



Environmental Impact Assessment Scoping Report

Auchinoon Energy Park

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Basis of Report

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Acronyms and Abbreviations

AGL	Above Ground Level
AILV	Abnormal Indivisible Load Vehicle
AM	Amplitude Modulation
AMSL	Above Mean Sea Level
ATC	Air Traffic Control / Automatic Traffic Count
AWI	Ancient Woodland Inventory
BAP	Biodiversity Action Plan
BBPP	Breeding Bird Protection Plan
BEIS	Department for Business, Energy & Industrial Strategy
BESS	Battery Energy Storage System
BGS	British Geological Survey
BoCC	Birds of Conservation Concern
BTO	British Trust for Ornithology
BSBI	Botanical Society of Britain and Ireland
CAA	Civil Aviation Authority
CEMP	Construction Environmental Management Plan
CEC	City of Edinburgh Council
CIEEM	Chartered Institute of Ecology and Environmental Management
CNS	Communications, Navigation and Surveillance
CTMP	Construction Traffic Management Plan
CTR	Control Zone
DIA	Drainage Impact Assessment
DIO	Defence Infrastructure Organisation
DPEA	Directorate for Planning and Environmental Appeals
DTM	Digital Terrain Model
DWPA	Drinking Water Protected Area
ECow	Ecological Clerk of Works
ECU	Energy Consents Unit
EIA	Environmental Impact Assessment
EIR	Environmental Information Regulations
ETSU-R-97	Assessment and Rating of Noise from Wind Farms
EU	European Union
FRA	Flood Risk Assessment
GDL	Garden and Designed Landscape
GIS	Geographic Information System
GLTA	Ground Level Tree Assessment



GPG	Good Practice Guide
GWDTE	Groundwater Dependent Terrestrial Ecosystem
HES	Historic Environment Scotland
HGV	Heavy Goods Vehicle
HLA	Historic Land-Use Assessment
HMBEP	Habitat Management and Biodiversity Enhancement Plan
HV	Heavy Vehicle
ICAO	International Civil Aviation Organisation
IEF	Important Ecological Feature
IEMA	Institute of Environmental Management and Assessment
INNS	Invasive Non-Native Species
IOA	Institute of Acoustics
ISEP	Institute of Sustainability and Environmental Professionals
LB	Listed Building
LBAP	Local Biodiversity Action Plan
LEPO	Long Established of Plantation Origin
LI	Landscape Institute
LLA	Local Landscape Area
LVIA	Landscape and Visual Impact Assessment
MAVRIC	Mapping Application for Visualising Road Injury Casualties
MOD	Ministry of Defence
NBN	National Biodiversity Network
NCAP	National Collection of Aerial Photography
NCN	National Cycle Network
NERL	NATS En Route Ltd
NHZ	Natural Heritage Zone
NPF4	National Planning Framework 4
NRTF	National Road Traffic Forecast
NSA	National Scenic Area
NSR	Noise Sensitive Receptor
NVC	National Vegetation Classification
OCEMP	Outline Construction Environmental Management Plan
OS	Ordnance Survey
PAN	Planning Advice Note
PCA	Peat Condition Assessment
PLHRA	Peat Landslide Hazard and Risk Assessment
PMP	Peat Management Plan
PSR	Primary Surveillance Radar



PV	Photovoltaic
PVA	Potentially Vulnerable Area
RFQ / RQF	Registered Qualifications Framework
RVAA	Residential Visual Amenity Assessment
SAC	Special Area of Conservation
SBL	Scottish Biodiversity List
SEPA	Scottish Environment Protection Agency
SLC	South Lanarkshire Council
SLR	SLR Consulting Limited
SM	Scheduled Monument
SNH	Scottish Natural Heritage (now NatureScot)
SPA	Special Protection Area
SPP	Species Protection Plan
SSSI	Site of Special Scientific Interest
TMA	Terminal Area
TWIC	The Wildlife Information Centre
UHF	Ultra High Frequency
UKBAP	UK Biodiversity Action Plan
UXO	Unexploded Ordnance
VP	Vantage Point
WCA	Wildlife and Countryside Act
WFD	Waste Framework Directive
WHS	World Heritage Site
WLA	Wild Land Area
WLC	West Lothian Council
WPAC	Wind Power Aviation Consultants
WSP	WSP Group
WTS	Wind Turbine Syndrome
ZTV	Zone of Theoretical Visibility



1.0 Introduction

1.1 Overview

This Scoping Report is submitted on behalf of Eurowind Energy Limited (the Applicant) for the Auchinoon Energy Park (the 'proposed development'), located on land approximately 2km south of the centre of Livingston and approximately 13km west of the City of Edinburgh (the 'Site'). It is the intention of the Applicant to submit an application for consent under Section 36 of the Electricity Act 1989 (the 1989 Act) and gain direction under section 57 (2) of the Town and Country Planning (Scotland) Act 1997, that planning permission for the development is deemed to be granted.

The proposed development is locally wholly within the administrative boundary of West Lothian Council (WLC), approximately centred at British National Grid (BNG) 307856 662617. The Site location and Site boundary are set out on **Figure 1.1**.

The proposed development would consist of up to eight wind turbines (with blade tips up to 200m in height), a solar photovoltaic (PV) array covering approximately 60 hectares (ha), a battery energy storage system (BESS), and associated infrastructure. The proposed development would have a total installed capacity exceeding 50MW. Further details of the proposed development are provided in **Section 3.0**.

This Scoping Report forms the Applicant's written request to the Energy Consents Unit (ECU), to provide an EIA Scoping Opinion. The Scoping Report provides a description of the development proposal, the Site and surrounding area, summary of the likely impacts of the proposed development, and the methodology for the assessment of those impacts. The Scoping Report provides the required information for the Scottish Ministers and key consultees to form a Scoping Opinion on the proposed development and the Environmental Impact Assessment (EIA) required to support the application for consent.

The findings of the EIA process will be used to inform the final design of the proposed development and assess its predicted environmental effects. The results of the EIA will be presented in an EIA Report that will be submitted with the Section 36 application made to the ECU.

1.2 Purpose of the Scoping Report

The proposed development will constitute a Schedule 2 development as provided for by the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (as amended) (the EIA Regulations 2017) and requires that the Section 36 application be accompanied by an EIA Report setting out the findings of the EIA.

Undertaking an EIA Scoping Study is good practice¹ and an important step in the EIA process as it allows all parties involved to agree key environmental issues relevant to the proposed development and to agree on the methodology used for assessment. The Scoping stage seeks to engage the determining authority and other stakeholders at an early stage in the planning process; and ensures that key opinions, based on local understanding, are identified.

In developing this Scoping Report, the Applicant has had regard to the Scottish Renewables 'Guidelines on Streamlining Environmental Impact Assessment for Onshore Wind Farms'

¹ Scottish Natural Heritage (SNH) and Historic Environment Scotland (HES) (2018) Environmental Impact Assessment Handbook Version 5



(September 2025)², which provide a sector-specific framework for delivering proportionate, consistent and efficient EIAs for onshore wind development.

In line with the EIA streamlining guidance, this Scoping Report does not include a detailed planning policy section. The purpose of the Scoping Report is to define the environmental scope of the EIA and therefore a standalone policy section would not contribute to the proportionality, or efficiency aims set out in the streamlining guidance.

The planning policy context is therefore more appropriately addressed within the Planning Statement which will be submitted at application stage.

The specific aims of this Scoping Report are to:

- Identify the technical subject areas that may be subject to significant environmental effects as a result of the proposed development and therefore require further study;
- Identify the technical subject areas that are unlikely to be subject to significant environmental effects and can be scoped out from further study;
- Provide a basis for a consultation process to agree the scope and content of the EIA with the ECU;
- Provide a basis for agreeing methodologies for undertaking required studies with the ECU, based upon currently available baseline data, Site characteristics and best practice in individual technical disciplines; and
- Provide all statutory consultees and stakeholders with an opportunity to comment on the proposed development at an early stage.

In making its formal Scoping Opinion, under Regulation 12(4)(a) of the EIA Regulations, the ECU must consult with a number of consultees and incorporate their views within the Scoping Opinion.

Upon receipt of the Scoping Opinion from the ECU, the Applicant will continue the EIA process that will lead to the preparation of an EIA Report, paying due cognisance to the findings and responses received. In the 2017 version of the Environmental Impact Assessment Directive (2014/52/EU), scoping remains voluntary, however, if a Scoping Opinion is requested, there is a requirement to base the EIA on the Scoping Opinion received.

1.3 Notice of Intention

The Applicant, Eurowind Energy Limited hereby gives the ECU notice in writing that it intends to make a Section 36 application (as detailed above), and to accompany such an application with an EIA Report.

This notice, made pursuant to Regulation 12 of the EIA Regulations, includes information necessary to identify the location, the nature and purpose of the proposed development, and indicates the main environmental consequences to which the prospective Applicant proposes to refer to in its EIA.

1.4 The Applicant

Established in Denmark in 2006, Eurowind Energy Limited is one of Europe's leading renewable energy developers, with operations in 16 countries across Europe and the United States.

² Scottish Renewables (2025) *Guidelines on Streamlining Environmental Impact Assessment for Onshore Wind Farms*. Available at: [Streamlining EIA Guidance September 2025 original.pdf](#)



Eurowind Energy Limited employs an experienced UK team based in Glasgow that was established in 2021. Eurowind Energy UK has one operational wind farm and one consented 16MW solar farm at Howpark, in the Scottish Borders. As well as the recently consented flagship project Uisenis Wind Farm on the Isle of Lewis (189MW) and a growing development portfolio of over 2.5GW across the UK.

Eurowind Energy Limited develop, construct, and operate wind, solar photovoltaic and 'Power to X' assets across Europe and in the USA. They are dedicated to local long-term solutions and believe that the future of energy supply is renewable, clean, and sustainable. Projects are developed in close collaboration with a range of local stakeholders to develop smart schemes that work for all. Eurowind Energy Limited only engages in projects that they, themselves, want to invest in.

Further information on Eurowind Energy Limited can be found on its company website at <https://www.eurowindenergy.com>.

1.5 SLR Consulting Limited

SLR Consulting ("SLR") is a registered Environmental Impact Assessor, Member of the Institute of Environmental Management and Assessment (IEMA) and holder of the ISEP EIA Quality Mark. The company has significant experience in the preparation of planning applications and undertaking EIA for a wide variety of projects, including renewable energy, minerals, waste and infrastructure developments.

The company has significant experience and expertise in the preparation of planning applications and undertaking EIA for a wide variety of projects. SLR's environmental specialists, have the skills and relevant competency, expertise and qualifications to undertake EIA for the proposed development.

Further information on SLR can be found on its corporate website at www.slrconsulting.com.

1.6 Project Team

SLR has been commissioned by the Applicant to undertake the EIA for the proposed development, with input from the following specialist consultants:

- Ecology Consulting in relation to Ornithology;
- Bidwells in relation to Forestry; and
- Wind Power Aviation Consultants Ltd (WPAC) in relation to Aviation.

1.7 Report Structure

Following this introductory section, the remainder of this Scoping Report comprises the following sections:

- **Section 2.0: Site and Surroundings**
 - Describes the location, setting and physical characteristics of the Site and describes baseline features in and around the Site.
- **Section 3.0: The Proposed Development**
 - Provides an outline of the proposed development.
- **Section 4.0: Scoping the EIA**
 - Provides detail on the approach to scoping the EIA, sets out the process of scoping consultation and describes the specialist studies that will be undertaken to assess the impact of the proposed development on the environment, and a reasoning why certain aspects have been scoped out of the EIA.



- **Section 5.0 - 11.0:** Specialist environmental studies that are proposed to be undertaken as part of the EIA process
 - Describes the specialist environmental studies that are proposed to be undertaken to assess the potential significant impacts of the proposed development on the environment and, where relevant, notes those aspects to be scoped out of assessment.
- **Section 12.0: Other Topics**
 - Sets out those topics that are not expected to result in likely significant environmental effects and are consequently not proposed for detailed assessment within the EIA, consistent with the Scottish Renewables Guidance on Streamlining EIA. Each topic is addressed individually, with an explanation of the intended reporting format where further work will accompany the application.
 - Any topics recommended for scoping out are explicitly stated.
- **Section 13.0: Schedule of Mitigation**
 - Summarises the information that will be contained within the Schedule of Mitigation Chapter of the EIA Report.
- **Section 14.0: Invitation to Comment**
 - Provides contact details for responding to matters contained within this Scoping Report.



2.0 Site and Surroundings

2.1 Site Location

The Site lies approximately 2km south of the centre of Livingston, adjoining the northern side of the A70 and is wholly within the administrative boundary of WLC. The boundary of the City of Edinburgh Council (CEC) lies approximately 1.1km to the east of the Site (at its closest point). The Site is centred on British National Grid (BNG) 307856, 662617 (See **Figure 1.1** for Site Location).

The landcover of the Site is generally characterised by rough moorland/grassland with a scattering of relatively small geometric coniferous plantation woodlands.

The Site lies on gently sloping ground, framed by Corston Hill (348 metres (m) Above Ordnance Datum (AOD)) and Auchinoon Hill (351m AOD) to the east of the Site (see **Figure 1.2**). Levels within the majority of the Site range from approximately 200 – 250m AOD. The land within the Site boundary is generally agricultural in nature interspersed with woodland blocks and open moorland. There is a recreational clay target shooting range within the Site boundary and a single 34.5m tall wind turbine.

The north of the Site is intersected by the West Coast Main Line and is also bordered by the Edinburgh to Glasgow via Shotts railway line. The two tracks adjoin immediately to the north east of the Site on their approach to Edinburgh.

A number of watercourses run through the Site. The Morton Burn and the Rae Burn cross centrally while Camilty Water and Whitelea Burn intersect areas in the south west of the Site. Morton Reservoir also lies within the Site boundary (see **Figure 1.2**).

Two overhead electricity transmission lines (275kV and 400kV) cross the Site in a broadly east-west direction across the central and northern sections of the Site boundary (see **Figure 1.3**).

The Site does not contain any Core Paths.

There is one Site of Special Scientific Interest (SSSI) within the Site boundary (Linhouse Valley) which overlaps with the north west Site boundary (see **Figure 6.1**). Areas of Linhouse Valley SSSI also contain areas of woodland listed on the Ancient Woodland Inventory (AWI). There are also pockets of AWI that lie just within the northern and western boundaries of the Site (see **Figure 6.2**).

The Site is not subject to any national landscape designations intended to protect landscape quality or scenery, but it is located partly within the locally designated Pentland Hills Special Landscape Area (SLA) (see **Figure 5.5a-b**).

The majority of the Site is shown by British Geological Survey (BGS) mapping to be underlain by several sedimentary bedrock units comprising sandstones, dolostones and sedimentary rock cycles of Strathclyde Group type. The central extent of the Site is underlain by basaltic lavas and tuffs of the Arthurs Seat Volcanic Formation. Other smaller areas of igneous intrusions are also noted within the northern and southern extents of the Site.

The bedrock is shown to be generally overlain by glacial till superficial deposits. Areas of alluvium are noted along the banks of the watercourses within the Site and small areas of peat are noted within the southern extent of the Site. The hilltops locally, particularly within the eastern extent of the Site, are shown to be absent of any superficial deposits.

Peatland classification mapping indicates that the majority of the Site is underlain by Class 4 peatlands and mineral soils (Class 0). Areas of Class 3 and 5 peatlands are noted within the southern extent of the Site.



An initial Phase 1 low resolution peat depth survey has been undertaken across the Site, the results of the peat depth survey and survey area extents are shown in **Figure 8.1**. Peat depths of between 0 and 3.6m have been recorded within the Site with the deepest areas of peat noted within the southern extent of the Site.

There are two designated heritage assets within the Site boundary (see **Figures 10.2 & 10.3**). Corston Hill Cairn, a Scheduled Monument is located on the western flank of Corston Hill in the north east of the Site. The Linhouse Water Railway Viaduct, a Category A Listed Building is located in the northern extent of the Site.

There are an additional 25 undesignated heritage assets within the Site boundary including enclosures, farmsteads, field boundaries, head-dykes and a cornmill (see **Figure 10.1**).

Previous relevant planning applications on land within and adjoining the Site are set out below:

- Planning reference: LIVE/0680/FUL/13 – Erection of a 34.5m high wind turbine within the Site boundary. This application was granted temporary permission in 2014 for a period of 25 years.
- Planning reference: LIVE/0479/FUL/05 – Formation of a clay pigeon shooting range within the Site boundary. This application was granted permission in 2005.
- Planning reference: 0442/FUL/22 – Selms Muir Solar Farm. This application was granted permission in 2022 for the construction of a Solar Farm and BESS on land immediately bordering the north of the Site.

2.2 Surrounding Area

The nearest residential areas to the proposed development include Murieston and Bellsquarry, located on the southern edge of Livingston.

Murieston lies 600m to the north west of the Site while Bellsquarry is 1.8km from the Site. Other residential properties within the area are standalone, dispersed around Leyden Road and the B7031 to the east and around Murieston South District Road to the west.

The Site is adjacent to the A70 in the south east, which separates it from the Pentland Hills Regional Park. Residential properties are located along the A70 to the south of the Site.

Kirknewton Airfield is located 2.3km to the east, whilst Edinburgh Airport is located approximately 12km north east of the Site.

The WLC Core Paths Plan depicts a core path running between the north western edge of the Site boundary and Murieston (see **Figure 1.4**). This is the Linhouse Circular (core path 13³), which connects with the western end of the East Calder, Calderwood and Linhouse Path (core path 15).

The closest national cycle network (NCN) route (NCN 75) is located 1.4km north of the Site. Long distance walking routes, Cross Borders Drove Route – Route 4 and Scottish National Trail – Route 10 are located 0.2km and 3.5km to the south east of the Site respectively (see **Figure 1.4**).

Harperrig Reservoir lies 400m to the south of the Site, through which the Water of Leith flows.

Ecological designations (excluding ancient woodland) within 10km of the Site are set out on **Figure 6.1**. These include:

- Linhouse Valley SSSI – intersecting the north west boundary of the Site. Designated for its grasslands, woodlands and fens.

³ <https://www.westlothian.gov.uk/media/2631/DCPP-5-Plan-4-Core-Path-Network/pdf/dcpp-plan4.pdf>



- Calderwood SSSI – 0.4km north west of the Site. Designated for woodland and fen.
- Cobbinshaw Moss SSSI – 2.6km south west of the Site boundary. Designated for its blanket bog.
- Hermand Birchwood SSSI – 3km west of the Site. Designated for its woodland.
- Craigengar SSSI – 4.1km south east of the Site. Designated for its bog, heath, flush and flora.
- Craigengar SAC – 4.9km south of the Site. The qualifying features of this area are its dry heaths, upland grassland and flora.
- Cobbinshaw Reservoir SSSI – 5.1km south west of the Site boundary. Designated for its wetland.
- Balerno Common SSSI – 5.4km east of the Site. Designated for its freshwater habitats, fens and bryophyte assemblage.
- Tailend Moss SSSI – 6.8km north west of the Site. Designated for its raised bog.
- River Tweed SAC – 7.3km south east of the Site. This river supports Annex II species including Atlantic Salmon (*Salmo salar*), sea lamprey (*Petromyzon marinus*) and Otter (*Lutra lutra*), as well as other lamprey species (*Lampetras p.*), and priority open water habitat.
- North Esk Valley SSSI – 7.4km south east of the Site. Designated for its nationally important Silurian geological exposures and the biological value of its grassland and valley fen habitats.
- Skolie Burn SSSI – 7.4km west of the Site. Designated for neutral grassland.
- Habbies Howe, Logan Burn SSSI – 8km east of the Site. Designated for its bryophyte and lichen assemblage.
- Petershill SSSI – 9.9km north west of the Site boundary. Designated for its grasslands and geological qualities.

Ornithological designations within 20km of the Site are set out **Figure 7.1**. These include:

- Westwater SPA/Ramsar site – 8km south east of the Site – designated for its wintering population of pink-footed geese and wintering waterbird assemblage.
- Firth of Forth SPA/Ramsar site – 13km north of the Site – designated for a range of internationally important wintering waterfowl populations, and passage Sandwich terns.
- Forth Islands SPA – 17 km north east of the Site – designated for its internationally important breeding seabird populations (including arctic tern, common tern, Sandwich tern, roseate tern, gannet, shag, lesser black-backed gull and puffin) and breeding seabird assemblage (including razorbill, guillemot, cormorant, kittiwake and herring gull).

There are a number of Category A, B and C Listed Buildings in close proximity outwith the Site, the closest of which are the Category A Listed Linthouse Mansion (LB14156), 0.1km west of the Site boundary, and Dovecot, Linnhouse (LB14157), located 0.2km north west of the main house (see **Figures 10.2 & 10.3**).

Harburn House Inventory Garden and Designed Landscape (GDL00208) sits 1.2km west of the Site boundary. Mid Calder, Kirknewton and Livingston Village Conservation Areas are located within 5km of the Site (see **Figures 10.2 & 10.3**).



2.3 Cumulative Context

Table 2-1 details the ‘operational’, ‘consented’ and ‘in planning’ wind farms within 10km of the Site boundary. Cumulative wind energy development is discussed further in **Section 5.0** below and are set out on **Figure 5.2**.

Table 2-1: Cumulative Wind Farm Development

Wind Farm	Status	Distance (m/km)	Specification
Camilty Plantation	Consented	0.6km south west	6 turbines, 149.9m
Harburnhead	Operational	2.6km south west	22 turbines, 126m
Harburnhead Wind Turbine	Consented	2.7km west	1 turbine, 119m
Pearie Law	Operational	4km west	6 turbines, 125m
Pearie Law II	Consented	5km west	4 turbines, 150m (3) 180m (1)
Pates Hill	Operational	6.3km west	7 turbines, 110m
Longhill Burn	Operational	7.4km west	8 turbines, 200m
Woolfords Farm	Consented	7.5km west	3 turbines, 180m
Muirhall & Muirhall South	Operational	8.8 km south west	11 turbines, 135 m (6) 145m (5)
Heathland	Consented	10 km west	14 turbines, 150m (3) 180m (11)
Tormywheel	Operational	11 km west	15 turbines, 111m

Table 2-2 details the ‘operational’, ‘consented’ and ‘in planning’ solar farms and BESS sites within 5km of the Site.

Table 2-2: Operational, consented and in-planning solar farms and BESS

Solar Farm	Status	Distance (m/km)	Specification
Selms Muir Solar Farm	Consented	0.1km east	18MW
Kirknewton Solar & BESS Farm	In-planning	0.5km east	40MW
Brewster Brothers Solar Panels	Consented	4km north	1-1.7MW
The Wyman Gordon Facility Solar Panels, Nettlehill Road	Consented	4.2km north	2MW
Drumshoreland Road BESS	Consented	4.4km north	49.9MW
Broxburn Battery Storage	Operational	4.4km north	20MW
Learielaw BESS	Consented	5km north	100MW



3.0 The Proposed Development

3.1 Constraints and Design Development

The current Site layout presented on **Figure 1.5**, is an early-stage design that has been arrived at, primarily, following consideration of key known Site constraints at this stage. Consideration has also been taken of landscape and visual receptors (including nearby settlements), key cultural heritage receptors, and nearby noise sensitive receptors. A Phase 1 peat probing has been completed with the Site layout taking cognisance of the results of this survey.

The current Site layout will evolve as the EIA process is carried out and as more environmental and Site-specific information becomes available. This will include consideration of the following:

- watercourses and waterbodies on Site;
- habitats on Site;
- further investigation into peat depths on Site;
- cultural heritage and archaeological considerations;
- ornithological considerations;
- landscape and visual considerations;
- residential visual amenity;
- noise sensitive receptors;
- slopes / topography on Site;
- telecommunications;
- site access, traffic and transport;
- aviation and radar; and
- wind yield.

3.2 Scoping Layout

Taking into account the constraints outlined in **Section 3.1**, the current proposed layout comprises eight turbines of up to 200m to tip height and a potential solar PV array covering approximately 60ha. It is not currently known where the onsite substation compound, including the battery storage units will be located and these items of infrastructure are not yet depicted on **Figure 1.5**.

The design objectives for the Site will be refined and used to evaluate further layout iterations which will continue to take account of a range of environmental and technical considerations where feasible to create a final optimised layout for the proposed development.

It is not expected that an amended Site layout will alter the scope of or approach to the EIA and therefore the scoping process is taking place in parallel to the design review. The design optimisation and iteration process from initial feasibility through to the final design will be reported and illustrated in the EIA Report and Design and Access Statement (DAS).

3.2.1 Pre-Application Consultation

A request for pre-application advice on the proposed Scoping layout has been submitted to WLC in March 2026. At the time of submission of the Scoping Report, no formal written response to that request had been received.



3.3 Proposed Development

It is currently anticipated that the proposed development would consist of:

- up to eight wind turbines (up to 200m to blade tip height);
- bi-facial solar photovoltaic (PV) panels mounted on metal frames, covering up to 60ha;
- a network of onsite access tracks and drainage;
- crane hardstandings adjacent to each turbine;
- foundations supporting each turbine;
- power cables linking the turbines and solar PV panels, laid in trenches underground;
- one permanent anemometry mast;
- temporary borrow pit search areas for the extraction of construction aggregates onsite;
- a substation compound including a control building and a BESS; and
- up to two temporary Site construction compounds.

Based on the proposed maximum tip height, it is anticipated that the indicative nominal capacity of each turbine will be approximately 7.2MW, giving a total generation capacity from the wind farm element of the proposed development of up to 57.6MW. A candidate turbine will be specified in the EIA Report where necessary to inform the environmental assessments, particularly operational noise. The final chosen turbine for the Site will not exceed the turbine parameters assessed in the EIA Report.

Assuming an area of 60ha is covered by the solar PV array, the total generation capacity from the solar PV array element of the proposed development would be up to 58MW. The combined total generation capacity of the proposed development is therefore expected to be up to 115.6MW.

Based on conservative estimates, it is anticipated that the proposed development would produce approximately 246,566MWh⁴ of renewable electricity per annum, sufficient to meet the needs of 74,199 homes and offset approximately 110,230⁵ tonnes of CO₂.

3.3.1 Wind Turbines

An indicative layout of eight wind turbines (at 200m tip height) is shown on **Figure 1.5** with proposed grid coordinates provided in **Appendix A**. Each wind turbine would be served by its own electrical transformer. A candidate turbine manufacturer and 'worst case' model will be selected for each technical and environmental discipline for the purposes of the EIA. A competitive procurement process would be undertaken, should consent be forthcoming and prior to construction, to select the final turbine that would be installed onsite.

The specification of the wind turbine would be a typical horizontal axis design, comprising of three rotor blades, a hub and a nacelle. The tower would be tubular and tapered in design and finished in a light grey semi-matt colour.

As the tip heights of the proposed wind turbines are in excess of 150m, aviation obstruction lighting will be required on selected turbines. Aviation consultants on this project (WPAC) will

⁴ Based on Site-specific wind load factor estimate of 39.3%; 2024 industry average solar load factor of 9.5% (DUKES, 2025); and Average annual Scottish domestic household consumption is 3,323 kWh (DESNZ, 2025).

⁵ Based on DESNZ "all non-renewable fuels" emissions statistic of 448 tonnes of carbon dioxide per GWh of electricity supplied in the Digest of UK Energy Statistics (July 2025) Table 5.14 ("Estimated carbon dioxide emissions from electricity supplied").



design a lighting layout which minimises the number of lit turbines whilst fulfilling flight safety requirements and gain approval for the lighting layout from the Civil Aviation Authority.

3.3.2 Solar PV Array

It is anticipated that the indicative solar PV area (shown on **Figure 1.5**) could accommodate up to 88155 tracking solar PV panels/modules set out in rows (known as strings), and ground mounted up to 4.5m above ground level at their most vertical edge, at peak tracker rotation only. Normal operating height would be in the range of 3-3.5m above ground level at their most vertical edge for the majority of the day.

There would be gaps of approximately 3-6m between each solar PV row depending on topography.

The solar PV array would be comprised of the following main components:

- solar PV Panels (up to 88155 modules);
- inverters placed at the end of the solar PV strings as required;
- string combiner boxes to combine multiple strings of solar PV panels;
- transformer stations adjacent to the solar PV array; and
- underground and cable tray cabling to connect the solar PV panels, inverters and transformers to the onsite substation compound.

There would be minimal disturbance to the ground as a result of the installing of the solar PV panels. The panels would be mounted on a frame made of galvanized steel or aluminium, which would be fixed into the ground by posts centred up to 6m apart. Each string of panels would be mounted on a rack comprising metal poles anchored to the ground using pile driven foundations. The piling depth for solar panel frame support legs would be approximately up to 3m, although the actual depth required would depend on the ground conditions and wind speed and direction - as wind dictates the anticipated force on the panels.

The anticipated security measures for the solar PV array part of the proposed development include approximately 12 pole mounted CCTV cameras (3m height) and perimeter security fencing around the array and proposed transformers.

Fencing would likely comprise plain wire interior and barbed wire at height, interlinked with wooden batons (75 x 38 x 1600mm) and end posts (150 x 150 x 2100mm). Vehicle access gates (approximately 4.5m x 1.5m) and a pedestrian access gate would allow entry into the Site.

It is not expected that permanent lighting would be included within the proposed development and would only be required for infrequent operational maintenance at certain times of the year.

3.3.3 Grid Connection

The grid connection for the proposed development has yet to be determined and is subject to an application to the network operator. 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 it has yet to be designed and an application has not yet been made for the grid connection.

The final proposed grid connection will be subject to a separate consent under Section 37 of the Electricity Act 1989 which would be the subject of a separate consenting process. ScottishPower Energy Networks (SPEN), the network owner and operator in the area of the proposed development would own the assets beyond the Site substation. Any cumulative impacts between the grid connection and the proposed development would be considered as



part of the Section 37 application. Therefore, taking account of the *Raeshaw Farms Ltd v Scottish Ministers* [2026] CSIH 10⁶ the proposed application differs from the circumstances in that case, and it would seem unreasonable to consider potential environmental effects of a grid connection route that presently could take any form, and an as yet unknown distance.

On this basis, the grid connection route assessment, including the appraisal of route options and associated environmental effects, is proposed to be scoped out of the EIA for the proposed development.

3.3.4 Site Access

Access to the Site is anticipated to be from existing access points to the Site from the A70. Options for the port of delivery for wind turbine components that are under investigation are the Port of Grangemouth, King George V Dock in Glasgow and Rosyth.

A high-level assessment of potential routes for abnormal loads will be undertaken for the length of wind turbines (the longest component) that would likely be required for the proposed development.

An Abnormal Load Route Assessment (ALRA) will be undertaken to inform the EIA Report.

3.3.5 Construction Works

The overall duration of the construction works would be approximately 18 months.

3.3.6 Energy Park Lifecycle and Decommissioning

It is anticipated that the proposed development would have an operational life of up to 40 years.

At the end of the operational life of the proposed development, it would be decommissioned, or an application may be submitted to repower the Site. The decommissioning period would take up to one year.

The ultimate decommissioning approach would be agreed with WLC and other appropriate regulatory authorities in line with best practice guidance and requirements of the time. This would be done through the preparation and agreement of a Decommissioning and Restoration Plan (DRP). Financial provision for the decommissioning stage would be provided for.

Over the period of operation of the proposed development, it is recognised that there are likely to be changes in legislation and guidance, environmental designations, the status/condition of sensitive environmental receptors and stakeholder objectives that may affect decommissioning and restoration methodologies. The detailed DRP would reflect the scientific ideas and best practice current at the time of decommissioning and restoration.

The environmental effects of decommissioning are considered to be similar to those during construction, excluding the loss of habitat which will have already occurred under construction. Decommissioning is anticipated to be a shorter process than the construction phase.

Environmental effects associated with the construction phase will therefore be considered to be representative of reasonable worst-case decommissioning effects, and no separate assessment of the decommissioning phase will be undertaken as part of the EIA. Decommissioning is therefore proposed to be scoped out of further assessment.

⁶ *Raeshaw Farms Ltd v Scottish Ministers* [2026] CSIH 10 (Inner House, Court of Session).



3.4 Questions to Consultees

- Q3.1** Do consultees agree with the proposal to scope out the assessment of the potential environmental impacts of the grid connection route based on the lack of information on the route and its form?
- Q3.2** Do consultees agree with the proposal for decommissioning to be scoped out of the assessment?



4.0 Scoping the Environmental Impact Assessment

4.1 Introduction

The EIA will be undertaken in accordance with the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (“the EIA Regulations”), Electricity Act 1989 – Sections 36 and 37: Applications Guidance (Scottish Government, 23 February 2022), the best practice guidelines of the Institute of Environmental Management and Assessment (Guidelines for Environmental Impact Assessment) published in 2004; and the Scottish Natural Heritage (SNH) (now NatureScot) handbook on EIA 2018.

The principal purpose of the EIA will be to assess in a systematic manner the potential significant environmental effects of the proposed development. Throughout the process of undertaking the EIA, the results obtained will be used in an iterative manner to influence the design of the proposed development, in order that any significant, detrimental environmental effects can be designed out (embedded mitigation), minimised or negated completely.

The EIA will be led by SLR with input from other specialist technical and environmental consultants (as set out in **Section 1.6**) who have the requisite skills, competencies, expertise and qualification to undertake the EIA for the proposed development.

4.2 Approach to Scoping

This EIA Scoping Study has been based on a combination of desk based and Site survey investigations. This has been complemented by the use of Geographic Information System (GIS) technology to collate and identify potential environmental receptors and environmental designations that may be affected by the proposed development. The GIS datasets comprise details of ecologically important sites, sites of archaeological and/or cultural heritage importance, landscape designations and other important receptors (watercourses etc.). The potential receptors and designated sites that have been identified are shown on the figures within this Scoping Report.

The findings of the desk-based work and the GIS work have been augmented by some Site reconnaissance and survey work, as well as discussion with consultees. Site work undertaken to date includes two years of ornithological surveys and a Phase 1 peat probing exercise.

In accordance with the Scottish Renewables publication ‘Guidelines on Streamlining Environmental Impact Assessment for Onshore Wind Farms’ (2025), this Scoping Report has sought to streamline the Scoping process by avoiding the inclusion of policy and legislative reviews and listing standard guidance.

4.2.1 Potential Environmental Effects

The EIA Regulations (Regulation 4 (2), (3) and (4)) specify that the EIA must:

“(2) identify, describe and assess in an appropriate manner, in light of the circumstances relating to the proposed development, the direct and indirect significant effects of the proposed development (including, where the proposed development will have operational effects, such operational effects) on the factors specified in paragraph (3) and the interaction between those factors.

(3) The factors are —

(a) population and human health;

(b) biodiversity, and in particular species and habitats protected under Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora(a) and Directive 2009/147/EC of the European Parliament and of the Council on the conservation of wild birds;

(c) land, soil, water, air and climate; and



(d) material assets, cultural heritage and the landscape.

(4) The effects to be identified, described and assessed under paragraph (2) include the expected effects deriving from the vulnerability of the development to risks, so far as relevant to the development, of major accidents and disasters.”

Previous experience of other wind farm and solar development sites, combined with the EIA requirements, the knowledge of the Site and possible effects of the proposed development, has led to the identification of the following topics for consideration in the EIA. A summary of known baseline conditions of relevance, predicted effects, any outline mitigation measures that can be recommended at this stage and the proposed scope for the EIA is provided for each of the following topic areas in **Sections 5.0 to 11.0**:

- Landscape and Visual;
- Ecology;
- Ornithology;
- Geology, Hydrology, Hydrogeology and Peat;
- Noise;
- Cultural Heritage and Archaeology; and
- Site Access, Traffic and Transport.

For each topic that is identified as requiring further study, a detailed technical assessment will be carried out in accordance with the scope and methodology agreed with relevant consultees. Each technical assessment will be carried out by an appropriately qualified consultant to prevailing technical and professional standards and reported in a dedicated EIA Report Chapter.

The technical assessments will provide a detailed assessment of potential impacts, identification of mitigation measures and description of the significance of residual effects (those remaining after the mitigation measures have been implemented). The EIA will identify direct and indirect effects, positive (beneficial) and negative (adverse) effects, cumulative effects, and seek to identify, as far as possible, the duration of such effects, whether short term, long term, permanent, temporary, periodic, etc. during the construction and operational phases of the proposed development. The results of each technical assessment will be reported in the EIA Report structured as follows:

- Volume 1: Non-Technical Summary.
- Volume 2: Written Statement.
- Volume 3: Figures and Visualisations.
- Volume 4: Technical Appendices.
- Volume 5: Confidential Information (if required).

In line with the overarching principles of the Scottish Renewables Streamlining EIA Guidance, which emphasises a proportionate approach focused on the likelihood of significant environmental effects, it is intended that a number of topics will not be taken forward for detailed assessment within the EIA Report. As part of the scoping exercise, these topics have been reviewed and, while they do not warrant full EIA assessment, they will still be addressed where appropriate through technical appendices or stand-alone supporting reports. The topics proposed to be scoped out include:

- Socio-economics, Tourism and Recreation;



- Aviation and Radar (the effects of aviation lighting will be fully considered within the LVIA chapter of the EIA Report);
- Forestry;
- Glint and Glare;
- Shadow Flicker; and
- Other Considerations including Telecommunications.

4.2.2 Scoping Consultation

This Scoping Report is issued to Scottish Ministers via the ECU. The ECU will then consult with key consultees and stakeholders before forming its EIA Scoping Opinion. It is anticipated that the agencies and bodies to be consulted will include those listed in **Appendix B**; this list is not exhaustive and other agencies will be consulted during the EIA as and when required.

The purpose of the consultation is to identify:

- Key issues and concerns;
- Issues of environmental importance that may be affected by the proposed development and need to be considered in an EIA;
- Methodologies for undertaking studies and agreement of these methodologies;
- Existing information that will be of assistance in the assessment of the environmental effects; and
- The need for further consultation.

4.2.3 Public Consultation

The Applicant is committed to undertaking meaningful consultation with the local community and stakeholders.

The Applicant will contact local community councils, detailed on the consultee list to introduce themselves, the project, and to request the opportunity to meet and discuss the proposed development, should they wish. Following this, it is anticipated that the first round of in person public exhibitions will be held in Autumn 2026. This will provide an opportunity for the public to learn about the proposed development directly from the project team in attendance and through information panels and visualisations present at the public exhibition venues. It will be an opportunity for the Applicant to encourage and hear first-hand feedback on the proposed development and to help shape development throughout the design and EIA process.

The second public exhibition which is proposed to be held in Spring 2027 will provide the public with an update on progress, how feedback from stakeholders has influenced the proposal, and provide further details about the design of the proposed development, an update on the EIA, and further information on community benefits and submission timescales.

A project website will also be live and available to the public following the submission of the EIA Scoping Report.



5.0 Landscape and Visual

5.1 Introduction

This section of the Scoping Report sets out the proposed methodology and approach to be applied in the production of the Landscape and Visual Impact Assessment (LVIA) for the proposed development. It also presents the suggested scope of the LVIA in terms of those landscape and visual receptors to be scoped in and scoped out of the assessment process. Justification of the suggested scope is presented through a preliminary assessment of the relevant receptors in respect of their potential to be significantly affected by the proposed development.

The purpose of the LVIA is to identify and record the potential significant effects that the proposed development may have on the landscape and visual resource, taking into account effects on the landscape elements of the Site; the landscape character of the Site and surrounding area; areas that have been designated for their scenic or landscape-related qualities; Wild Land Areas and views from various locations such as settlements, routes, hilltops and other sensitive locations. The potential cumulative effects that may arise from the addition of the proposed development to other wind farms will also be considered.

In this (Landscape and Visual) section of the Scoping Report, where distances are referenced in relation to the proposed development, these refer to the distance from the nearest turbine, based upon current positions shown on **Figure 1.5**.

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

- **Figure 5.1: LVIA Study Area with Topography**
- **Figure 5.2: Cumulative Wind Farms**
- **Figure 5.3: Blade Tip Zone of Theoretical Visibility (ZTV) with LVIA Viewpoints**
- **Figure 5.4a-b: Blade Tip ZTV with Landscape Character**
- **Figure 5.5a-b: Blade Tip ZTV with Landscape Planning Designations and Wild Land**
- **Figure 5.6: Blade Tip ZTV with Visual Receptors**

5.2 Environmental Baseline and Potential Sources of Impact

5.2.1 Proposed Study Area

In accordance with best practice guidance⁷, the study area for the LVIA of the proposed development is planned to cover a radius of 45km from the nearest turbine, as shown on **Figure 5.1**. This is generally considered to be the maximum radius within which a significant landscape and / or visual effect could arise given the height of the turbines that are being considered. Furthermore, it is considered that any significant landscape and visual effects arising from other components of the proposed development would be more contained and, as such, the 45km radius would ensure that these are also captured in the LVIA.

Following a review of the ZTV (**Figure 5.3**) for the proposed development, it is considered that a detailed study area with a smaller radius of 15km will be appropriate to identify any potential significant landscape effects. Further justification for this smaller radius is provided later in this section of the Scoping Report.

