of Theoretical Visibility mapping to understand where the Proposed Development may be seen. The sensitivity of each receptor and the scale of change proposed under the Proposed Development is used to determine significance. A total of 17 viewpoints were selected to represent settlements, roads, coastal areas and upland locations, with 15 included in detailed assessment, and cumulative effects were considered for operational, under construction and consented wind farms within 45km. Nighttime effects were assessed separately using aviation lighting guidance and dusk or dawn visualisations from selected viewpoints.

5.1.3 Potential Effects

During construction, potential effects on landscape and visual receptors would arise from temporary works across the Site, including soil stripping, the creation and widening of access tracks, construction compounds, crane pads and turbine foundations, along with the installation of the anemometer mast, the solar array and the BESS. Effects on landcover would be temporary and not significant as agricultural land would be reinstated.

During operation, the principal effects would arise from the four proposed wind turbines, anemometer mast and supporting infrastructure including solar array, BESS and onsite tracks. These elements would represent long term changes to the landscape, particularly where turbines are visible within 3km of the Site, including parts of the Coastal and Flow Plateau and some coastal areas of the Solway Firth. In these nearer locations, the turbines



would become a noticeable feature and result in significant effects on certain landscape character types and visual receptors, as outlined in the LVIA. Effects are however reduced with distance as the turbines occupy a smaller part views and are increasingly screened by vegetation and landform. Across much of the study area, especially beyond 4-6km, effects would be not significant.

Decommissioning effects have been scoped-out of the assessment, since they are of a similar nature to construction issues, but of a smaller scale and shorter duration.

5.1.4 Mitigation Measures

The assessment identifies that key mitigation has been built into the design of the Proposed Development from the outset. This includes selecting a layout with a reduced number of turbines and increasing their separation from nearby residential properties to help limit visual prominence and protect residential visual amenity. The layout has been shaped to remain compact so that the turbines read as a single coherent group rather than an elongated or dispersed arrangement, which helps reduce wider landscape effects. Screening provided by existing woodland and hedgerows across the Site and surrounding farmland assists in limiting views of lower infrastructure such as access tracks, the solar array and BESS. Embedded mitigation also includes removal of mid-tower lighting and a reduction in aviation lighting from 4 to 2 lit turbines. Lighting will be controlled via sensor-dimming to lower brightness under clear visibility (in line with aviation guidance). Collectively, these measures reduce potential effects on landscape character, visual amenity and night-time views.

5.1.5 Assessment Result

The assessment concludes that the Proposed Development would lead to significant landscape and visual effects in areas located closest to the Site, particularly within approximately 3km, where the turbines would become a prominent feature in views and would influence the character of the Coastal and Flow Plateau and parts of nearby coastal landscape areas. Effects on certain visual receptors, including residents in some nearby settlements, users of local roads, core paths, NCR7, NCR72 and sections of the Hadrian's Wall Path near Bowness on Solway, would also be significant where open and close-range views occur. These significant effects become more limited with increasing distance, and across much of the wider study area the turbines would be partially screened or would form a small component of the view, resulting in not significant effects.

The assessment also finds that effects on designated landscapes, including the Nith Estuary National Scenic Area, the Solway Coast National Landscape and the Solway Coast Regional Scenic Area, would not be significant, as the turbines would be seen at considerable distances and occupy only a narrow part of the overall view. Cumulative effects, when considered alongside existing and consented wind farms, would generally be less significant. With mitigation in the form of embedded design, the Proposed Development would result in a defined set of localised significant effects, while the majority of the surrounding landscape and visual environment would remain largely unaffected.

5.2 Ecology (EIA Report Chapter 8)

EIA Report **Chapter 8: Ecology** assesses the potential impacts of the Proposed Development on ecological receptors and designations.

5.2.1 Existing Environment

The Site comprises of pastoral and improved grassland fields, bordered by hedgerows, tree lines and small areas of woodland. In the southern part of the Site, the landscape becomes more varied, with a mix of wetland, heath and mire habitats. These include wet woodland, transition mires, rush pasture and swamp habitats, several of which are recognised as



Annex I or Scottish Biodiversity List priority habitats. These habitats vary in value from less than local to national, with the wetlands and wet woodland supporting particularly high plant and invertebrate diversity. The fauna recorded includes otter activity along watercourses, badger setts within the Site, common lizard in suitable grassland and heath areas and a notably rich bat assemblage comprising at least eight species present. Trees and woodland edges offer potential roosting features, and survey evidence indicates that Soprano Pipistrelle and Myotis roosts (both types of bats) are likely to be nearby. Water vole and protected fish species are recorded in the wider area but habitats onsite are generally unsuitable for them, and watercourses are small and of low suitability for migratory or resident fish. Overall, the Site supports a mixture of common and notable habitats and species, providing ecosystem services such as grazing, pollination and wildlife habitat, and in the absence of the Proposed Development it is expected to remain broadly similar over the next 40 years.

5.2.2 Methodology Assessment Overview

The ecological assessment follows the CIEEM Guidelines for Ecological Impact Assessment, identifying Important Ecological Features based on legal protection, conservation status and their value within defined geographic tiers ranging from local to international. The study area varies by receptor, with habitat surveys covering the Site plus buffers of 250m around turbines and 100m around other infrastructure, and species-specific areas extending up to 500m for great crested newt and 200 m for protected mammals and aquatic assessments. Baseline data were gathered through desk studies, UKHab and NVC habitat surveys, protected species surveys, bat activity and roost potential surveys, and aquatic habitat assessment, supported by Ecobat analysis to contextualise bat activity. Impact assessment considers direct, indirect, secondary, cumulative, permanent and temporary effects, and evaluates significance based on whether an effect would undermine the favourable conservation status of a species or habitat. The approach also applies the mitigation hierarchy (avoid, minimise, restore, offset) and assesses cumulative interactions with other developments within relevant catchments and distance thresholds, including wind farms within 10 km, to determine overall ecological risk.