⁷ NatureScot. (2017) Visual Representation of Wind Farms. Version 2.2



5.2.2 Site Context

The Site encompasses parts of the western and south-western slopes of Corston Hill (348m AOD) and Auchinoon Hill (351m AOD), including Morton Hill, in West Lothian, which are situated approximately 2km, 4km, and 4km south east of the settlements of Livingston, Polbeth and West Calder respectively, and 4km, 5km, and 13km south west of East Calder, Kirknewton, and Edinburgh respectively. This group of settlements contribute to a densely settled landscape that extends across the West Lothian lowlands to the north of the Site. While to the south east of the Site, the Pentland Hills form a notable backdrop in the local landscape, extending from the south west to the north east. The Site is situated within the hill fringes between these settled lowlands and upland hills.

The landcover of the Site is generally characterised by rough moorland/grassland with a scattering of relatively small geometric coniferous plantation woodlands, and Morton Reservoir located to the north. Two overhead electricity transmission lines form a notable feature passing through the central and northern sections of the Site in an east-west direction, while other vertical structures include the mast on Auchinoon Hill and a domestic wind turbine close to Mortonhill Farm. The edges of the Site are defined by the Camilty Burn (and the Camilty Plantation) to the west and north of the Site, the A70 to the south, and Auchinoon and Corston Hills to the east.

Beyond these immediate areas, the association between the Site and more distant parts of the landscape is influenced by the varied topography of the wider surroundings. While the relatively subdued topography of the settled lowlands of West Lothian and Edinburgh and the Firth of Forth beyond increase the susceptibility of these northern landscapes to the proposed development, the Pentland Hills provide a strong degree of containment to the south of the Site, reducing the Site's association with the settled Borders landscapes further to the south. To the south west of the Site, a plateau comprising a mixture of forestry and farmland extends towards Clydesdale.

Wind farm development is relatively widespread across parts of the study area, particularly along the south-western fringes of the Pentland Hills and the plateau moorland to the south west of the Site. Given their short distance from the proposed development, the consented Camilty and Longhill Burn schemes and the operational Harburnhead, Pearie Law, Pates Hill, and Muirhall Wind Farms, all of which are situated to the west and south west of the proposed development, are likely to be of most relevance to the LVIA.

5.2.3 Landscape Character

The landscape of the Site is defined slightly differently by NatureScot's National Landscape Character Assessment (2019) ('NatureScot's LCA') and WLC's appraisal contained in their Landscape Capacity Study for Wind Energy Development in West Lothian (2011) ('the WLCLCS'). The Site is defined by NatureScot's LCA as part of a unit of 'Upland Fringes - Lothians' (269) Landscape Character Type (LCT). The key characteristics of the Upland Fringes - Lothians LCT according to the NatureScot LCA include its:

- *"Broadly undulating, landforms forming a series of smooth rounded hills and slopes, some steep-sided and some gently sloping, shelving gradually from the Uplands northward to merge with rolling farmlands.*
- *Occasional hills where underlying geology incorporates harder strata.*
- *Varied scale, openness and land use reflecting transitional nature between upland and lowland.*
- *Incised watercourses have etched v-shaped valleys into the slopes, often forming deep cleughs.*
- *Occasional larger rivers flow through similar, but larger-scale, v-shaped channels;*



- *Remnant heather moorland and rough grassland on high ground gives way to improved grassland and then to arable land on the lowest elevations, with a parallel transition from post and wire fence and walls to beech and hawthorn hedges.*
- *Some areas of extensive coniferous forest, but tree cover is more frequent in the form of shelterbelts.*
- *Deciduous woodland is restricted to steeper land in river channels, though this includes some important ancient woodlands.*
- *Dispersed settlement pattern of farmsteads and clusters of cottages, with occasional small villages.*
- *Distinctive character of rural road network, dense in places, including local features such as fords and bridges.*
- *Quarries, overhead lines and busy A roads which have localised influence in some parts of the landscape;*
- *Clearly transitional landscape between lowland and upland characters.*
- *Views across the lowland, and to the coast in the east, backed by the ridge lines of the hills to the south.*

The WLCLCS defines the Site as part of the 'Upland Hill Fringes' LCT and also draws a distinction between the slightly different characters of the west and south of the Site, defining it as part of the 'North-West Pentland Fringe' (2(i)) LCT subtype, and the east and north of the LCT, which is defined as part of the 'Gladsmuir / Woodmuir / Camilty Fringe' (2(ii)) LCT subtype. The key differences between the two characterisations are described in the WLCLCS as follows:

"Division of the North-West Pentland Fringe LCT in the LLCA [or Upland Fringes – Lothians LCT in the NatureScot's LCA] into three separate units, namely 2(i) North-West Pentland Fringe; 2(ii) Gladsmuir / Woodmuir / Camilty Fringe, and 2(iii) Harburn/ Hartwood Fringe in the WL-LCA. Within West Lothian the biggest influence on landscape character is topographical relief / landform, with land cover (principally the difference between good quality and poorer quality agricultural land and moorland) also influential. The Upland Hill Fringes LCT is a transitional area between upland and lowland, reflected in the varied scale and enclosure which defines the different landscape units but which have a unity of character due to the similarity of landform."

NatureScot advise that "Where there are topic-specific landscape capacity or sensitivity studies, they would take precedence for informing that development type, e.g. windfarms". Where coverage allows, it is proposed that the LCT units in the WLCLCS will therefore form the basis of the character assessment that will be undertaken in the LVIA. Where parts of the study area are not covered by the WLCLCS, it is proposed that the LVIA will also be informed by the 'East Lothian Supplementary Landscape Capacity Study for Smaller Wind Turbines' (2005), the 'Midlothian Landscape Wind Energy Capacity Study' (2014), the Scottish Borders 'Update of Wind Energy Landscape Capacity and Cumulative Impact Study' (2016), the North Lanarkshire 'Landscape Capacity Study for Wind Turbine Development Background Report (2018)', and South Lanarkshire's 'Landscape Capacity Study for Wind Energy' (2016). The relevant landscape character types from these studies will be illustrated in a figure in the LVIA.

Given the scale of the proposed development, the topography of the local landscape, and the developed context of much of the surrounding landscape, it is considered that significant effects on landscape character are likely to be generally contained to a 15km radius of the proposed turbines. The LVIA will therefore include an assessment of the effects of the proposed development on the LCTs within a 15km detailed study area. For the avoidance of doubt, the assessment of visual effects would not be limited to the same detailed study area



due to the potential for localised visual effects to be experienced at greater distances by high-sensitive receptors.

5.2.4 Landscape Designations

The Site is not subject to any national landscape designations intended to protect landscape quality or scenery, but it is located partly within the locally designated Pentland Hills Special Landscape Area (SLA). A number of other areas within 45km of the proposed development have been attributed a landscape planning designation. **Figure 5.5a** shows these landscape designations with the blade tip ZTV overlain. The designations include nationally important National Scenic Areas (NSAs), Wild Land Areas (WLAs), and Gardens and Designed Landscapes (GDLs) that have been designated by Historic Environment Scotland (HES). There are also a number of locally important SLAs and Local Landscape Areas (LLAs) that have been designated through the relevant Council's Local Development Plan.

In addition to these 'landscape designations', there are also several other designated landscapes that may be susceptible to landscape and/ or visual effects associated with the proposed development. These designations include The Forth Bridge, Antonine Wall, New Lanark and the Old and New Towns of Edinburgh World Heritage Sites (WHS), which are designated for cultural or natural (or mixed) heritage considered to be of 'Outstanding Universal Value (OUV)', and the Pentland Hill Regional Park that is designated primarily for its recreational interests through Section 48A of the Countryside (Scotland) Act 1967.

In the preliminary appraisal set out in **Table 5-1**, the potential effects of the proposed development are considered in respect of all landscape designations. This considers the separation distance between the landscape designation and the proposed development, and whether the landscape designation would be subject to theoretical visibility of the proposed development, having regard to the preliminary ZTV. Thereafter, it is assessed in the final column whether or not these landscape designations should be scoped in or out of the assessment. It should be noted that changes to the layout during the detailed design process may materially alter the potential for significant effects, and therefore the scope of some aspects of the assessment may be reconsidered at a later date.

Table 5-1: Preliminary Appraisal of Potential Effects on Landscape Designations

Designation	Distance to nearest turbine (km)	Scoped In?	Preliminary Appraisal
Pentland Hills Special Landscape Area (West Lothian)	0.0	Yes	The Site is partly located in this SLA and there is widespread theoretical visibility predicted across large parts of the designated area at short distances, and as a result there is potential for significant effects to occur.
Pentland Hills Regional Park	0.4	Yes	The Site borders the Regional Park and there is widespread theoretical visibility across large parts of the designated area at short to medium range distances, and as a result there is potential for significant effects to occur.
Almond and Linthouse Valleys Special Landscape Area	1.1	Yes	The Site is located in this SLA and there is widespread theoretical visibility across parts of the designated area at short distances, and as a result there is potential for significant effects to occur.
Harburn House GDL	2.0	Yes	The Site is located relatively close to this GDL and there is widespread theoretical visibility across large parts of the designated area at short range



			distances. Although there is enclosure from forestry and woodlands, there is potential for significant effects to occur.
Pentlands Special Landscape Area (City of Edinburgh)	3.1	Yes	The Site is located relatively close to this SLA and there is widespread theoretical visibility across large parts of the designated area at short to medium range distances, and as a result there is potential for significant effects to occur.
Pentland Hills Special Landscape Area (Scottish Borders)	4.1	Yes	The Site is located relatively close to this SLA but there is only some limited theoretical visibility predicted across some elevated hill summits and slopes at distances of 4-9km. There is therefore some limited potential for localised significant effects to occur.
Pentland Hills Special Landscape Area (Midlothian)	6.1	Yes	The Site is located a moderate distance from this SLA but there is only some limited theoretical visibility predicted across some elevated hill summits and slopes at distances of 6-16km. There is therefore some limited potential for localised significant effects to occur.
Pentland Hills and Black Mount Special Landscape Area	6.2	Yes	The Site is located a moderate distance from this SLA but there is only some limited theoretical visibility predicted across some elevated hill summits and slopes at distances of 6-16km. There is therefore some limited potential for localised significant effects to occur.
Water of Leith - West Special Landscape Area	7.1	No	The Site is located a moderate distance from this SLA but while some limited theoretical visibility is predicted across the more elevated edges of the SLA, it is considered that there would be a considerable amount of intervening screening from woodland. It is therefore considered that significant effects are unlikely to occur across the SLA.
Ratho Hills Special Landscape Area	7.4	No	The Site is located a moderate distance from this SLA but while some limited theoretical visibility is predicted across the more elevated edges of the SLA, it is considered that there would be a considerable amount of intervening screening from woodland. It is therefore considered that significant effects are unlikely to occur across the SLA.
Upper Almond Special Landscape Area	7.4	No	The Site is located a moderate distance from this SLA but while some limited theoretical visibility is predicted across the more elevated edges of the SLA, it is considered that there would be a considerable amount of intervening screening from woodland. It is therefore considered that significant effects are unlikely to occur across the SLA.
Hatton House GDL	7.6	No	There is widespread theoretical visibility across large parts of the designated area at medium range distances, but the strong degree of enclosure from woodland would screen this visibility in reality, and as a result significant effects are unlikely to occur.
Malleny GDL	9.0	No	There is widespread theoretical visibility across large parts of the designated area at medium range



			distances, but the strong degree of enclosure from woodland and intervening buildings associated with the settlement of Balerno would remove this visibility in reality, and as a result significant effects are unlikely to occur.
Bathgate Hills Special Landscape Area	9.2	Yes	There is some theoretical visibility of the proposed development across parts of this SLA, including its more elevated and relatively open south facing slopes, and while there is considerable development situated between the SLA and the proposed development, there is potential for significant effects to arise upon outward views towards the Pentland Hills.
Newhall GDL	9.5	No	There is no theoretical visibility predicted across this designated landscape and there is therefore no potential for significant effects.
Newliston GDL	10.3	No	There is widespread theoretical visibility across large parts of the designated area at medium range distances, but the intervening distance, strong degree of enclosure from woodland and development within the wider landscape would moderate effects, and as a result significant effects are unlikely to occur.
Gogar Special Landscape Area	10.9	No	There is some limited theoretical visibility across small parts of the designated area at medium range distances, but the intervening distance, the strong degree of enclosure from woodland and development within the wider landscape would moderate effects, and as a result significant effects are unlikely to occur.
Penicuik GDL	11.5	No	There is no theoretical visibility predicted across this designated landscape and there is therefore no potential for significant effects.
Little Sparta (Stonypath) GDL	12.0	No	There is no theoretical visibility predicted across this designated landscape and there is therefore no potential for significant effects.
Millburn Tower GDL	12.8	No	There is widespread theoretical visibility across large parts of the designated area at medium range distances, but the intervening distance, the strong degree of enclosure from woodland and development within the wider landscape would moderate effects, and as a result significant effects are unlikely to occur.
Dundas Special Landscape Area	13.9	No	There is widespread theoretical visibility across large parts of the designated area at medium range distances, but the intervening distance, the strong degree of enclosure from woodland and development within the wider landscape would moderate effects, and as a result significant effects are unlikely to occur.
Dundas Castle GDL	13.9	No	There is some theoretical visibility across parts of the designated area at medium range distances, but the intervening distance, the strong degree of enclosure from woodland and development within



			the wider landscape would moderate effects, and as a result significant effects are unlikely to occur.
Cammo Special Landscape Area	14.7	No	There is some theoretical visibility across parts of the designated area at medium range distances, but the intervening distance, the strong degree of enclosure from woodland and development within the wider landscape would moderate effects, and as a result significant effects are unlikely to occur.
Cammo GDL	14.7	No	There is some limited theoretical visibility across small parts of the designated area at medium range distances, but the intervening distance, the strong degree of enclosure from woodland and development within the landscape would moderate effects, and as a result significant effects are unlikely to occur.
Craigie Hill Special Landscape Area	14.8	No	There is some theoretical visibility across parts of the designated area at medium range distances, but the intervening distance, the strong degree of enclosure from woodland and development within the wider landscape would moderate effects, and as a result significant effects are unlikely to occur.
Hopetoun House GDL	14.8	No	There is widespread theoretical visibility across large parts of the designated area at medium range distances, but the intervening distance and the strong degree of enclosure from woodland would screen this visibility in reality, and as a result significant effects are unlikely to occur.
Forth Coast Special Landscape Area	14.8	No	There is some theoretical visibility across parts of the designated area at medium range distances, but the intervening distance, the strong degree of enclosure from woodland and development within the wider landscape would moderate effects, and as a result significant effects are unlikely to occur.
Craigiehall GDL	15.2	No	There is some limited theoretical visibility across small parts of the designated area at medium range distances, but the intervening distance, the strong degree of enclosure from woodland and development within the landscape would moderate effects, and as a result significant effects are unlikely to occur.
Lower Almond Special Landscape Area	15.3	No	There is some limited theoretical visibility across small parts of the designated area at medium range distances, but the intervening distance, the strong degree of enclosure from woodland and development within the landscape would moderate effects, and as a result significant effects are unlikely to occur.
House of The Binns GDL	15.6	No	There is some limited theoretical visibility across small parts of the designated area at medium range distances, but the intervening distance, the strong degree of enclosure from woodland and development within the landscape would moderate effects, and as a result significant effects are unlikely to occur.



Craiglockhart Special Landscape Area	16.1	No	There is some theoretical visibility across parts of the designated area at long range distances, but the intervening distance, the strong degree of enclosure from woodland and development within the landscape would moderate effects, and as a result significant effects are unlikely to occur.
South Bo'ness SLA Local Landscape Areas	16.1	No	There is some theoretical visibility across parts of the designated area at long range distances, but the intervening distance, the strong degree of enclosure from woodland and development within the landscape would moderate effects, and as a result significant effects are unlikely to occur.
Slamannan Plateau/Avon Valley SLA Local Landscape Areas	16.1	No	There is some theoretical visibility across parts of the designated area at long range distances, but the intervening distance, strong degree of enclosure from woodland and development within the landscape would moderate effects, and as a result significant effects are unlikely to occur.
Blackridge Heights Special Landscape Area	16.2	No	There is some theoretical visibility across parts of the designated area at long range distances, but the intervening distance, strong degree of enclosure from woodland and development within the landscape would moderate effects, and as a result significant effects are unlikely to occur.
Corstorphine Hill Special Landscape Area	16.3	No	There is some theoretical visibility across parts of the designated area at long range distances, but the intervening distance, strong degree of enclosure from woodland and development within the landscape would moderate effects, and as a result significant effects are unlikely to occur.
Dalmeny GDL	16.3	No	There is some limited theoretical visibility across small parts of the designated area at long range distances, but the intervening distance, the strong degree of enclosure from woodland and development within the landscape would moderate effects, and as a result significant effects are unlikely to occur.
North Esk Valley Special Landscape Area	16.3	No	There is no theoretical visibility predicted across this designated landscape and there is therefore no potential for significant effects.
Southern Forth Coast Special Landscape Area	16.3	No	There is some theoretical visibility across parts of the designated area at long range distances, but the intervening distance, the strong degree of enclosure from woodland and development within the landscape would moderate effects, and as a result significant effects are unlikely to occur.
Airngath Hill Special Landscape Area	16.7	No	There is no theoretical visibility predicted across this designated landscape and there is therefore no potential for significant effects.
Forth Bridge World Heritage Site	16.7	No	There is some limited theoretical visibility across small parts of the designated area at long range distances, but the intervening distance and intervening development within the landscape would



			moderate effects, and as a result significant effects are unlikely to occur.
Tweedsmuir Uplands Special Landscape Area	16.9	No	There is some limited theoretical visibility across small parts of the designated area at long range distances, but the intervening distance would moderate effects, and as a result significant effects are unlikely to occur.
Braids, Liberton, Mortonhall Special Landscape Area	17.5	No	There is some limited theoretical visibility across small parts of the designated area at long range distances, but the strong degree of enclosure from woodland and development within the landscape would moderate effects, and as a result significant effects are unlikely to occur.
Upper Clyde Valley and Tinto Special Landscape Area	18.0	No	There is some limited theoretical visibility across small parts of the designated area at long range distances, but the intervening distance would moderate effects, and as a result significant effects are unlikely to occur.
Lauriston Castle GDL	18.1	No	There is some limited theoretical visibility across small parts of the designated area at long range distances, but the strong degree of enclosure from woodland and development within the landscape would moderate effects, and as a result significant effects are unlikely to occur.
Water of Leith, New Town Special Landscape Area	18.3	No	There is some theoretical visibility across parts of the designated area at long range distances, but the intervening distance and the strong degree of enclosure from nearby buildings would moderate effects, and as a result significant effects would not occur.
Antonine Wall World Heritage Site	18.4	No	There is no theoretical visibility predicted across this designated landscape and there is therefore no potential for significant effects.
Roslin Glen And Hawthornden Castle GDL	18.4	No	There is no theoretical visibility predicted across this designated landscape and there is therefore no potential for significant effects.
The Old and New Towns of Edinburgh World Heritage Site	18.6	No	There is some theoretical visibility across parts of the designated area at long range distances, but the intervening distance, the strong degree of enclosure from nearby buildings, and the extensive development situated between the WHS and the proposed development would moderate effects, and as a result significant effects would not occur.
Ferry Hills Local Landscape Area	18.6	No	There is some limited theoretical visibility across parts of the designated area at long range distances, but the intervening distance would moderate effects, and as a result significant effects are unlikely to occur.
The New Town Gardens GDL	18.6	No	There is some limited theoretical visibility across small parts of the designated area at long range distances, but the strong degree of enclosure from development within the landscape would moderate effects, and as a result significant effects would not occur.



Portmore GDL	19.0	No	There is no theoretical visibility predicted across this designated landscape and there is therefore no potential for significant effects.
Dean Cemetery GDL	19.3	No	There is some limited theoretical visibility across small parts of the designated area at long range distances, but the intervening distance and the strong degree of enclosure from development within the landscape would moderate effects, and as a result significant effects would not occur.
South Esk Valley & Carrington Farmland Special Landscape Area	19.5	No	There is no theoretical visibility predicted across this designated landscape and there is therefore no potential for significant effects.
Gladhouse Reservoir & Moorfoot Scarp Special Landscape Area	19.9	No	There is no theoretical visibility predicted across this designated landscape and there is therefore no potential for significant effects.
Princes Street Gardens Special Landscape Area	19.9	No	There is some very limited theoretical visibility across a small part of the designated area at long range distances, but the intervening distance and the strong degree of enclosure from development within the landscape would moderate effects, and as a result significant effects would not occur.

Limited level of influence to the defining characteristics, due to limited / restricted or distant visibility of the proposed development, such that there is no potential for significant effects. Not required to be assessed further within the LVIA. Distances (km) to nearest turbine are shown in brackets.

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| <ul style="list-style-type: none"> • Castle Rock SLA (20.0); • Inverleith SLA (20.1); • Royal Botanic Garden, Edinburgh GDL (20.6); • Letham Hill LLA (20.7); • South West Dunfermline LLA (21.0); • Holyrood, Duddingston and Prestonfield SLA (21.0); • Upper Forth LLA (21.0); • Palace of Holyroodhouse GDL (21.1); • Prestonfield House (Priestfield) GDL (21.2); • Calton Hill SLA (21.3); • Middle Clyde Valley SLA (21.9); • Inchcolm LLA (22.5); • Duddingston House GDL (22.5); • Fordell Castle GDL (22.7); • St Colme GDL (22.8); • Cullaloe Hills and Coast LLA (22.7); • Pittencreeff Park GDL (24.4); • Valleyfield GDL (25.0); | <ul style="list-style-type: none"> • Douglas Valley SLA (32.9); • Blair Adam GDL (33.0); • Lower Clyde & Calderglen SLA (33.6); • Loch Leven and Lomond Hills LLA (33.7); • Denny Hill SLA (34.2); • Port Seton to North Berwick Coast SLA (34.8); • Kilsyth Hills SLA (35.3); • Seton House (Palace) GDL (35.4); • Southern Hills LLA (35.5); • Garden County Farmland SLA (35.6); • Dysart House And Ravenscraig Park GDL (36.5); • Colzium Lennox Estate GDL (37.2); • Bar Hill LLA (37.5); • Forest SLA (37.9); • Castle Campbell GDL (38.2); • Cowden Japanese-Style Garden GDL (38.6); • Gosford House GDL (38.7); • Wemyss Coast LLA (38.9); |
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• Culross Abbey House GDL (25.3); • Aberdour Castle GDL (25.3); • Dunimarle Castle GDL (25.6); • The Falls of Clyde GDL (26.0); • The Murrel GDL (26.3); • Fisherrow Sands SLA (26.7); • Tulliallan GDL (29.0); • Inchkeith LLA (29.2); • Prestonpans Coast SLA (29.9); • Cleish Hills LLA (30.1); • Ochils SLA (31.0); • Dunmore Park GDL (31.4); • The Pineapple GDL (31.9); • Raith Park And Beveridge Park GDL (32.4); • Chatelherault (Wham) GDL (32.8); • Loch Ore and Benarty LLA (32.8);	• Leadhills and the Lowther Hills SLA (38.9); • Wemyss Castle GDL (39.2); • Ochil Hills LLA (39.9); • Lammer Law, Hopes to Yester SLA (40.6); • Lomond Hills LLA (41.1); • Western Ochils LLA (41.5); • Cowane's Hospital GDL (42.1); • Kings Knot GDL (42.1); • Campsie Fells LLA (42.4); • Airthrey Castle GDL (42.5); • Luffness GDL (42.6); • Garleton Hills SLA (42.8); • Touch GDL (43.0); • 2 Uplands and Moorlands LLA (43.7); and • Glazert Valley LLA (44.0); and • Balbirnie GDL (44.3).
No theoretical visibility of the proposed development. Not required to be assessed further within the LVIA. Distances (km) to nearest turbine are shown in brackets.	
• Mavisbank GDL (20.2); • Tweed Valley SLA (21.2); • Craigmillar Castle GDL (21.4); • The Drum GDL (21.9); • Melville Castle GDL (22.0); • The Drum SLA (22.0); • Edmonstone House SLA (22.4); • Arniston GDL (23.3); • Callendar Park GDL (23.4); • Newbattle Abbey GDL (24.0); • Dalkeith House (Palace) GDL (24.2); • Stobo Castle GDL (24.8); • Lee Castle GDL (25.5); • Newhailes GDL (25.9); • New Lanark WHS (26.1) • Tyne Water Valley SLA (26.2); • River Esk SLA (26.2); • Dawyck GDL (26.7); • Pinkie House GDL (28.2); • Elphinston Ridge SLA (28.3); • Clyde Valley SLA (28.4); • Carberry Tower GDL (28.4); • Oxenford Castle GDL (29.8); • Kailzie GDL (29.8); • Prestonhall GDL (30.6); • Dalzell House GDL (31.0); • Fala Moor SLA (32.0);	• Ormiston View & Fountainhall SLA (32.5); • Fala Rolling Farmland & Policies SLA (33.2); • Humble Head & Waters SLA (33.4); • Cockenzie House GDL (34.2); • Winton Castle GDL (34.4); • Barncluith GDL (34.5); • The Glen GDL (34.8); • Cleish Castle GDL (35.2); • Winton Walks SLA (35.3); • Traquair House GDL (35.5); • Saltoun Hall GDL (36.9); • Lammermuir Hills SLA (38.5); • Kinross House GDL (39.6); • Samuelson SLA (39.9); • Tweed, Ettrick and Yarrow Confluences SLA (40.5); • Pilmuir GDL (40.6); • Bowland GDL (41.5); • Clerkington & Tyne SLA (41.8); • Bolton SLA (42.2); • Leslie House GDL (42.8); • Lammermuir Moorland SLA (42.8); • Lennoxlove (Lethington) GDL (43.0); • Yester House GDL (44.0); • Moffat Hills RSA (44.4); • St Mary's Pleasance (Haddington Garden) GDL (44.7).

The findings of this preliminary appraisal are that the special qualities of seven SLAs, views experienced by recreational users of the Pentland Hills Regional Park, and the qualifying features of the Harburn House GDL have the potential to be significantly affected by the proposed development and, therefore, require a detailed assessment. All other nationally and locally designated landscapes are not considered to have the potential to be significantly affected owing to either no theoretical visibility, low levels of theoretical visibility, limited extents of theoretical visibility, substantial separation distances, and / or limited association between the designated landscape and the Site of the proposed development, and/ or intervening



screening from buildings or woodland. In summary, the following designated landscapes will be included in the detailed assessment of the LVIA:

- Pentland Hills SLA (West Lothian);
- Almond and Linhouse Valleys SLA;
- Pentlands SLA (City of Edinburgh);
- Pentland Hills SLA (Scottish Borders);
- Pentland Hills SLA (Midlothian);
- Pentland Hills and Black Mount SLA;
- Bathgate Hills SLA;
- Pentland Hills Regional Park; and
- Harburn House GDL.

The detailed assessment in the LVIA will consider the special qualities of these local landscape designations in order to address the tests provided by Policy 4 of NPF4.

5.2.5 Wild Land

Wild Land Areas (WLA) mapped by NatureScot encompass Scotland's most extensive areas of high wildness. Policy 4 of NPF4 (Scottish Government, 2023) outlines criteria that needs to be satisfied by development proposals in WLAs:

“Development proposals in areas identified as wild land in the NatureScot Wild Land Areas map will only be supported where the proposal:

- will support meeting renewable energy targets; or,*
- is for small scale development directly linked to a rural business or croft, or is required to support a fragile community in a rural area.*

All such proposals must be accompanied by a wild land impact assessment which sets out how design, siting, or other mitigation measures have been and will be used to minimise significant impacts on the qualities of the wild land, as well as any management and monitoring arrangements where appropriate. Buffer zones around wild land will not be applied, and effects of development outwith wild land areas will not be a significant consideration.”

It is therefore of particular relevance to note that the proposed development is not located within a WLA, and therefore its effects on WLAs in the study area will not be a significant consideration to be weighed by the decision maker in the overall planning balance. However, in order to apply a precautionary approach, and due to the often, indistinct nature of the boundaries, it may still be deemed necessary by NatureScot to determine whether the nature of any effects from developments located along the fringes of WLAs are worthy of consideration by the decision maker.

There is only one WLA located within 45km of the proposed development, as shown in conjunction with the scoping layout ZTV in **Figure 5.5a**. The Talla-Hart Fell WLA is located 40.6km from the proposed development, and consequently it is considered that even when taking a precautionary approach, due to the large separation distances, the effects of the proposed development on the perception of defined wildness qualities would not merit significant consideration by the decision maker. As a result, it is proposed that WLAs require no further detailed assessment in the LVIA.



5.2.6 Visual Receptors and Visual Amenity

The LVIA will undertake an assessment of the likely visual effects of the proposed development by considering its wider effects on visual amenity, particularly in relation to principal visual receptors (shown on **Figures 5.6**), including settlements, roads, railway lines, NCN routes, walking routes, and a selection of viewpoints (shown on **Figure 5.3** and listed in **Table 5-2**). In accordance with the EIA Regulations, this assessment will focus on identifying those visual receptors that have the potential to be significantly impacted by the proposed development.

5.2.7 Proposed LVIA Viewpoints

A preliminary representative viewpoint list is presented in **Table 5-2**. The locations of the viewpoints are shown on **Figure 5.3**.

The viewpoints represent sensitive visual receptors in the study area, which have potential to be significantly affected. The selection of the viewpoints also considers the representation of the landscape receptors within which they are located, as well as the representation of the surrounding cumulative context, with both these considerations helping to inform the wider assessment. Collectively, the aim is to achieve a distribution of viewpoints from different directions and distances across the study area, albeit ensuring that the closer range receptors with the greatest potential to be significantly affected are fully represented. Comments on the proposed viewpoint locations are invited as part of this request for an EIA Scoping Opinion.

Table 5-2: Preliminary Viewpoints

ID	Viewpoint name	Grid ref. (Preliminary)		Distance to nearest turbine (km)	Visual receptors represented
1	Auchinoon Brae, A70	309746	662316	1.2	Road users
2	Harperrig Reservoir	309815	660702	1.7	Recreational walkers
3	Harlaw Walk, Livingston	306386	664387	2.5	Residents
4	West Cairn Hill	310727	658397	4.1	Recreational hill walkers
5	Craigengar, A70	304801	657413	4.3	Road users
6	Limefield Lane, West Calder	302390	663552	4.8	Residents
7	Station Road, Kirknewton	310997	667000	5.5	Residents
8	Black Mount	305485	653046	8.1	Recreational hill walkers
9	Dechmont Law, Livingston	303391	669745	8.6	Residents
10	Rowan Terrace, Blackburn	298771	665852	9.0	Residents
11	West Kip	317800	660595	9.3	Recreational hill walkers
12	A89, Broxburn	308008	671749	9.4	Road users and residents
13	Harlaw Reservoir	317981	665109	9.9	Recreational walkers
14	Cairnpapple Hill	298724	671731	12.8	Visitors
15	Forth	294521	654133	14.4	Residents
16	Allermuir Hill	322700	666170	14.7	Recreational hill walkers



ID	Viewpoint name	Grid ref. (Preliminary)		Distance to nearest turbine (km)	Visual receptors represented
17	Edinburgh Castle	325036	673529	20.1	Visitors
18	Arthur's Seat	327522	672942	21.9	Recreational walkers

Visualisations and figures will be produced to NatureScot's standards, as set out in 'Visual Representation of Wind farms: Version 2.2' (February 2017). In line with NatureScot guidance, photomontages illustrating the proposed wind turbines will be prepared for viewpoints within a 20km radius of the outermost turbines associated with the proposed development.

5.2.8 Residential Properties

The need for, and scope of, a Residential Visual Amenity Assessment (RVAA) will be reviewed during the initial assessment stages of the LVIA and agreed with consultees. It is currently envisaged that an RVAA will be required, and in accordance with the relevant Landscape Institute guidance, it is likely that a preliminary study area of approximately 1.5 to 2km radius from the proposed turbine positions will be appropriate in order to begin identifying properties to include in the assessment.

5.2.9 Aviation Lighting

A factor in the development of turbines at or greater than 150m in height is the likely requirement for them to have visible red, medium intensity (2,000 candela) lights fitted to the turbine nacelles in accordance with International Civil Aviation Organisation (ICAO) and Civil Aviation Authority (CAA) guidance, to ensure civil aviation safety at night. The details of the lighting requirements for the proposed development are currently being defined along with potential mitigation measures (see **Section 12.0**). Details of the confirmed visible aviation lighting scheme and any proposed mitigation agreed with the CAA will be provided in the LVIA.

If required, a proportionate Aviation Lighting Impact Assessment including visualisations illustrating turbine lighting at night will be prepared, for inclusion in the LVIA. The hub height ZTV will be used to identify where, theoretically, there could be direct line of sight of the lights from the surrounding area, and if applicable a lighting intensity ZTV will also be prepared to indicate possible reductions in effects as a result of vertical direction intensity lighting mitigation. Where relevant, cumulative ZTVs illustrating areas where lighting from more than one wind farm are predicted to be theoretically visible may also be produced to accompany the assessment.

SLR has undertaken Aviation Lighting Impact Assessments and visualisations for several other wind farm projects in the UK, and together with the recently published guidance produced by NatureScot, this will inform the approach to assessment of turbine lighting and the basis of our professional judgement about the level of effect arising from the proposed lighting. This assessment will include an appraisal of effects for each relevant receptor, including all viewpoints in the 45km study area where there is potential for significant effects to be experienced.

In order to inform this assessment, it is proposed that photographs will be taken from three of the readily accessible viewpoints at dusk (photographs to be taken 30 minutes after the period of civil twilight) and SLR will prepare visualisations to represent the effects of the maximum case lighting intensity scenario on these views. It is proposed that the following three viewpoints will be used to represent the effects of night-time lighting:

- Viewpoint 3: Harlaw Walk, Livingston;
- Viewpoint 9: Dechmont Law, Livingston; and
- Viewpoint 18: Arthur's Seat.



These viewpoints have been selected to represent the effects on road-users, walkers and residents in the local area who would be most likely to be affected. Night-time visualisations will be prepared in accordance with NatureScot's recently published Guidance on Aviation Lighting Impact Assessment (2024).

5.2.10 Cumulative Wind Energy Development

The assessment of cumulative effects describes the effects arising from the addition of the proposed development to a cumulative baseline of operational, under construction, consented and application stage wind farms. This assessment will include supporting graphics such as cumulative ZTVs and cumulative wirelines.

Stakeholders, including WLC, will be consulted over the final list of sites to be considered within the detailed cumulative assessment. It is proposed that the cumulative assessment will include only those wind farms with the potential to contribute to significant cumulative effects arising from the addition of the proposed development. Operational and under construction wind farms will be considered as part of the baseline conditions in the LVIA, with the cumulative effects assessment focusing on the contribution of the proposed development to effects arising, in addition to consented and application stage projects.

An initial review of the broad wind farm context within a 60km radius has been undertaken, based on the latest NatureScot mapping of large-scale wind farm development. It is considered that any cumulative effects that would occur, will arise as a result of the pattern of wind farm development within a shorter radius than 60km. Known cumulative wind farms within a 45km radius of the Site are shown for scoping purposes in **Figure 5.2**.

In respect of the proposed development, there are likely to be notable cumulative interactions with the consented Camilty scheme and the operational Harburnhead, Pearie Law, and Pates Hill Wind Farms. There are a number of other wind farm developments in the local area that may also contribute to cumulative effects in combination with the proposed development.

Taking this into account and in combination with the ZTV coverage anticipated, it is considered that any significant cumulative effects that might occur are likely to arise as a result of the pattern of development within a 20km radius, rather than as a result of changes beyond this distance. It is therefore proposed that a detailed cumulative plan will be produced showing the locations of wind farms within 20km of the proposed development that are operational, under construction, consented or which are at application stage and where the turbines are greater than 50m to blade tip. Sites that lie outwith a 20km radius of the proposed development in their entirety will be discounted due to their distance from the proposed development and the reduction in likely effects as a result of the local topography.

In accordance with NatureScot and Scottish Government guidance it is not usual to assess scoping stage sites unless they are of particular relevance to the proposed development, where sufficient detail is available to inform the assessment, and where they are likely to come forward to application. It is therefore proposed to scope out scoping sites from the cumulative assessment, unless otherwise requested by WLC or NatureScot.

5.2.11 Key Sensitivities

The following key sensitivities will form the focus of the LVIA:

- potential impacts on the landscape of the Site;
- potential effects on landscape character, in particular LCT units within a 15km radius of the proposed development;
- potential effects on the special qualities of the Pentland Hills, the Almond and Linhouse Valleys, Pentlands, Pentland Hills, Pentland Hills and Black Mount, and Bathgate Hills SLAs



- potential effects on views experienced by recreational users of the Pentland Hills Regional Park;
- potential effects on the landscape of the Harburn House GDL;
- potential visual effects that would be experienced by the principal visual receptors within the study area, including those experienced by receptors located at settlements, roads and recreational routes within the immediate context of the proposed development;
- potential cumulative landscape and visual effects, in particular with other wind farm developments within 20km of the proposed development;
- the visual amenity experienced at residential properties within 1.5-2km of the turbines within the proposed development; and
- potential effects associated with the visibility of the proposed development at night due to visible aviation lighting.

5.3 Method of Assessment and Reporting

The LVIA will consider the potential effects of the proposed development during the following development stages:

- construction and decommissioning⁸ of the proposed development; and
- operation of the proposed development.

Landscape and visual receptors may or may not be affected at all three development stages.

5.3.1 Categories of Effects

The LVIA is intended to determine the effects that the proposed development will have on the landscape and visual resource. For the purposes of assessment, the potential effects on the landscape and visual resource are grouped into eight categories:

- **Physical effects:** physical effects are restricted to the area within the Site and are the direct effects on the existing fabric of the Site. This category of effects is made up of landscape elements, which are the components of the landscape, such as rough grassland and moorland, that may be directly and physically affected by the proposed development.
- **Effects on landscape character:** landscape character is the distinct and recognisable pattern of elements that occurs consistently in a particular type of landscape and the way that this pattern is perceived. Effects on landscape character arise either through the introduction of new elements that physically alter this pattern of elements or through visibility of the proposed development that may alter the way in which the pattern of elements is perceived. This category of effects is made up of landscape character receptors, which fall into two groups; landscape character areas and landscape-related designated areas.
- **Effects on the special qualities of NSAs and LLAs/ SLAs:** an assessment is carried out to cover the potential for significant effects on the landscape's special qualities.

⁸ Effects arising from the process of decommissioning will not be covered in detail since they are of a similar nature to construction issues, but of a smaller scale and shorter duration.



- **Effects on wild land:** the assessment of the effects on the wild land qualities of the WLAs through consideration of the impacts on the physical attributes and perceptual responses identified.
- **Effects on views:** the assessment of the effects on views is an assessment of how the introduction of the proposed development will affect views throughout the study area. The assessment of effects on views is carried out in relation to representative viewpoints and principal visual receptors.
- **Effects on views from properties:** Residential Visual Amenity Assessment (RVAA) is carried out for properties within 1.5-2km of the turbine envelope, in line with Landscape Institute (LI) technical guidance for both day and night.
- **Effects of Turbine Lighting:** should visible aviation lighting be required, an Aviation Lighting Impact Assessment will be prepared to assess the potential visual impact of the turbine lights.
- **Cumulative effects:** cumulative effects arise where the study areas for two or more wind farms overlap so that both wind farms are experienced at a proximity where they may have a greater incremental effect, or where wind farms may combine to have a sequential effect. In accordance with guidance, the LVIA assesses the effect arising from the addition of the proposed development to the cumulative situation.

5.3.2 Assessment Approach

The objective of the LVIA is to predict the likely significant effects on the landscape and visual resource. In line with the EIA Regulations, the LVIA effects are assessed to be either significant or not significant.

The significance of effects is assessed through a combination of two considerations: the sensitivity of the landscape or visual receptor and the magnitude of change that will result from the addition of the proposed development.

The geographic extent over which the landscape and visual effects will be experienced is also assessed, which is distinct from the size or scale of effect. This evaluation is not combined in the assessment of the level of magnitude but instead is used in determining the extent in which a particular magnitude of change is experienced and the extent of the significant and non-significant effects. The extent of the effects will vary depending on the specific nature of the proposed development and is principally assessed through analysis of the geographical extent of visibility of the proposed development across the landscape or principal visual receptor.

The duration and reversibility of effects on views are based on the period over which the proposed development is likely to exist, and the extent to which the proposed development will be removed, and its effects reversed at the end of that period. Duration and reversibility are not incorporated into the overall magnitude of change and may be stated separately in relation to the assessed effects.

The 'nature of effects' relates to whether the effects of the proposed development are adverse, neutral or beneficial. Guidance provided in GLVIA3 states that 'thought must be given to whether the likely significant landscape and visual effects are judged to be positive (beneficial) or negative (adverse) in their consequences for landscape or for views and visual amenity' but does not provide an indication as to how that may be established in practice. The nature of effect is therefore one that requires interpretation and reasoned professional opinion.