5.2.3 Potential Effects

During construction, the Proposed Development would lead to direct and temporary habitat loss across the Site, including the permanent loss of a small area of purple moor-grass and rush pasture (0.04ha), a similarly small area of neutral grassland (0.06ha), along with approximately 0.33km of tree lines and 0.09km of native hedgerow, with several of these losses representing significant negative effects at local or regional levels due to their SBL priority status. Construction activity may also disturb species such as otter, badger, reptiles and bats, although effects on most species are not significant when considering embedded mitigation, including 50m buffers to watercourses, pollution prevention measures, vegetation management and supervised soft-start processes. However, construction could cause significant short-term negative effects on roosting bats if roosts are present within trees to be removed or within 20–30m of works, and the loss of a maternity roost for soprano pipistrelle or Myotis species would represent a significant long-term effect without licensing and compensatory measures. Overall, construction would also cause a significant negative effect on biodiversity due to habitat loss and network disruption, although these effects are offset through habitat restoration and enhancement set out in the Outline HMP.

During operation, habitat effects are limited, with modified grassland under the solar array expected to continue supporting grazing and no significant degradation predicted. Faunal effects vary: fish, water vole, otter, badger and reptiles are not expected to experience significant operational impacts due to limited disturbance, low traffic levels and effective pollution controls, while reptiles would experience a positive effect from new refugia and enhanced habitat. The main operational risks relate to bats, where moving wind turbine



blades may cause collision or barotrauma, particularly for high-risk or vulnerable species such as soprano pipistrelle, noctule, Nathusius' pipistrelle and Leisler's bat. Similarly, solar panels could alter bat behaviour or reduce prey availability, representing a potential significant negative effect at national level for the bat assemblage. With mitigation measures recommended, including limiting turbine operation during periods when bats are most active (such as at temperatures above 10°C and wind speeds of 5–6.5m/s), using blade feathering to reduce rotation when turbines are idle, and delivering habitat improvements through the HMP, these effects can be reduced to levels that are not considered significant, and biodiversity overall is predicted to experience a net gain through habitat creation and management.

Decommissioning is scoped out of the Ecology assessment because predicted effects are not expected to differ materially from those occurring during construction, and any potential impacts would be addressed through standard best-practice measures at the time of closure. As noted in Chapter 8: Ecology, no separate decommissioning assessment has been undertaken.

5.2.4 Mitigation Measures

Mitigation for ecological receptors has been integrated into the design of the Proposed Development from the beginning. This includes avoiding sensitive habitats wherever possible, keeps safe distances from watercourses and woodland edges, and follows clear guidance on how to reduce risk to wildlife. The CEMP, will set out good practice on preventing pollution, managing soils and water, protecting habitats that are being retained, and restoring any areas that are only disturbed temporarily.

Before construction begins, updated surveys within 250m of the works to check for otter, badger, bats and water vole. If any active setts or bat roosts are found, licensed measures will be put in place so that works can proceed safely. Onsite protection will include a low speed limit, covering or providing escape ramps for any deep excavations, safe storage of materials, managing vegetation in a way that protects reptiles and keeping lighting to the minimum needed for safety.

For bats, the project includes further steps such as keeping turbines away from key flight routes, limiting lighting near sensitive areas, feathering turbine blades when they are idle and using a recommended curtailment approach during the bat active season. This means turbines would not operate at night when bats are most active, under conditions above 10°C and with wind speeds between 5–6.5m/s. Long-term improvements will be delivered through the Outline Habitat Management Plan (HMP). This includes creating new wet meadow areas, planting native woodland, adding new hedgerows and providing features such as wildlife boxes and reptile shelters. Ongoing monitoring of water levels and vegetation will help ensure these habitats develop well and support a more diverse range of species over time..

5.2.5 Assessment Result

The assessment shows that, without mitigation, the project would cause several important ecological impacts. These include the loss of small areas of priority habitats such as rush pasture, neutral grassland, treelines and native hedgerow, which are considered important at local to regional levels. There is also potential for short-term impacts on bats during construction if any trees with active roosts are affected, and long-term impacts could occur if soprano pipistrelle or Myotis maternity roosts were lost. During operation, several bat species – including noctule, Nathusius' pipistrelle, Leisler's bat and soprano pipistrelle – could be at risk of collision with turbines if no mitigation were applied, and the presence of the solar panels could influence bat behaviour or food availability.



Overall, the project would lead to a reduction in biodiversity during both construction and operation in the absence of safeguards. However, the mitigation embedded in the design, the species protection measures set out in the CEMP, the recommended curtailment and feathering of turbine blades, and the extensive habitat creation and enhancement delivered through the HMP collectively address these risks. The HMP includes new wet meadow habitat, native woodland and hedgerows, along with additional features to support wildlife. With these measures in place, no significant effects on protected species or habitats are expected, and the project is predicted to deliver an overall ecological benefit.

5.3 Ornithology (EIA Report Chapter 9)

EIA Report **Chapter 9: Ornithology** contains an assessment of the potential effects of the Proposed Development on birds.

5.3.1 Existing Environment

The ornithological baseline describes a diverse bird community associated with the farmland, wetland and coastal hinterland surrounding the Site, informed by two full years of breeding and wintering bird surveys (2023–24 and 2024–25). The Site lies close to internationally important designations, most notably the Solway Firth Special Protection Area (SPA), Ramsar site and Site of Special Scientific Interest (SSSI) located 2km south, which supports significant populations of whooper swan, pink-footed goose, barnacle goose, golden plover, lapwing, curlew and internationally important gull assemblages. The baseline surveys recorded a wide range of breeding species across the Site and its 500m buffer, with a regionally important breeding bird assemblage including medium-value species such as lapwing, curlew, skylark, tree pipit, grasshopper warbler and several declining farmland passerines, along with a single high-value species (quail). Wintering surveys documented substantial numbers of pink-footed goose, whooper swan, golden plover, lapwing, curlew and large gull flocks within 2km of the Site, though most feeding activity occurred outside the Proposed Development footprint. Flight activity data from vantage point surveys showed regular overflying movements of geese and gulls between inland feeding areas and Solway Firth roosts, with some flightlines intersecting turbine heights. Only limited breeding or foraging evidence was found within the Site for SPA species, and overall the Site itself was used only intermittently by high-value waterfowl and waders. The surrounding landscape includes improved farmland, peat workings to the west and woodland to the north, with these habitats influencing bird distribution and movement patterns recorded in the baseline.

5.3.2 Methodology Assessment Overview

The ornithology assessment follows NatureScot guidance for onshore wind farm bird surveys, using two full years of vantage point flight activity surveys, breeding bird walkover mapping, targeted raptor and wader surveys, and wintering bird field and nocturnal surveys. These methods were used to establish a detailed baseline across the Site, a 500m breeding buffer and a wider 2km area for key species.

Survey design drew on recognised methodologies, including NatureScot bird monitoring guidance and the Brown & Shepherd method for upland birds. Designated sites within 5km (SSSI) and within 20km (SPA/Ramsar) were reviewed to understand potential ecological connections. This included considering typical foraging and flight ranges for species such as whooper swan, barnacle goose, pink-footed goose and local gull assemblages. Impact significance was then assessed by considering both the importance of each species and the predicted scale of change, following NatureScot's wider countryside assessment approach.

Impact significance was assessed using NatureScot's approach, which considers both the importance of a species and the scale of change predicted. Collision risk modelling used the updated NatureScot 2024 model using precautionary avoidance rates, and cumulative



effects were considered across the relevant regional assessment area. Professional judgement has been applied throughout, particularly where access constraints outside the Site may have limited the precision of breeding bird estimates. However, the overall dataset is considered robust and suitable for EIA.

5.3.3 Potential Effects

During construction, the key potential effects include direct habitat loss from turbine foundations, access tracks, solar PV arrays and associated infrastructure, although this loss is described as a very small proportion of the Site and primarily affects improved grassland of low ornithological value. This means that even for important breeding bird species such as curlew, skylark and reed bunting, the changes would be very small and would not be noticeable. Construction phase disturbance is the principal mechanism of effect, with all birds within 500m of works assumed to be at risk due to noise, human presence and vehicle movements, particularly during the 16-month construction period. While a single pair of breeding curlew and a small number of other bird species are present close to the works, these represent only a very small proportion of the wider bird populations in the surrounding area. As a result, any changes would be very limited and not noticeable. Some wintering birds of high conservation value (such as golden plover, lapwing, common gull, herring gull and black-headed gull) use land close to the proposed infrastructure, but only small numbers were recorded within the Site itself. This means that any temporary disturbance or displacement during construction is expected to have a very small effect. Species such as barn owl and quail may be present in the wider area and will be protected through standard breeding-season safeguards. Overall, even when considering disturbance, habitat change or short-term displacement, construction effects on all bird species are assessed as not significant.

Once the development is operating, potential effects on birds could include some birds avoiding areas close to the turbines or solar panels, as well as a very small risk of collision. Survey information shows that only a few birds regularly use land close to the turbines, meaning any displacement would be very limited. Evidence from existing wind farms shows that birds actively avoid turbines, making collisions extremely unlikely. For all bird species considered, including geese, swans, waders, gulls and birds of prey, the risk of collision is very low and would not result in noticeable changes to bird populations. There are no important bird movement routes crossing the site, and the development would not obstruct birds moving through the area. Overall, operation of the development is not expected to have noticeable or significant effects on birds or nearby protected sites. Decommissioning effects are expected to mirror those of construction, involving temporary disturbance and small-scale habitat disturbance, but given the low sensitivity of habitats within the Site and the lack of significant construction impacts, the assessment concludes that no separate detailed decommissioning assessment is required, and no significant ornithological effects are anticipated at that stage.

5.3.4 Mitigation Measures

Although the assessment shows that the development is unlikely to have noticeable effects on birds, a range of good-practice measures will still be used during construction to protect wildlife. These include carefully managing construction activities to reduce disturbance, timing works to avoid sensitive periods such as the breeding season, and overseeing works on site to ensure agreed safeguards are followed. In addition, habitat improvements delivered as part of the project will enhance wildlife areas across the site, providing wider benefits for birds and other species.

Once the development is operating, no further actions are required because it is not expected to cause noticeable effects on birds. However, the habitat improvements



introduced as part of the project will remain in place throughout its lifetime and will continue to provide long-term benefits for both breeding and wintering birds..

5.3.5 Assessment Result

The assessment concludes that the development would not have noticeable effects on birds or on protected wildlife areas. Only small areas of habitat of limited importance would be affected, meaning breeding birds would not be adversely affected. While construction activities may cause some short-term disturbance, only small numbers of sensitive bird species use areas close to the works, so any temporary displacement would be minor. Most wintering birds, including geese, swans, waders and gulls, are found away from the site, meaning they would not be noticeably affected by the development. Once the development is operating, the risk of birds colliding with turbines is expected to be very low, and experience from other wind farms shows that birds tend to avoid turbines in practice. The development is not expected to disrupt normal bird movement routes, and birds will continue to move freely through the wider area. Overall, the project would not affect bird populations at a local or regional level, or harm protected wildlife areas such as the Solway Firth. With standard safeguards and habitat improvements in place, no noticeable effects on birds are expected..

5.4 Hydrology, Hydrogeology, and Geology (EIA Report Chapter 10)

EIA Report **Chapter 10: Hydrology, Hydrogeology and Geology** contains an assessment of the potential impacts of the Proposed Development on soils and the water environment.

5.4.1 Existing Environment

The Site lies within a gently sloping landscape that drains south toward the River Esk estuary, approximately 2.5km away, with most of the area falling within the Kirtle Water catchment and a small portion draining toward the Saugh-hope Burn, although no infrastructure lies in that catchment. The Site contains a mix of brown earth soils and shallow peat deposits, with most peat less than 0.5m deep and only one small area reaching 2.8 m. The underlying bedrock is Triassic St Bees Sandstone, forming a highly productive aquifer that Scottish Environment Protection Agency (SEPA) classifies as having Good groundwater status, with vulnerability mostly between Class 2 and Class 3.

Surface water features include small drains and one tributary of the Kirtle Water, with baseline water quality in the wider catchment recorded as Poor for the Kirtle Water and Moderate for the Solway Estuary. No private water supplies, Drinking Water Protected Areas or licensed abstractions are at risk, and while several potential Groundwater-Dependent Terrestrial Ecosystem (GWDTE) habitats exist, surveys confirm they are sustained by surface water and waterlogging rather than groundwater.