SLR generally adopts a precautionary approach which assumes that significant landscape and visual effects from commercial wind energy development will be weighed on the negative side of the planning balance, although positive or neutral effects may arise in certain situations.



5.3.3 Baseline Survey Methodology

5.3.3.1 Desk Study

The assessment is initiated through a desk study of the Site and the study area. This study identifies aspects of the landscape and visual resource that may need to be considered in the landscape and visual assessment, including landscape-related planning designations (i.e. NSAs), landscape character typology, WLAs, operational and potential cumulative wind farms, and views from routes (including roads, railway lines, NCN Routes, long-distance walking routes and recreational sailing routes), and settlements.

The desk study also utilises Geographic Information System (GIS) and Resoft Windfarm software to explore the potential visibility of the proposed development. The resultant ZTV diagrams and wirelines provide an indication of which landscape and visual receptors are likely to be key in the assessment.

5.3.3.2 Field Survey

Field surveys will be carried out throughout the study area, although the focus is on the areas shown on the ZTV to gain theoretical visibility of the proposed development. The baseline field survey has four broad stages:

- A preliminary familiarisation around the study area in order to visit the aspects of the landscape and visual resource that have been identified through the desk study and verify their existence and importance. Important features and characteristics that have not become apparent through the desk study are also identified, and particularly sensitive receptors are noted in order to inform the design process.
- A visit to the Site and its surrounding landscape, in order to establish the potential of the Site for the proposed development and to identify the most suitable areas for development in landscape and visual terms, along with any constraints that may restrict the developable area.
- Further field survey around the wider study area, concurrent with the design process for the proposed development, to identify those receptors that are likely to be particularly important in the assessment and inform the layout design, possible turbine height, and the extent of the proposed development.
- The identification of representative viewpoints to include in the landscape and visual assessment, including a wide range of receptors, landscape character, and directions and distances from the proposed development.

5.3.4 Methodology for the Assessment of Effects

The LVIA will follow SLR's methodology devised specifically for the assessment of wind farm developments, and which generally accords with 'Guidelines for Landscape and Visual Impact Assessment: Third Edition ('GLVIA3'), the key source of guidance for LVIA. The methodology will be provided in full in the LVIA.

The sensitivity of the landscape or visual receptor and the magnitude of change that will result as a consequence of the addition of the proposed development are informed by various factors.

5.3.4.1 Sensitivity of Receptors

The sensitivity of the baseline conditions, including the importance of environmental features on or near to the proposed development or the sensitivity of potentially affected receptors, will be assessed in line with best practice guidance, legislation, statutory designations and / or professional judgement.



The sensitivity of a receptor is an expression of the combination of the judgements made about the susceptibility of the receptor to change and the value related to that receptor.

Resource / Receptor Value

For the landscape resource this is related to the value that is attached to different landscapes by society. A landscape may be valued by different people for different reasons. For visual receptors this relates to the recognition attached to a particular view (for example in relation to heritage assets or through planning designations) and indicators of value attached to views by visitors (for example through appearances in guidebooks or on tourist maps and the provision of facilities such as car parking and interpretation). For the purposes of the LVIA, a receptor value is classified on a four-point scale of: negligible, low, medium, and high.

Susceptibility to Change

For landscape receptors this means the ability to accommodate the proposed development without undue consequences for the maintenance of the baseline situation and/or achievement of landscape planning policies and strategies.

For visual receptors this engages consideration of the susceptibility of the occupation or activity of people experiencing the view and the extent to which their attention or interest may therefore be focused on the views and visual amenity they experience.

For the purposes of this LVIA, susceptibility to change is classified on a three-point scale of: low, medium, and high.

5.3.4.2 Magnitude of Change

This is gauged by appraising the type and amount of change predicted to occur in relation to the landscape or visual receptor. Factors influencing the magnitude of change include: size, scale and nature of change; geographical extent; and duration and reversibility of effect.

For the purposes of the LVIA, magnitude of change is classified on a six-point scale of: negligible, low, medium-low, medium, medium-high and high.

5.3.4.3 Significance of Effect

The sensitivity of the landscape and visual receptor and the magnitude of change that will result from the addition of the proposed development will be used as a guide, in addition to professional judgement, to predict the significance of the likely effects.

Table 5-3 summarises guideline criteria for assessing the significance of effects.

Table 5-3: Framework for Assessment of the Significance of Effects

		Magnitude of Change					
Sensitivity		High	Medium-High	Medium	Medium-Low	Low	Negligible/No Change
	High	Major Significant	Major Significant	Major/moderate Significant	Moderate Significant or Not Significant	Moderate/minor Not Significant	Minor Not Significant
	Medium-High	Major Significant	Major/moderate Significant	Moderate Significant or Not Significant	Moderate Significant or Not Significant	Moderate/minor Not Significant	Minor Not Significant



	Medium	Major/ moderate Significant	Moderate Significant or Not Significant	Moderate Significant or Not Significant	Moderate/ minor Not Significant	Minor Not Significant	Minor Not Significant
	Medium-Low	Moderate Significant or Not Significant	Moderate Significant or Not Significant	Moderate/ minor Not Significant	Minor Not Significant	Minor Not Significant	Negligible Not Significant
	Low	Moderate Significant or Not Significant	Moderate/ minor Not Significant	Minor Not Significant	Minor Not Significant	Negligible Not Significant	Negligible Not Significant

Effects within the dark grey boxes in the matrix are considered to be significant with either a major or major / moderate level of effect. Effects within the light grey boxes may be significant or not significant depending on the specific relevant factors that arise at a particular landscape or visual receptor and here the level of effect is moderate. Effects within the white boxes are considered to be not significant at either a moderate / minor, minor or negligible level. In accordance with GLVIA3, experienced professional judgement is applied to the assessment of all effects and reasoned justification is presented in respect of the findings where the level of effect is assessed as moderate.

A significant effect occurs where the proposed development will provide a defining influence on a landscape element, landscape character receptor or view, albeit that it may be one of a number of defining characteristics. A not significant effect occurs where the effect of the proposed development is not material, and the baseline characteristics of the landscape element, landscape character receptor, view or visual receptor continue to provide the definitive influence. In this instance, the proposed development may have an influence, but this influence will not be definitive.

5.4 Consultation

A request for pre-application advice has been submitted to WLC in March 2026. At the time of submission of the Scoping Report, no formal written response to that request had been received.

It is envisaged that it may be necessary for direct correspondence with NatureScot and WLC following receipt of the pre-application advice request and/or Scoping Opinion. Details of all relevant correspondence will be included in the LVIA that will accompany the application for the proposed development.

5.5 Matters Scoped Out

The LVIA will include an assessment of effects on the landscape and visual receptors that are summarised in **Section 5.2.11**, during the proposed development's construction and operational stages. Based on the current layouts, it is proposed that all other landscape and visual receptors are scoped out of the LVIA.

5.6 Questions to Consultees

Q5.1 Do you have any comments on the proposed methodology?

Q5.2 Are you in agreement with the proposed study areas?



- Q5.3** Are you in agreement that the assessment of the effects on landscape designations should focus on those areas highlighted as being relevant to the LVIA in **Table 5-1**?
- Q5.5** Are you in agreement that Wild Land Areas in the 45km study area can be scoped out of the LVIA?
- Q5.6** Do you have any comments or suggestions in relation to the preliminary viewpoint locations listed in **Table 5-2**?
- Q5.7** Do you have any comments on the approach to assessing the effects of turbine lighting?
- Q5.8** Do you have any comments or suggestions on the approach to cumulative landscape and visual assessment?



6.0 Ecology

6.1 Introduction

This section sets out the proposed approach to the assessment of potential effects on ecology arising from the proposed development. It also details the methods that have been and will be used to establish the baseline conditions within the Site and its surroundings, and the process to be used to determine the sensitivity of the habitats and species populations present. The assessment will be undertaken in accordance with legislation and best practice guidance. Note that ornithology is considered within **Section 7.0**.

This section is supported by the following figure:

- **Figure 6.1: Statutory designated sites within 10km;**
- **Figure 6.2: Non-statutory designated Sites within 5km.**

6.2 Environmental Baseline

An initial desk study was undertaken in March 2026 to provide baseline information and up to date ecological information on statutory and non-statutory designated sites and protected species. The study area was as noted in **Section 6.2.1**. Desk study data was obtained from those sources considered to provide relevant ecological data and included:

- NatureScot SiteLink⁹;
- The Wildlife Information Centre (TWIC);
- National Biodiversity Network (NBN) Atlas¹⁰;
- Ancient Woodland Inventory (AWI) of Scotland¹¹; and
- Carbon and Peatland 2016 Map of Scotland¹².

6.2.1 Study Area

The ecology assessment will incorporate the following study areas:

- Designated sites: the Site with a 10km study area for statutory designated sites and a 5km study area for non-statutory designated sites measured from the Site boundary (see **Figure 6.1** and **Figure 6.2**).
- Protected species: the Site plus any species-specific buffers as necessary and as defined in guidance.
- Fish habitat surveys: any affected classified watercourses within the Site (or those visible on the 1:25,000 OS Map scale) + 100m buffer upstream and downstream.
- Habitats and potential Groundwater Dependent Terrestrial Ecosystems (GWDTE): within the Site and up to 250m from known infrastructure.
- Bats: ground-level static surveys will be undertaken within the Site, at locations where the turbines are most likely to be located¹³ (and will be processed through the online

⁹ NatureScot (2026). Sitelink. Available at: <https://sitelink.nature.scot/home> [Accessed March 2026].

¹⁰ NBN (2026). NBN Atlas Scotland. Available at: <https://scotland.nbnatlas.org/> [Accessed March 2026].

¹¹ NatureScot (2000). Ancient Woodland Inventory Dataset.

¹² Scotland's Environment (2016). Carbon and peatland 2016 map

¹³ NatureScot (2021). Bats and onshore wind turbines: survey, assessment and mitigation. Version August 2021. NatureScot, Inverness.



Ecobat tool¹⁴ which compares the acoustic data with other bat records in its database for the region).

- Cumulative assessment (if required): appropriate scale depending on the receptor.

6.2.2 Desk Study

6.2.2.1 Designated Sites

One statutory designated site, Linhouse Valley Site of Specific Scientific Interest (SSSI) was identified within the Site boundary. Two blocks of woodland listed on the Ancient Woodland Inventory (AWI) were identified within the Site.

Table 6-1 below identifies statutory designated sites within 10km of the Site, and non-statutory designated sites within 5km of the Site (see also **Figure 6.1** and **Figure 6.2**).

Note that where sites are designated for their geological or ornithological interest, they are not reported here and instead reference should be made to the respective sections of this Scoping Report for that information.

Table 6-1: Designated Sites within 10km and 5km of the Site

Site Name	Designation	Qualifying/ Notified Features	Approximate Distance and Direction from Site Boundary ¹⁵
Statutory Designated Sites within 10 km			
Linhouse Valley	SSSI	• Lowland acid grassland • Lowland neutral grassland • Valley fen • Upland mixed ash woodland	Within the Site boundary
Calderwood	SSSI	• Upland oak woodland • Valley fen	0.4km north west
Cobbinshaw Moss	SSSI	• Intermediate bog (blanket)	2.6km south west
Hermard Birchwood	SSSI	• Upland birch woodland	3km west
Craigengar	SSSI	• Blanket bog • Subalpine dry heath • Spring-head, rill and flush • Marsh saxifrage <i>Saxifraga hirculus</i>	4.1km south east
Craigengar	Special Area of Conservation (SAC)	• Dry heaths • Marsh saxifrage <i>Saxifraga hirculus</i> • Species-rich grassland with mat-grass in upland areas	4.9km south

¹⁴ The Mammal Society (2017). Ecobat. Available at: <https://mammal.org.uk/current-research/bat-survey-tools>.

¹⁵ Measured from the nearest point "as the crow flies".



Site Name	Designation	Qualifying/ Notified Features	Approximate Distance and Direction from Site Boundary ¹⁵
Cobbinshaw Reservoir	SSSI	Open water transition fen	5.1km south west
Balerno Common	SSSI	- Transition open fen - Bryophyte assemblage - Mesotrophic loch	5.4km east
Tailend moss	SSSI	Raised Bog	6.7km north west
River Tweed	SAC	- River lamprey <i>Lampetra fluviatilis</i> - Brook lamprey <i>Lampetra planeri</i> - Otter <i>Lutra lutra</i> - Sea lamprey <i>Petromyzon marinus</i> - Atlantic salmon <i>Salmo salar</i> - Rivers with floating vegetation often dominated by water-crowfoot	7.3km south east
North Esk Valley	SSSI	- Lowland acid grassland - Valley fen	7.4km south east
Skolie burn	SSSI	Lowland neutral grassland	7.4km west
Habbies howe-Logan burn	SSSI	- Bryophyte assemblage - Lichen assemblage	8.0km east
Petershill	SSSI	- Lowland neutral grassland - Lowland calcareous grassland	9.9km north west
Non-statutory Designated Sites within 5 km			
Almondell and Calderwood	Country Park	The reason(s) for the designation of this site are unknown.	2.8km north east of the Site boundary
33478	Ancient (of semi-natural origin)	Ancient Woodland	Within the north west of the Site
33513	Ancient (of semi-natural origin)	Ancient Woodland	Within the south west of the Site
33469	Ancient (of semi-natural origin)	Ancient Woodland	Adjacent to the north west Site boundary
Selm Muir wood	Long Established of Plantation Origin (LEPO)	Ancient Woodland	Adjacent to the north east Site boundary



Site Name	Designation	Qualifying/ Notified Features	Approximate Distance and Direction from Site Boundary ¹⁵
33486	Ancient (of semi-natural origin)	Ancient Woodland	Adjacent to the west Site boundary
34214	LEPO	Ancient Woodland	Adjacent to the north east Site boundary
33514	Ancient (of semi-natural origin)	Ancient Woodland	Adjacent to the south west Site boundary
33514	Ancient (of semi-natural origin)	Ancient Woodland	Adjacent to the south west Site boundary
33485	LEPO	Ancient Woodland	0.06 km north west
Calder wood	Ancient (of semi-natural origin)	Ancient Woodland	0.3 km north west
33471	LEPO	Ancient Woodland	0.5 km west
33468	Ancient (of semi-natural origin)	Ancient Woodland	0.7 km west
33512	LEPO	Ancient Woodland	0.7 km west
Lizzie Bryce's strip	LEPO	Ancient Woodland	0.9 km north west
33473	LEPO	Ancient Woodland	0.9 km north west
5 woodland blocks	Ancient (of semi-natural origin)	Ancient Woodland	Within 5km of the Site
16 woodland blocks	LEPO	Ancient Woodland	Within 5km of the Site
1 woodland block	Other (on Roy map)	Ancient Woodland	Within 5km of the Site

6.2.2.2 Protected and Notable Species

The NBN and TWIC data search provided numerous protected and notable species records within 2km of the Site (extended to 10km for records of bats) recorded over the last 10 years.

The data search returned a total of 212 records of bats comprising six individual species, as well as numerous bats unidentified to species level:

- Daubenton's bat *Myotis daubentonii*;



- Whiskered/Brandt's bat *Myotis mystacinus/brandtii*;
- Natterer's bat *Myotis nattereri*;
- Common pipistrelle *Pipistrellus pipistrellus*;
- Soprano pipistrelle *Pipistrellus pygmaeus*; and
- Brown long-eared bat *Plecotus auritus*.

The data search returned records of several protected terrestrial mammals including: badger *Meles meles*, pine marten *Martes martes*, and otter.

Other recorded terrestrial mammals, which are notable due to their inclusion on one or more of the Scottish Biodiversity List (SBL)¹⁶, UK Biodiversity Action Plan (UKBAP) or Local BAP (LBAP)¹⁷, included European hedgehog *Erinaceus europaeus* and brown hare *Lepus europaeus*.

The data search returned records of two species of amphibian, which are notable due to their inclusion on the SBL and/or UKBAP, including common toad *Bufo bufo*, common frog *Rana temporaria*. Records of one species of reptile, common lizard *Zootoca vivipara*, was also returned.

The data search returned records for a total of four invertebrate species, notable due to their inclusion on the SBL or LBAP, including common hawk dragonfly *Aeshna juncea*, black darter dragonfly *Sympetrum danae*, small heath butterfly *Coenonympha pamphilus* and small pearl-bordered fritillary *Boloria selene*.

The data search returned records for five flowering plant species, notable for their inclusion on Schedule 8 of the Wildlife and Countryside Act (WCA), SBL or LBAP, including ash *Fraxinus excelsior*, wych elm *Ulmus glabra*, bluebell *Hyacinthoides non-scripta*, greater butterfly orchid *Platanthera chlorantha* and salad burnet *Poterium sanguisorba*.

The data search returned records of five invasive non-native species (INNS) listed under Schedule 9 of the WCA including grey squirrel *Sciurus carolinensis*, rhododendron *Rhododendron ponticum*, Himalayan balsam *Impatiens glandulifera*, Japanese rose *Rosa rugosa* and variegated yellow archangel *Lamium galeobdolon* subsp. *argenteum*. Several other INNS not listed under the WCA were also identified.

6.2.3 Field Survey

6.2.3.1 Habitats

The habitat surveys will be undertaken within the Site boundary plus, where accessible, a 250m buffer. All habitats will be classified using the UKHab system. The UKHab system comprises a 5 level of Primary Habitat Hierarchy and all habitats will be classified to a minimum detail of level 3.

National Vegetation Classification (NVC) surveys will be completed in conjunction with the UKHab surveys to map in detail potentially important semi-natural vegetation communities on Site and allow identification of potential Groundwater Dependent Terrestrial Ecosystems (GWTDE) and Annex I habitats. The methodology will follow the NVC Users' Handbook¹⁸. Habitats of interest will be recoded to community level with subcommunities recorded where

¹⁶ Scottish Government (2025). Scottish biodiversity: list. Available online at: <https://www.gov.scot/publications/scottish-biodiversity-list/> [Accessed March 2026].

¹⁷ West Lothian Council (2018). West Lothian Local Biodiversity Action Plan 2018–2023. West Lothian Council, Livingston.

¹⁸ Rodwell, JS (2006). National Vegetation Classification: Users' Handbook. JNCC, Peterborough



necessary to determine if a habitat meets Annex I habitat criteria under the European Nature Information System (EUNIS) habitat classification system.

6.2.3.2 Protected Mammals (excluding Bats)

A combined protected species walkover survey for badger, red squirrel, otter, water vole, beaver will be conducted across the Site and a 100m buffer, extended to 250m for otter and pine marten, using standard methodologies^{19,20,21,22,23}.

Survey effort will focus on prominent features such as woodland edges, existing paths and habitat boundaries, all of which can provide shelter and/or commuting routes for wildlife.

Habitat suitability Index surveys for great crested newts were carried out in all ponds within 500m of the Site.

6.2.3.3 Bats

A Daytime Bat walkover (DBW) will be conducted to observe, assess, and record any habitats suitable for bats to roost, commute, or forage both onsite and in the surrounding area in conjunction with the protected species walkover. This survey aims to determine the suitability of the Site for bats, assess what further surveys are required, and consider how those surveys would be safely carried out. This survey will be completed by an experienced ecologist in accordance with best practice guidance²⁴. Suitability will be assessed as 'none', 'negligible', 'low', 'moderate', or 'high'. While a full Ground Level Tree Assessment (GLTA) or Preliminary Roost Assessment (PRA) is not included in this survey, the DBW will inform the need for further surveys of habitat (trees/woodland) or any buildings or structures. This may include a GLTA of trees and/or a PRA of any building/structures. Following this, further aerial inspection surveys (for trees) or activity surveys (of trees, buildings or structures) may be required.

Static bat activity surveys have commenced and will continue within the 2026 active bat season (April to October), with three specific survey periods to be completed during spring (April-May), summer (June to mid-August) and autumn (mid-August to October). Full spectrum static detectors will be used for the collection of bat activity data. Detectors will be deployed for a minimum of 15 nights per season to maximise the chances of obtaining 10 nights of suitable data per season in line with guidance¹³. Statics will be placed with the aim to cover the full range of habitats in which turbines are likely to be positioned within the Site, to give a representative indication of bat activity in different locations and habitat types.

¹⁹ Scottish Badgers (2018). Surveying for Badger Good Practice Guidelines. Version 01

²⁰ Cresswell, W.J., Birks, J.D.S., Dean, M., Pacheco, M., Trehwella, W.J., Wells, D. and Wray, S. (2012). UK BAP Mammals: Interim Guidance for Survey Methodologies, Impact Assessment and Mitigation. The Mammal Society, Southampton.

²¹ Chanin P (2003a). Ecology of the European Otter. Conserving Natura 2000 Rivers, Ecology Series No. 10. English Nature, Peterborough

²² Chanin P (2003b). Monitoring the Otter *Lutra lutra*. Conserving Natura 2000 Rivers Monitoring Series No 10. English Nature, Peterborough

²³ Dean, M., Strachan, R., Gow, D. and Andrews, R. (2016). The Water Vole Mitigation Handbook (The Mammal Society Mitigation Guidance Series). Eds Fiona Mathews and Paul Chanin. The Mammal Society, London.

²⁴ Collins, J. (ed.) (2023). Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edition). The Bat Conservation Trust, London.



6.2.3.4 Fish Habitat and Electrofishing Survey

A fish habitat survey was carried out in accordance with Scottish Environment Protection Agency^{25,26} (SEPA) and Scottish Fisheries Co-ordination Centre^{27,28} (SFCC) methods to identify and classify fish habitats and habitats for freshwater pearl mussel. The results of the fish habitat survey identified habitat with the potential to support protected fish species including salmonids and European eel.

Electrofishing surveys will be conducted at four locations in line with the National Electrofishing Programme for Scotland²⁹ protocol. This will include water quality monitoring and macro-invertebrate surveys in line with Marine Science Scotland guidance³⁰.

6.3 Potential Sources of Impact

6.3.1 Construction

During construction of the proposed development, in the absence of appropriate mitigation, it is anticipated that impacts may arise from:

- Permanent and temporary habitat loss and degradation is likely to occur as a result of turbine hardstanding, access track construction, borrow pits, construction compounds, and other Site infrastructure.
- Sensitive terrestrial habitats of conservation concern such as peatland (if present): effects include direct (i.e. derived from land-take) and indirect (i.e. changes caused by effects to supporting systems such as groundwater or overland flow) during construction.
- Pollution and disruption to watercourses may occur as a result of increased sediment run off and potential fuel spillage from construction vehicles.
- Species disturbance or displacement may result from construction noise and increased activity on the proposed development.
- Injury or death of species may occur from an increase of construction traffic, habitat destruction and general disturbance from increased activity on the Site.

6.3.2 Operation

During operation of the proposed development, in the absence of appropriate mitigation, it is anticipated that impacts may arise from:

- Injury or death of species as a result of maintenance traffic commuting across the proposed development and presence of Site operatives. Bat species may be impacted

²⁵ Environment Agency. (2003). River Habitat Survey in Britain and Ireland. Field Survey Guidance Manual: 2003 Version. Environment Agency, Bristol.

²⁶ Hendry, K. & Cragg.Hine, D. (1997). A Guidance Manual. APEM Ltd, Fisheries Technical Manual 4, R & D Technical Report W44, Version 1.0/07.97. R & D Project 603.

²⁷ Scottish Fisheries Co-ordination Centre (SFCC) (1998). Habitat Survey Training Manual. (Puhr, C.B.). SFCC.

²⁸ Scottish Fisheries Co.ordination Centre. (2007). Electrofishing Team Leader Training Manual: Managing Electrofishing Operations. SFCC, Pitlochry.

²⁹ The Scottish Government (2023) National Electrofishing Programme for Scotland (NEPS) 2021: Analysis, Scottish Government. Available at: <https://www.gov.scot/publications/national-electrofishing-programme-scotland-neps-2021/pages/3/> (Accessed June 2026)

³⁰ Marine Scotland Science. (2021) Monitoring watercourses in relation to onshore wind farm developments: generic monitoring programme. Available at: <https://www.gov.scot/publications/monitoring-watercourses-in-relation-to-onshore-wind-farm-developments-generic-monitoring-programme/> (Accessed June 2026)



by potential collision risk with turbine blades or barotrauma (injury/death caused by the change in air pressure in the wake of rotating turbine blades).

- Habitat loss and degradation is possible as a result of any maintenance activities which require a construction element (i.e. re-laying cable routes or works requiring new construction compounds). The aquatic environment may be impacted by environmental incidents and accidents (e.g. fuel spillage from maintenance vehicles).

6.4 Method of Assessment and Reporting

6.4.1 Proposed Assessment Methodology

The EIA Report will include an Ecological Impact Assessment (EclA). This will consider the potential direct, indirect and cumulative impacts that the construction and operation phases of the proposed development could have on Important Ecological Features (IEFs), as per CIEEM guidance³¹. The assessment will be supported by technical appendices that will include details of survey methodologies and all survey data.

An assessment of relevant cumulative impacts will be undertaken following published guidance. Where it is determined that a cumulative assessment is necessary, impacts will be assessed in combination with other relevant projects subject to EIA within 5km, and their effects on a relevant reference population; for example, at a watercourse, watershed or Natural Heritage Zone (NHZ) level.

The assessment will include the following elements:

- baseline conditions;
- scoping of ecological features and impacts in/out of detailed assessment;
- an assessment of potential impacts and effects on IEFs during construction and operation;
- an assessment of cumulative effects;
- an outline of any required mitigation; and
- a summary of significant residual effects.

Effects on IEFs will be assessed in relation to the species' reference population or habitat extent, conservation status, range and distribution. The assessment of potential effects will be informed by guidelines published by CIEEM and NatureScot.

The assessment involves the following process:

- identifying potential impacts of the proposed development;
- considering the likelihood of occurrence of potential impacts;
- defining the nature conservation value and conservation status of relevant populations for each IEF to determine overall sensitivity;
- establishing the magnitude of the change (both spatial and temporal) on each IEF;
- based on the above information, making a judgement as to whether or not the resultant effect would be significant in terms of the EIA Regulations;

³¹ CIEEM (2024). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.3. Chartered Institute of Ecology and Environmental Management, Winchester



- where a potential effect is deemed to be significant, measures to avoid, reduce, mitigate or compensate for the effect are suggested, where required;
- considering opportunities for enhancement, where appropriate; and
- determining residual effects following mitigation (including enhancement), and, where residual effects are assessed as remaining significant, considering appropriate proposals for compensation.

Determination of the level of sensitivity of an IEF is based on a combination of the feature's nature conservation value, defined on the basis of the geographic scale and conservation status, based on its distribution and/or population trend.

The potential impacts of the proposed development will be identified by considering the degree of change to baseline conditions predicted as a result of the proposed development, how IEFs are likely to respond to the proposed development, the duration and reversibility of an effect, best practice guidance and legislation, and professional judgement. Effects are judged in terms of magnitude in space and time, and effects can be beneficial, neutral or adverse.

The significance of potential effects is determined by integrating the assessments of IEF sensitivity and magnitude of change in a reasoned way, based on the available evidence and professional judgement.

A set of pre-defined significance criteria will be used in assessing the potential effects of the proposed development to establish whether there will be any effects which will be sufficient to adversely affect the IEF to the extent that its conservation status deteriorates above and beyond that which would be expected should baseline conditions remain (i.e., the 'do nothing' scenario).

The ecological assessment will be carried out in cognisance of relevant legislation and standards, as well as having regard to the following guidance:

- National Planning Framework 4 (NPF4)³²;
- CIEEM guidelines for EcIA³¹;
- NatureScot standing advice and guidance series for Planning and Development³³;
- CIEEM's species survey guidelines³⁴;
- NatureScot's Development in Peatland guidance³⁵; and
- Scottish Environment Protection Agency (SEPA)'s Guidance on Assessing the Impacts of Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems (GWDTEs)³⁶.

³² Scottish Government (2023). National Planning Framework 4. Available online: <https://www.gov.scot/publications/national-planning-framework-4/> Accessed March 2026.

³³ NatureScot. Planning and Development: Standing Advice and Guidance Documents. Available online: <https://www.nature.scot/professional-advice/planning-and-development/planning-and-development-advice/planning-and-development-standing-advice-and-guidance-documents> Accessed March 2026.

³⁴ CIEEM (2021). Good Practice Guidance for Habitats and Species. Available online: <https://cieem.net/resource/good-practice-guidance-for-habitats-and-species>. Accessed March 2026.

³⁵ NatureScot (2023). Advising on peatland, carbon-rich soils and priority peatland habitats in development management. Available online: <https://www.nature.scot/doc/advising-peatland-carbon-rich-soils-and-priority-peatland-habitats-development-management>. Accessed March 2026.

³⁶ SEPA (2024). Guidance on Assessing the Impacts of Development Proposals on Groundwater Abstractions and GWDTE. Available online: <https://www.sepa.org.uk/environment/land/planning/guidance-and-advice-notes/> Accessed March 2026.



6.5 Approach to Mitigation, Compensation and Enhancement

Mitigation, compensation and enhancements will be developed in consultation with key stakeholders, drawing on evidence from other developments as appropriate. The mitigation hierarchy will be implemented with mitigation likely to take the form of design mitigation, construction mitigation and habitat restoration/management during operation. Design mitigation, where possible, will be incorporated by the involvement of the lead ecologist in the design evolution process. This may involve, for example, the avoidance of areas of high-quality habitats or inclusion of buffer zones around (GWDTEs, sensitive habitats or known protected species locations. Construction mitigation may involve restrictions to the timing of construction work in certain areas, suitable suite of pre-construction surveys and subsequent Species Protection Plans (SPPs) and the appointment of an Ecological Clerk of Works (ECoW).

Compensation and enhancement during the operational phase are expected to be secured through the development and agreement of a Habitat Management and Biodiversity Enhancement Plan (HMBEP). Measures will be incorporated into an Outline HMBEP (to be submitted as part of the EIA Report) that will seek to not only compensate but effectively restore habitats and enhance levels of biodiversity across the Site significantly from the baseline conditions. This will support the requirements of NPF4 Policy 3 on biodiversity enhancement.

The HMBEP will be designed to take into account those habitats and features that are most likely to result in maximising the overall benefit to biodiversity. This can be demonstrated either quantitatively or qualitatively. In order to ensure the best possible outcomes for biodiversity, detailed consultation will be undertaken with the landowner and other stakeholders. Post-construction monitoring will be incorporated in the HMBEP (i.e. surveys which are required to measure specific outcomes against agreed targets and/or assist in determining condition) to assess the success of management measures and inform the need for any changes that might be required to improve the target outcomes.

All terrestrial ecological mitigation required during construction will be incorporated into a Construction Environmental Management Plan (CEMP). The CEMP will outline all required mitigation and provide details on timelines to be undertaken. The CEMP will also outline a timetable of actions and form part of the contract documents to ensure delivery of mitigation specified in the EIA Report. In addition, the CEMP will incorporate the provision of the ECoW to oversee the implementation of mitigation. The specific scope of an OHMBEP and any required SPPs will be defined once the baseline surveys are fully completed and the EIA has been undertaken.

6.6 Consultation

The following stakeholders will be engaged in relation to this assessment:

- NatureScot;
- WLC Biodiversity Officer;
- SEPA;
- TWIC;
- Forth District Salmon Fisheries Board;
- Forth Rivers Trust;
- Botanical Society of Britain and Ireland (BSBI); and
- Scottish Wildlife Trust.



6.7 Matters Scoped Out

Based on baseline data, the professional judgement of the EIA team, experience from other relevant projects and policy guidance of standards, generally common and widely distributed habitats or species which do not fall within the above categories will be scoped out of the assessment.

Due to the distances, lack of functional connectivity and reasons for their designations, it is considered unlikely that the proposed development would result in any significant adverse effect on the qualifying interests of the designated sites identified within the study area. Potential effects on these designated sites are proposed to be scoped out of the assessment.

Similarly, given the separation distance from the proposed development (no woodland removal from sites listed on the AWI are anticipated), and lack of connectivity, no significant adverse effects are anticipated on woodlands listed on the AWI. Therefore, potential effects on AWI are proposed to be scoped out of the assessment.

Mountain hare and Scottish wildcat were not included in protected species surveys due to the low quality habitat for these species and the location of the Site outside the geographical range for these species.

6.8 Questions to Consultees

- Q6.1** Do consultees agree that the scope of IEFs to be included in the assessment is appropriate?
- Q6.2** Do consultees agree that the methodology and scope of assessment is appropriate?
- Q6.3** Do consultees agree with the potential effects to be scoped out of the assessment?
- Q6.4** Are there any relevant consultees who should be consulted, or other sources of information that should be considered?



7.0 Ornithology

7.1 Introduction

This section sets out the proposed approach to the assessment of potential effects of the on ornithology arising from the proposed development. It also details the methods that have been and will be used to establish the baseline conditions within the Site and its surroundings, and the process to be used to determine the sensitivity of the ornithological species and habitats present.

The assessment will be carried out with reference to the assessment methodologies produced by NatureScot (SNH 2018b) for the wider countryside, and the Chartered Institute for Ecological and Environmental Management (2018).

This section is supported by the following figures:

- **Figure 7.1: SPA & Ramsar Sites with 20km**
- **Figure 7.2: Vantage Point Viewshed and Survey Areas**

7.2 Environmental Baseline and Potential Sources of Impact

The core ornithological study area includes the Site plus a 500m buffer. The desk study considered a wider buffer of 5km for nationally important sites and 20km for internationally important sites. Additional field surveys were carried out to a wider 2km buffer for key species including breeding raptors and owls (see **Figure 7.2**).

7.2.1 Statutory Protected Sites

There are three statutory designated nature conservation sites with ornithological features in the study area around the proposed development (see **Figure 7.1**):

- **Westwater SPA/Ramsar site** – 8km south east of the Site – designated for its wintering population of pink-footed geese and wintering waterbird assemblage. Pink-footed goose is the only species the SPA could have any connectivity with, given the distance.
- **Firth of Forth SPA/Ramsar site** – 13km north of the Site – designated for a range of internationally important wintering waterfowl populations, and passage Sandwich terns. Pink-footed goose is the only species the SPA could have any connectivity with, given the distance.
- **Forth Islands SPA** – 17km north east of the Site – designated for its internationally important breeding seabird populations (including arctic tern, common tern, Sandwich tern, roseate tern, gannet, shag, lesser black-backed gull and puffin) and breeding seabird assemblage (including razorbill, guillemot, cormorant, kittiwake and herring gull).

There are a further five nationally important SSSIs within 5km (see **Figure 6.1**), though none of these have any notified ornithological interested features. Refer to **Section 6.2** for further information.

7.2.2 Wintering Bird Baseline

The wintering bird surveys during the two baseline years (2023-24 and 2024-25) found a range of wintering bird populations of conservation importance. Key wintering bird populations recorded included:

- **Whooper swan** – up to 15 whooper swans were recorded on reservoirs and farmland around the Site, including the small reservoir beside the Morton Burn. Four flights were



observed over the Site during the vantage point (VP) surveys (total of 15 individuals) in 2024-25 (none were recorded in 2023-24).

- **Pink-footed goose** – this species fed regularly on farmland in the north eastern part of the wider survey area, though not within the Site itself. Flocks were regularly seen over-flying the Site, mainly when moving between farmland feeding areas and night roosts (including occasionally on Harperigg Reservoir). The peak count (1,449 in 2023-24) represents 17% of the Westwater Reservoir SPA population of 8,754 and 9.8% of the Firth of Forth SPA population of 14,700 (Woodward *et al.* 2024).
- **Greylag goose** – widely distributed in small numbers (peak 80) over the wider survey area, feeding on farmland and roosting on Harperigg Reservoir. There were occasional flights over the Site.
- **Barnacle goose** – the only record of this species on the ground across both winters was a flock of 21 roosting on Harperigg Reservoir on 02 October 2024, but a total of 286 birds were seen over-flying during September 2023. These were migratory birds heading to their wintering grounds on the Solway Firth, which migrate across this region on a broad front. Only a single barnacle goose was seen over-flying in 2024-25.
- **Red grouse** – this species was seen mainly on the moorland on the north eastern edge of the walkover survey area.
- **Scarce raptor species** (red kite, hen harrier, goshawk, merlin and peregrine) – these five species were seen only very occasionally during the winter surveys, with no concentration of activity noted.
- **Golden Plover** – this species was seen regularly during the walkover surveys on the moorland immediately to the east of the Site in both winters.
- **Lapwing** – recorded less regularly than golden plover, with only occasional over-flights.
- **Common Gull** – this species was abundant across much of the farmland within the wider survey area, particularly in the north of the Site, and using Harperigg Reservoir.
- **Lesser Black-backed gull** – this species had a similar distribution to common gull, foraging on farmland to the north of the Site and roosting on Harperigg Reservoir, but more flights were recorded over the Site.
- **Herring Gull** – similar distribution to both the previous two gull species, with most seen in the north of the Site and regular flights observed over it.
- **Black-headed Gull** – this species was found predominantly on Harperigg Reservoir, with occasional flights over the Site.
- **Common Crossbill** – this species was found widely in the conifer plantations across the Site.

7.2.3 Breeding Bird Baseline

The 2023 and 2024 breeding bird surveys found that the survey area supports a range of lowland breeding species and a regionally important assemblage. One high-value species was found breeding within the core survey area, common crossbill. It is a Wildlife and Countryside Act Schedule 1 species.

One high-value species, barn owl, was recorded breeding in the wider survey area, and it is likely that a second, goshawk, was also nesting in the wider area. Two additional high-value species were seen, though without any evidence of breeding, golden plover and osprey. Barn



owl, goshawk and osprey are Wildlife and Countryside Act Schedule 1 species, and golden plover and osprey are EU Birds Directive Annex 1 species.

Nine breeding species were classed as medium conservation value: red grouse, curlew, cuckoo, skylark, dunnoek, song thrush, starling, lesser redpoll and yellowhammer. All were classed as medium value because they are listed on the UK Biodiversity Action Plan list of priority species. They are mostly species that have declined widely across Britain but are still common and widespread. One additional medium value species was seen but not breeding, herring gull (a UK BAP priority species).

The overall conservation value of the breeding bird community in 2023 and 2024, measured from the core survey data as the breeding bird assemblage score, was 20.5. This is well below the threshold for national importance (40) for the main habitat within the survey area, 'Upland Moorland with water bodies' (Drewitt *et al.* 2020), so the breeding bird assemblage as a whole was considered to be locally important (low value).

7.2.4 Potential Sources of Impact

The key issues for the assessment of potential ornithological effects relating to the proposed development were identified as (after SNH 2018b):

- direct loss of bird habitat through construction of infrastructure;
- disturbance of birds during construction and operation (including displacement of flight activity through barrier effects);
- mortality of birds through collision with turbine blades or towers during operation; and
- cumulative effects of operational disturbance and collision mortality, on the national and NHZ populations of key target species.

7.3 Method of Assessment and Reporting

7.3.1 Baseline Data Collection

A comprehensive range of bird surveys has been undertaken at this Site. Specific surveys for the proposed development were undertaken (2023/24 and 2024/25 winters and 2023 and 2024 breeding seasons), to give two full years of baseline bird data, in line with the current NatureScot survey guidance (SNH 2017).

7.3.1.1 Vantage Point (VP) Surveys (year-round)

These surveys determine flight activity within the Site to assess potential collision risk. The VP surveys quantify the bird numbers that could potentially be at risk of collision (including roost flight observations at dawn/dusk). All flight lines of target species were mapped, and the flight height of each flock recorded.

Two VPs were used, which gave sufficient coverage of the survey area. The computer-generated viewshed is shown in **Figure 7.2**. The following surveys were undertaken from each VP:

Breeding season:

- 2023 – April to August – 36 hours/VP; and
- 2024 – April to August – 36 hours/VP.

Autumn/Winter:

- 2023-24 – September to March – 42 hours/VP; and
- 2024-25 – September to March – 42 hours/VP.



7.3.1.2 Breeding Bird Surveys

The core breeding bird walkover survey follows the standard Brown and Shepherd (1993) moorland survey method but with two additional visits as recommended in NatureScot guidance (SNH 2017). These surveys cover the Site plus a 500m buffer, where access is possible.

- 2023 – four visits, April to July; and
- 2024 – four visits, April to July.

All bird locations and behaviour were mapped to a 1:10,000 scale, using the standard British Trust for Ornithology (BTO) Common Birds Census notation. All species were recorded. In addition, the survey effort per unit area is standardised to make the surveys as repeatable as possible, recording systematically for approximately 2 hours per km². The chosen route ensured that the entire study area is covered to within about 100m of the observer, where access is possible. The survey route is plotted onto the survey map as it is carried out.

The surveys avoided strong winds, heavy rain, fog and low cloud. Birds were located by walking, listening and scanning by eye and with binoculars. Standard BTO notation was used to record the birds' activities; singing, calling, carrying nest material, nests or young found, repetitively alarmed adults, disturbance displaying, carrying food or in territorial dispute.

7.3.1.3 Raptor and Owl Breeding Surveys

As the survey area may be used by a range of scarce raptors, species-specific surveys were undertaken during April-August 2023 and 2024. Surveys were undertaken within the Site and a 2km buffer zone where access is possible and potentially suitable breeding habitat for these species is present. This included surveys for hen harrier, osprey, goshawk, red kite, peregrine, merlin, short-eared owl and barn owl, following the standard methodologies given in Gilbert *et al.* (1998) and Hardey *et al.* (2013).

7.3.1.4 Black Grouse Breeding Surveys

Black grouse surveys were undertaken following the methods outlined in Gilbert *et al.* (1998), covering all suitable black grouse habitat within the Site and a 2km buffer. Areas of suitable habitat to which access was not possible were scanned with binoculars from the Site boundary, from publicly accessible locations and from suitable vantage points within the Site. A three-visit survey protocol was followed:

- visit 1: Site visit to assess habitat for black grouse suitability;
- visit 2: areas of suitable habitat with the potential to support lekking black grouse were visited twice on different mornings to establish presence/absence; and
- visit 3: any locations where black grouse were recorded as present during the second visit were revisited in order to provide an accurate count of the number of lekking birds present. The survey was undertaken one hour prior to dawn until one hour after dawn.

7.3.1.5 Winter Field and Waterfowl Distribution Surveys

Whilst the VP surveys provide information on key species' flight activity over the Site outside the breeding season, additional survey work was undertaken to provide further information on any important bird populations using the area during the winter. This comprised surveys of the wintering birds within the proposed development Site and a 2km buffer. This included surveys at dawn and dusk to check the area specifically for roosting hen harriers and other important raptors and covering all possible habitats that could be used by wintering waterfowl as feeding/roosting sites (to give contextual information about where waterfowl feeding flocks were located, and possible linkage to SPAs). The Site lies within the potential SPA connectivity



distance from the Westwater and Firth of Forth SPA/Ramsar sites (for which pink-footed geese are a qualifying feature) (Mitchell 2012, SNH 2016a).

These surveys were carried out as follows:

- 2023-24 – twice-monthly surveys, September to March; and
- 2024-25 – twice-monthly surveys, September to March.

7.3.1.6 Desk Study

The ornithological assessment will include a full desk study detailing the designated Sites that could be affected by the proposed development (as set out above), and available bird records from consultees including NatureScot, Royal Society for the Protection of Birds (RSPB) and the Lothian and Borders Raptor Study Group.

7.3.2 Assessment of Effects

The assessment will include a full evaluation of the ornithological importance of the Site's bird populations and identification of any particularly sensitive areas. Collision risk will be estimated for bird species of conservation importance regularly over-flying the Site (based on the results of the VP surveys). This will be calculated using a standard modelling process, applying NatureScot-recommended avoidance rates. Possible disturbance impacts will be assessed by determining the bird populations of importance within the Site and its surrounds (based on the field surveys and any additional information available), and by reference to the current literature on bird-wind farm interactions. The assessment will be carried out with reference to the assessment methodologies produced by NatureScot (SNH 2018b) for the wider countryside, and the Chartered Institute for Ecological and Environmental Management (2018).

The sensitivity (conservation importance; as defined in **Table 7-1**) of the receptors present in the study area will be identified, then the magnitude of change on those receptors determined (as described in **Table 7-2**).

Table 7-1: Value (conservation importance) of bird species

Conservation Value	Definition
Very High	Cited interest of SPAs and SSSIs. Cited means mentioned in the citation text for those protected sites as a species for which the Site is designated (SPAs/SACs) or notified (SSSIs).
High	Other species that contribute to the integrity of an SPA or SSSI. A local population of more than 1% of the national population of a species. Any ecologically sensitive species, e.g. large birds of prey or rare birds (<300 breeding pairs in the UK). EU Birds Directive Annex 1, EU Habitats Directive priority habitat/species and/or Wildlife and Countryside Act (W&C Act) Schedule 1 species (if not covered above). Other specially protected species.
Medium	Regionally important population of a species, either because of population size or distributional context. UK BAP priority species (if not covered above).
Low	Any other species of conservation interest, e.g. species listed on the Birds of Conservation Concern not covered above.



Conservation Value	Definition
Negligible	Green-listed species (Stanbury <i>et al.</i> 2021) of favourable conservation status.

Table 7-2: Definition of terms relating to the magnitude of change from ornithological impacts

Magnitude	Definition
Very High	Total loss or very major alteration to key elements/ features of the baseline conditions such that post development character/ composition/ attributes will be fundamentally changed and may be lost from the Site altogether. Guide: >80% of population/habitat lost.
High	Major alteration to key elements/ features of the baseline (pre-development) conditions such that post development character/composition/attributes will be fundamentally changed. Guide: 20-80% of population/habitat lost.
Medium	Loss or alteration to one or more key elements/features of the baseline conditions such that post development character/ composition/ attributes of baseline will be partially changed. Guide: 5-20% of population/habitat lost.
Low	Minor shift away from baseline conditions. Change arising from the loss/ alteration will be discernible but underlying character/ composition/ attributes of baseline condition will be similar to pre-development circumstances/patterns. Guide: 1-5% of population/habitat lost.
Negligible	Very slight change from baseline condition. Change barely distinguishable, approximating to the “no change” situation. Guide: <1% of population/habitat lost.

The combined assessment of the magnitude of change and the sensitivity of the receptor will be used to determine whether an adverse impact is significant. These two criteria have been cross-tabulated to assess the overall significance of that impact (**Table 7-3**). This gives a guide as to the determination of significance, though a final assessment should still be subject to professional judgment.

Table 7-3 is the matrix of magnitude of change and conservation value used to test the significance of ornithological impacts. The significance category of each combination is shown in each cell. Shaded cells indicate potentially significant impacts in terms of the EIA Regulations.



Table 7-3: Magnitude of Change and Conservation Value Matrix

MAGNITUDE	CONSERVATION VALUE				
		Very high	High	Medium	Low
	Very high	Very high	Very high	High	Medium
	High	Very high	Very high	Medium	Low
	Medium	Very high	High	Low	Very low
	Low	Medium	Low	Low	Very low
	Negligible	Low	Very low	Very low	Very low

The interpretation of these significance categories is:

- very low and low are not normally of concern, though normal design care should be exercised to minimise adverse effects;
- very high and high represent adverse effects on bird populations which are regarded as significant for the purposes of EIA; and
- medium represents a potentially significant adverse effect on which professional judgment must be made, though mitigation should be able to reduce it below the significance threshold.

The NatureScot (SNH 2018b) wider countryside assessment guidance defines the key significance test as: “*An impact should be judged as of concern where it would adversely affect the favourable conservation status of a species or stop a recovering species from reaching favourable conservation status, at international or national level or regionally.*” It notes that the key baseline population the assessment should be made against for breeding birds is the SNH NHZ population. The Site lies within the ‘West Southern Uplands and Inner Solway’ (NHZ19) NatureScot NHZ.

As the survey area supports specially protected species under Schedule 1 of the 1981 Wildlife and Countryside Act, information on the breeding sites and associated flight activity of the species listed on that Schedule will only be provided in a Confidential Technical Appendix as part of the EIA Report. It is important that their breeding locations are kept confidential to minimise the risk of persecution and disturbance. Following NatureScot guidance, the amount of information contained in that technical appendix will be kept to a minimum but will include any data that indicate breeding locations. The assessment of the effects that the proposed development may have on these species will be included in the EIA Report ornithology chapter (but without identifying nesting locations).

7.3.3 Cumulative Assessment

A cumulative ornithological assessment will be undertaken following the NatureScot (SNH 2018c) guidance on ‘Assessing Significance of Impacts from Onshore Windfarms on Birds Outwith Designated Areas’, considering impacts on the favourable conservation status of key species within the relevant NHZ.

7.4 Consultation

It is proposed that the following stakeholders will be consulted in relation to the assessment:

- NatureScot;
- Lothian and Raptor Study Group; and
- RSPB.



7.5 Matters Scoped Out

No ornithological issues have been scoped out from this assessment, though, following NatureScot (SNH 2018b) guidance, the assessment will focus on the key species likely to be affected by the proposed development. Key species are defined using the following criteria:

- species listed on Annex 1 of the EU Birds Directive;
- species listed on Schedule 1 of the 1981 Wildlife & Countryside Act;
- species identified by SNH 2018b as 'Priority bird species for assessment when considering the development of onshore wind farms in Scotland'. These include (a) species that are widespread across Scotland which utilise habitats or have flight behaviours that may be adversely affected by a wind farm, and (b) as 'restricted range' species; and
- red-listed species on the Birds of Conservation Concern list.

7.6 Approach to Mitigation

Ornithological sensitivities will be taken as hard constraints when developing the layout design and appropriate buffers will be applied. A range of ornithological mitigation measures are likely to be required, primarily for the construction phase to reduce impacts on breeding birds. These will include the production of a Construction Method Statement to the satisfaction of NatureScot and other relevant stakeholders, timing of works to avoid more sensitive areas/times, and the development and implementation of a Breeding Bird Protection Plan (BBPP) to ensure that no Schedule 1 species are disturbed during the breeding season and protect other nesting birds.

7.7 Questions to Consultees

- Q7.1** Can consultees please advise whether the survey and assessment methodologies are appropriate for the Site and the proposed development?
- Q7.2** Do consultees agree with the Ornithology matters scoped out of the EIA?



8.0 Geology, Hydrology, Hydrogeology and Peat

8.1 Introduction

This section of the Scoping Report outlines the proposed scope of the EIA Report to assess the potential significant effects from the proposed development on geology, hydrology, hydrogeology and peat.

It sets out the environmental baseline of the Site related to the aforementioned topics and the potential sources of impact during construction and operation. It also sets out the method of assessment and reporting and approach to mitigation.

This section is supported by the following figures:

- **Figure 8.1: Probe Depth Plan**
- **Figure 8.2: Watercourses and Flooding Map**

8.2 Environmental Baseline

8.2.1 Geology and Hydrogeology

The majority of the Site is shown by BGS mapping to be underlain by several sedimentary bedrock units comprising sandstones, dolostones and sedimentary rock cycles of Strathclyde Group type. The central extent of the Site is underlain by basaltic lavas and tuffs of the Arthurs Seat Volcanic Formation. Other smaller areas of igneous intrusions are also noted within the northern and southern extents of the Site.

BGS mapping shows several inferred faults and thrust faults noted in the south and north west of the Site.

The bedrock is shown to be generally overlain by glacial till superficial deposits. Areas of alluvium are noted along the banks of the watercourses within the Site and small areas of peat are noted within the southern extent of the Site. The hilltops locally, particularly within the eastern extent of the Site, are shown to be absent of any superficial deposits.

BGS mapping indicates two occurrences of artificial ground both located in the north west of the Site, associated with Morton Reservoir and an infilled quarry

The peat, glacial till and igneous bedrock deposits are unlikely to contain significant amounts of groundwater. The igneous bedrock deposits have been classified by BGS as a low productivity aquifer, where small amounts of groundwater may be present within the near surface weathered zones, secondary fractures and rare springs. The sedimentary bedrock deposits have been classified by BGS as a moderately productive multi-layered aquifer which can yield groundwater amounts of up to 10 l/s. Shallow groundwater may also be present within the alluvial deposits, however, groundwater is likely to be localised and in hydraulic continuity with adjacent watercourses.

All of Scotland's groundwater bodies have been designated as a Drinking Water Protected Area (DWPA). SEPA is shown that the majority of the Site is located within the Livingston groundwater body (SEPA ID: 150711) which is currently classified as having a Poor overall status. The eastern boundary of the Site is located within the Edinburgh groundwater body (SEPA ID: 150591) which is currently classified as having Good overall status.

8.2.2 Mineral Resources, Quarrying and Mining

The Site is not located within a development high risk area or coal mining reporting area according to the Mining Remediation Authority (formerly the Coal Authority). The south and



western areas of the Site are located within the Mining Remediation Authorities Abandoned Mines Catalogue.

A review of BGS mapping indicates several mines and quarries located across the Site. Blackraw quarry and Corston quarry are both located on the northern access track, both of which have ceased works. Morton Hill quarry and Auchinoon Hill quarry located in the south, near Morton Hill, and Aichinoon hill respectively, both of which have ceased works.

8.2.3 Unexploded Ordnance (UXO)

The Zetica website³⁷ was reviewed for potential Unexploded Ordnance (UXO) and indicated that the Site is within a low bomb risk area.

8.2.4 Soils and Peat

The National Soil Map of Scotland indicates that soils beneath the Site generally comprise of noncalcareous gleys with localised areas of peat, peaty gleyed podzols and brown earth soils.

Peatland classification mapping indicates that the majority of the Site is underlain by Class 4 peatlands and mineral soils (Class 0). Areas of Class 3 and 5 peatlands are noted within the southern extent of the Site.

Mineral soils and Class 4 peatland are not considered representative of peatland habitats. Class 3 and Class 5 are not considered priority peatland habitats however soils may remain carbon rich with areas of deep peat.

An initial Phase 1 low resolution peat depth survey has been undertaken across the Site, the results of the peat depth survey and survey area extents are shown in **Figure 8.1**. Peat depths of between 0 and 3.6 m have been recorded within the Site with the deepest areas of peat noted within the southern extent of the Site.

8.2.5 Hydrology and Designated Sites

The majority of the Site is located within the River Almond surface water catchment, specifically the Limehouse Water sub catchment. Linhouse Water flows generally northwards along the north western boundary of the Site before discharging into the River Almond approximately 2km of the Site. Several tributaries of the Linhouse Water rise within the Site including the Morton Burn, Rae Burn and Whitelea Burn.

The eastern extent of the Site is located within the Water of Leith surface water catchment. The Water of Leith flows generally north eastwards 900m south east of the Site.

None of the surface water catchments which drain the Site have been designated as a DWPA. The Water of Leith catchment 900m south east of the Site has been classified as a DWPA, however, this is noted upstream of the Site.

All the watercourses monitored by SEPA which drain the Site have been currently classified with an overall status of Poor.

Watercourses and groundwater within the Site may also support local private supplies.

SEPA flood mapping indicates there is a risk of fluvial and surface water flooding across the Site, however, flood extents are largely confined to the immediate watercourse corridors (see **Figure 8.2**). The Site is not considered to be at risk of coastal or groundwater flooding. Areas downstream of the Site have been designated as a Potentially Vulnerable Areas (PVA).

³⁷ Zetica UXO (2026). <https://zeticauxo.com/guidance/risk-maps/>



Review of NatureScot's SiteLink indicates that the following designated sites are noted within 500m of the Site:

- Linhouse Valley Site of Special Scientific Interest (SSSI) which is located along the banks of the Linhouse Water within the north western extent of the Site. The SSSI has been designated for lowland acid and neutral grasslands, valley fen wetland habitats and upland mixed ash woodland and is located downstream of the Site.
- Calderwood SSSI which is located 0.4km north west of the Site near the Linhouse Water and Murieston Water confluence. The SSSI has been designated for valley fen wetland habitats and upland mixed ash woodland and is located downstream of the Site.

8.3 Potential Sources of Impact

Without mitigation or adherence to best practice, impacts on geology, hydrology, hydrogeology and peat could occur during the construction and operational phases of the proposed development. A summary of the potential effects on geology, hydrology, hydrogeology and peat resulting from construction, and operation of the proposed development is provided below. These will be considered in the EIA Report.

8.3.1 Potential Impacts During Construction

The following potential impacts during the construction phase will be considered in the EIA Report:

- disturbance and loss of carbon rich soils and peat deposits;
- ground instability (inc. peat slide risk if present);
- impacts on surface water and groundwater quality from pollution from fuel, oil, concrete or other hazardous substances;
- discharge of sediment-laden runoff to drainage system and watercourses;
- increased flood risk to areas downstream of the Site during construction through increased surface runoff;
- changes in groundwater levels, or saturation of peat deposits, from dewatering excavations;
- potential change of groundwater flow paths and contribution to areas of peat and GWDTEs;
- potential adverse impacts to water dependent designated sites (Linhouse Valley and Calderwood SSSIs);
- potential adverse impacts to private water supplies if present; and
- disturbance and or pollution resulting from borrow pit formation and use.

8.3.2 Potential Impacts During Operation

The following potential impacts during the operational phase will be considered in the EIA Report:

- increased runoff rates and flood risk, resulting from increases in areas of tracks and hard standing at turbines;
- increased flood risk from restriction of flow at permanent watercourse crossings;
- changes in natural surface water drainage patterns (which may affect water contribution to areas of peat, GWDTE and other water dependent designated sites);
- changes to groundwater levels and groundwater movement;
- longer term impacts on abstractions for water supplies, particularly any supplies dependent on groundwater; and
- pollution impacts on surface water quality from maintenance work.



8.4 Method of Assessment and Reporting

8.4.1 Study Area

The study area for the geological, hydrological, hydrogeological and peat study area will extend to 500m from the Site boundary. The cumulative effects study area will extend to 5km from the Site boundary.

8.4.2 Desk Study

An initial desk study will be undertaken to determine and confirm the baseline characteristics by reviewing available information relating to soils and peat, geology, hydrology, and hydrogeology such as groundwater resources, licensed and unlicensed groundwater and surface water abstractions, public and private water supplies, surface water flows, flooding, rainfall data, water quality and soil data. This will include review of published geological maps, Ordnance Survey maps, aerial photographs, and Site-specific data such as existing available peat probing data, digital terrain models (slope plans) and geological literature.

The desk study will identify sensitive features which may potentially be affected by the proposed development and will confirm the geological, hydrogeological, and hydrological environment.

8.4.3 Field Surveys

The hydrological assessment specialists will liaise closely with the project ecology and geology / geotechnical specialists to ensure that appropriate information is gathered to allow a comprehensive impact assessment to be completed.

A detailed Site visit and walkover survey will be undertaken, to:

- verify the information collected during the desk and baseline study;
- identify drainage patterns, areas vulnerable to erosion or sediment deposition, and any pollution risks;
- visit any identified GWDTEs (in consultation with the project ecologists);
- visit any private water supplies within the study area that might be affected by the proposed development to confirm details of the location of the abstraction, its type and use, as required;
- prepare a schedule of potential watercourse crossings;
- assess the Site geomorphology and conduct additional Phase II peat depth probing and assessment of peatland condition, as required; and
- inspect rock exposures, establish by probing an estimate overburden thicknesses (a probe is pushed vertically into the ground to refusal and the depth is recorded).

The desk study and field surveys will be used to identify potential development constraints to be considered as part of the design of the proposed development.

Once the desk study is completed and sensitive soil and peat, geological and water features are confirmed, an EIA Report will be prepared to assess the potential effects on soils and peat, geology, hydrology and hydrogeology as a result of the construction and operation of the proposed development.

8.4.4 Assessment of Effects

The purpose of this assessment will be to:

- identify any areas susceptible to peat slide (should peat be present), using peat thickness and Digital Terrain Model (DTM) data to analyse slopes;



- assist in the micro-siting of turbines, and tracks in areas of no peat or shallow peat and in the least hydrogeologically and hydrologically sensitive areas by applying buffer zones around watercourses and other hydrological features;
- assess potential effects on soils, peat and geology;
- determine what the likely effects of the proposed development are on the hydrological regime, including water quality, flow and drainage;
- assess potential effects on water (including groundwater) dependent habitats;
- determine suitable mitigation measures to prevent significant hydrological and hydrogeological effects; and
- develop an acceptable code of construction practice for working on the proposed development that will adopt best practice procedures, effective management and control of on-site activities to reduce or offset any detrimental effects on the geological, hydrogeological and hydrological environment.

It is anticipated the EIA Report would include the following technical appendices:

- peat landslide hazard and risk assessment (PLHRA);
- peat management plan (PMP);
- schedule of watercourse crossings;
- private water supply risk assessment; and
- GWDTE risk assessment.

A qualitative risk assessment methodology will be used to assess the significance of the potential effects. Two factors will be considered: the sensitivity of the receiving environment and the potential magnitude should that potential impact occur.

This approach provides a mechanism for identifying the areas where mitigation measures are required, and for identifying mitigation measures appropriate to the risk presented by the proposed development. This approach also allows effort to be focused on reducing risk where the greatest benefit may result.

The sensitivity of the receiving environment (i.e. the baseline quality of the receiving environment as well as its ability to absorb the effect without perceptible change) and the magnitude of change will each be considered through a set of pre-defined criteria.

The sensitivity of the receiving environment together with the magnitude of the change defines the significance of the effect, which will be categorised into level of significance.

8.4.5 Approach to Mitigation

The proposed development will undergo design iterations and evolution in response to constraints identified as part of the baseline studies and field studies so as to avoid and/or minimise potential effects on receptors where possible.

For example, it is expected that the following potential embedded mitigation will be included in the design of the proposed development:

- A buffer of up to 50m will be applied to watercourses shown on 1:10,000 scale mapping;
- Areas with significant floodplains or large extents shown to be at risk from flooding as shown by SEPA mapping will be avoided;
- Existing access tracks will be used where possible and any new tracks will be designed to limit the amount of required watercourse crossings;
- Areas of deep peat (>1m deep) or peat confirmed to be in near natural condition will be avoided where possible;
- Areas of potential increased peat slide risk will be avoided; and
- Impacts on private water supply sources and areas of GWDTEs will be avoided in accordance with SEPA's guidance where possible.



There is much best practice guidance which has been developed to assist developers minimise the risks associated with wind farm construction and operation and this will be used to develop Site-specific mitigation measures. Measures will be proposed to control and mitigate, for example, pollution risk (from anthropogenic and geogenic sources), flood risk, watercourse crossings, impacts on surface and groundwater flow paths, and management of peat and carbon rich soils.

Good practice measures will be applied in relation to pollution risk, and management of surface runoff rates and volumes. This will form part of the final CEMP to be implemented for the proposed development.

8.4.6 Peat Management Plan and Peat Landslide Hazard and Risk Assessment

A Stage 1 Peat Management Plan (PMP) will be prepared as a supporting technical appendix in line with NPF4, SEPA and NatureScot guidance. The Waste Framework Directive (WFD) 2008/98/EC, transposed into National Law under The Waste Management Licensing (Scotland) Regulations 2011, sets out a requirement to apply a waste hierarchy. In terms of this project, this hierarchy should be considered as follows:

- prevent excavation;
- reduce volumes of peat excavated; and
- reuse excavated peat in a manner to which it is suited.

An assessment of peatland condition will be included within the PMP, to identify areas of peatland in near natural condition and areas of priority peatland which should be avoided during the design of the proposed development in accordance with Policy 5 (Soils) of NPF4.

The following works will be completed:

- additional peat depth survey at 10m grid at proposed infrastructure locations will be completed (the probing will also provide information of the substrate below the peat) and 50m centres with 10m offsets along linear infrastructure;
- a limited (in terms of aerial extent) geomorphological mapping exercise will be undertaken to link the topographic features with the underlying geology and to visit those areas of the Site that may be identified as potentially 'at risk from peat slide';
- the thickness of the peat will be established by probing and the underlying sub-strata confirmed by inspection of watercourses;
- the investigation will consider turbine locations, access routes, compounds and borrow pits for signs of existing or potential peat instability;
- augering of a representative selection of peat probe locations will be undertaken and the proportion of acrotelmic and catotelmic peat recorded; and
- output from the field survey will comprise a record of investigation locations and summary of peat depths and augering results.

A PLHRA will be completed using the Site survey data and slope analysis (using DTM data), if required by best practice guidance, highlighting areas that may be impacted by a peat slide so that appropriate mitigation measures can be identified.

8.4.7 Borrow Pit Assessment

Suitability of materials on the Site will be verified and borrow pit search areas will be identified as part of the Borrow Pit Assessment. If appropriate areas are identified a description of likely materials, borrow pit size and the ability to supply appropriate materials for the construction of the proposed development will be included.



8.4.8 Cumulative Effects

A review of other existing and proposed developments typically within 5km, or those within hydrological connectivity to the Site will be undertaken and potential impacts on geology, hydrology, hydrogeology and peat will be assessed to identify cumulative impacts. Non-wind or solar developments will not be considered as part of the cumulative assessment unless any specific projects are requested to be considered by consultees.

The cumulative effects on geological, soil, hydrological and hydrogeological receptors will be assessed using the surface water catchments within the study area, with a maximum downstream distance of 5km from the Site boundary.

8.5 Consultation

As part of the consultation phase of the project environmental data and views of the proposed development will be sought from:

- WLC;
- NatureScot;
- SEPA; and
- Scottish Water

8.6 Matters Scoped Out

It is proposed that the potential impacts outlined above will be assessed as part of the EIA Report.

At this stage, it is proposed that the following can be scoped out of detailed assessment:

- It is proposed to scope out effects on geology. While there will be effects arising from rock extraction for borrow pits, track construction and for turbine and crane pad areas, these are limited in area and are not likely to extend beyond the immediate proposed development footprint. No particularly sensitive geological features have been identified within the Site. Potential effects on carbon rich soils and peat will be assessed in full.
- A standalone Flood Risk Assessment (FRA). Published mapping confirms that flooding at the Site is limited to fluvial and surface water flooding which is largely confined to the immediate watercourse corridors. It is proposed, therefore, that a simple screening of potential flooding sources (fluvial, coastal, groundwater, infrastructure etc.) is presented in the EIA Report and measures that would be used to control the rate and quality of runoff will be specified in the EIA Report.
- A Drainage Impact Assessment. Design standards and measures which would be used to control and manage incident rainfall would be specified in the EIA Report. A Site drainage design plan would be prepared as part of the detailed Site design (post planning) and form part of the final Construction and Environmental Management Plan. This would be submitted to SEPA for approval at that stage.
- Potential effects on the Water of Leith DWPA. The DWPA is located upstream of the proposed development and as a result no significant effects on the DWPA catchment are anticipated.
- Baseline water quality monitoring as part of the baseline assessment to inform the EIA report. Classification data is available from SEPA for the watercourses at Site and there are no known sources of potential water pollution at the Site that might give rise for the need for water quality monitoring to inform the assessment.

Subject to the adoption of appropriate embedded mitigation it is anticipated that other impacts on geology, hydrology, hydrogeology and peat receptors could be scoped out in line with Scottish Renewables 'Guidelines on Streamlining Environmental Impact Assessment for



Onshore Wind Farms' (September 2025)³⁸. Any additional receptors which are proposed to be scoped out will be agreed with key consultees once the design of the proposed development has been agreed.

8.7 Questions to Consultees

- Q8.1** It is not proposed to prepare a standalone FRA however it is proposed that a simple screening of potential flooding sources (fluvial, coastal, pluvial, groundwater etc.) and measures that would be used to control flood risk to and from the Proposed Development will be presented in the EIA Report. Is this approach acceptable?
- Q8.2** It is not proposed to prepare a DIA. Rather measures that would be used to control the rate and quality of runoff will be specified in the EIA Report. Is this approach acceptable?
- Q8.3** Site investigations, including detailed peat probing, augering and peatland condition assessment, private water survey, and GWDTE assessment will be undertaken as part of the proposed assessment. Should any additional investigation or data sources be considered when assessing baseline conditions?
- Q8.4** It is not proposed to undertake any water quality sampling, establish groundwater monitoring points, surface water monitoring points or undertake leachability trials of any rock as there is published data that can be used to characterise baseline conditions and complete the impact assessment. Is this acceptable?
- Q8.5** It is not proposed to undertake any hydraulic modelling to inform any watercourse crossings, as it is expected that this will be completed at the detailed design stage. Is this acceptable?
- Q8.6** Please advise if there is any specific information or methodology that should be used / followed as part of the private water supply risk assessment?
- Q8.7** Do you agree that the scope of the proposed assessment is appropriate?

³⁸ Scottish Renewables (2025) *Guidelines on Streamlining Environmental Impact Assessment for Onshore Wind Farms*. Available at: [Streamlining EIA Guidance September 2025 original.pdf](#)



9.0 Noise

9.1 Introduction

The noise assessment will focus on the potential for adverse noise and vibration impacts and effects at the nearest noise sensitive receptors (NSRs) from the following aspects of the proposed development:

- noise from construction of the proposed development;
- operational noise from the wind turbines; and
- operational noise from fixed plant and equipment associated with the Solar PV and ancillary support of the wind farm.

Noise sensitive receptors are defined, in this context, to be residential properties that could be adversely affected by incident noise from the proposed development.

This section provides a summary of the noise effects anticipated at each stage of the proposed development and, where appropriate, details the proposed assessment methodologies.

9.2 Environmental Baseline

The Site is located within a rural location, on land currently used as a farmland. However, north of the Site lies land of a general suburban context, including residential dwellings.

There are also several scattered more sensitive rural residential properties around the immediate Site with the closest occupied properties located to the south and east. Although those to the north and west are not dissimilarly distant.

Should other receptors be identified at consultation stage this will also be considered within future assessments.

The Environmental Health Officer (EHO) at WLC will be consulted to agree the key receptors taken forward in the EIA Report Chapter for noise impact assessment.

Section 2.3 of this document summarises other wind farms and solar farms in the vicinity of the Site, which are in turn discussed further within this section in respect to cumulative noise impacts.

9.3 Potential Sources of Impact

9.3.1 Construction Phase

The noise assessment will consider the potential impacts of noise generated during construction of the proposed development on nearby NSRs.

Given the intervening distances between receptors and turbine locations, it is proposed to scope out construction vibration from detailed assessment.

9.3.2 Operational Noise – Wind Turbines

An assessment of operational wind turbine noise is warranted. The assessment will also assess cumulative wind turbine noise impacts, considering all proposed (planning application submitted), consented and operational wind farm sites within reasonable proximity to the proposed development, and that may have a contribution to noise effects at the identified NSRs.

Given the intervening distances between receptors and turbine locations, it is proposed to scope out operational vibration from detailed assessment.



9.3.3 Operational Noise – Solar PV Array and BESS

Solar PV developments typically contain electrical, and ventilation plant associated with inverters and transformers. BESS sites typically also include transformers and cooling equipment associated with the battery cubes for heat dissipation during charge and discharge cycles

It will be necessary to undertake a relevant noise impact assessment of the operational phase on the identified NSRs.

9.4 Method of Assessment and Reporting

9.4.1 Existing Noise Limits

The consented limits from Camilty Wind Farm are provided in **Table 9-1** and **Table 9-2** for ease of reference. Although SLR note this is not operational.

Table 9-1: Day-time Noise Limits for Camilty Hill Wind Farm, dB L_{A90}

	Standardised 10 m Height Wind Speed (m/s)								
Location	4	5	6	7	8	9	10	11	12
Aberlyne	38	40	43	47	51	52	52	52	52
Camilty Lodge	36	37	39	40	42	45	47	50	52
Colzium	37	38	39	40	42	43	43	43	43
Crosswoodburn	38	40	43	47	51	52	52	52	52
Halfway House	37	38	39	40	42	43	43	43	43
Harburn House	35	35	37	40	43	46	49	51	53
Harburnhead	38	38	38	40	43	46	49	51	53
High Camilty	36	37	39	40	42	45	47	50	52
Over Williamston	36	37	39	40	42	45	47	50	52
Parkview Cottages	36	37	39	40	42	45	47	50	52
Whistle Lodge	36	37	39	40	42	45	47	50	52

Table 9-2: Night-time Noise Limits for Camilty Hill Wind Farm, dB L_{A90}

	Standardised 10 m Height Wind Speed (m/s)								
Location	4	5	6	7	8	9	10	11	12
Aberlyne	43	43	43	43	49	52	52	52	52
Camilty Lodge	43	43	43	43	43	43	46	49	53



Colzium	43	43	43	43	43	43	43	46	46
Crosswoodburn	43	43	43	43	49	52	52	52	52
Halfway House	43	43	43	43	43	43	43	46	46
Harburn House	43	43	43	43	43	44	48	51	54
Harburnhead	43	43	43	43	43	44	48	51	54
High Camilty	43	43	43	43	43	43	46	49	53
Over Williamston	43	43	43	43	43	43	46	49	53
Parkview Cottages	43	43	43	43	43	43	46	49	53
Whistle Lodge	43	43	43	43	43	43	46	49	53

In regard to the addition of baseline noise surveying at receptors that presently do not have consented limits, SLR will undertake directivity filtering of baseline noise data captured to eliminate datapoints where a receptor is downwind of Camilty Wind Farm.

Where a new receptor is close to existing locations with consented limits, those limits will be extrapolated to the other new receptors in the vicinity.

All derived limits will be agreed with WLC during consultation subsequent to baseline noise surveying.

SLR will also consider other potential cumulative wind farms within a 10 km radius (see **Section 2.3**). Where the individual contribution of another wind farm to receptors of interest, in relation to Auchinoon Energy Park, is below 25 dB L_{A90} (i.e., 10 dB below the lower fixed limit), it will be screened out of detailed assessment. At this level, the contribution is negligible when added logarithmically to that of Auchinoon Energy Park. This approach will be adopted subject to agreement with the EHO.

WLC will be advised on survey dates, and invited to comment upon, and attend the baseline surveying exercise once dates of access have been agreed with NSR locations.

9.4.2 Proposed Study Area

The nearest NSRs surrounding the proposed development will be considered within the noise assessment, as well as receptors located in proximity to cumulative wind farm developments.

A cumulative effect occurs when there is a combination of:

- a noise impact on an asset or group of assets due to changes resulting from the development subject of assessment; and
- an impact on the same asset or group of assets resulting from other development (consented or proposed) within the surrounding landscape.

In respect to noise, consideration of other developments will be limited to:

- wind farm planning applications, within 10km, that have been submitted and have a decision pending;
- solar farm planning applications, within 2km, that have been submitted and have a decision pending;



- wind farm planning applications, within 10km, that have been granted permission but are not yet constructed; and
- solar farm planning applications, within 2km, that have been granted permission but are not yet constructed.

Any effect resulting from operational wind farms (within 10km of the proposed development) will be included as part of the baseline impact assessment. Cumulative impact will be considered in two stages:

- assessment of the combined impact of the developments, including the proposed development; and
- assessment of the extent to which the proposed development contributes to the combined impact.

Any such assessment will remain to consider the relevant guidance outlined in respect to wind, or solar and BESS noise impact assessment respectively.

9.4.3 Field Survey

The existing baseline noise environment at NSRs in the vicinity of the proposed development is anticipated to consist of a combination of natural biophonic and other man-made anthropological sound sources.

Natural sounds include birdsong and wind generated effects, such as wind in the trees and foliage.

Other sounds include road traffic noise, farming activities, noise from industrial activities, existing wind turbine developments, and local noises such as running water and boiler flues, with the levels of each noise source being dependent on the distance from the receptor and shielding.

As noted above, baseline noise levels used to derive the relevant noise limits must not include noise from existing wind turbine development, and the derived ETSU-R-97 noise limits then apply to operational noise from all wind turbine developments.

A baseline noise survey is being undertaken to derive noise limits in line with ETSU-R-97. The locations for measurement (either at receptors or agreed suitably proxy locations) will be discussed with WLC, and the results will be corrected to ensure existing turbine noise is not included in the derivation of the limits devised.

All measurements will be long term (circa 1 month minimum) to facilitate capturing a full range of wind speed correlated dB L_{A90} background noise levels at 10min intervals such that noise level limits can be directed.

9.4.4 Assessment of Construction Noise

A construction noise assessment will be undertaken in accordance with BS5228-1: 2009+A1:2014 '*Code of practice for noise and vibration control on construction and open sites – Part 1: Noise*'.

9.4.5 Assessment of Operational Noise – Wind – ETSU-R-97

ETSU-R-97³⁹ details a methodology for establishing noise limits for proposed wind farm developments and these limits should not be exceeded. ETSU-R-97 states that noise limits should be set relative to existing background noise levels at the nearest receptors and that

³⁹ The Working Group on Noise from Wind Turbines (1996). ETSU-R-97: The Assessment and Rating of Noise from Windfarms. Final Report for the Department of Trade & Industry



these limits should reflect the variation in both turbine source noise and background noise with wind speed.

Separate noise limits apply for quiet daytime and for night-time periods. Quiet daytime limits are chosen to protect a property's external amenity, and night-time limits are chosen to prevent sleep disturbance indoors, with windows open.

ETSU-R-97 recommends that wind farm noise for the quiet daytime periods should be limited to 5 dB(A) above the prevailing background or a fixed minimum level within the range 35 - 40 dB $L_{A90,10min}$, whichever is the higher.

The precise choice of criterion level within the range 35 – 40 dB(A) depends on a number of factors, including the number of dwellings in the neighbourhood of the wind farm (relatively few dwellings suggest a figure towards the upper end), the effect of noise limits on the number of kWh generated (larger sites tend to suggest a higher figure) and the duration and level of exposure to any noise.

These factors will be taken into account and a justification for deriving suitable noise limits will be included in the noise assessment.

It is proposed that appropriate noise limits can be derived and applied to the proposed wind turbines acting in isolation.

Meeting these derived noise limits would then ensure that cumulative operational noise levels from the proposed development alongside other wind turbines in the area remain within acceptable levels.

The noise limits for the proposed development will be calculated by logarithmically subtracting the existing predicted operational noise levels for wind farm developments in the surround from the following noise limits that apply to cumulative noise from all wind farm developments within a 10km radius.

- the greater of 43 dB L_{A90} or background plus 5 dB at night;
- the greater of 40 dB L_{A90} or background plus 5 dB during the daytime; and
- or the greater of 45 dB L_{A90} or background plus 5 dB at receptor locations that are financially involved with the development.

The exception to this is at receptors where the consented daytime noise limit identified upon review of consented or completed wind farms varies from the above, which will be applied as the relevant cumulative noise limit during the daytime.

The derived noise limits will be discussed with WLC, and it is intended that a report describing the derivation of the noise limits is submitted and will be included as a technical appendix to the EIA Report.

Baseline noise measurements will be undertaken to allow the cumulative noise limits to be related to background noise levels and the scope of the baseline noise measurements will be discussed with WLC.

In addition to the noise limits that will be derived for the proposed development, consideration will also be made to how much the cumulative noise levels increase due to the proposed development.

Where the predicted increase is less than 1dB, the increase in operational noise levels will be negligible as the minimum perceptible change in noise level in the environment is about 3dB (and the minimum perceptible change under laboratory conditions is about 1dB).

The noise assessment for the proposed development will be undertaken in three stages:

- determine the 'Total ETSU-R-97 Noise Limits' which are applicable to the operation of all schemes in the area;



- undertake a cumulative assessment (where required) to determine whether predictions from all cumulative schemes meet the '*Total ETSU-R-97 Noise Limits*'; and
- derive a set of Site-Specific Noise Limits (for the proposed development) and undertake predictions to determine whether the proposed development can operate within the Site-Specific Noise Limits.

The guidance contained in the Institute of Acoustics (IOA) Good Practice Guide (GPG) will be used to establish suitable Site-Specific noise limits which fully take account of the proportion of the Total ETSU-R-97 Noise Limits which has been allocated to, and can realistically be used by, existing operational and consented wind farms in the area.

The proposed development is located entirely within the WLC area, thus detailed consultation will only be undertaken with the Environmental Health Department at WLC in order to agree the overall assessment methodology.

The noise assessment will include predictions of likely wind turbine noise levels across a range of wind speeds to demonstrate compliance with the Total ETSU-R-97 and Site-Specific Noise Limits.

A cumulative noise assessment will also be undertaken in order to consider the operational, consented and proposed (planning application submitted) wind farms within the vicinity of the proposed development. The assessment will be undertaken in accordance with ETSU-R-97 and the IOA (GPG).

9.5 Consultation

SLR will seek scoping opinion via correspondence with WLC regarding representative baseline noise survey locations. Where access is refused to private dwelling amenity spaces, SLR may then seek agreement of suitable accessible proxy measurement locations which are also considered representative to facilitate assessments to be undertaken in a timely manner.

Any commentary received on methodology, items scoped in and out of assessment, and perceived mitigation needs will be captured within the EIA Report Noise Chapter.

9.6 Matters Scoped Out

9.6.1 Vibration

Given the nature of construction activities proposed and the relative distances from residential receptors, the risk of ground borne vibration impacting on NSRs is very low. As such vibration assessment has been scoped out of the assessment in respect to the construction and operation assessments as levels of vibrations will be negligible in both instances.

Ground-borne vibration during the operational phase of the development will not be perceptible at receptor locations, nor on the Site itself.

Levels of vibration during the construction and decommissioning phases are not anticipated to be perceptible, except if there are short term construction activities in the near vicinity of receptor locations, where levels of vibration in any case will be significantly below the criteria set out in BS 5228 "*Code of Practice for Noise and Vibration Control on Construction and Open Sites*".

9.6.2 Infrasound and Low-Frequency Noise

A study, published in 2006 by acoustic consultants Hayes McKenzie on the behalf of the Department of Trade and Industry (DTI), investigated low frequency noise from wind farms. This study concluded that there is no evidence of health effects arising from infrasound or low frequency noise generated by wind turbines.



In February 2013, the Environmental Protection Authority of South Australia published the results of a study into infrasound levels near wind farms. This study measured infrasound levels at urban locations and rural locations with wind turbines close by, and rural locations with no wind turbines in the vicinity. It found that infrasound levels near wind farms are comparable to levels away from wind farms in both urban and rural locations. Infrasound levels were also measured during organised shutdowns of the wind farms; the results showed that there was no noticeable difference in infrasound levels whether the turbines were active or inactive.