5.4.2 Methodology Assessment Overview

The assessment follows a structured approach combining desk-based review, field surveys and professional guidance to identify potential effects of the Proposed Development. The study area extends 500m beyond the Site boundary, with cumulative effects considered within surface water catchments up to 5km downstream. Baseline information was compiled from SEPA datasets, British Geological Survey (BGS) mapping, peat probing surveys, hydrological walkovers, watercourse crossing surveys and a private water supply assessment. Site surveys were used to check how water drains across the land, how deep any peat is, the type and condition of soils, the location of streams and ditches, and how vulnerable groundwater may be. These surveys also helped identify any wet habitats that depend on water levels remaining stable. Built-in design measures and established good-practice construction methods were taken into account from the outset. The



assessment considered potential effects during both construction and operation, while eventual removal of the development is expected to result in similar, temporary effects to those seen during construction and was therefore not examined in detail. Potential Effects

During construction, potential effects mainly relate to disturbance of shallow peat and carbon-rich soils, risk of pollution from fuel, oils or concrete, increased sedimentation and erosion, temporary changes to surface water flow paths and small-scale dewatering in excavated areas. Most of the peat across the site is shallow, and areas with deeper peat have been avoided through the project design. This means that any ground disturbance during construction would be limited. Potential risks to nearby streams, groundwater and wet habitats have been carefully managed through built-in design measures and standard good-practice controls. These include keeping a safe distance from watercourses, managing soils and materials carefully, controlling surface water drainage and having clear procedures in place to deal with any accidental spills. Measures are also in place to manage rainfall runoff so that water flows are controlled and do not increase flood risk. As a result, construction activities are not expected to cause noticeable or significant effects on soils, water or drainage. Once the development is operating, effects on land and water would be much smaller than during construction because there would be no major digging or movement of soils or peat. The risk of pollution would be very low, as only small amounts of oil are used on site and solar panels are cleaned using clean water. Any temporary disturbance to ground or water would reduce further once vegetation has re-established, and routine upkeep of tracks and drainage features would ensure that natural water flows remain unchanged. Measures built into the design also ensure that rainfall is carefully managed so flood risk does not increase, and groundwater levels would not be affected. Overall, the operational phase is not expected to result in noticeable or significant effects on soils, water or drainage.

5.4.3 Mitigation Measures

Mitigation for hydrology, hydrogeology and soils has been embedded into the design of the Proposed Development, including complete avoidance of peat deeper than 1 m, maintaining 50m buffers to mapped watercourses and 10–15m buffers to minor drains, minimising new watercourse crossings and using existing access routes wherever possible. Good practice measures will be secured through the final CEMP and include pollution prevention, sediment management, controlled stockpiling, SuDS installation, wet-weather working protocols and the presence of an Ecological Clerk of Works (ECoW) to oversee water-environment sensitivities. A soil management plan will be used to protect shallow peat and carbon-rich soils. Water quality will be monitored before and during construction, and any water use or temporary drainage works will follow the relevant Scottish environmental regulations. At locations where works occur within 50m of watercourses, additional safeguards such as reduced working areas, silt traps, diversion ditches and real-time water quality monitoring will be applied. Solar PV arrays are designed with 1m panel clearance above areas with surface water depths greater than 0.3 m, and the BESS will incorporate firewater containment, shut-off valves and impermeable linings. Collectively, these measures ensure that pollution risk, sedimentation, flood risk and impacts on groundwater or surface water flow paths remain very low throughout construction and operation.

5.4.4 Assessment Result

The assessment finds that the design avoids deeper peat and keeps a safe distance from watercourses, and that good construction practice set out in the CEMP will effectively control all potential risks. Only small areas of shallow peat and carbon-rich soils would be disturbed, and established measures ensure that pollution, sediment run-off and drainage changes are well managed. The design prevents any measurable changes to surface water or groundwater levels, flow paths or flood risk. No private water supplies or protected drinking



water areas are affected, and the wet habitats identified are fed by surface water rather than groundwater, so no groundwater impacts are expected. Overall, no significant effects are predicted, either alone or in combination with other developments, as no other relevant projects lie within the same local catchments..

5.5 Cultural Heritage and Archaeology (EIA Report Chapter 11)

EIA Report **Chapter 11: Cultural Heritage and Archaeology** contains the assessment of the potential impacts of the Proposed Development on Cultural Heritage and Archaeology assets.

5.5.1 Existing Environment

The baseline indicates that no designated heritage assets lie within the Site itself, although a diverse archaeological and historic environment surrounds it, with 483 designated assets recorded within 10km, including the Frontiers of the Roman Empire: Hadrian's Wall World Heritage Site, 429 Listed Buildings, 53 Scheduled Monuments and one Conservation Area. The Site lies within a gently rolling lowland landscape, sitting around 20–31m above sea level. Peat is present in parts of the Site, particularly to the north and south, giving the area some potential for preserving buried archaeological remains. Within 1km, recorded heritage features mainly include post-medieval farmsteads, an 18th-century section of the Bridge of Sark military road, a small number of undated structures, and several prehistoric remains such as an Iron Age enclosure, associated field systems and two artefacts likely dating to the Iron Age. Although no prehistoric remains are recorded within the Site boundary, the proximity of multiple Bronze Age cairns, Iron Age settlements and artefact findspots indicates the wider landscape was actively used throughout prehistory. The archaeological walkover undertaken in 2025 confirmed the absence of visible heritage features within the Site, aside from the post-medieval West Scales Farmstead (SLR5) and highlighted that areas of Class I and Class 5 peat offer elevated potential for buried remains. Historic mapping from the 17th to 20th centuries shows long-standing agricultural land use, drainage of former mosses, and stable farmstead patterns, with little change to the internal configuration of the Site itself.

5.5.2 Methodology Assessment Overview

The assessment applies a proportionate and policy-compliant approach that combines desk-based research, field survey and structured professional judgement to understand the potential for effects on archaeological remains and on the settings of heritage assets. A 10km study area was used to consider setting effects informed by ZTV analysis, and a 1km archaeological study area was applied to identify the likelihood of unknown buried remains. Baseline information was compiled using Historic Environment Scotland (HES) and Historic Environment Record (HER) datasets, historic mapping, LiDAR, aerial imagery and walkover survey undertaken in 2025. The assessment considered whether the development could physically affect known heritage features, or change how they are seen and experienced within the surrounding landscape. This involved looking at how the setting of each historic feature contributes to its importance, and whether the development would alter how people understand or appreciate it. The assessment also considered the combined effect of other nearby wind and solar developments to understand the overall level of change that might be experienced. This approach ensures that potential effects on cultural heritage have been considered in a clear, balanced and consistent way, in line with national planning policy.

5.5.3 Potential Effects

During construction, the main potential effects on archaeology would come from ground works such as digging for turbine foundations, access tracks, crane areas, cabling, solar panel supports and temporary site compounds. These activities could disturb any previously



unknown archaeological remains buried in the ground, particularly in areas where peat is present. The importance of any such remains would depend on what is found and how extensive it is. The only known historic feature within the site, West Scales Farmstead, would not be affected because the development has been designed to avoid it and construction would take place at a safe distance. Any temporary changes in views or noise during construction would be short-term and limited, and are not expected to affect how nearby historic features are experienced.

During operation, potential effects on heritage assets relate to changes in how some historic features are seen within their surroundings. For most heritage features, the development would either not be noticeable or would appear only as a small and distant element in views, meaning there would be little or no change in how they are experienced. For a small number of historic features, including Stapleton Tower and two nearby prehistoric cairns at Calvertsholm Cottages, the turbines would be visible in important outward views that help people understand their historic location and setting. While this would result in a noticeable change in parts of those views, the overall character and significance of these features would remain intact. All other heritage features would experience only very limited or no change, and would not be noticeably affected. Decommissioning would involve removing the turbines and other above-ground equipment and restoring the land surface. Any activity at this stage would be similar to construction but on a smaller scale and over a shorter period. Some temporary disturbance could occur from vehicle movements or limited ground works, but most underground structures would remain in place where appropriate. As a result, any effects would be short-term and would not cause lasting changes to historic features or the potential for archaeological remains at the site.

5.5.4 Mitigation Measures

Embedded design measures already reduce the risk of harm, including the placement of infrastructure away from known assets and the use of micro-siting allowances that help avoid sensitive locations. For the single known asset within the Site, West Scales Farmstead, protection will be secured through clear demarcation and on-site procedures to prevent accidental encroachment. The main potential concern is the possibility of undiscovered archaeological remains beneath areas of peat. In these locations, ground works such as tracks, turbine bases or solar panel supports could uncover or disturb buried remains. To address this, a watching brief will be undertaken during all ground-breaking works within peat, supported by toolbox talks and a protocol for discovery so any features encountered can be recorded appropriately.

5.5.5 Assessment Result

The assessment finds that most heritage assets would experience no significant effects from the Proposed Development. Only one known archaeological feature lies within the Site, and it is avoided entirely, meaning construction effects are very limited. There is only a small chance of disturbing unknown remains, and this would mainly relate to peat areas where impacts would only be meaningful if deep deposits were removed.

During operation, views of the turbines from most heritage assets are distant or partly screened, so they do not change how these sites are understood or appreciated. For the small number of assets where the turbines are more visible, the change amounts to a slight distraction in some views, but the overall character and setting of these sites remains intact. No additional effects arise when considering other nearby developments. Overall, the scheme is assessed as meeting cultural heritage policy requirements, with significant effects confined to a few assets and managed through built-in and construction-stage safeguards.



5.6 Traffic and Transport (EIA Report Chapter 12)

EIA Report **Chapter 12: Traffic and Transport** contains an assessment of the potential impact of the Proposed Development on the road network surrounding the Site.

5.6.1 Existing Environment

The transport network around the Site is formed mainly by the A75, supported by the B6357 and C43A, all of which pass through a rural landscape of open farmland with limited residential frontage and low levels of pedestrian or cyclist activity. Traffic counts show the A75 carries the highest flows at around 9,800–10,000 weekday vehicles during daytime hours, including a notable proportion of Heavy Goods Vehicles (HGVs), while the B6357 and C43A carry much lighter traffic. There are no footways, core paths or cycle routes along either the B6357 or C43A, and the A75's cycle route crosses via an underpass rather than on-carriageway. Accident data indicates some recorded incidents on the A75 but none on the B6357 or C43A. The area is therefore characterised by a strategic trunk road with capacity to absorb additional movements and local roads that currently experience low traffic levels and limited demand from vulnerable road users.

5.6.2 Methodology Assessment Overview

The traffic and transport assessment follows recognised guidances from the Institute of Sustainability and Environmental Professionals (ISEP) and applies a structured process to understand how construction traffic may influence local roads and users. Baseline traffic flows were established using Transport Scotland data, automatic traffic counters and site inspections, and these were projected to anticipated 2028 levels to represent future conditions at the start of construction. Estimated construction traffic, including HGVs, staff vehicles and abnormal load convoys, was compared against these future flows to identify any changes in overall traffic, HGV proportions or potential effects on safety, severance, pedestrian activity and driver delay. The assessment used percentage-based thresholds from IEMA to determine whether any increase in traffic would be large enough to create a perceptible environmental effect, supported by professional judgement for road safety, amenity and non-motorised users. Cumulative effects were reviewed by considering whether other developments would use the same road sections. This method provides a robust basis for determining whether construction traffic could lead to significant impacts.

5.6.3 Potential Effects

Construction traffic will generate additional movements of HGVs, staff vehicles and a small number of abnormal load convoys transporting turbine components. These vehicle trips will follow defined routes using the A75, B6357 and C43A, with a left-in, left-out Site access that manages turning movements safely. When compared with projected future traffic flows, the increases during the busiest construction months remain modest, typically between 2 and 6 percent, which is below the level at which noticeable environmental or road-user effects usually occur. Traffic thresholds in the IEMA guidance indicate that changes under 10 percent would not be expected to create discernible effects, and this assessment confirms that no significant impacts on driver delay, road safety, pedestrian amenity or severance would arise. Abnormal load convoys would be infrequent, escorted and pre-advertised, leading to short-term and controlled disruption only.