Bowdler et al., (2009) concluded 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”.

During a planning Appeal (PPA-310-2028, Clydeport Hunterston Terminal Facility, approximately 2.5km south west of Fairlie, 9 Jan 2018)⁴⁰, the health impacts related to low frequency noise associated with wind turbines were considered at length by the appointed Reporter (Mr M Croft). The Reporter considered evidence from Health Protection Scotland and the National Health Service.

In addition, he also considered low frequency noise surveys undertaken by the Appellant and the Local Authority both of which demonstrated compliance with planning conditions and did not identify any problems attributable to the turbine operations; some periods with highest levels of low frequency noise were recorded when the turbines were not operating.

The Reporter concluded that:

- The literature reviews by bodies with very significant responsibilities for the health of local people found insufficient evidence to confirm a causal relationship between wind turbine noise and the type of health complaints cited by some local residents.
- The NHS’s assessment is that concerns about health impact are not supported by good quality research.
- Although given the opportunity, the Community Council failed to provide evidence that can properly be set against the general tenor of the scientific evidence.

Low-frequency noise and infrasound is considered in the WSP BEIS⁴¹ report.

The report considered a number of studies which investigated claimed links between adverse health symptoms and infrasound emissions from wind turbines. The report notes on page 116 that:

“It has been demonstrated in controlled experiments, including the involvement of participants self-reporting to be sensitive to wind turbine infrasound, that exposure to infrasound at levels representative of wind turbine emissions at dwellings is not associated with physiological or psychological health effects, whereas the expectation of effects from being exposed to wind turbine infrasound, and positive or negative messages influencing that expectation, can affect health symptom reporting.

⁴⁰ Directorate for Planning and Environmental Appeals (DPEA) (2018) *Planning Appeal Decision: Clydeport Hunterston Terminal Facility (Ref: PPA-310-2028)*. Edinburgh: Scottish Government.

⁴¹ BEIS (2016). Review of the evidence on the response to amplitude modulation from wind turbines. Available at: (gov.uk in Bing) (Accessed: 24 March 2021).



Overall, the findings from the existing evidence base indicate that infrasound from wind turbines at typical exposure levels has no direct adverse effects on physical or mental health, and reported symptoms of ill-health are more likely to be psychogenic in origin.

It is expected that further evidence from ongoing studies into wind turbine infrasound effects will emerge soon, in particular from the NHMRC studies in Australia. However, based on the existing scientific evidence, it does appear probable that the above findings will not be contradicted by newer evidence.”

Since the publication of the WSP BEIS report, the study that was granted funding by NHMRC (the National Health and Medical Research Council of Australia) was published in the Environmental Health Perspectives (EHP) journal which is published by the United States National Institute of Environmental Health. The study aimed to test the effect of exposure to 72 hours of infrasound (designed to simulate a wind turbine infrasound signature) exposure on human physiology, particularly sleep. The study concluded that:

“Our findings did not support the idea that infrasound causes wind turbine syndrome (WTS)⁴². High level, but inaudible, infrasound did not appear to perturb any physiological or psychological measure tested in these study participants.”

It is therefore not necessary to carry out specific assessments of low frequency noise and infrasound and it is proposed that they are scoped out of the EIA.

9.6.3 Amplitude Modulation

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

A study was carried out in 2007 on behalf of the Department for Business, Enterprise and Regulatory Reform (BERR)⁴³ by the University of Salford, which investigated the incidence of noise complaints associated with wind farms and whether these were associated with AM. The study defined AM as aerodynamic noise from wind turbines with a greater degree of fluctuation than normal at blade passing frequency. Its aims were to ascertain the prevalence of AM on UK wind farm sites, to try to gain a better understanding of the likely causes, and to establish whether further research into AM is required.

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

This research was updated in 2013 by an in-depth study undertaken by Renewable UK, which has identified that many of the previously suggested causes of AM have little or no association to the occurrence of AM in practice. The generation of AM is based upon the interaction of a number of factors, the combination and contributions of which are unique to each site. With the current state of knowledge, it is not possible to predict whether any particular site is more or less likely to give rise to AM, and the incidence of AM 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.

⁴² WTS (Wind Turbine Syndrome). Term referring to alleged adverse human health effects related to proximity to wind turbines.

⁴³ University of Salford (2007). Research into aerodynamic modulation of wind turbine noise.



In 2016, the IOA proposed a measurement technique to quantify the level of AM present in any particular sample of wind farm noise. In August 2016 a report written by WSP/Parsons Brinkerhoff was published by the Department of Business, Energy & Industrial Strategy (BEIS, formerly The Department of Energy & Climate Change)⁴⁴. The report sought to build on 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.

In November 2017, an article entitled 'A planning condition for wind farms' was published in Vol 42 No 6 of the Acoustics Bulletin magazine⁴⁵. The article was written collaboratively by a number of noise consultants and suggested a noise planning condition which included consideration of AM. The authors noted in the article that:

"Whilst local authorities and developers have waited for a planning condition that could be applied to newly consented wind farms, or to those already consented but with a suspensive condition, the report Wind Turbine AM Review (WTAMR) by WSP/Parsons Brinckerhoff for DECC arguably did not provide that. In addition, there have been a number of comments on WTAMR that we consider should be addressed."

The article then went on to propose a draft condition but noted that: *"This approach is proposed based on the current state of understanding, but may be subject to modification in light of new research and further robust information."* and *"As various people before us have discovered, the derivation of a penalty is not easy. There is not sufficient reliable research to be confident that a penalty system would always provide a fair indication of the impact of AM."*

At the time of writing there has been no official response to those recommendations from the IOA Noise Working Group and, as yet, no endorsement from any Scottish Government Minister or Department. The recommendation to impose a planning condition and the associated penalty scheme is at odds with the advice from the IOA GPG which currently states (paragraph 7.2.1):

"7.2.1 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."

The WP BEIS report discusses AM, and on page 119 states that:

"At present, it seems evident that reliable predictions of AM in the context of development planning and noise assessment guidance are unlikely to be practically feasible in the near future."

In addition, there is no agreed methodology which can be definitely used to predict the occurrence of AM or an agreed methodology which can be used (with consensus of industry) to determine whether the effects of AM, should it occur, are actually significant.

In summary 'excess' amplitude modulation' (i.e. where the wind turbine noise has higher variability with momentary time than the 2 – 3 dB(A) considered within *ETSU-R-97*) is still the subject of research; current practice (at the time of publishing of the *IoA GPG*) in relation to determining applications for wind turbine developments is to not impose a planning condition specific to this phenomenon.

44 BEIS (2016). Review of the evidence on the response to amplitude modulation from wind turbines. Available at: (gov.uk in Bing) (Accessed: 24 March 2021)

45 A Planning Condition For Wind Turbines, Vol 42 No 6 of the IOA Acoustics Bulletin, Nov 2017.



It should also be noted that AM is also much less likely to occur with modern turbine technology and that historically any complaints linked to amplitude modulation have been investigated in terms of the Statutory Nuisance provisions of the Environmental Protection Act 1990.

On this basis, it is therefore concluded that formal assessment of amplitude modulation is scoped out of the EIA and assessment is based on the evidence and guidance in the public domain on the subject.

9.6.4 Screening Out Where Operational Noise Levels Are Low

Operational noise effects will be scoped out where the predicted noise levels from the proposed development are below 10 dB below the typical lowest noise limit applicable to cumulative wind farm noise, typically a level of 30dB L_{A90} .

Where predicted noise levels from the proposed development are 10 dB or more below the lowest applicable noise limit then its contribution at noise sensitive properties can be concluded to be negligible.

9.6.5 Uncorrelated Noise Sources

Cumulative operational noise from the proposed wind turbines in conjunction with other (non-wind turbine) sources, such as the solar aspects of the proposed development, has been scoped out as the noise limits apply to wind turbine noise only. Where there is no defined standard or applicable methodology to consider wind turbine noise with other sources appropriately.

9.7 Questions to Consultees

The following are questions to consultees:

- Q9.1** Can the consultees confirm that they agree with the proposed assessment methodologies, specifically the use of ETSU-R-97 and the IOA GPG to assess operational noise and BS5228 to assess construction noise?
- Q9.2** Can consultees agree that assessment of vibration, infrasound, low frequency noise, amplitude modulation and uncorrelated noise sources be scoped out of the EIA?
- Q9.3** It is proposed that cumulative noise from the wind farms is assessed in isolation from any other forms of development which have their own assessment criteria and methodologies and are therefore not comparable. Is this agreeable?
- Q9.4** Are the consultees aware of any additional potential NSRs, such as new housing developments?
- Q9.5** Are there any other wind energy developments which should be taken into consideration in the cumulative noise assessment alongside those listed herein.
- Q9.6** What are WLC's requirements for the provision of information on noise during construction?



10.0 Cultural Heritage and Archaeology

10.1 Introduction

This section outlines the proposed scope and methodological approach for the Archaeology and Cultural Heritage Chapter of the EIA Report. The chapter will present the assessment of the potential effects resulting from the proposed development on archaeology and cultural heritage assets, which include:

- World Heritage Sites;
- Scheduled Monuments;
- Listed Buildings;
- Inventory Gardens and Designed Landscapes (GDLs);
- Inventory Battlefields;
- Conservation Areas; and
- Non-designated heritage assets, such as locally and regionally important heritage features.

The cultural heritage impact assessment will:

- identify cultural heritage assets that may be subject to significant effects, both within the limits of the proposed development and within a defined study area;
- establish the potential for currently unknown archaeological assets to survive buried within the Site;
- assess the predicted effects on these assets; and
- propose a programme of mitigation where appropriate.

The assessment will consider direct effects (such as physical disturbance or changes to an asset's setting), indirect effects (such as increased pollution or changes in water draining patterns which can indirectly affect the preservation of heritage materials), and cumulative effects (where assets affected by the proposed development are also likely to be affected by other unrelated development proposals).

This section is supported by the following:

- **Appendix D: Cultural Heritage Appraisal;**
- **Figure 10.1: Non-designated Heritage Assets;**
- **Figure 10.2: Designated Heritage Assets with Bare Earth ZTV;**
- **Figure 10.3: Designated Heritage Assets with Screened ZTV**
- **Figure 10.4: Heritage Viewpoints**
- **Figures 10.5 to 10.18: Heritage Scoping Wirelines**

10.2 Pre-application Consultation

In response to a request for pre-application advice submitted by the Applicant in April 2026, HES provided a response outlining preliminary advice for the proposed development in May 2026. This advice outlined a number of assets that HES felt had the potential for significant effect.



HES make comment about a number of assets which are already included below in **Section 10.2.4**. In addition to this list, HES request that the following assets are also considered; Camilty Hill, enclosure (**SM1165**), Murieston Castle (**SM1207**) and Hully Hill, Cairn (**SM1160**).

10.3 12Environmental Baseline

A high-level review of the baseline conditions has been undertaken with reference to the available Historic Environment Record (HER) data, and the most up to date and detailed design of the proposed development available at the time. This includes the Scoping Site boundary, the Scoping turbine layout, the Scoping Solar layout, and the development infrastructure. This may be subject to change according to subsequent design iterations.

10.3.1 Assets within the Site Boundary

A full commercial HER search has been undertaken prior to the production of the Scoping Report, with the data shown on **Figure 10.1**. This data has been used to inform an understanding of key constraints early on in the project design.

There are 44 heritage assets within the Site boundary. Of these assets, one is a Scheduled Monument, one is a Category A Listed Building, and 42 are non-designated heritage assets. These assets are listed in **Table 10-1**.

A single recorded prehistoric asset, the Scheduled Monument Corston Hill cairn (**SM6194**) is located within the north of the Site, along the western extent of Corston Hill. Whilst there is no recorded evidence of prehistoric settlement within the Site, the landscape along Morton Burn is the type of landscape that would be utilised by prehistoric groups for settlement and agriculture. Burial cairns are often situated within sight of areas of prehistoric settlement. Due to extensive medieval and post-medieval agricultural activity within this area of the landscape, any above ground remains are likely to have been removed.

The location of a potential Roman Road (**18249**) runs along the eastern Site boundary, however, there is no definitive evidence of this being the course of a Roman Road. Whilst the Roman Road does not prove definitive Roman occupation within the Site itself, Camilty Hill Roman Fortlet (**SM1933**) is located c.1.5km south east of the Site boundary, indicating a general presence of the Roman military within the vicinity of the Site.

The majority of recorded heritage assets within the Site are agricultural in nature and comprise enclosures, farmsteads, field boundaries, head-dykes and a cornmill. The majority of the agricultural assets are undated by the West of Scotland Archaeology Service (WoSAS); however, there are some assets dated to the medieval and post-medieval period. The central portion of the Site is covered extensively in rig and furrow (**50313**, **18710**), a medieval and post-medieval method of ploughing which leaves extensive marks on the landscape. The higher ground within the north of the Site has significantly less evidence of rig and furrow, indicating that it was likely used for grazing rather than for the cultivation of crops.

The Category A Listed Linhouse Water Railway Viaduct (**LB7365**) is located within the northern extent of the Site, carrying the West Coast Main Line over Linhouse Water. The rail line cuts through the Site, roughly north east to south west in orientation.

Table 10-1: Cultural Heritage Assets within the Site Boundary

HER or Designation Reference	Asset Name	Asset Type	Period
LB7365	Railway Viaduct, Linhouse Water	Category A Listed Building; Railway Viaduct	Post-medieval



HER or Designation Reference	Asset Name	Asset Type	Period
SM6194	Corston Hill, cairn	Scheduled Monument; Cairn	Prehistoric
18249	N/A	Roman Road	Roman
18002	Corston	Ring-ditches	Undated – Potentially Modern
18003	Causewood	Windpump	Undated
18004	Corston Hill	Mound	Undated
18005	Auchinoon Hill	Sheepfolds (possible)	Post-medieval
18012	Camilty Bridge	Bridge	Undated
18617	High Camilty / Whitelochnees	Farmstead	Post-medieval
18635	Cowthrople / Camilty	Farmstead	Undated
18710	Morton Hill / Camilty Water / Rae Burn	Cultivation Remains	Medieval; Undated
50313	Morton Hill / Auchinoon Hill	Rig; Field Walls; Sheepfolds; Sheep Shelter	Post-medieval; Undated
50329	Corston Hill	Farmstead; Head-dyke	Undated; Post-Medieval
50331	Morton Hill	Enclosure	Undated
50337	Morton Hill	Enclosures	Undated
50338	Causewood / Easter Causewayend	Farmstead	Undated
50340	Whitelea Burn	Wall	Undated
50341	Mortonhill / Midton	Building; Enclosures	Undated
50342	Linhouse Water / Morton Mill	Corn Mill	Undated
50347	Morton Reservoir	Enclosure	Undated
50348	Morton Reservoir	Enclosures; Field Wall	Undated
50349	Selm Muir Wood	Wall	Undated
67285	Corston	Farmstead	Post-medieval
88587	Morton Reservoir	Reservoir (Period Unassigned)	Undated



HER or Designation Reference	Asset Name	Asset Type	Period
90952	Corston Farm	Farmhouse (19th Century)	Post-medieval
93056	Corston Hill	Boundary Stone (19th Century) (1837)	Post-medieval
93249	Corston Hill	Boundary Stone (19th Century) (1837)	Post-medieval
93737	Corston Hill	Boundary Stone (19th Century) (1837)	Post-medieval
94499	Corston Hill	Boundary Stone (19th Century) (1837)	Post-medieval
94635	Corston Hill	Boundary Stone (19th Century) (1837)	Post-medieval
95965	Corston Hill	Boundary Stone (19th Century) (1837)	Post-medieval
96259	Corston Hill	Boundary Stone (19th Century) (1837)	Post-medieval
96262	Corston Hill	Boundary Stone (19th Century) (1837)	Post-medieval
99401	Auchinoon Hill	Sheepfold	Undated
99402	Auchinoon Hill	Sheepfold	Undated
99403	Auchinoon Hill	Enclosure	Undated
99404	Auchinoon Hill	Enclosure	Undated
99405	Auchinoon Hill	Enclosure	Undated
99406	Auchinoon Hill	Enclosure	Undated
99407	Auchinoon Hill	Sheepfold; Enclosure	Undated
99408	Auchinoon Hill	Enclosure; Sheepfolds	Undated
99409	Auchinoon Hill	Enclosure; Field	Undated
99410	Auchinoon Hill	Sheepfold	Undated
99411	Auchinoon Hill	Enclosure; Field	Undated

10.3.2 Assets outwith the Site Boundary

Within 10km of the proposed turbine locations there are 340 Designated Heritage Assets, comprising:

- 22 Scheduled Monuments;
- 305 Listed Buildings;
 - 40 Category A;
 - 146 Category B;
 - 119 Category C;
- four Inventory GDLs; and
- nine Conservation Areas.



There are three World Heritage Sites within 20km of the proposed turbine locations; the Old and New Towns of Edinburgh are located 17km to the north east, The Forth Bridge is located 13.5km north-north east, and Frontiers of the Roman Empire: The Antonine Wall is located 15km to the north west.

10.4 Potential Sources of Impact

10.4.1 Potential Sources of Impact within the Site Boundary

The 44 heritage assets recorded within the Site Boundary (**Table 10-1**) will be confirmed via a walkover survey. The assets recorded on the HER, along with the Scoping layout are shown on **Figure 10.1**.

With the exception of **WoSAS Pin: 18710**, a large area of cultivation remains, all non-designated heritage assets have been given a 10m avoidance buffer to avoid direct physical impacts on non-designated heritage assets where possible. Any further design changes will take into consideration the location of these assets to avoid any potential direct impacts.

With regards to **WoSAS Pin: 18710**, a small portion of a large collection of cultivation remains will be impacted by Turbines 3, 4, and 5, an area of solar arrays and the related infrastructure. The extent of impacts will be investigated during the walkover survey and outlined fully in the EIA Report Chapter.

As noted, there are two designated heritage assets within the Site boundary, comprising one Scheduled Monument (**SM6194**) and one Category A Listed Building (**LB7365**). Scheduled Monuments are protected under the Ancient Monuments and Archaeological Areas Act 1979, and any direct physical impacts without prior Scheduled Monument Consent would be in breach of the act. Listed Buildings are protected under the Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997 and any direct physical impacts without prior Listed Buildings Consent would be in breach of the act. As such, all infrastructure and construction activities will be placed outwith a 200m buffer from each designated heritage asset, in order to ensure that no direct impacts would occur. **SM6194** will be fenced off, outside of the Scheduled Area, to ensure no accidental damage occurs.

In addition, there is the potential for direct physical impacts to occur on previously unrecorded heritage assets within the Site. The archaeological potential of the Site will be assessed within the EIA Report Chapter, and any potential direct impacts will be discussed.

If there are any further ground-breaking works undertaken during operation or decommissioning of the wind farm (e.g., track widening), then there is the potential for further impact on recorded or unrecorded heritage assets. If this is the case, then further mitigation methods may be required.

Relevant mitigation measures will be embedded within the design of the proposed development as design progresses. Any additional mitigation will be proposed in the EIA Report Chapter and will be subject to agreement with the WoSAS and outlined fully in a Written Scheme of Investigation (WSI).

10.4.2 Potential Sources of Impact Outwith the Site Boundary

Direct impacts to an asset's setting are most likely to occur as part of the construction and operational phases of a development. As such, the potential for impacts on the setting of heritage assets during these phases has been considered.

With regards to the potential impacts on the setting of heritage assets, a bare earth ZTV calculation (shown in **Figure 10.2**) has been used to identify assets scoped in for further assessment. After analysis of the ZTV, a study area of 10km has been set as the area where significant impacts to the assets' setting are most likely, with visibility of the proposed development significantly reducing outwith this study area.



A screened ZTV (shown in **Figure 10.3**) has also been provided, however, it is acknowledged that vegetation is typically not considered permanent screening and as such it has not been relied upon for the basis of scoping assets out of assessment. The built environment, in cases where it screens views of the proposed development, is considered to be permanent and has been considered when assessing the potential for impacts on assets and their setting.

Assets within this study area have been subject to an initial appraisal, set out in **Appendix D**, to determine the scope of the assessment. The study area is taken from the turbines, as the most visible and potentially impactful elements of the proposed development.

Assets outwith this study area where long-distance visibility contributes to their cultural significance have been considered. Where significant effects are likely, these have been scoped in. As such, Cairnpapple Hill, prehistoric ceremonial complex (**SM90053**) has been scoped in for further assessment. All World Heritage Sites within the vicinity of the proposed development were considered for potential impacts on their setting. It is considered that the proposed development does not impact any key aspects of their setting and as such, all are scoped out of further assessment.

Following the appraisal of assets set out in **Appendix D** and pre-application advice received from HES, 13 designated cultural heritage assets have been identified as requiring a detailed settings assessment within the EIA Report, as there is the potential for the proposed development to have a significant effect upon their setting.

Following the receipt of HES' pre-application advice in May 2026, a Site visit was subsequently undertaken on 10 of June 2026 to visit many of the assets identified by HES within their pre-application advice letter. Harburn Estate (**GDL00208**) and Linhouse Mansion (**LB14156**) were unable to be accessed.

Whilst the list generated by HES and the Applicant is largely reflective of one another, upon visiting **SM1207** and **SM1160**, it was felt that these assets were unlikely to experience a significant effect as a result of the proposed development. Whilst **Figures 10.2** and **10.3** identify visibility from the proposed development, it is proposed that these assets are scoped out in their respective sections below, with justification. Camilty Hill, Enclosure (**SM1165**) has been included for further assessment at the request of HES.

10.4.2.1 Murieston Castle (SM1207)

The monument is a 16th century medieval tower, remodelled as a picturesque ruin in 1824. The castle survives over two stories with a circular turret. The monument is situated in a manicured garden within a modern farmyard with large infrastructure surrounding the castle. The castle is positioned to overlook the Murieston Water with 180-degree view when it was once a medieval tower. However, since the remodelling of the asset with the addition of a second floor, it is reclassified as a folly and thus largely a decorative feature. Despite this the modern built environs surrounding the castle result in limited visibility outwards as shown in **Plate 1. Figure 10.3** indicates that only four turbine tips would be visible due to the built environment already existing around the asset. It is therefore proposed that it be scoped out of further assessment.





Plate 3: South facing view of SM1207 with green farm infrastructure behind.

10.4.2.2 Hully Hill, Cairn and Standing Stones (SM1160)

The monument was once a prehistoric, potentially bronze age cairn that was excavated in 1830. Approximately 30m wide and 3m high, the cairn is surrounded by three standing stones intermittently around the monument. It appears to relate to the standing stone of **SM1158** located to the east of the monument however, intervisibility is no longer possible due to the built environment in the area. It is clear from inspection of the cairn that it has largely been altered, likely in the 19th century, after excavation, as evidenced by modern concrete in the monument. The setting of the monument is largely destroyed due to the substantial built environment surrounding the asset and therefore, whilst there is theoretical visibility from the proposed development, any significant effect on the setting of the monument is unlikely to occur. It is therefore proposed that the monument is scoped out of further assessment.





Plate 4: South, south east facing view from SM1160.

The assets scoped in for further assessment within the EIA Report after the initial heritage appraisal are provided in **Table 10-2**. A series of wirelines have been provided to demonstrate the potential impacts on the assets (**Figures 10.5 to 10.18**).

The proposed visualisations to accompany the EIA Chapter have also been outlined in **Table 10-2**. These visualisation locations are approximate, and final locations will depend on access and visibility of the final layout of the proposed development. If any viewpoints cannot be accessed and photos cannot be taken, wirelines will be produced. Any changes in visualisation locations will be communicated to the appropriate consultees. The provided visualisations will include the developments considered for cumulative assessment.

Table 10-2: Proposed Visualisations for Assets Scoped in for Further Assessment

Scoping Figure Number	Asset Reference	Asset Name	Visualisation Coordinates	Proposed Visualisation for EIA Chapter
Figure 10.5	SM6194	Corston Hill, cairn	308735, 663535	Photomontage. The locations of SM2980 and SM1153 will be noted on the visualisation. In response to HES consultation, will show position of SM1165.
Figure 10.6	SM2980	Harperrig, cairn, West Cairn Hill	310728, 658399	Photomontage. The locations of SM6194 and SM1153 will be noted on the visualisation.



Scoping Figure Number	Asset Reference	Asset Name	Visualisation Coordinates	Proposed Visualisation for EIA Chapter
Figure 10.7	SM1153	Harperrig, cairn, East Cairn Hill	312150, 659579	Photomontage. The locations of SM6194 and SM2980 will be noted on the visualisation.
Figure 10.8	SM1193	Cairns Castle	309028, 660515	Photomontage.
Figure 10.9	SM1172	Kaimes Hill, fort	312955, 666532	Photomontage.
Figure 10.10	SM1213	Dalmahoy Hill, fort	313534, 666945	Photomontage. The location of SM1172 will be noted on the visualisation.
Figure 10.11	LB7419	Blackburn House	300067, 665633	Photomontage.
Figure 10.12	LB14156	Linhouse Mansion	306138, 663088	Photomontage. This view will depict the approach to Linhouse Mansion along the main drive from the north west.
N/A	LB14156	Linhouse Mansion	N/A	Photomontage from the viewing platform of the 16 th century tower.
Figure 10.13	LB14156	Linhouse Mansion	306251, 662958	Photomontage. This view will depict views from the rear of Linhouse Mansion to the southeast.
Figure 10.14	SM90053	Cairnpapple Hill, prehistoric ceremonial complex	298716, 671740	Photomontage. The locations of SM6194, SM2980, and SM1153 will be noted on the visualisation.
Figure 10.15	LB7365	Railway Viaduct, Linhouse Water	307729, 664872	Photomontage.
Figure 10.16	GDL00208	Harburn House	304477, 660747	Photomontage.
Figure 10.17	SM1933	Camilty Hill, Roman fortlet, Castle Greg	305054, 659265	Photomontage from entrance to fort at its north east.
Figure 10.18	SM1165	Camilty Hill, Enclosure, Harburn	304922, 659360	Photomontage.

10.5 Method of Assessment and Reporting

10.5.1 Proposed Sources

The sources to be consulted in the production of the EIA Report Chapter include, but are not limited to, those outlined in **Table 10-3**.



Table 10-3: Proposed Sources

Subject	Source	Location
Designated heritage assets (except conservation areas)	Historic Environment Scotland (HES)	HES digital data download
Conservation Areas	WLC	HES digital data download
Non-designated heritage assets	HES Database – Trove	Digital data supplied as download
Non-designated heritage assets	Historic Environment Record (HER) data held by the West of Scotland Archaeology Service (WoSAS) on behalf of WLC.	Digital data supplied as download
Historic maps	National Library of Scotland	Online
Aerial photography	HES	HES database Trove and National Collection of Aerial Photograph (NCAP) (online)
LiDAR Data	Publicly available LiDAR data collated online.	Scottish Remote Sensing Portal – Online
Historic Land-Use Assessment (HLA)	HES	Online
Grey Literature	Unpublished reports	Various – Archaeological Data Service Archives, Council Archives
	Published reports and articles	Various – Academic Journals
Condition of recorded heritage assets within Site	Field inspection	Walkover survey by SLR Consulting
Setting of heritage assets	Field inspection within study areas and other specified assets from areas of public access.	Field survey by SLR Consulting

10.5.2 Study Area

There is no guidance defining what the extent of an appropriate ‘study area’ should be for the archaeological and cultural heritage assessment of wind farms. Any given study area will therefore represent an exercise in professional judgement, refined to point of agreement between stakeholders during consultation alongside the use of a ZTV.

With regards to the potential impacts on the setting of heritage assets, a ZTV calculation (Shown in **Figure 10.2**) has been used to identify assets scoped in for further assessment. After analysis of the ZTV, a study area of 10km has been identified as the area where significant impacts to the assets’ setting are most likely, with visibility of the proposed development significantly reducing outwith this study area. The study area is taken from the wind turbines, as the most visible and potentially impactful elements of the development. Due to the environs surrounding the development, a screened ZTV (**Figure 10.3**) has been provided to further illustrate the relevance of a 10km buffer from the proposed turbines.

This study area will be applied with a degree of flexibility, and assets outwith this area where long-distance views contribute to the cultural significance of the asset will be considered at



the discretion of the assessor. As outlined in the EIA Handbook, visibility does not equate to adverse impact, and the ZTV is to be used as a point of reference⁴⁶.

Assets within this study area have been subject to an initial appraisal, set out in **Appendix D**, to determine the scope of the assessment. The study area is taken from the wind turbines, as the most visible and potentially impactful elements of the development.

Assets recorded within the Site and within 1km of the Site boundary will be analysed to inform the archaeological potential of the Site (shown on **Figure 10.1**).

10.6 Scope of Assessment

10.6.1 Assets within the Site

All cultural heritage assets within the Site boundary will be assessed in order to determine the potential for any direct and indirect impacts.

Should WoSAS identify any non-designated assets that they consider to be of national/regional significance, and which they consider to derive significance from their setting, these should be made known to the Applicant via consultation.

10.6.2 Assets outwith the Site

All affected nationally significant designated within the aforementioned 10km study area have been subject to an initial appraisal, set out in **Appendix D**, to determine the scope of the assessment. This will be updated alongside design iterations.

Assets where long-distance views contribute to their cultural significance outwith the 10km study area have also been considered. As such, Cairnpapple Hill, prehistoric ceremonial complex (**SM90053**) has been scoped in for further assessment.

Assets considered to be of national importance by WoSAS, including non-inventoried designed landscapes, will be subject to an appraisal and considered for further assessment once HER data has been obtained. A final scope of assets that have the potential for significant effects as a result of the proposed development will be agreed with the relevant consultees and assessed in full within the EIA Report.

10.6.3 Field Surveys

A targeted Site inspection will be carried out in relation to all recorded assets within the Site boundary; the aim of this would be to establish the condition of any recorded assets and identify the potential for any additional presently unrecorded assets. The targeted survey will also encompass any proposed areas of infrastructure, to identify any potential assets within the area of proposed works.

An in-field visit to heritage assets that have been scoped in for further assessment, will be undertaken to assess setting impacts.

10.6.4 Zone of Theoretical Visibility

As above, the EIA Report will be complemented by the ZTV as presented on **Figure 10.2** in determining impacts. The ZTV is based upon the maximum level of theoretical visibility, i.e. the maximum height of the turbine blade tips.

⁴⁶ Scottish Natural Heritage and HES (2018), Appendix A, Paragraph 44



10.6.5 Assessment and Type of Impact

The proposed development has the potential to result in effects upon the cultural significance of heritage assets where it changes their baseline condition and/or their setting.

In accordance with the EIA Regulations and the EIA Handbook, this assessment will identify any development impacts as direct (physical) impacts, indirect (physical) impacts, direct (settings) impacts, and cumulative impacts⁴⁷. With regard to the EIA handbook, consideration has also been given to whether the impacts are adverse or beneficial, and short-term, long-term, or permanent⁴⁸. NPF4 Policy 11f considers that areas identified for wind farms are expected to be suitable for use in perpetuity and as such, under the guidance of the EIA Handbook, the operational impacts of the development should be considered permanent.

Impacts on cultural heritage assets will be identified and assessed with reference to the guidance set out in the EIA Handbook⁴⁹ and the Historic Environment Policy for Scotland (HEPS), specifically HEP3 and HEP4⁵⁰.

Direct impacts upon the cultural significance of heritage assets will take into account the level of their cultural significance (where known) and the magnitude (extent) of the identified impacts.

Where direct impacts on an asset's setting are concerned, the sensitivity of an asset's setting to change is also considered and will be carried out following the three-stage approach outlined in Managing Change in the Historic Environment: Setting⁵¹. The three-step approach is as follows:

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

10.6.6 Cumulative Effect

Cumulative effects will be assessed in line with the guidance provided in the EIA Handbook⁵². A cumulative effect is considered to occur when there is a combination of:

- an impact on an asset or group of assets due to changes resulting from the proposed development; **and**
- an impact on the same asset or group of assets resulting from other wind farm developments, or other EIA applications of a similar scale (consented, under construction, within appeal or allocated in the Local Development Plan, but not operational) within the surrounding landscape.

⁴⁷ Scottish Natural Heritage and HES (2018), Appendix 1, Paragraph 44.

⁴⁸ Scottish Natural Heritage and HES (2018), Box C.7.Info.1

⁴⁹ Scottish Natural Heritage and HES (2018)

⁵⁰ HES (2019a), Page 14

⁵¹ HES (2020), Page 8

⁵² Scottish Natural Heritage and HES (2018), Box AP1.Info.2, Page 183



In line with guidance presented in Managing Change in the Historic Environment: Setting⁵³, any effect resulting from operational wind farms will be considered as part of the baseline of the asset and will be considered in the construction and operational impacts sections of this chapter.

Assets with a minor or higher significance of effect resulting from the proposed development in isolation will be considered for cumulative assessment, as these assets are most likely to be susceptible to significant cumulative effects. A study area of 15km from each asset assessed has been chosen based on professional judgement, allowing the assessment to encompass both the proposed development and any other developments within the surrounding landscape deemed to have the potential for cumulative effects.

All wind farm developments considered as part of the cumulative assessment will be listed in full within the cultural heritage chapter of the EIA Report.

10.6.7 Cultural Heritage Significance

For both designated and non-designated heritage assets, cultural significance can be derived from its inherent heritage interests, as outlined in HES's Designation Policy and Selection Guidance (2019) annexes⁵⁴.

These categories of cultural significance have been outlined in **Table 10-4**. **Table 10-4** categorises heritage assets based on their designation and presumed value, based on the guidance provided in Appendix 1 Figure 2 of the EIA Handbook⁵⁵. This is referred to as "*sensitivity*"⁵⁶ in the EIA Handbook and will henceforth be referred to as cultural heritage significance. **Table 10-4** will act as an aid to consistency in the exercise of professional judgement and provide transparency for others in evaluating the conclusions drawn.

Table 10-4: Cultural Heritage Significance

Cultural Heritage Significance	Criteria
Highest	Sites of international importance, including: World Heritage sites.
High	Sites of National importance, including: Scheduled Monuments; Category A Listed Buildings; Gardens and Designed Landscapes included on the national inventory; Inventoried Battlefields Conservation Areas containing nationally important buildings; and Non-designated assets of equivalent significance as identified by the local heritage officer or professional judgement.
Medium	Sites of Regional/Local importance, including: Category B and C Listed Buildings; Conservation Areas containing buildings that contribute significantly to its character; and Non-designated assets of equivalent significance.

⁵³ HES (2020), Managing Change in the Historic Environment: Setting. Page 9

⁵⁴ HES (2019b) Annexes 1 - 5

⁵⁵ Scottish Natural Heritage and HES (2018), Page 185

⁵⁶ *Ibid*



Cultural Heritage Significance	Criteria
Low	Assets of Local importance. Heritage assets that are compromised by poor preservation and/or poor survival of contextual associations or with little of the asset remaining to justify a higher importance.
Negligible	Assets that are of very little or no heritage interest. Heritage assets where the ability to interpret their archaeological context has been removed/eroded.
Unknown	Further information is required to assess the significance of these assets.

The factors contributing to cultural significance extend beyond their designation status and are subject to more individual nuance based on the type, function, and preservation. The assessment will take into account the factors contributing to an asset's cultural significance as well as the sensitivity of the heritage asset to change. Each element of an asset's setting may make a positive, neutral, or negative contribution to the cultural significance of an asset.⁵⁷

An asset's sensitivity of change refers to the capacity of the asset's setting to retain its ability to contribute to the understanding, appreciation, and experience of the asset and its cultural significance despite the introduction of changes caused by the proposed development to the asset's baseline environment.

The contribution of the asset's setting to its cultural significance, and sensitivity thereof, varies based on the type of asset, its preservation, and its current setting. As part of the assessment, the contribution of the asset's setting and relative sensitivity to change will be presented with relevant justification, utilising the results of desk-based research, a field visit, and professional judgement.

Due to the unique qualities of each heritage asset, this will be determined on a case-by-case basis for each receptor in line with *HES's Managing Change in the Historic Environment: Setting*⁵⁸ guidance and the *EIA Handbook*⁵⁹ as per the above methodology.

10.6.8 Magnitude of Change

Determining the magnitude of any likely changes includes consideration of the nature of the activities proposed during the construction, operational and decommissioning phases of the proposed development. Changes could potentially include, but are not limited to, ground disturbance due to construction activities and changes to setting. The latter might include visual change, as well as the introduction of noise, vibration, smell, dust, or traffic movements.

Where adverse impacts on cultural heritage assets are possible, the magnitude of change can be reduced through measures to prevent, reduce and/or, where possible, offset these effects.

Taking into account all embedded mitigation measures, the magnitude of any change will be assessed using professional judgement, with reference to the criteria set out in **Table 10-5**.

Table 10-5: Magnitude of Change

Magnitude of Change	Explanatory Criteria
High Beneficial	Changes to the elements of the fabric or the setting of the cultural heritage asset that contribute to its cultural significance, such that this cultural

⁵⁷ HES (2019b)

⁵⁸ HES (2020)

⁵⁹ Scottish Natural Heritage and HES (2018)



Magnitude of Change	Explanatory Criteria
	significance, or the ability to understand, appreciate and experience the asset, is considerably enhanced.
Medium Beneficial	Changes to the elements of the fabric or the setting of the cultural heritage asset that contribute to its cultural significance, such that this cultural significance, or the ability to understand, appreciate and experience the asset, is enhanced to a clearly discernible extent.
Low Beneficial	Changes to the elements of the fabric or the setting of the cultural heritage asset that contribute to its cultural significance, such that this cultural significance, or the ability to understand, appreciate and experience the asset, is enhanced to a minor extent.
Neutral/None	The proposed development would not impact the cultural heritage significance of the heritage asset, or the ability to understand, appreciate and experience it.
Low Adverse	Changes to the elements of the fabric or the setting of the cultural heritage asset that contribute to its cultural significance, such that this cultural significance, or the ability to understand, appreciate and experience the asset, is eroded to a minor extent.
Medium Adverse	Changes to the elements of the fabric or the setting of the cultural heritage asset that contribute to its cultural significance, such that this cultural significance, or the ability to understand, appreciate and experience the asset, is eroded to a clearly discernible extent.
High Adverse	Changes to the elements of the fabric or the setting of the cultural heritage asset that contribute to its cultural significance, such that this cultural significance, or the ability to understand, appreciate and experience the asset, would be considerably eroded.

10.6.9 Significance of Effect

Table 10-6 provides a matrix that relates the cultural significance of the asset to the magnitude of change on its cultural significance, to produce an overall anticipated level of effect (significance of effect).

Table 10-6: Significance of Effect Matrix

		Cultural Significance (Excluding Unknown)				
		Highest	High	Medium	Low	Negligible
Magnitude of Change	High Beneficial	Major	Major	Moderate	Minor	Minor
	Medium Beneficial	Major	Moderate	Minor	Minor	Negligible
	Low Beneficial	Moderate	Minor	Minor	Minor	Negligible
	Neutral/None	Neutral/Nil	Neutral/Nil	Neutral/Nil	Neutral/Nil	Neutral/Nil
	Low Adverse	Moderate	Minor	Minor	Minor	Negligible
	Medium Adverse	Major	Moderate	Minor	Minor	Negligible
	High Adverse	Major	Major	Moderate	Minor	Minor



10.6.10 Significance

Once the anticipated effects of the proposed development upon cultural heritage assets are defined, professional judgement will be used to determine whether those effects would be either 'Significant' or 'Not Significant' for the purposes of EIA. As part of this determination process, regard will be given to any relevant guidance.

With reference to the matrix presented in **Table 10-6**:

- any effects identified as 'major' would most probably be considered 'significant';
- any effects identified as 'moderate' might also be considered 'significant,' although professional judgement may determine otherwise on the basis of the associated Site-/asset-specific detail; and
- any effects identified as 'minor' or less are unlikely to be considered 'significant,' though again, professional judgement will be exercised.

A clear statement will be made in relation to all affected assets as to whether the identified effects upon them are considered to be 'significant' or 'not significant' for purposes of EIA.

10.6.11 Application of NPF4

The following are excerpts from Policy 7: Historic Places in NPF4 in relation to designations and non-designated heritage assets.

Policy 7c) states that development proposals affecting the setting of Listed Buildings should *"preserve its character, and it's special architectural or historic interest."*

Policy 7h) states that development proposals affecting Scheduled Monuments will only be supported where; *"significant adverse impacts on the integrity of the setting of a scheduled monument are avoided."*

Policy 7i) states that development proposals affecting nationally important Gardens and Designed Landscapes will be supported where they *"protect, preserve, or enhance their cultural significance, character and integrity and where the proposals will not significantly impact on important views to, from and within the stie or its setting."*

The phrase 'integrity of setting' applies only to Scheduled Monuments and Gardens and Designed Landscapes as per the wording used in NPF4. For Listed Buildings, the setting is protected under the Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997.