The operational phase has been scoped out of detailed assessment because the Proposed Development would generate only occasional maintenance visits and no meaningful change in traffic levels. These low levels of activity are not expected to have any noticeable impact on the transport network. Effects during decommissioning have not been assessed because this stage would take place many years in the future and traffic conditions at that time cannot be reliably predicted.



5.6.4 Mitigation Measures

Mitigation for traffic and transport focuses on applying standard good practice and implementing a Construction Traffic Management Plan to control how construction vehicles access and use the road network. The plan would set out agreed routes, timing of deliveries, driver conduct requirements and communication procedures to ensure safe and efficient movements. It would also include measures such as wheel washing, speed management, temporary signage, GPS monitoring for HGVs, and protocols for abnormal load convoys to ensure impacts remain minimal. Road condition surveys and coordinated liaison with authorities and emergency services would help manage any localised effects. No additional mitigation is required for operation or decommissioning because traffic levels during those phases are very low and not expected to cause any noticeable impact.

5.6.5 Assessment Result

The assessment concludes that construction of the Proposed Development will not result in any significant traffic or transport effects because increases in traffic flows on the A75, B6357 and C43A remain well below the thresholds at which environmental effects become noticeable. Traffic levels during construction are expected to increase only slightly, even at the busiest times, and the few abnormal load deliveries will be planned and safely managed. Once the project is operating, traffic will be very low, and decommissioning traffic is expected to remain below construction levels. Other developments in the area are not expected to add noticeably to traffic on the same routes, so no cumulative impacts are predicted. With standard good practice and a Construction Traffic Management Plan in place, the Proposed Development is assessed as having no significant effects on the transport network.

5.7 Noise (EIA Report Chapter 13)

EIA Report Chapter 13: Noise contains an assessment of the potential impact of the Proposed Development on noise within the Site.

5.7.1 Existing Environment

Baseline noise conditions around the Site are typical of a rural area influenced mainly by distant road traffic from the A75, with additional contributions from wind in vegetation and occasional agricultural activity. Noise monitoring was undertaken at four representative locations between September and October 2025 to capture both ambient and background noise levels across a full range of wind speeds. The data show clear daily patterns with lower levels during night-time and a consistent relationship between increasing wind speed and higher background noise. All monitoring locations recorded stable conditions suitable for deriving ETSU-R-97 compliant noise limits, and rain-affected data was screened out to ensure accuracy. Overall, existing noise levels are relatively low and dominated by constant rather than intermittent sources, providing a robust baseline against which predicted turbine noise can be assessed.

5.7.2 Methodology Assessment Overview

The noise assessment follows the ETSU-R-97 framework and the Institute of Acoustics Good Practice Guide, supported by BS4142 for fixed plant, to establish a robust basis for evaluating operational noise from the turbines and associated infrastructure. Noise was measured at four locations and used to set appropriate limits for both day and night. A cautious, industry-standard noise model was then used to predict noise from the project. Limits for each property were based on background noise levels and recognised guidance,



with slightly higher limits allowed for properties financially involved in the project. Construction, decommissioning and vibration were scoped out due to distance and expected low impact. The assessment then compared predicted turbine and fixed-plant noise levels with the derived limits to determine whether any significant effects would occur.

5.7.3 Potential Effects

Construction noise has been scoped out of detailed assessment because the works will take place at distances where receptors are unlikely to experience notable noise, and any short-term increases will be managed through standard controls in the CEMP.

Operational noise effects relate primarily to turbine noise and, to a lesser extent, noise from fixed infrastructure such as the substation, transformers and the battery storage system. Assessments show that noise from the turbines would stay well within accepted limits at all nearby homes. As a result, turbine noise would not stand out from everyday background noise and would not be noticeable to people living nearby.. Noise from fixed equipment will be limited through careful design so that it remains quiet and does not cause disturbance. As a result, any noise effects would be very small and unlikely to be noticed. Overall, operational noise for both turbines and fixed plant is assessed as not significant.

Decommissioning noise has been scoped out for similar reasons to construction.

5.7.4 Mitigation Measures

Noise mitigation relies primarily on the use of low-noise design features and adherence to agreed operational noise limits. The candidate turbine model includes trailing edge serrations on the blades, which reduce aerodynamic noise at source, and the final turbine selection will be required to meet the assessed noise limits to ensure effects remain acceptable. Any fixed plant, including the substation, transformers and battery storage system, will be specified and, if necessary, acoustically enclosed so that operational noise remains below the derived limits at all nearby dwellings. Construction and decommissioning noise will be managed through standard good-practice controls set out in the Construction Environmental Management Plan, including restricted working hours and careful plant selection. With these measures in place, all identified noise effects are expected to remain not significant.

5.7.5 Assessment Result

The assessment concludes that the Proposed Development will not result in any significant noise effects during construction, operation or decommissioning. Turbine noise is predicted to stay well within required limits at all nearby properties. Noise from the substation, transformers and battery system will also meet the relevant standards, so overall noise effects are expected to be not significant. No cumulative impacts have been identified due to the absence of other nearby wind turbine developments. Overall, the Proposed Development complies with relevant noise guidance, and residual noise effects are assessed as not significant.

5.8 Aviation (EIA Report Chapter 14)

EIA Report Chapter 14: Aviation contains an assessment of the potential impact of the Proposed Development on aviation interests surrounding the Site.

5.8.1 Existing Environment

The Site lies within Class G airspace, an area of uncontrolled airspace used by both civilian and military aircraft where pilots may operate without air traffic control clearance under visual flight rules. The area is covered by various civil and military radar systems, although radar



safeguarding reviews confirm that no NATS en-route radar, MoD air traffic control radar, MoD air defence radar or Met Office radar lies within a range where the Proposed Development would have technical safeguarding implications. There are no licensed or unlicensed aerodromes, gliding sites, parachute centres or microlight sites within the established consultation distances, and no instrument flight procedures intersect the airspace above the Site. The only aviation feature of local relevance is the presence of a designated MoD Tactical Training Area used for military low-flying activity, which requires attention to obstacle lighting requirements. Proposed Development

5.8.2 Methodology Assessment Overview

The aviation assessment applies recognised civil and military safeguarding guidance to identify whether the Proposed Development could affect radar systems, air traffic operations or low-flying activity. The study area was defined by the maximum range of any radar capable of surveilling the airspace above the Site, and all relevant aviation receptors were identified through desk-based review of NATS safeguarding maps, MoD data, aeronautical publications and aviation charts. Radar line-of-sight modelling was undertaken using the RView system and validated across two independent terrain datasets to determine whether the turbines would be detectable and whether any technical effects on radar performance could arise. Each potential receptor was then considered in terms of operational pathways, regulatory requirements and consultation responses to establish whether significant effects could occur and whether mitigation would be required. The methodology follows the principle that wind farms should avoid impacts wherever possible and that, where technical effects are identified, mitigation must be agreed with the relevant aviation authority to ensure safety and regulatory compliance.