In regard to Scheduled Monuments and GDLs, a significant effect in EIA terms does not necessarily equate to a significant impact upon the integrity of setting. Where significant effects⁶⁰ are found, a detailed assessment of adverse impacts upon the integrity of the setting is made. Changes to factors of setting that contribute to cultural significance, such that the understanding, appreciation and experience of an asset are not adequately retained will have a significant adverse impact on the integrity of its setting. This is most likely to occur where the sensitivity of setting is deemed to be highly sensitive to change.

Policy 7o) states:

"Non-designated historic environment assets, places and their setting should be protected and preserved in situ wherever feasible. Where there is potential for non-designated buried archaeological remains to exist below a site, developers will provide an evaluation of the archaeological resource at an early stage so that planning

⁶⁰ As defined and agreed in the Hill of Fare Wind Farm Cultural Heritage Statement of Agreed Matters (July 2025). DPEA Reference: WIN-110-4



authorities can assess impacts.

Historic buildings may also have archaeological significance which is not understood and may require assessment. Where impacts cannot be avoided they should be minimised.

Where it has been demonstrated that avoidance or retention is not possible, excavation, recording, analysis, archiving, publication and activities to provide public benefit may be required through the use of conditions or legal/planning obligations.

When new archaeological discoveries are made during the course of development works, they must be reported to the planning authority to enable agreement on appropriate inspection, recording and mitigation measures"

10.6.12 Mitigation

A statement of any embedded mitigation measures proposed to be implemented in response to identified cultural heritage impacts will be provided, with the impact assessments taking these into account. The main approach to mitigating both direct and indirect impacts will be through design. Avoidance of direct impacts on heritage assets will be a consideration throughout the design process.

Suitable measures for minimising effects through ground disturbance might include:

- the micro-siting of proposed development infrastructure away from sensitive locations;
- the fencing off or marking out of heritage assets or features in proximity to construction activity in order to avoid disturbance where possible;
- a programme of archaeological work where required, such as an archaeological watching brief during construction activities in or in proximity to areas of archaeological sensitivity, or excavation and recording where impact is unavoidable; and/or
- a working protocol to be implemented should unrecorded archaeological features be discovered.

Suitable measures for mitigating any setting effects might include:

- alteration of the proposed turbine layout; and/or
- reduction of proposed turbine heights.

Where avoidance has not been possible, further mitigation will be proposed as a condition to consent.

10.6.13 Residual Effects

Residual effects are those that remain even after the implementation of suitable mitigation measures. Residual effects will be identified, and the significance of those residual effects defined with reference to **Table 10-6**.

10.7 Consultation

Consultees are invited to comment on the current scope of assets to be assessed in the EIA.

HES is also invited to comment in relation to the method of assessment employed in assessing those heritage assets within their remit; these include Scheduled Monuments, Category A Listed Buildings, Inventoried GDLs, and Inventoried Battlefields.

WoSAS is invited to comment in relation to non-designated heritage assets and designated heritage assets of regional significance, and any non-designated assets which they consider to be of higher significance.



Additional follow up consultation, post-scoping, will be undertaken as required with HES and WoSAS, to agree on the scope of assessment for the final design layout of the proposed development.

10.8 Matters Scoped Out

For heritage assets whose cultural significance is primarily influenced by their immediate setting and physical characteristics, any proposed change located more than 5km away is unlikely to result in significant effects. Therefore, Conservation Areas and Category B and C Listed Buildings have been scoped out of setting, indirect, and cumulative impacts where they fall outwith a distance of 5km from the proposed development.

It is also considered that any assets that fall outwith the ZTV (and where important views associated those assets' approaches and third points of appreciation also fall outwith the ZTV) can be scoped out of the EIA in relation to cultural heritage.

10.9 Questions to Consultees

- Q10.1** Do consultees agree with the methodology set out?
- Q10.2** Do consultees agree with assets and matters scoped out?
- Q10.3** Are there any assets, not listed in the appraisal, that key consideration should be given to?
- Q10.4** Do consultees have any specifications on further visualisations and their locations?



11.0 Site Access, Traffic and Transport

11.1 Introduction

This section of the Scoping Report outlines the proposed method to assess the potential effects associated with access, traffic and transport by the vehicle movements generated during the construction and operation of the proposed development.

The assessment of the effects of these vehicle movements will follow the guidance in the Institute of Environmental Management and Assessment (IEMA) Guidelines: Environmental Assessment of Traffic and Movement, July 2023^{61,62}. The method will involve:

- establishing the environmental baseline;
- identifying potential sources of impact;
- quantifying impacts;
- assessing effects;
- identifying mitigation;
- assessing cumulative impacts; and
- identifying residual impacts.

The assessment will also be informed by Scottish Renewables' Guidelines on Streamlining Environment Impact Assessment for Onshore Wind Farms⁶³ and Transport Scotland's Transport Assessment Guidance⁶⁴.

11.2 Environmental Baseline

11.2.1 Study Area

The study area for the assessment will comprise the public road network likely to be used by vehicles travelling to and from the proposed development. The extent of the study area will be determined through assessment, but it is likely to include the following sections of road:

- the A70 between Bridge Road in Balerno and the A721 in Carnwath;
- the B7031 between the A70 and the A71; and
- the B7008 between the A70 and the A71.

11.2.1.1 A70

The length of the A70 within the study area (around 30km) is a single- carriageway road with one lane in each direction. It is mainly bordered by open farmland, with occasional residential properties and other developments accessing it directly but the northern and southern ends of this length pass through the built-up areas of Balerno and Carnwath respectively.

The A70 is subject to a 60 miles per hour (mph) speed limit along most of its length, with a 30mph limit applying on the easternmost 1.4km or so through Balerno, a 40mph speed limit

⁶¹ The IEMA was renamed as The Institute of Sustainability and Environmental Professionals (ISEP) in July 2025

⁶² Davis, S., Hoare, D., Howard., R., Ross, A. (2023) Institute of Environmental Management and Assessment (IEMA) Guidelines: Environmental Assessment of Road Traffic and Movement. London: IEMA.

⁶³ Scottish Renewables (2025). Guidelines on streamlining Environmental Impact Assessment for Onshore Wind Farms. Scottish Renewables.

⁶⁴ Transport Scotland (2012). Transport Assessment Guidance. Glasgow: Transport Scotland.



applying for around 250m through Carnwath and a 30mph speed limit applying for the southernmost 550m or so through Carnwath.

The section of the A70 within the study area that is within South Lanarkshire Council's (SLC) area is classified as an 'Agreed Route' in the Timber Transport Forum's 'Agreed Routes Map for Timber Transport'⁶⁵. An 'Agreed Route' is defined as "*Roads which can be used for timber haulage without restriction other than as regulated by the Road Traffic Act 1988*". Many vehicles involved in timber haulage would be Heavy Goods Vehicles (HGVs), so it is reasonable to consider that this section of the A70 is suitable for HGV usage.

There are footways on each side of the A70 for the easternmost 500m or so through Balerno, with a footway continuing on the southern side only for around another 400m. The easternmost 400m or so of this footway forms part of Core Path CEC16 in City of Edinburgh Council's (CEC) Core Path Network. This same length of the A70 carriageway forms part of NCN Route 75 (see **Figure 5.6**).

There is a footway on the western side of the A70 for the southernmost 1km or so through Carnwath (part of which is signed as a shared foot and cycleway) and a footway on the eastern side of the southernmost 100m or so through Carnwath. The footway on the western side forms Core Path CL/3185/1 and CL/3186/1 in SLC's Core Path network.

11.2.1.2 B7031

The B7031 is around 4km long and links the A70 to the south with the A71 to the north and is a single carriageway road with one lane in each direction. It is mainly bordered by open farmland, with occasional homes and other developments accessing it directly but around a 1km length passes through the built-up area of Kirknewton.

The northernmost 300m or so is subject to a 40mph speed limit, immediately followed by a 30mph speed limit for around 1.1km as it passes through Kirknewton. The remainder is subject to a 60mph speed limit. It crosses the Edinburgh – Carstairs railway line at a level crossing in Kirknewton.

There is a continuous footway along at least one side of the entire length of the B7031 and footway on both sides for a length of around 250m through Kirknewton. The northernmost 1.5km or so forms part of NCN Route 75 and part of Core Path 1 in WLC's Core Path network.

11.2.1.3 B7008

The B7008 is around 6.7km long and links the A70 in the south with the A71 to the north. It is a single carriageway road with one lane in each direction. It is mainly bordered by open farmland, with occasional homes and other developments accessing it directly, but the northernmost 900m or so passes through the built-up area of West Calder. It is subject to a 30mph speed limit for around 250m through Harburn and for the northernmost 700m or so through West Calder – the remainder is subject to a 60mph speed limit.

There is a footway on the eastern side of the road for the northernmost 1.8km or so and on the eastern side for the northernmost 550m or so.

11.2.2 Data Collection

Vehicle movement data will be collected by undertaking week-long Automatic Traffic Counts (ATCs). The locations of these ATCs will be determined through the assessment but would likely be at least on the A70 in the vicinity of the proposed development and on the sections

⁶⁵ [Agreed Route Map for Timber Transport Forum](#)



of the B7008 and the B7031 between the A70 and the A71. These ATCs will give data on vehicle volumes, types and speeds.

A 'low' growth factor from the National Road Traffic Forecasts (NRTF) dataset will be applied to the observed vehicle movement data to allow for traffic growth to the year when construction of the proposed development could be expected to commence.

Data on accidents will be collated from the Department for Transport's (DfT's) Mapping Application for Visualising Road Injury Casualties (MAVRIC).

11.3 Potential Sources of Impact

The proposed development will generate vehicle movements during construction by staff travelling to and from it and plant, components, materials and supplies being delivered to or removed from it. This will lead to additional cars, vans, Light Good Vehicles (LGVs) and HGVs on the road network.

The number of typical daily construction-related vehicles that will be generated during each month of the construction phase will be estimated. These estimates will reflect the activities that will take place during construction and the amount of materials and number of items of equipment that will need to be delivered to or removed from the proposed development. These estimates will also reflect an assessment of the amount of aggregate that could be won from onsite borrow pits.

The number of staff likely to be present during each week or month of the construction phase will be estimated based on experience of other similar developments and the phasing plan for the proposed development.

Professional judgement will be applied to estimate the routes taken by vehicles travelling to and from the proposed development based on the locations of potential suppliers of materials. The increase in vehicle movements during the busiest month (or months) of construction on each section of road in the study area will be calculated based on the above estimates.

The delivery of the turbine components during construction will require Abnormal Indivisible Load Vehicle (AILV) movements as some of the vehicles carrying the components will have at least one dimension that exceeds the maxima in The Road Vehicles (Construction and Use) Regulations 1986. A report will be prepared to consider the potential routes for these AILVs and this report will be included as a technical appendix to the EIA Report. The effects of the passage of these AILVs will be considered in the assessment.

Transport demand during operation will likely be much lower than during construction, since during operation there will be only occasional visits from maintenance or inspection vehicles. It is proposed, therefore, that the potential transport effects of the proposed development once it is fully operational are scoped out of the assessment.

Activities during decommissioning would likely be similar to those during construction, except that they would occur in reverse. However, some elements (such as below ground infrastructure) may remain. Hence decommissioning is likely to generate fewer vehicle movements than construction.

11.4 Method of Assessment and Reporting

Baseline

The sections of roads within the study area will be visited by members of the project team to note things like their configuration, any restrictions on movement (such as height or weight restrictions) and the presence of any potential sensitive receptors. Baseline data for these roads, as described in **Section 11.2.2**, will be collated and reviewed.

Initial Screening



The additional traffic expected to be generated by the construction of the proposed development will be compared to the baseline vehicle movements and the percentage increase in all vehicles and in HGVs only will be calculated. These increases will then be reviewed against the IEMA Guidelines, which state:

“Following the determination of a study area, it is recommended the competent traffic and movement expert applies two broad rules of thumb as criteria to assist in delimiting the scale and extent of the environmental assessment:

Rule 1 Include highway links where traffic flows will increase by more than 30% (or the number of heavy goods vehicles will increase by more than 30%)

Rule 2 Include highway links of high sensitivity where traffic flows have increased by 10% or more.”

The IEMA Guidelines also state *“It should also be noted that the day-to-day variation of traffic on a road is frequently at least + or - 10%. At a basic level, it should therefore be assumed that projected changes in traffic of less than 10% create no discernible environmental impact.”*

All sections of road will be subject to the threshold in Rule 1. Sections of road will be identified as being of ‘high sensitivity’ (i.e. also subject to Rule 2 above) based on the guidance in paragraph 1.30 of the IEMA Guidelines. The baseline study work referred to earlier in this section will have established which sections of road within the study area could be classified as being of ‘high sensitivity’.

Where the estimated increase in traffic arising from the proposed development does not breach the relevant threshold for any section of road, the significance of any effects will be considered to be low and not significant in EIA terms. No further assessment work will be undertaken on such sections.

11.4.1 Assessment of Effects

Where the estimated increase in traffic arising from the proposed development breaches the relevant threshold for any section of road, potential effects on the following will be assessed:

- severance;
- road vehicle driver and passenger delay;
- non-motorised user delay;
- non-motorised user amenity;
- fear and intimidation of and by road users;
- road user and pedestrian safety; and
- hazardous / large loads.

The magnitude of change on each of these will be determined based on the criteria in **Table 11-1**.

Table 11-1 Categorisation of Magnitude of Change by Potential Effect

Topic	Magnitude of Change			
	Large	Medium	Small	Negligible
Severance	Change in road link traffic flow of 90% or over.	Change in road link traffic flow of 60% to less than 90%.	Change in road link traffic flow of 30% to less than 60%.	Change in road link traffic flow of less than 30%.



Topic	Magnitude of Change			
	Large	Medium	Small	Negligible
Road Vehicle Driver and Passenger Delay	Judgement based on the individual characteristics of sections of road.			Change in road link traffic flow of less than 10%.
Non-Motorised User Delay	Judgement based on the individual characteristics of sections of road.			Change in road link traffic flow of less than 10%.
Non-Motorised User Amenity	Judgement based on the individual characteristics of sections of road. Medium or Large likely if change in total traffic flows or HGV flows of more than 100%.			Change in total traffic flows or HGV flows of less than 10%.
Fear and Intimidation of and by Road Users	Two changes in 'Level of fear and intimidation'.	One change in level of fear and intimidation with >400 vehicle increase in average 18 hour (hr) vehicle flow or >500 Heavy Vehicle (HV) increase in total 18hr HV flows.	One change in level of fear and intimidation with <400 vehicle increase in average 18hr vehicle flow or <500 HV increase in total 18hr HV flows.	No change in Level of fear and intimidation.
Road User and Pedestrian Safety	Judgement based on accident data and individual characteristics of sections of road.			Change in road link traffic flow of less than 10%.
Hazardous / Large Loads	Judgement based on number of such movements and nature of affected road network.			

However, there may be instances where, for example, a relatively low increase in vehicle movements results in a relatively large percentage increase simply because the baseline vehicle movements are so low. Such an increase may breach one of the thresholds in **Table 11-1**, but, in absolute terms, may be considered to have a lesser impact magnitude. Professional judgement will be used in the application of the thresholds in **Table 11-1**.

11.4.2 Receptor Sensitivity

Receptor sensitivity will be defined as shown in **Table 11-2**.

Table 11-2 Receptor Sensitivity Definitions

Sensitivity	Description
Very high	Receptor with no capacity to accommodate a particular effect and no ability to recover or adapt.



High	Receptor with very low capacity to accommodate a particular effect with low ability to recover or adapt.
Moderate	Receptor with low capacity to accommodate a particular effect with low ability to recover or adapt.
Low	Receptor has some tolerance to accommodate a particular effect or will be able to recover or adapt.
Negligible	Receptor is generally tolerant and can accommodate a particular effect without the need to recover or adapt.

Professional judgement will be used in the application of the definitions shown in **Table 11-2**. For example, pedestrians may be less sensitive to severance effects if there are measures in place to aid pedestrians crossing the road. This is acknowledged in paragraph 1.31 of the IEMA Guidelines which states *“For example, pedestrians are less sensitive to changes in traffic if there are adequate footways and crossing facilities”*.

11.4.3 Significance Criteria

An effect significance matrix based on the magnitude of change and receptor sensitivity is set out in **Table 11-3**.

Table 11-3 Effect Significance

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

Effects of ‘major’ significance will be considered to be ‘significant’ in terms of the EIA Regulations. Effects of ‘moderate’ significance will be considered to be either ‘significant’ or ‘not significant’ in terms of the EIA Regulations and professional judgement used to determine the level of significance. Effects of ‘minor’ or ‘negligible’ significance will be considered to be ‘not significant’ in terms of the EIA Regulations.

11.4.4 Mitigation

Mitigation measures will be proposed to lessen any effects of the vehicle movements generated by the proposed development. These will be developed in accordance with the guidance in the ‘IEMA Impact Assessment Guidelines: Implementing the Mitigation Hierarchy



from Concept to Construction' of August 2024⁶⁶, which identifies the following three types of mitigation:

- Primary mitigation, which are measures that are an inherent part of the project design (such as borrow pits to reduce the amount of aggregate that will need to be brought in from offsite sources).
- Secondary mitigation, which are measures that require further activity in order to achieve the anticipated outcome and are often secured through planning conditions, requirements and/or management plans (for example a Construction Traffic Management Plan (CTMP)).
- Tertiary mitigation, which are measures which will be required regardless of any EIA assessment, as they are measures which are imposed, for example, as a result of legislation or standard practices.

11.4.5 Cumulative Effects

A cumulative assessment will be undertaken to determine the increase in vehicle movements arising from the proposed development and any other developments that would affect the same sections of the road network at around the same time as the proposed development would be constructed. The significance of cumulative effects will be assessed using the same process as described above.

The baseline traffic surveys will record vehicle movements generated by potential cumulative developments that were operational or under-construction at the time of the surveys. No specific allowance need therefore be made for potential cumulative developments of these types. Insufficient information is likely to be available for potential cumulative developments that are at the scoping stage and these are proposed to be excluded from the cumulative assessment.

For the purposes of this assessment, therefore, potential cumulative developments will be considered relevant if they would affect the same sections of the road network at around the same time as the proposed development would be constructed and either:

- have consent and are unbuilt; or
- are the subject of a valid (but undetermined) application.

11.5 Consultation

The relevant roads authorities would be consulted if required to, for example, clarify anything in their response to this Scoping Report or to discuss any specific issue which arises during the EIA process.

11.6 Matters Scoped Out

Potential transport effects of the proposed development once it is fully operational are proposed to be scoped out of the assessment for the reasons explained in **Section 11.3**.

11.7 Questions to Consultees

Q11.1 Is the proposed methodology acceptable?

⁶⁶ Beadle, Burgess, Callaghan, Howard, Knott, Riley, Walker et al. (2024) Institute of Environmental Management and Assessment (IEMA) Guidelines: Implementing the Mitigation Hierarchy from Concept to Construction. London: IEMA



- Q11.2** Are there any key locations on the road network within the study area that consultees would wish to see considered as sensitive receptors?
- Q11.3** Are there any locations on the road network within the study area with atypically-high accident rates?
- Q11.4** Are there any particular committed developments that consultees would wish to see included in the cumulative assessment?



12.0 Other Topics

12.1 Introduction

A number of other topics that are considered relevant in relation to the proposed development include:

- Climate and Carbon Balance;
- Socio-Economics, Tourism and Recreation;
- Aviation and Radar;
- Forestry;
- Glint and Glare;
- Shadow Flicker;
- Telecommunications;
- Agricultural Land Classification
- Television Reception;
- Ice Throw;
- Air Quality;
- Population and Human Health;
- Risks of Major Accidents and/or Disasters; and
- Environmental Management.

12.2 Climate and Carbon Balance

The EIA Regulations 2017 include for consideration of potentially significant effects on climate which includes greenhouse gas emissions. As a renewable energy project, the proposed development is likely to result in a significant saving in carbon and therefore provide an overall benefit to the UK climate.

As set out in the Scottish Renewables Guidance on Streamlining EIA, consideration of vulnerability to climate change related risk will be given due regard in the description of the proposed development, and adaptation and resilience to climate change will be covered in each topic assessment where this is relevant.

The Scottish Government Carbon Calculator tool will be used to consider the impacts of the proposal in relation to carbon balance. The main aims of the calculation are: to quantify sources of carbon emissions associated with the proposed development (i.e. from construction, operation and transportation of materials, as well as loss of peat as relevant); to quantify the carbon emissions which will be saved by constructing the proposed development; and to calculate the length of time for the project to become a 'net avoider', rather than a 'net emitter' of carbon dioxide emissions. The length of time is termed the 'payback time'.

A carbon balance assessment will be undertaken for the proposed development using guidance Calculating Potential Carbon Losses and Savings from Wind Farms on Scottish



Peatlands⁶⁷. The results of this assessment will comprise a technical appendix submitted as part of the EIA Report.

12.2.1 Questions to Consultees

Q12.2.1 Are consultees in agreement with the proposed approach to climate and carbon balance?

12.3 Socio-Economics, Tourism and Recreation

12.3.1 Baseline Information

12.3.1.1 Economy and Employment

In 2024, the resident population of West Lothian was 186,400⁶⁸. Of this population, 63.6% are aged between 16-64 years (considered to be the working age population).

The proportion of the population that are considered economically active within West Lothian is higher than both the Scottish and Great Britain averages, at 83.5%, compared to 77.3% and 79.0% respectively⁶⁸. In line with this, unemployment in West Lothian is lower than both the Scottish and Great Britain figures, at 1.9% compared to 3.7% and 4.3% respectively. There is also a lower job density within West Lothian (0.71) compared to Scotland (0.83) and Great Britain (0.86)⁶⁸.

The main reasons for economic inactivity within West Lothian are due to those who are long-term sick, followed by those who are retired and those who are students. There is a higher proportion of those that are classed as long-term sick in West Lothian (36.7%) compared to Scotland (33.8%) and Great Britain (27.8%). There is also a much higher proportion of those who are retired in West Lothian when compared to the Scottish and Great Britain figures, at 21.5%, compared to 15.5% and 13.0% respectively⁶⁸.

There are a lower proportion of residents within West Lothian with registered qualifications framework (RFQ) level 4, 3, 2 and 1⁶⁹ when compared to the Scottish levels. In line with this, there is a slightly higher proportion of the population with other qualifications (4.0%) when compared to Scotland (3.5%) and a higher proportion of no qualifications (9.5%) when compared to Scotland (8.2%)⁶⁸.

The largest employment sectors within West Lothian are wholesale and retail trade; repair of motor vehicles and motorcycles (15.8%), followed by human health and social work activities (11.8%), and manufacturing (10.5%).

There are a small number of businesses located within 500m of the Site. These include:

- Farrans;

⁶⁷ Scottish Government (2018). *Carbon Calculator Technical Guidance: Calculating Potential Carbon Losses and Savings from Wind Farms on Scottish Peatlands*.

⁶⁸ NOMIS (2025) Labour Market profile – West Lothian. Available at: <https://www.nomisweb.co.uk/reports/lmp/lad/1778385239/report.aspx>

⁶⁹ Qualifications are measured using the Registered Qualifications Framework (RQFs). Under RQFs, Trade Apprenticeships are accurately classified to the relevant levels. No qualifications indicates no formal qualifications held, Other qualifications includes foreign qualifications and some professional qualifications, RQF1 equivalent indicates fewer than 5 GCSEs at grades A-C, foundation GNVQ, NVQ 1, intermediate 1 national qualification (Scotland) or equivalent, RQF2 equivalent indicates 5 or more GCSEs at grades A-C, intermediate GNVQ, NVQ 2, intermediate 2 national qualification (Scotland) or equivalent, RQF3 equivalent indicates 2 or more A levels, advanced GNVQ, NVQ 3, 2 or more higher or advanced higher national qualifications (Scotland) or equivalent, and RQF4 equivalent and above indicates HND, Degree and Higher Degree level qualifications or equivalent.



- Algeco Livingston Service Centre;
- Harburn Barn wedding venue;
- Brucefield Industrial Estate;
- Valneva Scotland;
- Nextpharma Edinburgh;
- The Clancy Group;
- DX Express;
- Kimberly Watson Packaging;
- Cairns Farm venue; and
- Country Business.

There are a number of farms located in close proximity to the Site and within the Site boundary. The land where the solar PV array would be located is mapped as suitable for pastures and grazing and for a narrow range of crops, rather than high quality arable farmland. Further details on agricultural land can be found in **Section 12.9: Agricultural Land Classification**.

12.3.1.2 Tourism

West Lothian has a strong visitor economy, offering a number of tourism attractions, including three country parks (Almondell and Calderwood, Beecraigs, and Polkemmet), historic opportunities (Linlithgow Palace and Binny Craig), as well as shopping, sports, and food and drink opportunities.

The most recent data from Visit Scotland⁷⁰ indicates the quantity of visitors to Edinburgh and the Lothians, including West Lothian. This highlights that, in 2023, tourism turnover contributed £175m to the West Lothian economy. In total, there were 5.41m overnight visitors to Edinburgh and the Lothians in 2024.

Since 2019, West Lothian has seen an overall increase in visitor numbers to its council run Country Parks, as well as an increase in visitor numbers to Beecraigs Caravan Park. However, in the 2023-2024 year, visitor numbers to the caravan park have decreased by 2% when compared to 2022-2023 figures⁷¹.

There are a number of tourist attractions located within 500m of the Site, including:

- Harburn Estate;
- Murieston Castle;
- Burnbank Smithy; and
- The Doocot Linhouse Estate.

12.3.1.3 Recreation

There are a number of recreational opportunities both within and surrounding the Site. These include:

⁷⁰ Visit West Lothian (2025) Edinburgh and the Lothians. Available at: <https://www.visitscotland.org/research-insights/regions/edinburgh-lothians>

⁷¹ West Lothian Council (2025) West Lothian Local Development Plan 2 Evidence Report. Available at: [https://www.westlothian.gov.uk/media/64764/Schedule-15-Tourism-and-Culture/pdf/Schedule 15. Tourism and Culture.pdf](https://www.westlothian.gov.uk/media/64764/Schedule-15-Tourism-and-Culture/pdf/Schedule%2015%20Tourism%20and%20Culture.pdf)



- Oakbank Park Woods;
- Oakbank Woods
- Morton Clay Targets;
- Morton Reservoir;
- Morton Fishings;
- The Big Shoot -Midcalder;
- Linhouse Glen;
- Linhouse Water;
- Linhouse;
- Burnbank Smithy; and
- Harperrig Reservoir.

The Land Reform (Scotland) Act 2003⁷² gives the public a 'right to roam', allowing the public rights of responsible access to most land and inland water in Scotland.

There are no NCN routes intersecting the Site, with the closest route (NCN 75) located 2.1km east of the Site (see **Figure 1.4**).

Additionally, there are two core paths located on the northern boundary of the Site; Linhouse Circular and East Calder, Calderwood and Linhouse Path⁷³ (see **Figure 1.4**).

12.3.2 Proposed Scope

In line with Scottish Renewables' Guidance on Streamlining EIA, the Applicant will submit a standalone Socio-Economic Benefits Report alongside the EIA Report. This will set out how the proposal maximises net economic impact, including local and community socio-economic benefits (employment, supply-chain opportunities), as required by NPF4 Policy 11(c). There is therefore no need for a socio-economics chapter and is therefore scoped out of the EIA.

The Socio-Economic Benefits Report will be produced in line with Scottish Renewables Maximising Net Socio-Economic Benefit of Renewable Energy Guidance and Reporting Framework⁷⁴ in order to comply with NPF4 Policy 11c.

In line with this guidance the statement will assess the following:

- employment and skill development;
- supply chain opportunities;
- overall economic impact;
- community impacts (including recreation);
- community empowerment; and

⁷² UK Government (2003) The Land Reform (Scotland) Act 2003. Available at: <https://www.legislation.gov.uk/asp/2003/2/contents>

⁷³ West Lothian Council, Core Paths Plan. Available at: <https://www.westlothian.gov.uk/media/2631/DCPP-5-Plan-4-Core-Path-Network/pdf/dcpp-plan4.pdf>

⁷⁴ Scottish Renewables Maximising Net Socio-Economic Benefit of Renewable Energy Guidance and Reporting Framework, 2025 Available at: <https://www.scottishrenewables.com/publications/1883-maximising-net-socio-economic-benefit-of-renewable-energy-guidance-and-reporting-framework>



- environmental protection and enhancement.

12.3.3 Questions to Consultees

Q12.3.1 Do consultees agree with the baseline information presented?

Q12.3.2 Do consultees agree with the proposed scope for the Socio-Economics Benefits Report?

Q12.3.3 Is there anything else that consultees think should be considered within the Socio-Economic Benefits Report?

12.4 Aviation and Radar

Wind turbines have the potential to affect civil and military aviation and meteorological forecasting. This section of the scoping report covers the methodology that will be used to undertake the aviation and radar assessment, lists the references and describes the baseline condition, consultation requirements and mitigations to be applied if required.

Impacts on aviation will not be assessed through the EIA process in line with Scottish Renewables' Guidance on Streamlining EIA. Technical reporting on aviation and radar will be provided as a supporting technical appendix to the EIA Report.

12.4.1 Baseline Conditions

Study Area

The assessment of effects of the proposed turbines will be based upon the guidance laid down in CAA Publication CAP 764 Policy and Guidelines on Wind Turbines Version 7 (December 2025). Consultation criteria for aviation stakeholders are defined in Chapter 4. These distances inform the size of the study area and include:

- Airfield with a surveillance radar – 30km.
- Non radar licensed aerodrome with a runway of more than 1.1km – 17km.
- Non radar licensed aerodrome with a runway of less than 1.1km – 5km.
- Licensed aerodromes where the turbines would lie within airspace coincidental with any published Instrument Flight Procedure (IFP).
- Unlicensed aerodromes with runways of more than 800m – 4km.
- Unlicensed aerodromes with runways of less than 800m – 3km.
- Gliding sites – 10km.
- Other aviation activity such as parachute sites and microlight sites within 3km – in such instances developers are referred to appropriate organisations.

CAP 764 further states that these distances are for guidance purposes only and do not represent ranges beyond which all wind turbine developments will be approved or within which they will always be objected to. These distances are intended as a prompt for further discussion between developers and aviation stakeholders and will be reported upon in the EIA Report. For example, Glasgow and Edinburgh Airports have stated a requirement to be consulted in relation to wind farms out to 40km if there is the potential to affect their operations or IFPs.

It is necessary to take into account the aviation and air defence activities of the Ministry of Defence (MOD) as safeguarded by the Defence Infrastructure Organisation (DIO). The types of issues that are routinely addressed in the EIA Report include:

- MOD Airfields, both radar and non-radar equipped;



- MOD Air Defence Radars;
- UK Met Office Meteorological Radars; and
- Military Low Flying.

It is necessary to take into account the possible effects of turbines upon the National Air Traffic Services En Route Ltd (NERL) communications, navigation and surveillance (CNS) systems – a network of primary and secondary radars and navigation facilities around the country.

As well as examining the technical impact of turbines on Air Traffic Control (ATC) facilities, it is also necessary to consider the physical safeguarding of ATC operations using the criteria laid down in CAP 168 Licensing of Aerodromes to determine whether a proposed development will breach obstacle clearance criteria.

12.4.2 Data Sources

Data sources include CAA1:250K and 1:500K aviation charts, the NATS Aeronautical Information Publication database and WPAC databases.

12.4.3 Methodology

The radar calculation results will be produced using specialist propagation prediction software (RView Version 5). Developed over a number of years, it has been designed and refined specifically for the task. RView 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, as detailed below.

12.4.4 Baseline

Established Baseline Conditions

This is a very complex area in terms of airspace classification and usage, with the Site located between Edinburgh and Glasgow Airports. Glasgow Airport is 59km to the west and Edinburgh Airport 12km to the north-east. The proposed development is located underneath the Edinburgh Control Zone (CTR), Class D Regulated Airspace, which extends upwards from ground level to 6000ft above mean sea level (AMSL). RAF Kirknewton gliding site is located 5km to the east (measured from the centre of the runway to the nearest turbine).

The airspace above the Site is further complicated by the overlaying Scottish Terminal Area (TMA) Class D regulated airspace controlled by NATS En Route Ltd (NERL) from the Scottish Area Control Centre at Prestwick, who sequence and separate the traffic inbound and outbound from all the Scottish airports using a number of different radars in the region, which are all combined into a coherent air picture.

12.4.5 Potential for Significant Effects

Construction

There are no technical effects on aviation interests during construction. The only aviation issues are those associated with the operation of large cranes which will be the subject of standard conditions for crane operations as laid down in CAA CAP1096 'Guidance to crane users on aviation lighting and notification'.

Decommissioning

There are no technical effects on aviation interests during decommissioning. The only aviation issues are those associated with the operation of large cranes which will be the subject of standard conditions for crane operations as laid down in CAA CAP1096 'Guidance to crane users on aviation lighting and notification'.



12.4.6 Consultation

Radar Equipped Licensed Aerodromes

Edinburgh Airport – the proposed development is 12km to the south west of Edinburgh Airport. Initial radar modelling shows that all of the turbines will be in radar line of sight of the main primary surveillance radar (PSR) and the Terma Scanter 4002 wind farm mitigation radar. The location is also within the area within which the airport will require an assessment of the impact on the published IFPs. The Applicant will consult with Edinburgh Airport and provide radar modelling results as required when the Site layout is finalised and report the outcome in the aviation technical appendix of the EIA Report. The Applicant will also liaise with the airport to arrange any IFP assessments as required. The proposed development is also under the safeguarded Outer Horizontal Surface and in an area which will also require assessment and consultation with Edinburgh Airport, again the outcome of consultation with the airport will be reported in the aviation technical appendix to the EIA report.

Glasgow Airport – the proposed development is 59km to the east of Glasgow Airport and beyond the stated requirement for consultation. Initial radar modelling shows that the turbines will all be screened by terrain from both the main PSR at Glasgow and the Terma Scanter 4002 wind farm mitigation radar located on the airport. Consultation with Glasgow Airport is therefore not required.

Non-radar Equipped Licensed Aerodromes – none within consultation distance

Unlicensed Aerodromes – none within consultation distance or marked on aviation charts.

MOD Air Traffic Control (ATC) Radar – the closest MOD ATC radars are at MOD Leuchars Base, 89km to the north east and RAF Spadeadam 100km to the south. Radar modelling has confirmed that there is no possibility of either radar being affected by the proposed development. This will be confirmed with additional radar modelling of the finalised turbine layout and reported in the aviation technical appendix to the EIA report.

MOD Air Defence Radar - the closest AD radar is at Brizlee Wood near Alnwick. Radar modelling has been undertaken which shows there is no radar line of sight below 500m above ground level (AGL) over the Site. This will be confirmed by additional radar modelling of the finalised turbine layout and reported in the technical appendix to the EIA report.

MOD Low Flying – the proposed development is located in an area designated ‘Green’ on the MOD wind farm consultation charts which indicates that the MOD would have ‘*no low flying concerns.*’ It is therefore very unlikely that there will be an MoD low flying objection; this will be confirmed by the MOD and reported in the aviation technical appendix to the EIA report. It is likely the MOD will still require the turbines to have infra-red lighting installed, this will be reported on in the aviation lighting and mitigation technical appendix to accompany the EIA Report.

RAF Kirknewton – is a gliding training establishment 5km to the east of the proposed development (measured from the centre of the runway to the nearest turbine). WPAC have undertaken an initial aviation impact assessment which concludes that the proposed development will have no effect on gliding operations, either in terms of creating physical obstructions or wind turbine induced turbulence. The Applicant will consult with the MOD and report the outcome in the aviation technical appendix.

UK Met Office Weather/Rainfall Radars

The Met Office safeguards its network of radars using a European methodology known as OPERA (Operational Programme for the Exchange of Weather Radar Information). In general, they will object to any proposed turbine within 5km in line of sight and will examine the impact of any turbines within 20km. Where a site is within 20km, the Met Office will undertake an operational assessment based on three main criteria, having determined if there is a technical effect on the radar. The factors they will consider include:



- proximity to airports;
- river catchment response times; and
- population density.

In this case the closest Met Office radar is at Munduff Hill, over 40km to the north east of the proposed development and well beyond safeguarding distance. There will be no effect on Met Office radars, and this issue can therefore be scoped out of the aviation technical appendix.

NATS En Route Ltd (NERL)

An initial assessment has been conducted to determine any effect of the proposed development on NERL communications, navigation and surveillance (CNS) infrastructure. The closest radar in the system is at Lowther Hill. Initial radar modelling shows that all of the proposed turbines will be visible to the radar and mitigation is likely to be required. Mitigation will be available through the use of another of the radars used in this area as part of the network of coverage, which includes the Terma radars at Edinburgh and Glasgow Airports. The Applicant will consult with NERL once the turbine layout has been finalised and the outcome reported in the technical appendix to the EIA Report.

12.4.7 Approach to Mitigation

Aviation Obstruction Lighting

A wind farm with tip heights in excess of 150m will need to be illuminated at the hub of selected turbines with medium intensity red aviation obstruction lighting. WPAC will design a lighting layout which minimises the number of lit turbines whilst fulfilling flight safety requirements and gain approval for the lighting layout from the CAA. This will be reported in the EIA Report within a technical appendix to describe the effect of aviation lighting on the environment and to inform the LVIA in accordance with the latest NatureScot Guidelines issued in November 2024. It will also articulate the mitigation techniques available taking into account the extant legislation and guidance. This issue will be fully reported in the Aviation Lighting and Mitigation Technical Appendix to the EIA report.

An infra-red lighting layout to fulfil MOD requirements will also be designed and approval obtained from the MOD and reported in the EIA Report.

12.4.8 Questions to Consultees

Q12.4.1 Is Edinburgh Airport content with the approach proposed above?

Q12.4.2 Does Glasgow Airport agree that consultation is not required?

Q12.4.3 Does the MOD agree with the assessment in relation to Kirknewton?

Q12.4.4 Does NATS agree with the consultation methodology proposed?

12.5 Forestry

12.5.1 Introduction

The Forestry section of the Scoping Report outlines the assessment of the issues relating to forestry and potential impacts within the Site boundary, and considers relevant legislation, policy and guidance.

The objective of the assessment, in line with key national policies, is to avoid or otherwise minimise potential impacts on the forest environment arising from the proposed development.



12.5.2 Baseline Description

The Site contains three conifer woodland creation sites, 54.95 hectares (ha) under 17FGS24878, 44.67ha under 18FGS25477 and 62.22ha under 21FGS61105, planted between 2017 and 2022 which are under current Forestry Grant Scheme (FGS) contracts.

Approximately 67ha of existing woodlands have been managed under felling licences for clear-felling or thinning operations with contractual restructuring obligations and approximately 60ha of conifers and 8.5ha of broadleaves, composed of small woodland blocks and shelterbelts, within the Site boundary do not have active management prescriptions.

Forestry Grant Scheme contract 21FGS61105 is subject to existing legal arrangements, which will require compliance with contractual terms and conditions.

Two of the eight turbines proposed are within mature woodland stands or cleared felled areas with road infrastructure bisecting shelterbelts and the new woodland creation scheme under contract.

12.5.3 Relevant Legislation, Policy and Guidance

All forestry proposals are subject to the UK Forestry Standard, which is the national technical standard for sustainable forest management and where appropriate relevant legislation, policy and guidance documentation will be considered.

12.5.4 Embedded Mitigation

Areas lost to essential infrastructure footprints and associated tree-free buffer zones will be subject to full Compensatory Planting Obligations, which will be detailed in the application, along with a Compensatory Planting Plan detailing how the obligations will be secured and delivered.

Mitigation measures for FGS contractual commitments will be developed in consultation with Scottish Forestry for the potential loss of contractual woodland creation areas. Details of how obligations are to be addressed will be included in the application.

12.5.5 Proposed Scope of Assessment

A desk-based appraisal of OS mapping, aerial photography and review of web-based data, in conjunction with relevant policies and guidance will identify existing forest and woodland cover including information provided by the landowner such as species/age/class or existing management regimes. The objective of the proposed development will be to minimise the scale of impact on the forest environment, through consultation with Scottish Forestry, and other consultees as necessary to ensure appropriate forestry proposals inform the application stage.

The assessment methodology set out in the Control of Woodland Removal Policy, 2009 (CWRP)⁷⁵ implementation guidance will form the basis of the approach to be adopted, while drawing on the principles set out in The Forestry (Environmental Impact Assessment) (Scotland) Regulations 2017⁷⁶ in assessing the overall significance of environmental effects.

The impacts of the proposed development on new woodland creation areas under FGS contracts will require consideration of planted areas which have received funding and quantitative assessment against the FGS Woodland Creation contract.

⁷⁵ [woodland removal policy | Scottish Forestry](https://www.forestry.gov.scot/publications/control-woodland-removal-policy) <https://www.forestry.gov.scot/publications/control-woodland-removal-policy>

⁷⁶ [The Forestry \(Environmental Impact Assessment\) \(Scotland\) Regulations 2017](#)



Areas which have been felled adjacent to infrastructure may have existing restocking obligations whereas woodland areas in proximity to infrastructure where felling is necessary will require compensatory planting to mitigate woodland loss under the Control of Woodland Removal Policy. Woodland areas which require removal or have existing restructuring agreements will be identified, quantified and detailed as part of the assessment, along with details of how compensatory planting, if required, will be addressed in the application.

An assessment on forestry receptors within the Site as a result of the proposed development will comprise a technical appendix submitted as part of the EIA Report.

12.5.6 Potential Impacts

To accommodate the proposed development, it is likely that woodland removal will be required due to essential infrastructure footprints and associated tree free buffer zones located within afforested areas.

The FGS contracts may require adjustment and a variation submitted to Scottish Forestry for consideration and agreement.

12.5.7 Receptors and Impacts Scoped out of Assessment

Secondary effects resulting from forestry activities, including, but not limited to, effects on habitats and species, ornithology, hydrology, and landscape and visual receptors, will be considered within their respective chapters of the EIA report and will not be assessed separately as part of the Technical Appendix within the EIA Report.

12.5.8 Questions to Consultees

Q 12.5.1 Are there any additional planning or forestry policies that consultees believe should be taken into consideration in respect of the proposed development?

12.6 Glint and Glare

The indicative solar PV array area is located, at its closest point, 9m from the A70, and 109m from the nearest residential receptor.

Once the extent of the area of the proposed solar PV array is known, an assessment of satellite aerial mapping and a ZTV of the solar PV array would be carried out in order to understand the potential for residential and traffic nuisance glare. Should this assessment conclude that no significant effects upon vehicle or residential receptors are anticipated, it is proposed to scope out the need for a glint and glare assessment. If the assessment suggests that there is a reasonable likelihood of significant effects on vehicle or residential receptors, then a glint and glare assessment would be carried out.

The glint and glare assessment, if included within the EIA, will comprise a technical appendix submitted as part of the EIA Report.

12.6.1 Questions to Consultees

Q12.6.1 Do you agree with the decision to scope out Glint and Glare from the EIA?

12.7 Shadow Flicker

Shadow flicker occurs when a certain combination of conditions prevails at a certain location, time of day and year. It firstly requires the sun to be at a certain level in the sky. The sun then shines onto a window of a residential dwelling from behind the wind turbine rotor. As the wind turbine blades rotate it causes the shadow of the turbine to flick on and off. This may have a negative effect on residents in affected properties. If shadow flicker cannot be avoided through



design, technical mitigation solutions are available, such as shutting down turbines when certain conditions prevail.

The phenomenon occurs only within buildings where shadows are cast across a window aperture, and the effects are typically considered to occur up to a maximum distance of 10 times the rotor diameter from each wind turbine. In the UK, effects on receptors are also generally restricted to 130 degrees either side of north of the turbine.

Once the final turbine layout and parameters are fixed, the locations of residential properties in proximity to the Site will be verified and if any are situated within 10 rotor diameters from the proposed turbine locations (plus any additional micro-siting), a shadow flicker model will be run to predict potential levels of effect. Shadow flicker is considered as an environmental constraint during the design process.

Following the assessment of potential shadow-flicker effects, and where modelling demonstrates that appropriate curtailment would prevent any exceedance of the relevant daily or annual limits, shadow flicker would not be expected to give rise to significant environmental effects. On this basis, it is therefore proposed that shadow flicker would be scoped out of the EIA.

A concise summary of the modelling approach, assumptions, and any curtailment measures will be provided in a technical appendix submitted as part of the EIA Report.

12.7.1 Questions to Consultees

Q12.7.1 Do you agree with the decision to scope out Shadow Flicker from the EIA?

12.8 Telecommunications

Tall structures such as wind turbines can adversely affect the performance of fixed telecommunications links, if positioned close enough to those links.

Ofcom data will be used in order to identify all fixed microwave telecommunications links within 3km of the Site boundary; mapping the proximity of any such links to the proposed development; and, if required, calculating, using the Ofcom-recommended 'Bacon Formula', whether the proposed development has the potential to adversely affect the performance of the link(s).

Consultation will also be undertaken with key stakeholders to identify relevant microwave links and Ultra High Frequency (UHF) telemetry links.

Potential means of mitigation of effects on fixed telecommunications links include micro-siting of turbines, installation of higher performance antennae, or re-routing of links.

Impacts on telecommunications will not be assessed through the EIA process in line with Scottish Renewables' Guidance on Streamlining EIA. Technical reporting on telecommunications (where required) will be provided as a supporting technical appendix to the EIA Report. Should no potential impacts on telecommunications be identified as a result of the proposed development, information on studies undertaken and results will be included in the Project Description chapter with no requirement for an associated technical appendix.

12.8.1 Questions to Consultees

Q12.8.1 Do you agree with the decision to scope out Telecommunications from the EIA?



12.9 Agricultural Land Classification

The online Scotland's Soils map⁷⁷ details the land on which the proposed development is located is classified as a mix of classes 4.1, 4.2, 5.1 5.2, 5.3 and 6.1.

- Class 4.1 are classified as *"Land capable of producing a narrow range of crops, primarily grassland with short arable breaks of forage crops and cereal."*
- Class 4.2 are classified as *"Land capable of producing a narrow range of crops, primarily grassland with short arable breaks of forage crops."*
- Class 5.1 is classified as *"Land capable of use as improved grassland. Few problems with pasture establishment and maintenance and potential high yields."*
- Class 5.2 is classified as *"Land capable of use as improved grassland. Few problems with pasture establishment but may be difficult to maintain."*
- Class 5.3 is classified as *"Land capable of use as improved grassland. Pasture deteriorates quickly"*
- Class 6.1 is classified as *"Land capable of use as rough grazings with a high proportion of palatable plants."*

As the land within the Site is not classified as prime agricultural land, it is proposed to scope out the need for an agricultural land classification assessment.

12.9.1 Questions to Consultees

Q12.9.1 Do you agree with the decision to scope out Agricultural Land from the EIA?

12.10 Television Reception

The Site is located in an area which is served by a digital transmitter and television reception is unlikely to be affected by the proposed development as digital signals are rarely affected. In the unlikely event that television signals are affected by the proposed development, mitigation measures will be considered by the Applicant.

Television reception is scoped out of the EIA.

12.10.1 Questions to Consultees

Q12.10.1 Do you agree with the decision to scope out Television Reception from the EIA?

12.11 Ice Throw

Ice build-up on blade surfaces can occur in cold weather conditions. Turbines can continue to operate with a very thin accumulation of snow or ice but will shut down automatically as soon as there is a sufficient build up to cause aerodynamic or physical imbalance of the rotor assembly.

The potential for ice throw to occur after start-up following a turbine shut down during conditions suitable for ice formation is high. There are monitoring systems and protocols in place to ensure that turbines that have been stationary during icing conditions are restarted in a controlled manner to ensure public safety. The risk to public safety is considered to be very low due to the few likely occurrences of these conditions along with the particular circumstances that can cause ice throw.

⁷⁷ <https://soils.environment.gov.scot/>



Due to the very low risk, it is proposed that ice throw is scoped out of the EIA.

12.11.1 Questions to Consultees

Q12.11.1 Do you agree with the decision to scope out Ice Throw from the EIA?

12.12 Air Quality

The generation of dust during construction activity is unlikely to have a direct impact on any human receptors and would be controlled by means of best practice to be described in the EIA Report.

Consideration will be given within the Ecology and Geology, Peat, Hydrology & Hydrogeology Chapters to the potential impacts that dust generation could have on any identified sensitive ecological or hydrological receptors. If required, detailed mitigation measures will be proposed within these EIA Report chapters. Otherwise, it is proposed that air quality is scoped out of the EIA Report.

12.12.1 Questions to Consultees

Q12.12.1 Do you agree with the decision to scope out Air Quality from the EIA?

12.13 Population and Human Health

The EIA Regulations 2017 include a requirement to assess as part of the EIA process, the potential significant effects on population and human health resulting from the proposed development. These requirements will be addressed in the EIA and EIA Report, as appropriate, under each of the other topic headings e.g. noise or landscape and visual.

Where no significant effects are likely, these will be scoped out of the EIA.

12.13.1 Questions to Consultees

Q12.13.1 Do you agree with the decision to scope out Population and Human Health from the EIA?

12.14 Risk of Major Accidents and/or Disasters

The proposed development would be constructed in accordance with relevant health and safety legislation and would be subject to routine inspections during operation. Braking 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. In addition, given the elevated location of the Site, flooding will not pose a significant risk to the operation of the proposed development nor will the construction of the proposed development contribute to flooding elsewhere.

Therefore, it is considered unlikely that significant effects will arise as a result of the proposed development, and this topic is proposed to be scoped out of the EIA.

12.14.1 Questions to Consultees

Q12.14.1 Do you agree with the decision to scope out Major Accidents and Disasters from the EIA?

12.15 Environmental Management

The Applicant is committed to pollution prevention and environmental protection. As such an environmental management strategy to minimise environmental effects of the proposed development during construction will be developed. The principles of this strategy will be



presented in an Outline Construction Environmental Management Plan (OCEMP) appended to the EIA Report. Should consent be granted, the OCEMP would be revised and updated to a CEMP, the content of which would be agreed with WLC through consultation and enforced via a planning condition. The CEMP would be used by the Principal Contractor to ensure appropriate environmental management is implemented throughout the construction phase of the proposed development.

12.15.1 Questions to Consultees

Q12.15.1 Do you agree with the outlined approach to environmental management?



13.0 Schedule of Mitigation

A Schedule of Mitigation will be included in the EIA Report. This chapter will summarise the mitigation measures proposed in the preceding chapters of the EIA Report to reduce or offset the effects of the proposed development on the environment. These are the measures that have been agreed with the relevant stakeholders and will be applied during the construction and operation of the proposed development. A number of these measures are embedded mitigation, undertaken through good practice and to adhere to relevant legislation during all stages of the proposed development.



14.0 Invitation to Comment

You are invited to provide comment on this Scoping Report. Please send all Scoping responses to the Energy Consents Unit at the address below or online via the Energy Consents Unit portal: <https://www.energyconsents.scot/>.

Energy Consents Unit
5 Atlantic Quay
150 Broomielaw
Glasgow
G2 8LU



15.0 References and Standard Guidance

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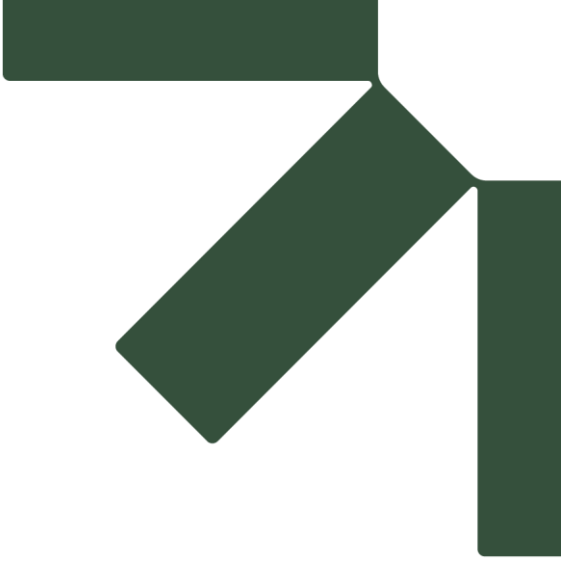
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Appendix A Turbine Co-ordinates

Environmental Impact Assessment Scoping Report

Auchinoon Energy Park

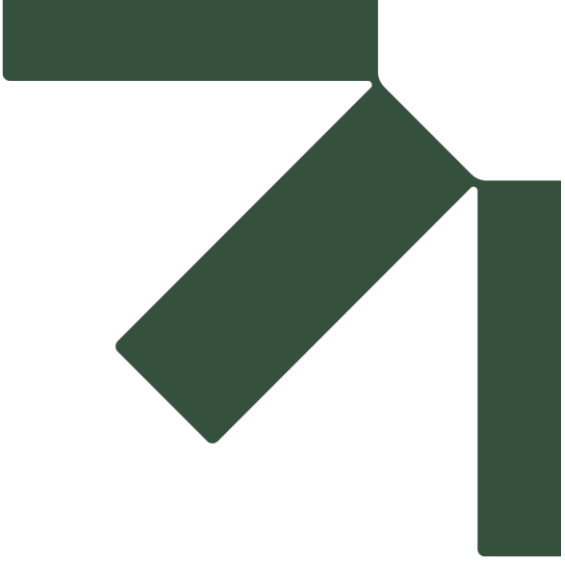
Eurowind Energy Ltd

SLR Project No.: 405.066205.00001

16 June 2026

Turbine ID	Easting	Northing
1	306964	661316
2	307294	660896
3	307492	662089
4	306883	661931
5	308155	662410
6	308635	661884
7	307527	661467
8	308120	661621





Appendix B Proposed Consultees

Environmental Impact Assessment Scoping Report

Auchinoon Energy Park

Eurowind Energy Ltd

SLR Project No.: 405.066205.00001

16 June 2026

Statutory Consultees
West Lothian Council
Historic Environment Scotland
NatureScot
SEPA

Internal Scottish Government Advisors
Marine Scotland
Scottish Forestry – Central Scotland
Transport Scotland

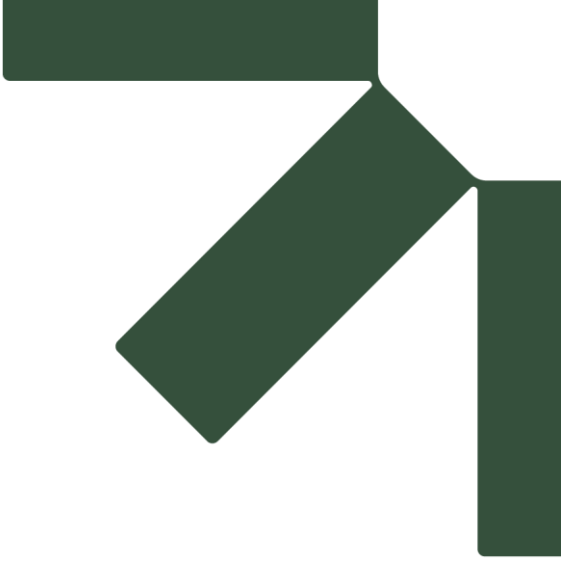
Neighbouring Local Authorities
Midlothian Council
Scottish Borders Council
South Lanarkshire Council
The City of Edinburgh Council

Non-Statutory Consultees	
British Horse Society Scotland	Mountaineering Scotland
BT	NATS Safeguarding
Civil Aviation Authority	Network Rail
Crown Estate Scotland	Office for Nuclear Regulation
Defence Infrastructure Organisation	RSPB Scotland
Edinburgh Airport	Scottish Fire and Rescue Service
Fisheries Management Scotland	Scottish Power Energy Networks (SPEN)
Forth District Salmon Fisheries Board	Scottish Rights of Way and Access Society (ScotWays)
Forth Fisheries Trust	Scottish Water
Glasgow Airport	Scottish Wildlife Trust
Glasgow Prestwick Airport	Visit Scotland
Health & Safety Executive	West of Scotland Archaeology Service
John Muir Trust	Woodland Trust
Joint Radio Company	



Community Council	Contact Details
West Lothian Council	
Bellsquarry & Adambrae Community Council	Not in Operation
Dedridge Community Council	mduncandedridge@hotmail.com
East Calder & District Community Council	michelle@enhancepeople.co.uk
Kirknewton Community Council	kirknewtoncommunitycouncil@gmail.com
Mid Calder Community Council	mccommunitycouncil@gmail.com
Murieston Community Council	secretary@muriestoncommunitycouncil.org.uk davidson.mcquarrie@muriestoncommunitycouncil.org.uk davidson.mcquarrie@blueyonder.co.uk
Polbeth Community Council	Not in Operation
Pumpherstons Community Council	Pumpherstonscomm@gmail.com
West Calder & Harburn Community Council	contact@wchcc.co.uk
Scottish Borders Council	
West Linton Community Council	westlintoncc@gmail.com
The City of Edinburgh Council	
Balerno Community Council	richardmhenderson@gmail.com ajabcc01@gmail.com
Ratho & District Community Council	chair@radcc.org secretary@radcc.org





Appendix C Wirelines

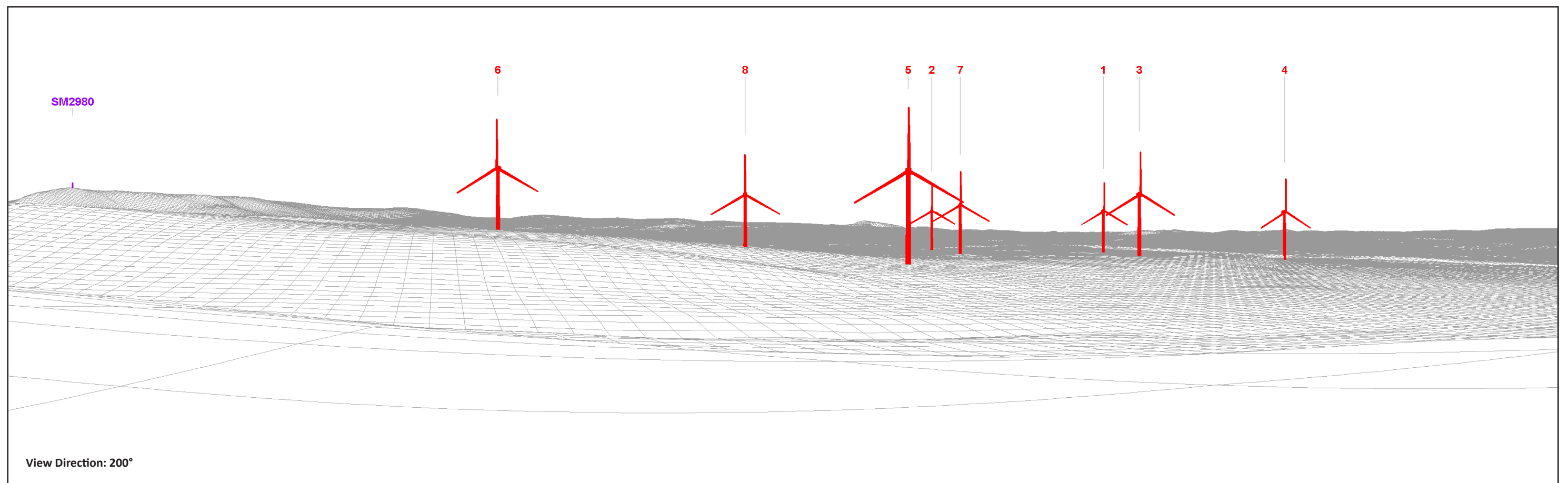
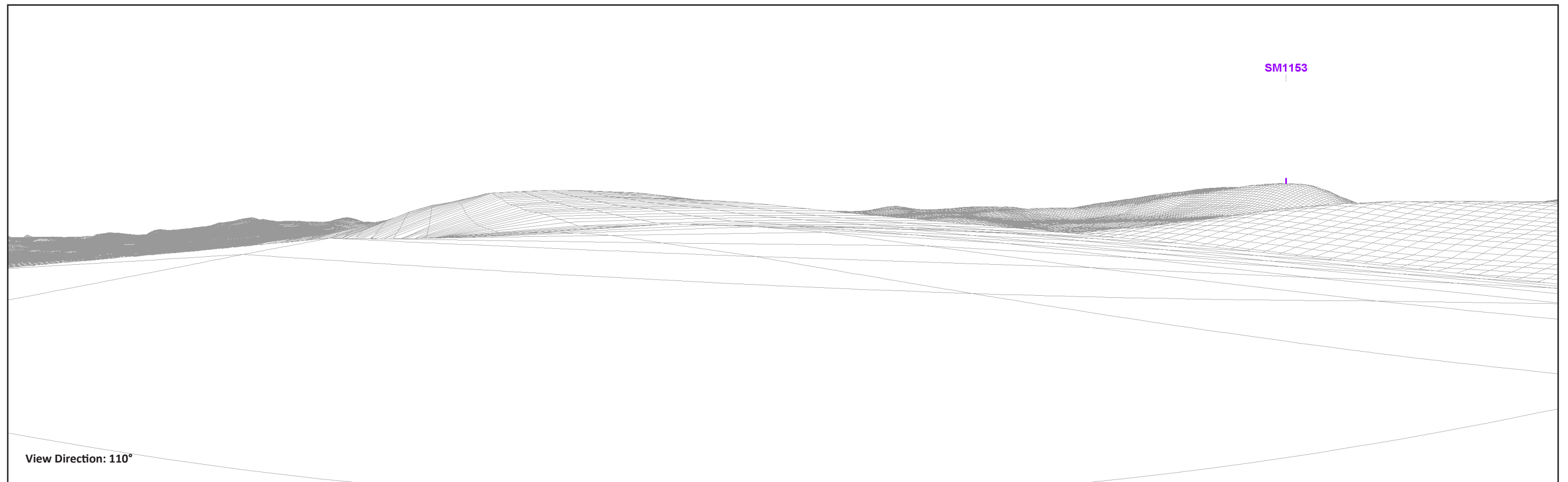
Environmental Impact Assessment Scoping Report

Auchinoon Energy Park

Eurowind Energy Ltd

SLR Project No.: 405.066205.00001

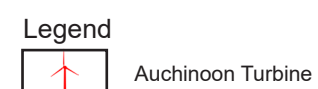
16 June 2026



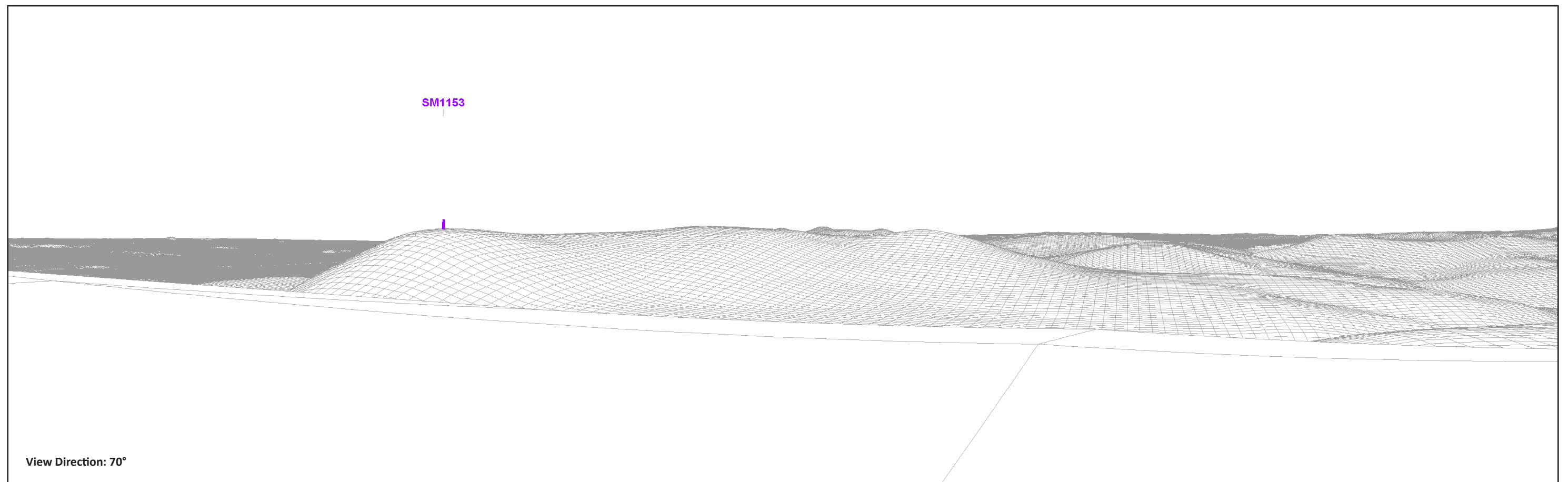
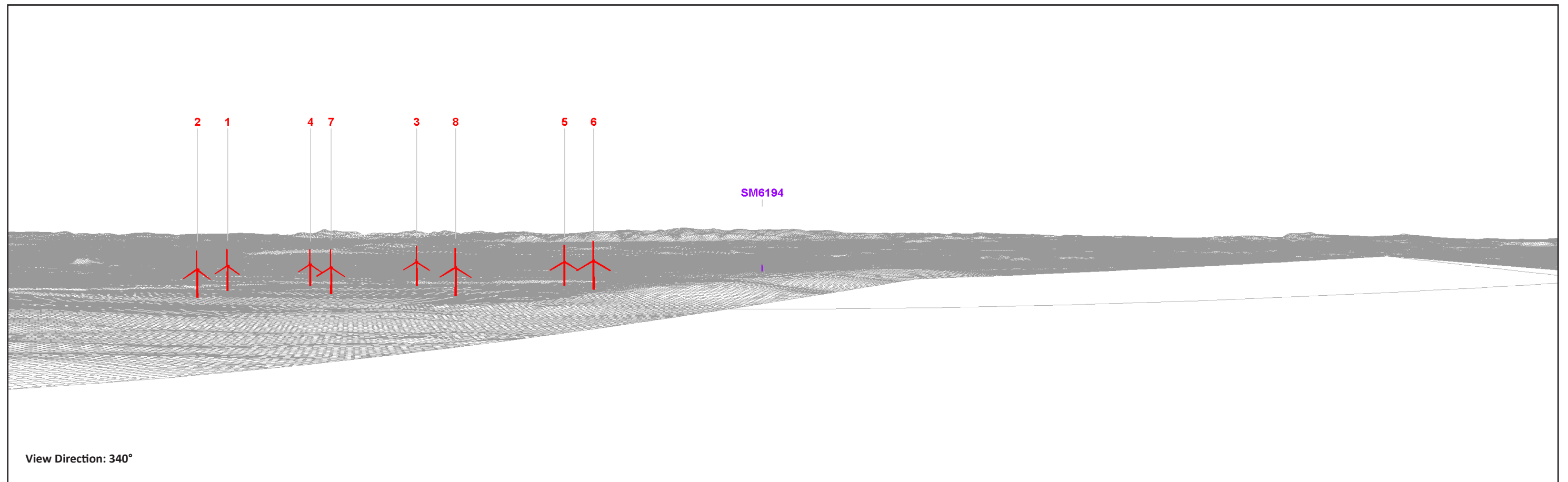
Distance to nearest turbine: 1.265km

Horizontal Field of View: 90°

Camera Height: 1.5 m



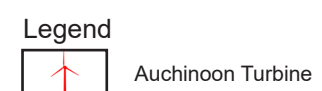
Auchinoon Energy Park
Figure 10.5
Viewpoint 1: Corston Hill, cairn (SM6194)



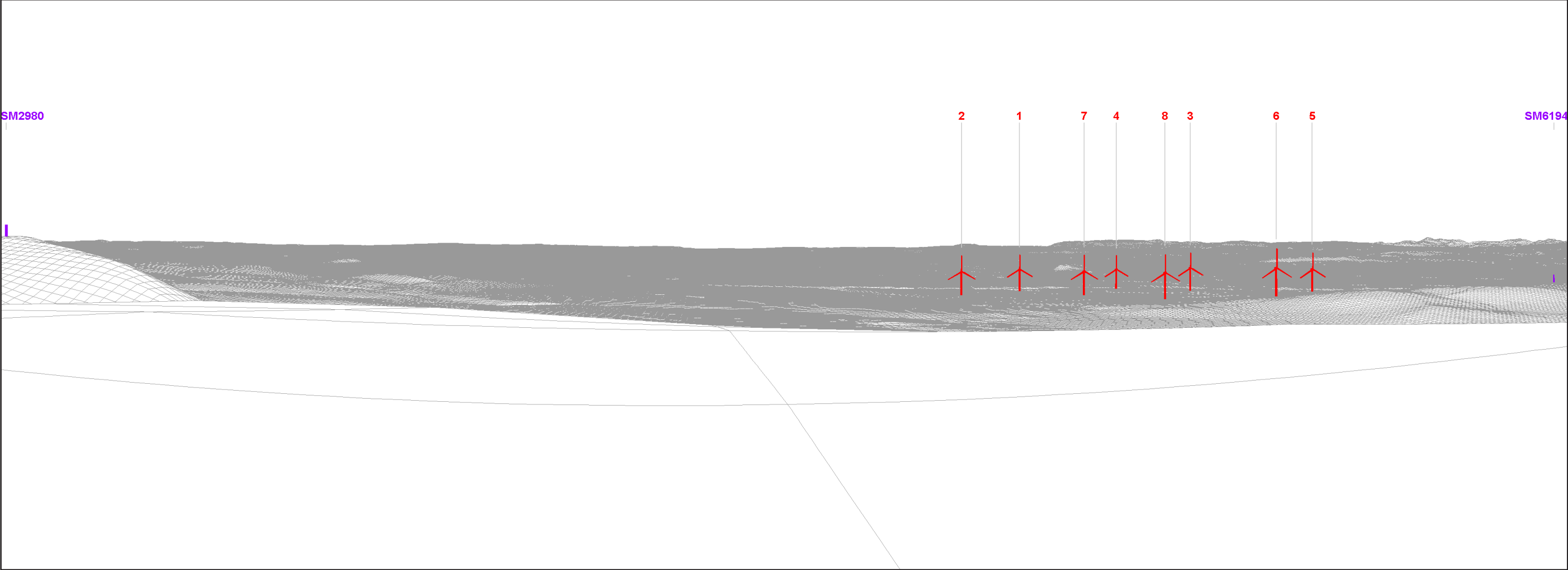
Distance to nearest turbine: 4.065km

Horizontal Field of View: 90°

Camera Height: 1.5 m



Auchinoon Energy Park
Figure 10.6
Viewpoint 2: Harperrig, cairn, West Cairn Hill (SM2980)



Distance to nearest turbine: 4.204km Horizontal Field of View: 90° View Direction: 275° Camera Height: 1.5 m

Legend

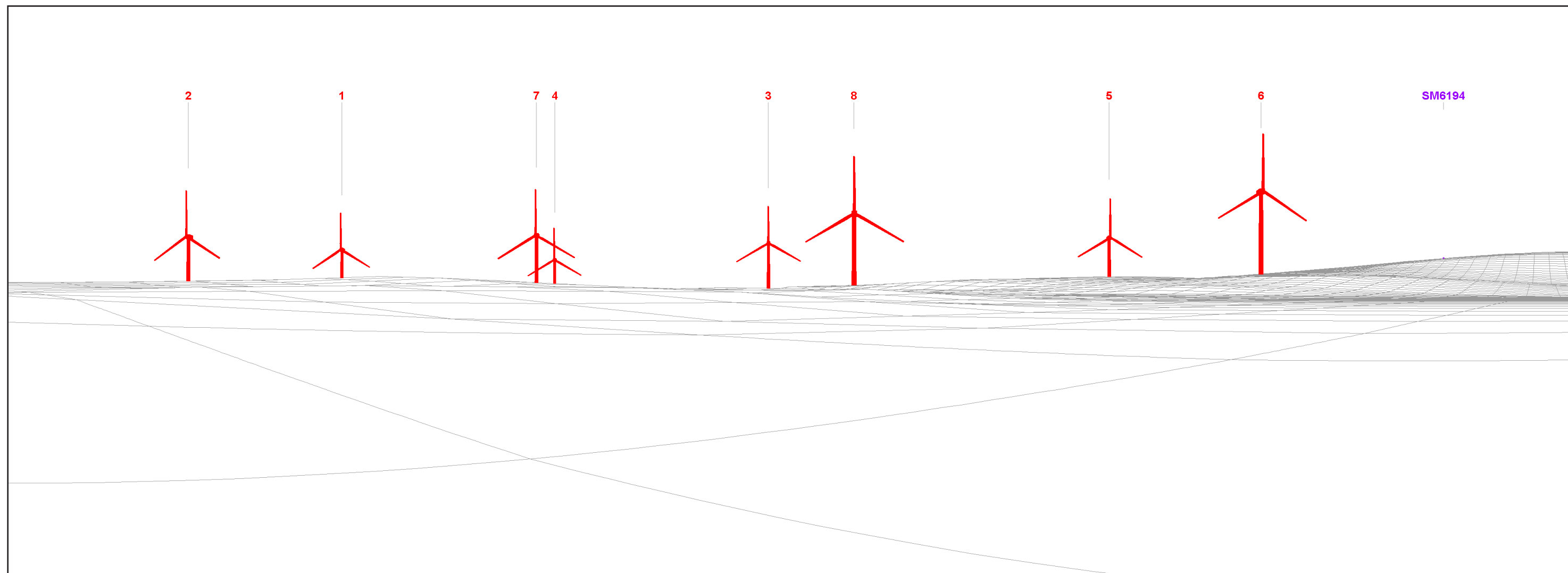


Auchinoon Turbine

Auchinoon Energy Park

Figure 10.7

Viewpoint 3: Harperrig, cairn, East Cairn Hill (SM1153)



Distance to nearest turbine: 1.424km

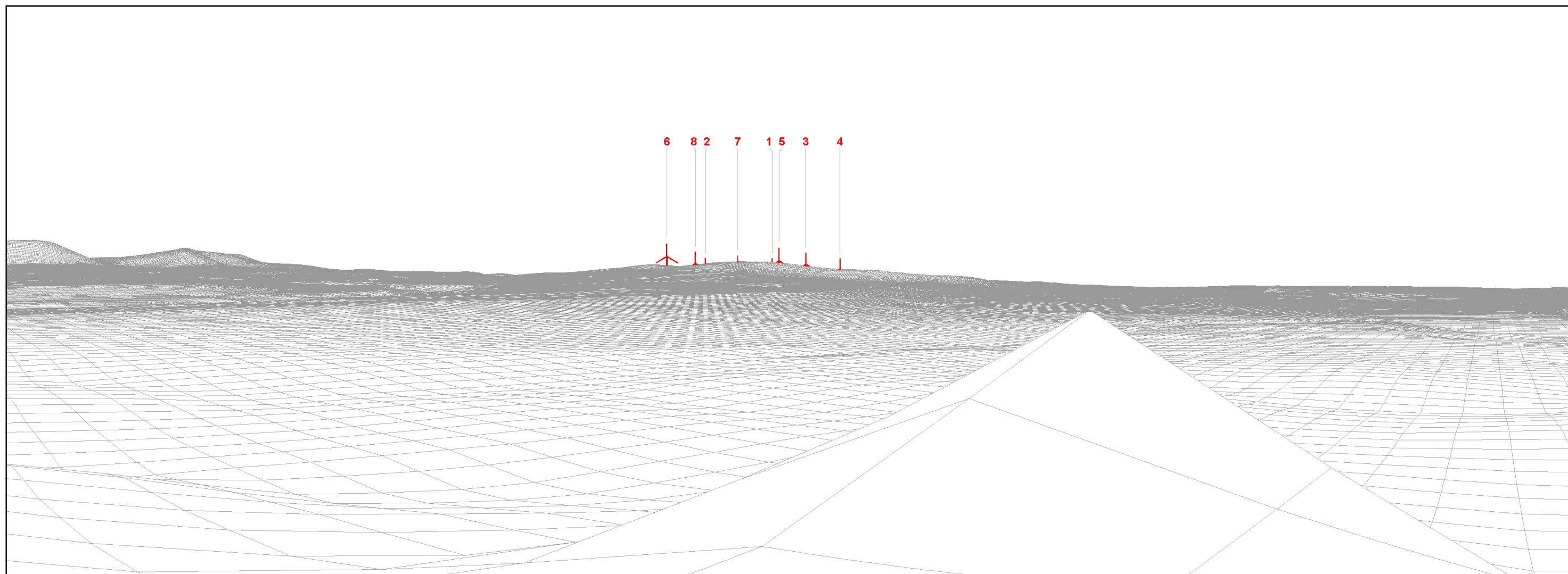
Horizontal Field of View: 90°

View Direction: 317°

Camera Height: 1.5 m

Legend
 Auchinoon Turbine

Auchinoon Energy Park
Figure 10.8
Viewpoint 4: Cairns Castle (SM1193)



Distance to nearest turbine: 6.327km

Horizontal Field of View: 90°

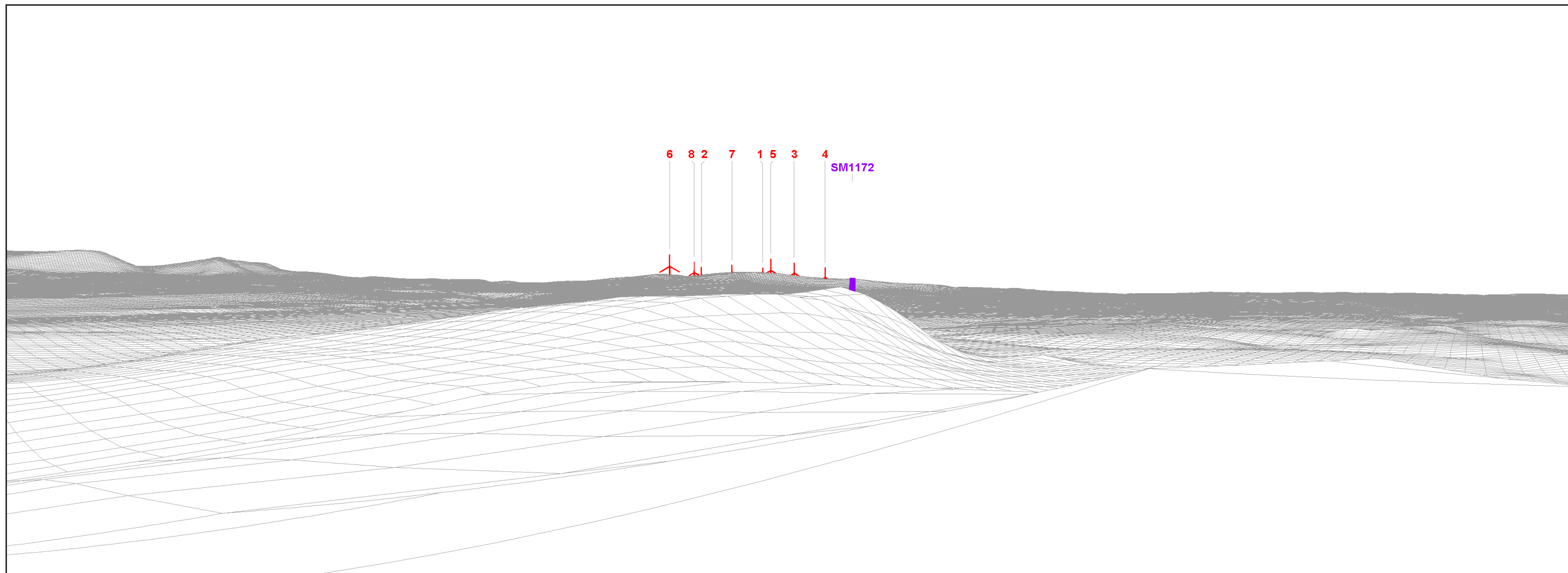
View Direction: 230°

Camera Height: 1.5 m

Legend



Auchinoon Turbine



Distance to nearest turbine: 7.036km

Horizontal Field of View: 90°

View Direction: 231°

Camera Height: 1.5 m

Legend

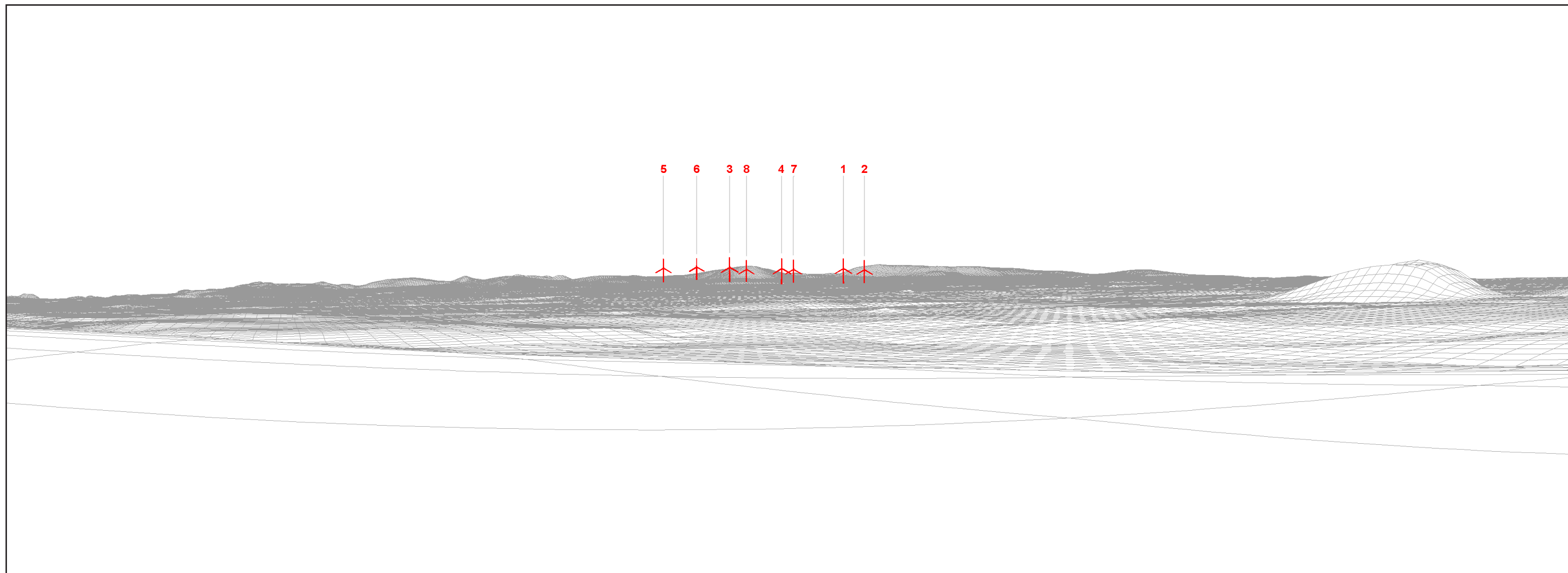


Auchinoon Turbine

Auchinoon Energy Park

Figure 10.10

Viewpoint 6: Dalmahoy Hill, fort (SM1213)