5.8.3 Potential Effects

During construction the turbines and cranes will temporarily act as tall vertical structures within an area used for civil and military visual flight, including low-flying activity. These obstacles require appropriate notification to aviation authorities so that their presence can be published in aeronautical information and safely avoided by aircraft. As turbine blades will not rotate until commissioning, there is no prospect of radar detection or technical interference during construction. When standard procedures are followed, including notifying the CAA and MoD of crane use and obstacle details, construction-phase effects reduce to negligible levels and are considered acceptable.

The Site lies within a military Tactical Training Area, and the MoD identified the need for appropriate aviation lighting to ensure continued safety for low-flying aircraft. An Aviation Lighting Impact Assessment has been completed and approved by the CAA and accepted by the MoD. With this lighting scheme in place, the turbines will be clearly visible to pilots without causing operational restrictions, and no radar, safeguarding or air traffic control conflicts are predicted. As a result, operational aviation effects are negligible and fully acceptable to civil and military stakeholders.

Cumulative aviation effects can arise where multiple wind farms jointly affect a safeguarded radar or air traffic control system. Radar modelling and consultation confirm that the Proposed Development does not generate detectable radar impacts and will not contribute to cumulative effects on any civil or military radar, airfield operations or low-flying corridors.

5.8.4 Mitigation Measures

Mitigation for aviation focuses on ensuring that the turbines and construction equipment are safely visible to both civil and military aircraft while avoiding any impact on radar or air traffic operations. During construction, crane activity and turbine erection will be notified in advance to the CAA and MoD so that temporary obstacles are clearly identified within aeronautical information channels, and cranes will follow the lighting and notification requirements in CAP



1096. For the operational phase, an aviation lighting scheme has been developed, assessed through a dedicated Aviation Lighting Impact Assessment and formally approved by the CAA and accepted by the MoD. This scheme ensures that the turbines are visible to pilots conducting military low-flying training while avoiding unnecessary lighting intensity. With these measures in place, construction and operational effects on aviation are reduced to negligible levels and fully satisfy civil and military safeguarding requirements.

5.8.5 Assessment Result

The assessment confirms that the Proposed Development will not give rise to any significant effects on aviation interests during construction, operation or cumulatively. All relevant aviation receptors, including civil and military radar systems, licensed and unlicensed aerodromes and safeguarded aviation facilities, were examined and either confirmed as unaffected or formally scoped out. Military low-flying activity within the Tactical Training Area was the only receptor requiring mitigation, which has been fully addressed through an aviation lighting scheme approved by the CAA and accepted by the MoD.

5.9 Other Issues (EIA Report Chapter 15)

EIA Report Chapter 15: Other Issues covers a range of environmental topics that are relevant to the Proposed Development but do not require a standalone technical chapter. These include shadow flicker, climate and carbon balance, glint and glare, risk of accidents and disasters, population and human health, air quality, the Eskdalemuir Seismic Array, telecommunications and infrastructure, and waste and environmental management. The chapter provides a concise assessment of these issues to ensure that all relevant environmental considerations are addressed.

5.9.1 Shadow Flicker

Shadow flicker may occur when rotating turbine blades periodically cast shadows over windows of nearby buildings. The phenomenon only occurs under specific conditions of sunlight, wind direction and turbine operation, and typically only within around ten rotor diameters of a turbine.

Modelling undertaken for the Proposed Development identifies that, under highly conservative worst-case assumptions (continuous sunshine, turbine alignment and operation, no screening), 13 receptors could theoretically experience more than 30 hours of shadow flicker per year. When realistic sunshine levels and operational patterns are applied, this reduces to four properties.

Where potential effects are identified, the Applicant will implement a Shadow Flicker Protocol, secured by condition, which includes complaint investigation and the use of turbine-specific shadow flicker control modules capable of pausing blade rotation during periods when shadow flicker could occur. With this mitigation in place, no significant effects are expected.

5.9.2 Climate and Carbon Balance

The Proposed Development's wind energy component has been assessed using the Scottish Government's carbon calculator (offline version). The assessment includes emissions associated with turbine manufacture, transport and construction, as well as carbon losses from peat disturbance. The design has avoided deeper peat to minimise emissions.

The assessment indicates that the wind turbines would repay their full lifecycle carbon cost in approximately 1.1 years (based on displacement of fossil-fuel electricity). Thereafter, the



development would generate a substantial net climate benefit. Over a 40-year lifespan, the turbines are estimated to avoid approximately:

- 36,845 tCO₂/yr compared to fossil-fuel generation; and,
- equating to more than 1.4 million tonnes of CO₂ avoided over the project lifetime.

Even against the UK grid-mix, the payback period is estimated at 2.2 years. Overall, the Proposed Development is expected to deliver a strong, long-term carbon benefit.

5.9.3 Risk of Accidents and Other Disasters

The assessment concludes that the Proposed Development presents a very low likelihood of accidents or major incidents. This is due to its rural location, modern turbine safety systems, and the requirement for construction and operation to follow established health and safety regulations.

Rare events such as turbine malfunction, lightning strike, or extreme weather were considered. Turbines incorporate automatic shutdown systems during high winds or icing, and lightning protection is standard. A dedicated safety approach is also in place for the Battery Energy Storage System, informed by a Battery Safety Statement.

Overall, the assessment identifies no significant risks to people, property, or the environment.

5.9.4 Population and Human Health

The assessment concludes that the Proposed Development is not expected to give rise to any significant effects on population or human health. Relevant topics such as landscape and visual impact, hydrology, traffic and transport, and noise have all been assessed in detail within their respective chapters, each identifying appropriate mitigation where necessary to ensure effects remain at acceptable levels. These commitments are brought together in the Schedule of Commitments to ensure they are secured during construction and operation. Beyond the matters already assessed, no additional pathways have been identified through which the Proposed Development would adversely affect the health or wellbeing of local residents.

5.9.5 Air Quality

Construction activities associated with the Proposed Development can result in temporary effects from dust if unmanaged. This can lead to nuisance effects such as soiling of buildings and, if present over a long period, can affect human health. However, the nearest non-financially involved property is over 500m away from any substantial construction works, such as the substation compound, borrow pits, and new tracks. Given this distance, the effects associated with dust or vehicle emissions are considered unlikely. Therefore, the assessment concludes that the effects of dust and vehicle emissions from the construction and operation of the Proposed Development are not significant.

5.9.6 Eskdalemuir Seismic Array

The Proposed Development lies within the consultation zone for the Eskdalemuir Seismic Array, which is an important monitoring station used to support the UK's obligations under the Comprehensive Nuclear Test Ban Treaty. Wind turbines can introduce low-level seismic vibration, and the Ministry of Defence manages a noise budget that limits the cumulative effect of wind farm development within 50km of the array. A national working group involving the Scottish Government, the MOD, Scottish Renewables and developers is developing an updated approach to allocating this noise budget fairly. The Applicant supports this process and will comply with the agreed allocation and any required mitigation. Recent legislation also enables new regulations to be introduced to ensure that development around



Eskdalemuir continues to protect the operation of the seismic array while allowing appropriate wind farm development outside an agreed exclusion distance.

5.9.7 Telecommunications and Other Infrastructure

The assessment confirms that the Proposed Development is not expected to affect telecommunications, microwave links, or television reception. Checks using Ofcom tools identified no fixed links crossing the Site, and none of the telecommunication consultees raised concerns.

Modern digital TV signals are resilient to interference, and if any unexpected issues arise, proportionate mitigation can be applied. The assessment therefore concludes that no significant effects on telecommunications are likely.

5.9.8 Waste and Environmental Management

Waste and environmental management during construction will be controlled through the measures set out in the CEMP, including procedures for waste handling, storage of materials, and pollution prevention. A site-specific Waste Management Plan will be secured by condition to ensure that all construction waste is appropriately managed and disposed of. Given these measures and commitments, waste and environmental management does not require further detailed assessment within the EIA.

6.0 Summary of Significant Effects

The following table (Table 1) summarises the significant effects predicted as a result of the Proposed Development.

Topic	Mitigation	Residual Significant Effects
Landscape and Visual Amenity	Turbine layout designed to reduce visibility, micro-siting to avoid sensitive viewpoints, careful track routing, and implementation of standard good-practice construction measures.	None. Visual effects remain within acceptable levels with no significant effects.
Ecology	Avoidance of sensitive habitats through design, timing of works to avoid key breeding periods, habitat protection measures, pollution prevention, and implementation of the Habitat and Environmental Management Plan	None. No significant ecological effects after mitigation.
Ornithology	Buffering and micro-siting to avoid nests, construction timing to avoid breeding birds, habitat management, and implementation of a Species Protection Plan.	None. Effects are not significant following mitigation.
Hydrology, Hydrogeology, and Geology	Application of a robust CEMP, pollution prevention measures, peat management, appropriate drainage design, and micro-siting to avoid sensitive hydrological features.	None. Effects on water, soils and peat are not significant after mitigation.



Topic	Mitigation	Residual Significant Effects
Cultural Heritage and Archaeology	Turbine micro-siting to avoid known features, archaeological watching brief during ground-breaking works, fencing and exclusion zones around heritage assets.	None. No significant effects on heritage features.
Traffic and Transport	Construction Traffic Management Plan, agreed HGV routes, escorted abnormal loads, signage, wheel-washing and liaison with authorities.	None. All construction and operational traffic effects are not significant.
Noise	Use of low-noise turbine design, compliance with ETSU-R-97 limits, fixed-plant acoustic design standards and CEMP construction controls.	None. Operational turbine noise and fixed-plant noise meet all applicable limits with no significant effects.
Aviation	Approved aviation lighting scheme, construction crane notifications, and compliance with civil and military safeguarding requirements.	None. No significant effects on radar, air traffic or low-flying operations after mitigation.
Other Issues	Shadow flicker control protocol and turbine shutdown system; aviation and telecommunications safeguarding; Battery Safety measures; Construction Environmental Management Plan including peat and waste management; safety controls for construction and operation; compliance with Eskdalemuir seismic requirements.	None. No significant effects are predicted across shadow flicker, telecommunications, seismic considerations, waste management or public safety.

6.1 Conclusion Summary

The Environmental Impact Assessment has examined the Proposed Development in detail, informed by extensive baseline surveys, consultation with statutory consultees and stakeholders, and an iterative design process that has sought to avoid and reduce environmental effects wherever possible. Mitigation has been embedded into the design from the outset, and further good-practice measures will be secured through construction and operational management plans. Following the application of this mitigation, the assessments conclude that no significant adverse residual effects are predicted across any topic area. Where potential effects could arise during construction or operation, these would be localised, temporary or effectively managed through established best-practice controls, monitoring and regulatory compliance. Overall, the Proposed Development is considered capable of delivering its renewable energy, climate change and socio-economic benefits without giving rise to unacceptable environmental impacts.



7.0 Next Steps and Further Information

D&GC will consider the Town and Country Planning / Major application and the findings of the EIA. Before making a decision on the application, the D&GC will consult a number of consultees and will consider all representations received from other parties including members of the public.

A copy of the NTS will be made available for download from the applicant website at:

<https://www.westscales.com/>

Hard copies of this NTS are available free of charge from:

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Paper copies of the EIA Report may be purchased by arrangement from the above address for £1800 per copy, or £20 per USB memory stick copy. The price of the paper copy reflects the cost of producing all of the Landscape and Visual photographs at the recommended size. As such, a USB memory stick is recommended.

Hard copies of the EIA Report can be viewed at the following location during their normal opening hours:

- Dumfries and Galloway Council offices, Kirkbank House, English Street, Dumfries, DG1 2HS.