Distance to nearest turbine: 7.756km

Horizontal Field of View: 90°

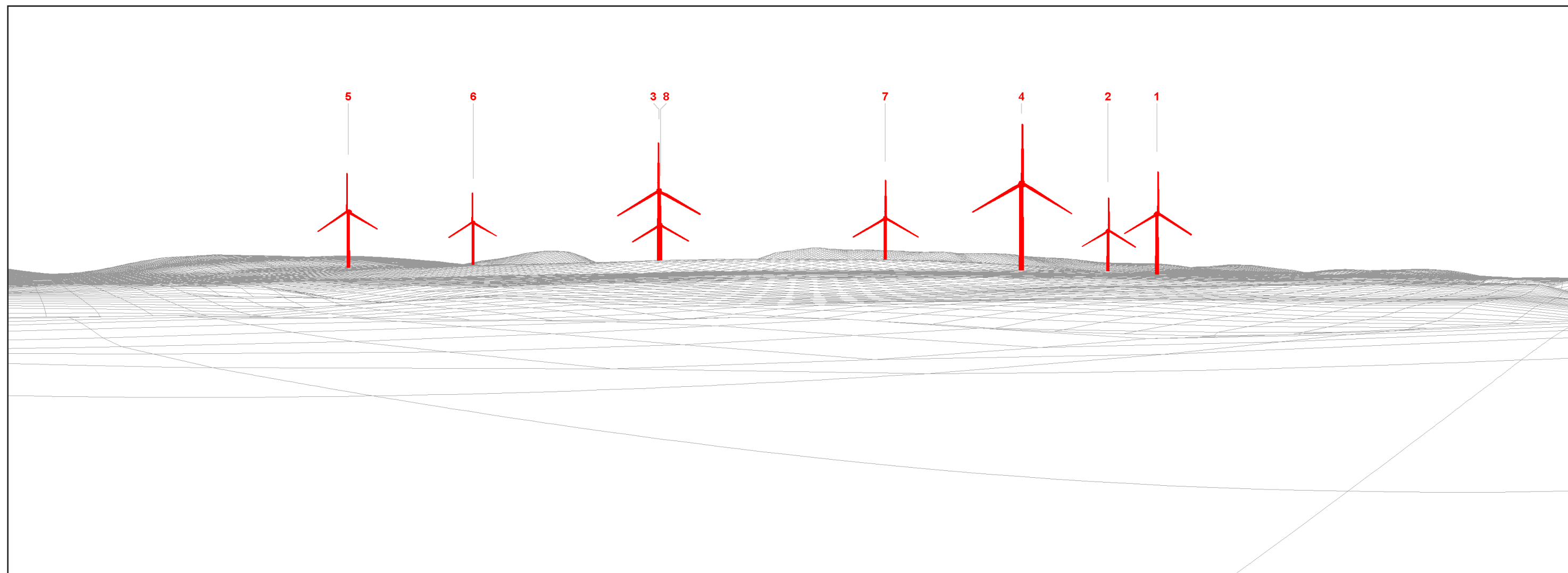
View Direction: 119°

Camera Height: 1.5 m

Legend



Auchinoon Turbine



Distance to nearest turbine: 1.376km

Horizontal Field of View: 90°

View Direction: 134°

Camera Height: 1.5 m

Legend

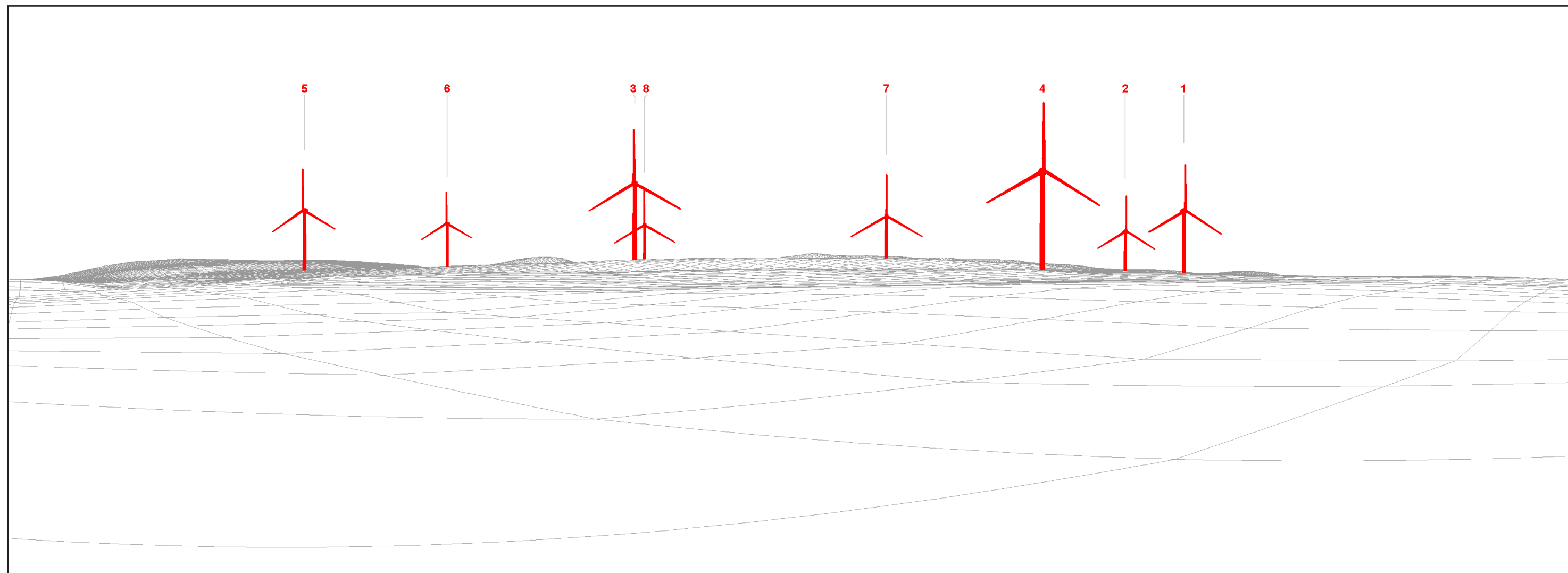


Auchinoon Turbine

Auchinoon Energy Park

Figure 10.12

Viewpoint 8: View towards Linhouse Mansion, from Northwest (LB14156)



Distance to nearest turbine: 1.205km

Horizontal Field of View: 90°

View Direction: 134°

Camera Height: 1.5 m

Legend

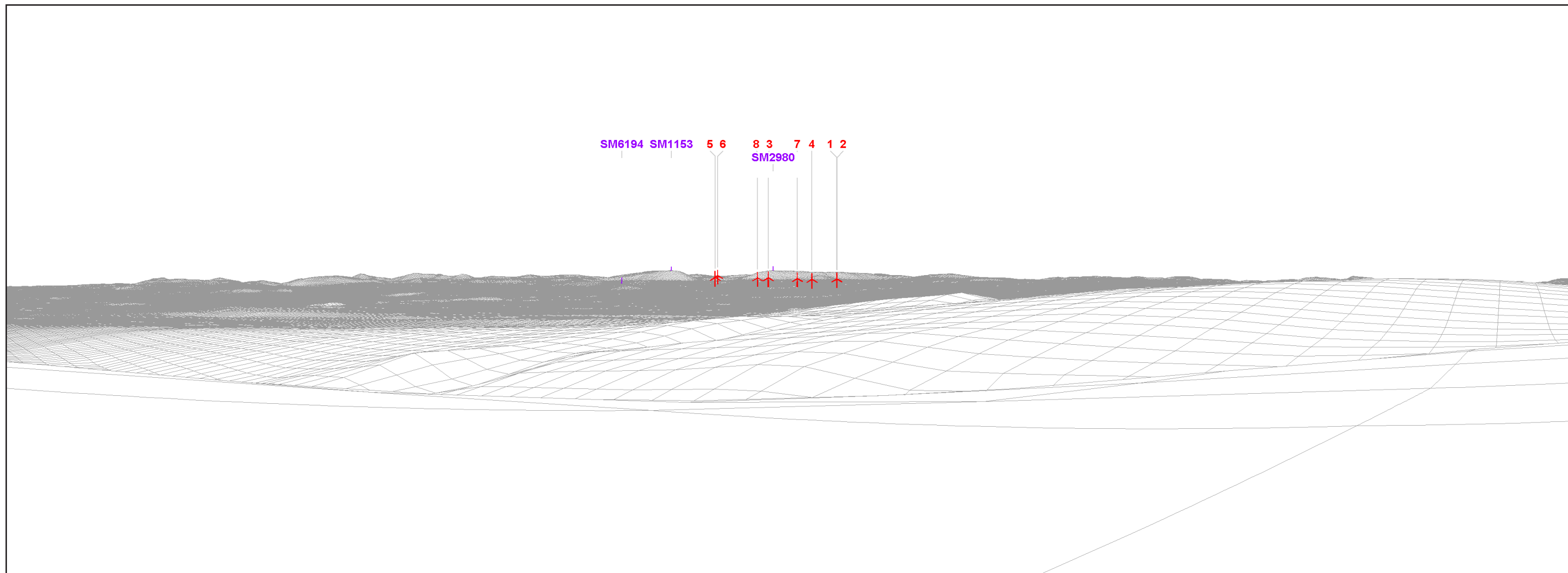


Auchinoon Turbine

Auchinoon Energy Park

Figure 10.13

Viewpoint 9: View from the Southeast of Linhouse Mansion (LB14156)



Distance to nearest turbine: 12.763km

Horizontal Field of View: 90°

View Direction: 139°

Camera Height: 1.5 m

Legend

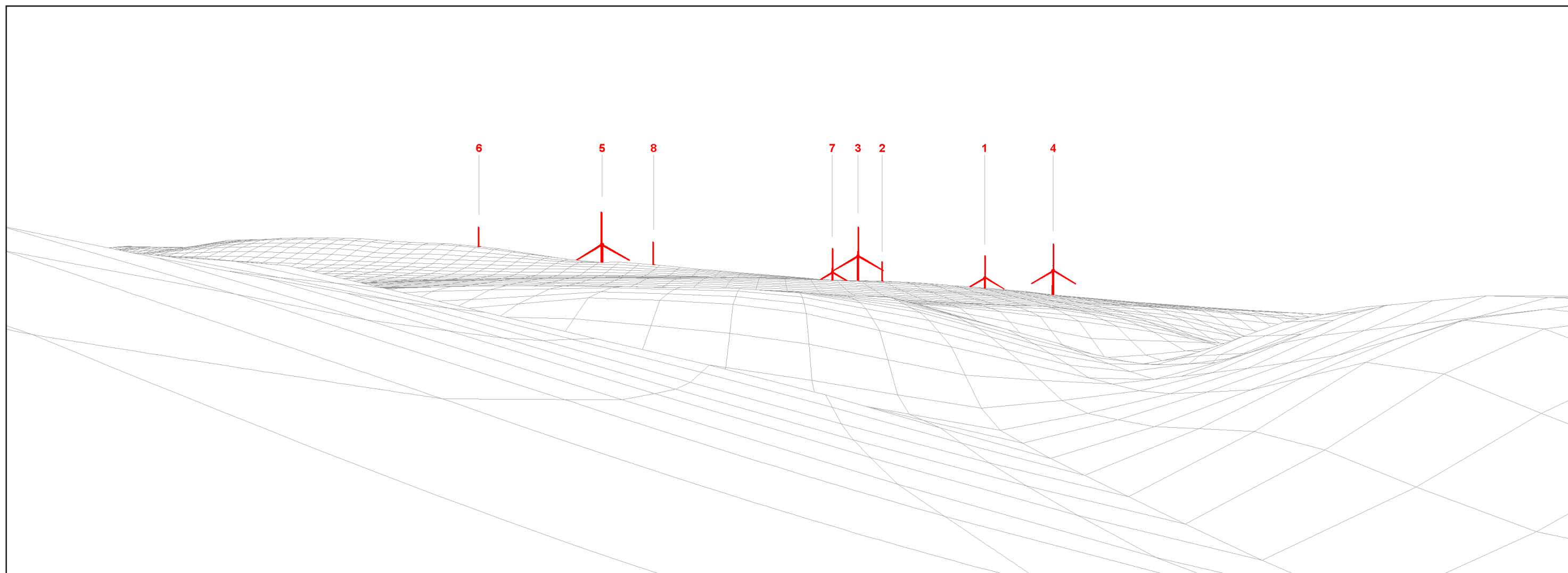


Auchinoon Turbine

Auchinoon Energy Park

Figure 10.14

Viewpoint 10: Cairnpapple Hill, prehistoric ceremonial complex (SM90053)



Distance to nearest turbine: 2.498km

Horizontal Field of View: 90°

View Direction: 181°

Camera Height: 1.5 m

Legend

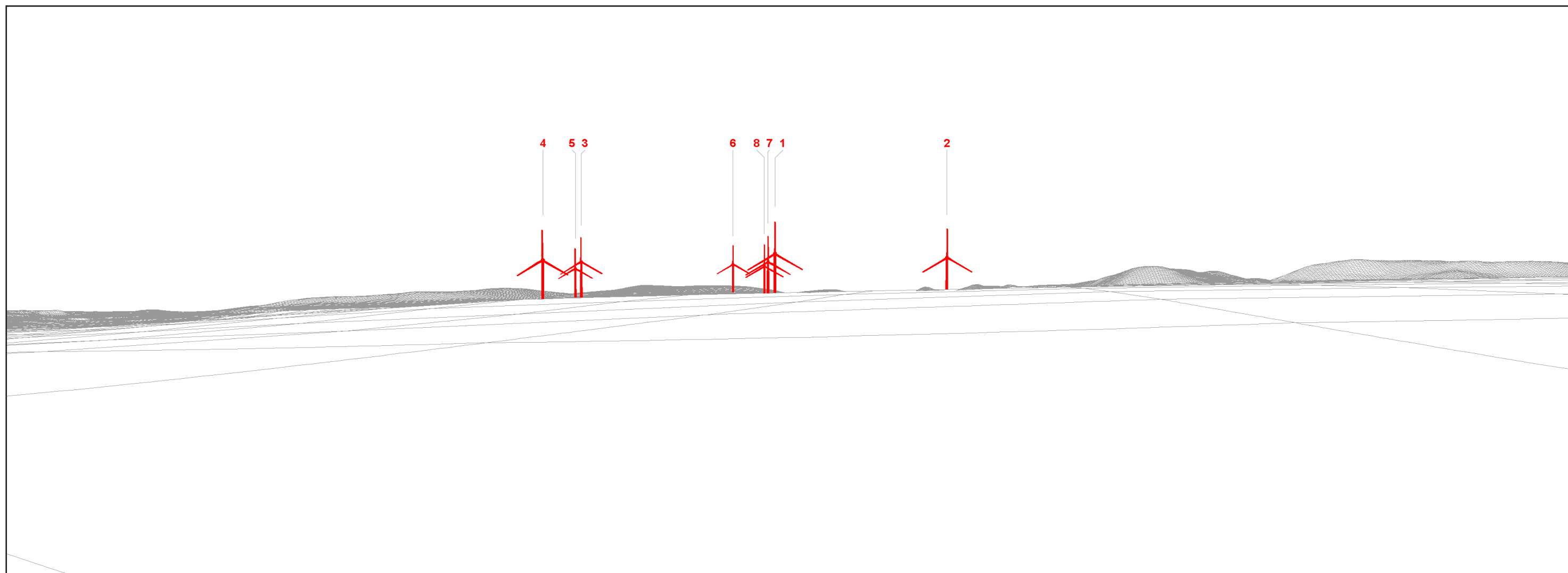


Auchinoon Turbine

Auchinoon Energy Park

Figure 10.15

Viewpoint 11: Railway Viaduct, Linhouse Water (LB7365)



Distance to nearest turbine: 2.551km

Horizontal Field of View: 90°

View Direction: 78°

Camera Height: 1.5 m

Legend

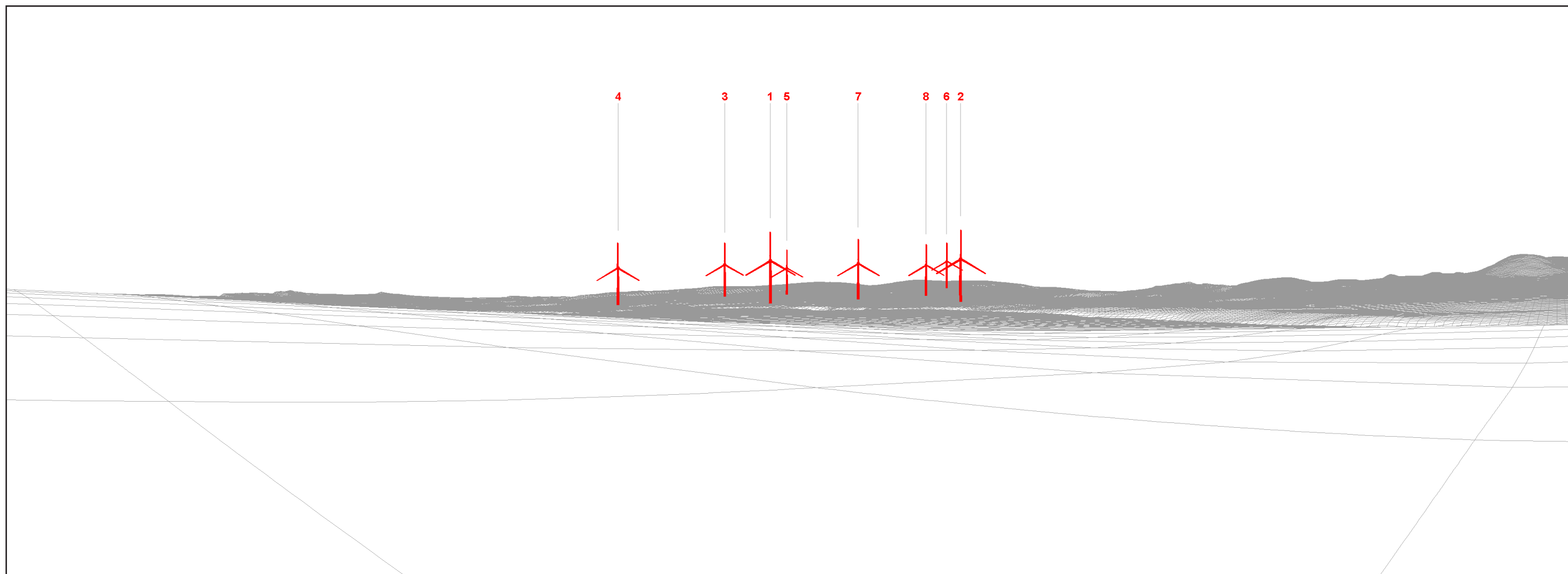


Auchinoon Turbine

Auchinoon Energy Park

Figure 10.16

Viewpoint 12: Harburn House (GDL00208)



Distance to nearest turbine: 2.801km

Horizontal Field of View: 90°

View Direction: 46°

Camera Height: 1.5 m

Legend

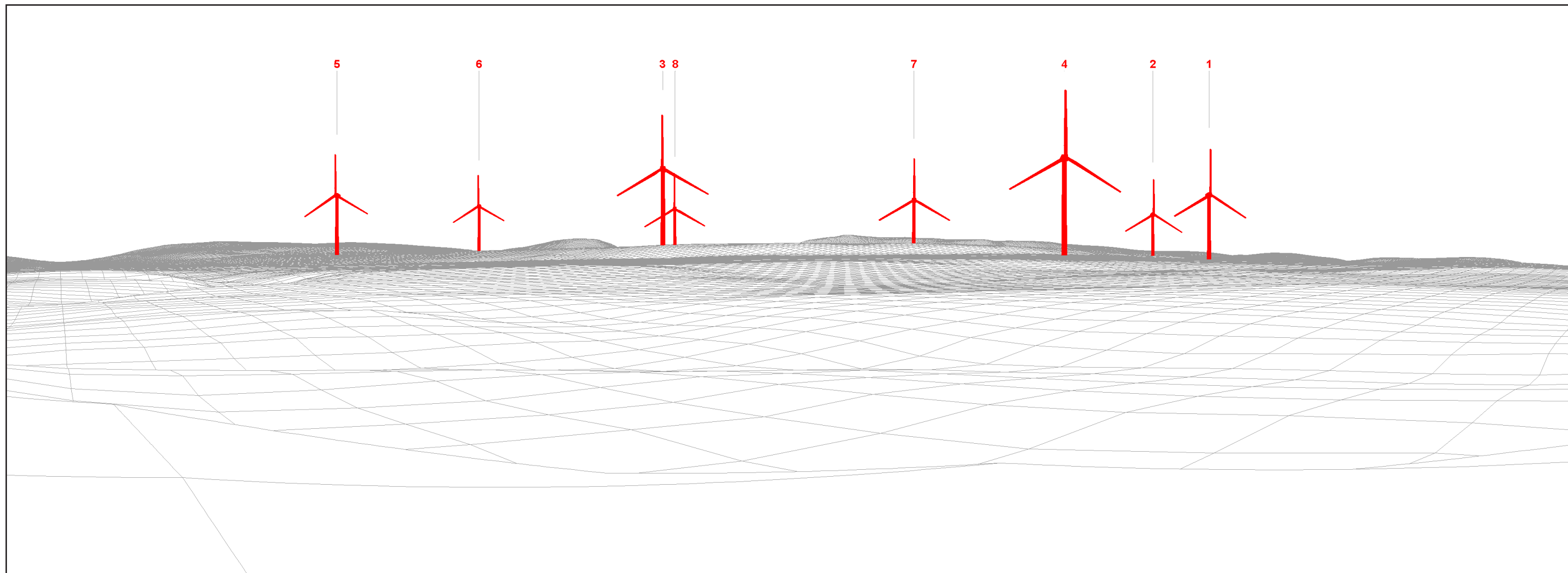


Auchinoon Turbine

Auchinoon Energy Park

Figure 10.17

Viewpoint 13: Camilty Hill, Roman Fortlet, Castle Greg (SM1933) and
Camilty Hill, enclosure, Harburn (SM1165)



Distance to nearest turbine: 1.218km

Horizontal Field of View: 90°

View Direction: 132°

Camera Height: 1.5 m

Legend

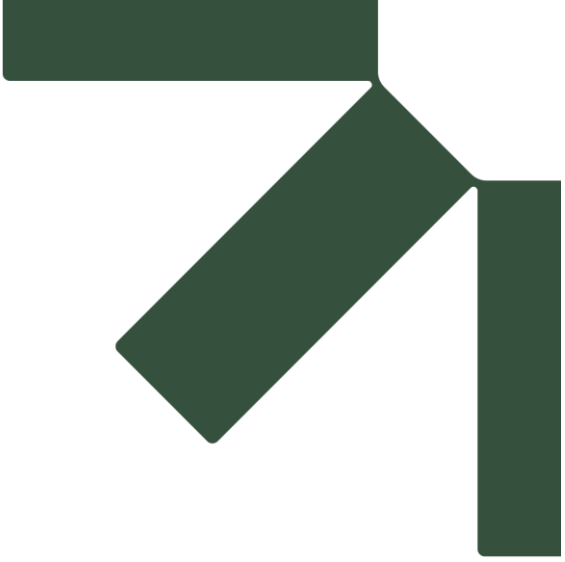


Auchinoon Turbine

Auchinoon Energy Park

Figure 10.18

Viewpoint 14: Views from the tower viewing platform of Linhouse
Mansion, looking Southeast (LB14156)



Appendix D Cultural Heritage Appraisal

Environmental Impact Assessment Scoping Report

Auchinoon Energy Park

Eurowind Energy Ltd

SLR Project No.: 405.066205.00001

16 June 2026

Appendix D Cultural Heritage Appraisal Table



Table 10.1.1: Scheduled Monuments within 10km of the Proposed Turbine Locations.

Designation Reference	Designation Title	Category	Bare Earth ZTV Turbine Visibility (0-8)	Screened ZTV Turbine Visibility (0-8)	Distance To Nearest Turbine (km)	Direction To Nearest Turbine	Appraisal Comments
SM6194	Corston Hill, cairn	Prehistoric ritual and funerary: cairn (type uncertain)	8	7-8	1.3	South west	The asset has scoped in for further assessment.
SM6188	Harlaw, enclosure 300m NW of	Prehistoric domestic and defensive: enclosure (domestic or defensive)	8	8	9.8	South west	This asset comprises the remains of a prehistoric settlement, sub-circular in shape with a diameter of 80m and visible as a series of cropmarks. Situated c. 1.5km to the south of the Water of Leith and to the east of Bavelaw Burn, the enclosure is strategically placed within the landscape. The enclosures' elevated placement prevents any risk of flooding from the surrounding watercourses, whilst still benefiting from the water resources and fertile soils in the area. The asset would have utilised its elevated position above both the Bavelaw Burn and the Water of Leith to monitor access along these two key routeways through the valley. As such, key views out from the asset are focussed to the north and west. The approach to the enclosures, likely from the lowlands to the north or from the more gradually sloping landscape to the east, also contributes to the assets setting. There are eight turbine tips anticipated to be visible to the south west of the asset. Views overlooking the Water of Leith to the north west and along the valley to the east are therefore unimpacted by the proposed layout. Views towards the enclosure from the Water of Leith and from the lowlands to the west also do not contain the proposed turbines. At most, views to the west may have some turbine tip visibility; however, the distance and undulating landscape between the enclosure and the Proposed Development suggest that any distraction is unlikely and the turbines are not imposing to the extent that they would impact the ability to understand, appreciate, and experience the enclosure's setting. As such, the enclosure is scoped out of further assessment.
SM6229	Craigpark Quarry, enclosure 450m W of	Prehistoric domestic and defensive: enclosure (domestic or defensive)	8	8	9.3	South west	The asset comprises the remains of a prehistoric enclosure, visible as a series of sub-circular earthworks, measuring up to 80m in diameter. A potential entrance has been recorded to the northeast of the enclosure. The enclosure is located to the east of the River Almond, with Tormain Hill sheltering views to the southeast. The enclosure's setting comprises the River Almond to the west, the lowlands to the north, west, and south west. Views overlooking this landscape contribute to the agricultural and defensive aspects of the asset's setting. Situated on an elevated ridge, outside the floodplain of the River Almond, the enclosure has good fertile soil for agricultural activities, whilst still being in proximity to the River Almond. The River Almond would have provided a form of transport and communication through the lowlands. A potential entrance has been identified to the northeast of the enclosure. As such, the primary approach would be from the north eastern ridgeline. Views towards the enclosure would be contained to the northeastern approach. Additionally, views towards the River Almond to the west contribute to the defensive aspect of the asset's setting, providing the ability to monitor those travelling along the route. There are eight turbine tips anticipated to be visible from the enclosure in views to the south west. Views of the open landscape to the north and west and of the River Almond to the north west remain unimpacted by the proposed layout. Whilst the turbine tips would be visible in the approach to the southwestern facing entrance, this aspect of the asset's setting is localised and long-distance views do not contribute to the way we understand, appreciate and experience the approach



Designation Reference	Designation Title	Category	Bare Earth ZTV Turbine Visibility (0-8)	Screened ZTV Turbine Visibility (0-8)	Distance To Nearest Turbine (km)	Direction To Nearest Turbine	Appraisal Comments
							to the enclosure. As such, any views of turbines would not distract from the setting of the asset. As such, the enclosure is scoped out of further assessment.
SM6254	Five Sisters, shale bing SE of Mid Breich	Industrial: mines, quarries	8	0-8	6.3	South east	This asset comprises the remains of a shale bing, demonstrating the extraction and processing of oil-shale, contributing to the history of industry development in West Lothian. The bing's setting consists of its immediate environment from which the oil-shale was extracted, transported and then processed. The bing's setting is functional and outward views do not contribute to its significance. Up to eight turbine tips are anticipated to be visible from the asset but would not be anticipated to impact the ability to understand, appreciate or experience the asset's functional setting. As such, the asset is scoped out of further assessment.
SM2980	Harperrig, cairn, West Cairn Hill	Prehistoric ritual and funerary: cairn (type uncertain)	8	8	4.1	North west	Scoped in for further assessment.
SM4242	Almondell, footbridge & aqueduct	Industrial: bridge, viaduct, aqueduct	8	0	6.1	South	This asset comprises a cast-iron aqueduct, measuring 1.8m wide and 3.6m high in its centre. Completed in 1822, the trough carries water from the River Almond to the Union Canal. Above the trough is a walkway forming a functional bridge crossing. The footbridge and aqueduct's setting is functional, in that its primary function is associated with providing a crossing point and transporting water. Immediate views along it, orientated northeast and south west, help us understand this function, but views beyond the River Almond do not contribute towards its setting. Due to the placement of the proposed development outwith any key localised view, the eight turbine tips anticipated to be visible will not impact the ability to understand, appreciate, and experience the asset's setting. Therefore, it is scoped out of further assessment.
SM3953	Bavelaw, steadings 60m NE of Redford Bridge	Secular: farmstead	8	0-8	8.0	South west	This asset comprises the remains of Bavelaw steadings, situated to the north of Bavelaw Burn and east of Redford Bridge. The asset is associated with the industrial activities of the former Redford Plantation and post-medieval agricultural activities of the surrounding farmland. The asset's setting is primarily related to its agricultural function, with the asset placed to the west of the former plantation and within agricultural land associated with the former Bavelaw Estate. This reflects the original role of the farmstead in relation to the workings of the Redford Plantation. Long-distance views do not contribute to our understanding, appreciation or experience of the asset and its setting. There are eight turbine tips anticipated to be visible to the west. This would not impact the ability to understand, appreciate and experience the asset's setting given the localised and functional agricultural and industrial setting of the farmstead. As such, the asset is scoped out of further assessment.
SM7254	Old West Calder Church, West Calder	Ecclesiastical: church	8	0	5.2	South east	This asset comprises the ruins of a roofless post-Reformation Parish Church, dating to 1643, serving West Calder from 1646 to 1880. The asset derives its significance in part from its level of preservation, with archaeological investigation having the potential to further our understanding of



Designation Reference	Designation Title	Category	Bare Earth ZTV Turbine Visibility (0-8)	Screened ZTV Turbine Visibility (0-8)	Distance To Nearest Turbine (km)	Direction To Nearest Turbine	Appraisal Comments
							post-Reformation ecclesiastical architecture and practices from the 1600s to the late 1800s. The church's setting comprises the West Calder Parish it served, with its central location making it visible from all directions in the village. Views from the church would have been limited to its associated burial ground. There are eight turbine tips anticipated to be visible from the church to the south east. Any visibility will not encroach on the ability to understand, appreciate or experience the asset's association with West Calder village and parish, which is the primary aspect of its setting. Additionally, the development of the West Calder village has altered the asset's setting. Screening all long-distance outward views from the church. As such, the proposed development will not cause any further distraction that may impact the ability to understand, appreciate, and experience the church's setting. Therefore, the asset is scoped out of further assessment.
SM8954	Union Canal, River Almond to River Avon	Industrial: inland water	8	0-8	8.8	South west	This asset comprises two sections of the Union Canal, from the River Almond to the River Avon and from Fountainbridge to the River Almond. The former stretches 20km, running from the west end of Lin's Mill Aqueduct, over the River Almond to the east end of the aqueduct over the River Avon. The latter stretches 15km and runs from the former Lochrin Basin to the west end of Lin's Mill Aqueduct over the River Almond. Both assets' significance derives in part from their intrinsic characteristics, as representation and preservation of Georgian civil engineering and the pioneering developments achieved during the 19th century. The asset's setting is associated with their function, being that of redirecting, monitoring, and controlling an artificial waterway, allowing commercial and transport routes across central Scotland. As such, views to and from the canal do not contribute to the understanding, appreciation, and experience of the canal beyond those along its footpath and immediate proximity. There are eight turbines anticipated to be visible from the canals to the southwest. Due to the asset's settings being limited to their immediate proximity and function, any long-distance views of the proposed turbines, will not distract from understanding, appreciating, and experiencing the Union Canal. Therefore, the assets are scoped out of further assessment.
SM11097	Union Canal, Fountainbridge to River Almond	Industrial: inland water	8	0-8	9.2	South west	
SM1193	Cairns Castle	Secular: tower	8	6-8	1.4	North west	Scoped in for further assessment.
SM11210	West Harwood, burial mound 720m SSE of	Prehistoric ritual and funerary: barrow	8	8	5.5	North east	This asset comprises the remains of a prehistoric barrow, situated on the north eastern slopes of Pearie Law. Prehistoric funerary monuments are often located within proximity to watercourses potentially associating running water with the journey to the afterlife, and they are often found on prominent positions in the landscape. This barrow is intentionally placed within proximity to watercourses, with Vein Syke and Bog Burn c.1km south and Harwood Water c.1.2km north. As such, proximity to these watercourses contributes to the significance of the asset. Due to the position of the cairn on the north eastern slope of Pearie Law, views in the south western facing direction are restricted. As such, primary views are focused on overlooking the lower lying landscape to the north east. This may have been the position of prehistoric settlement or a key route through the landscape, however, there is minimal archaeological evidence to support this. The primary approach is south western facing, from the lowlands climbing up the gentle gradient towards the barrow. Whilst the barrow is no longer distinctive within the landscape, at its full height it would have likely served as a key marker in the landscape for those approaching from the north east. These aspects of the asset's setting contribute towards its significance.



Designation Reference	Designation Title	Category	Bare Earth ZTV Turbine Visibility (0-8)	Screened ZTV Turbine Visibility (0-8)	Distance To Nearest Turbine (km)	Direction To Nearest Turbine	Appraisal Comments
							West Calder, Pearie Law Wind Farm is a modern addition to the landscape, situated to the east, south east and south of the barrow. This modern intrusion has altered outward views in these directions, as well as along the south west facing approach. The turbines are in close proximity to the asset and will cause a large distraction in views in this direction. These modern additions to the landscape has impacted our ability to understand, appreciate and experience the asset's cultural significance to some degree. There are eight turbines from the proposed development anticipated to be visible to the north east of the asset. The primary approach towards the barrow from the north east would not be impacted by the turbines as they would be behind the viewer. Views to the watercourses in the north and south would also not have any proposed turbines visible in the background and would not impact the barrow's setting. At most, views overlooking the open landscape to the north east would have visibility of the Proposed Development. However, due to the existing modern infrastructure already present in the immediate periphery of the north east facing views, the anticipated visibility of the Proposed Development is not likely to impact the asset's setting any further. As such, the Proposed Development will not impact the ability to understand, appreciate and experience the asset's setting. It is scoped out of further assessment.
SM11245	Crosswood, cairn 750m SE of	Prehistoric ritual and funerary: cairn (type uncertain)	8	8	4.2	North east	This asset comprises a prehistoric cairn, visible as a series of turf-covered mounds and measuring 8m in diameter. Stone robbing has altered the shape and potential scale of the cairn. The cairn is situated on the western slope of Torweaving Hill and to the east of Crosswood Burn. The cairn is located on the eastern bank of the Crosswood Burn, at the bottom of a west facing slope, and is positioned to be surrounded by the Crosswood Burn to the north, south, and west. Prehistoric burial assets are often found associated with watercourses, potentially associating running water with the journey to the afterlife. The approach would be south facing, along the previous route of the Crosswood Burn, however, the Crosswood Reservoir now sits directly to the north of the asset. The cairn is the most northern cairn in a series of prehistoric funerary and rock art monuments. The group follows the east side of the Crosswood Burn, forming a series of monuments with tangible and intangible relationships. It is likely that the asset is associated with these monuments (NHLE 72637, 35474, 70012, 371166, 72638), and therefore these assets may form a chain in which they are viewed from each neighbouring cairn or marked stone. These monuments also have a clear focus on the Crosswood Burn to the east, indicating that this watercourse was an important part of the contemporary landscape. All of these components form a localised prehistoric ritualistic and burial landscape. Key views from the monument therefore comprise of views north, west and south over the Crosswood Burn, and southeast along the prehistoric group. Views toward the asset would also therefore comprise northwest facing views from the southeast assets. The approach to the asset and its consecutive monuments to the south east would likely be from the lower terrain to the north, following the east side of the Crosswood Burn. Its secondary approach would therefore be from the south east, coming back from the monuments, facing northwest. There are eight turbine tips anticipated to be visible to the north east of the asset. There are no views of the turbines when viewing the burn to the west, nor are there any present when viewing associated assets. The two approaches would remain unimpacted with peripheral visibility of the turbines upon the northwestern



Designation Reference	Designation Title	Category	Bare Earth ZTV Turbine Visibility (0-8)	Screened ZTV Turbine Visibility (0-8)	Distance To Nearest Turbine (km)	Direction To Nearest Turbine	Appraisal Comments
							approach not competing for visual focus with the cairn. As such, aspects of the asset's setting which contribute to the way in which we understand, appreciate, and experience the monument and its relationship with contemporary assets will be impacted. It is scoped out of further assessment,
SM1153	Harperrig, cairn, East Cairn Hill	Prehistoric ritual and funerary: cairn (type uncertain)	8	8	4.2	North west	Scoped in for further assessment.
SM1165	Camilty Hill, enclosure, Harburn	Prehistoric domestic and defensive: enclosure (domestic or defensive)	8	0	2.8	North east	Scoped in for further assessment.
SM1161	Tormain Hill, cup & ring marked rocks 700m NE of Bonnington Mains	Prehistoric ritual and funerary: cupmarks or cup-and-ring marks and similar rock art	8	0	8.7	South west	This asset comprises the remains of several prehistoric cup and ring-marked rocks situated on the summit of Tormain Hill. The markings vary in that they include plain cup marks, cups with rings, concentric circles and gutters. The location of the rock art suggests that its setting incorporates the wider landscape, with panoramic views of the Pentlands, west Edinburgh, the open landscape to the west, and views to the north as far-reaching as the Ochil Hills. Views towards the asset would have been contained to its immediate approach along the Tormain Hill ridgeline to the northeast and from the south west, as the panels are low lying and not particularly discernible from a long-distance approach. There are eight turbine tips anticipated to be visible to the south west of the asset. This would be present in the periphery and backdrop when approaching the asset from the north east. Given that the placement of the rock art is primarily viewed from its immediate vicinity would indicate that any long-distance visibility of the turbines would not encroach on the ability to appreciate the rock art. Views from the asset would remain unimpacted in views to the north, east, and south. There would be the potential for peripheral visibility of the turbines when looking south and west, although this would not impact the overall ability to understand, appreciate, and experience the placement of the rock art due to its panoramic setting. As such, the asset is scoped out of further assessment.
SM1172	Kaimes Hill, fort	Prehistoric domestic and defensive: fort (includes hill and promontory fort)	8	0-8	6.5	South west	Scoped in for further assessment.
SM1213	Dalmahoy Hill, fort	Prehistoric domestic and defensive: fort (includes hill and promontory fort)	8	0-8	7.1	South west	Scoped in for further assessment.
SM1933	Camilty Hill, Roman fortlet, Castle Greg	Roman: fortlet	8	0-5	2.8	North east	Scoped in for further assessment.
SM1207	Murieston Castle	Secular: castle	8	4-6	2.4	South east	This asset comprises the remains of a late medieval tower, constructed in the 16 th century before undergoing alterations in 1824, turning it into a folly. Situated to the west of Murieston Water, the remains of the structure are now surrounded by Murieston Castle farm.



Designation Reference	Designation Title	Category	Bare Earth ZTV Turbine Visibility (0-8)	Screened ZTV Turbine Visibility (0-8)	Distance To Nearest Turbine (km)	Direction To Nearest Turbine	Appraisal Comments
							The tower's setting comprises that of its immediate landscape, overlooking Murieston Water to the east and the surrounding agricultural landscape. This intentional placement near freshwater provided a necessary resource for domestic and agricultural practices. The views to the north, east and south form an aspect of the castle's defensive setting, with Murieston Water forming a natural barrier to the north and east. The castle's placement afforded clear views along the ridgeline to the southwest and open landscape to the west and north, with clear monitoring of its primary south east-facing approach. Long-distance views were likely present in all directions, however, Murieston Water forms a natural barrier in the landscape to the east and south. The watercourse would form a defence along the eastern side of the castle and inhibit attacks from this direction. As such, whilst the castle would have been placed to monitor approaches in all directions, it is likely to have focused on the more open landscape in the northern, western and south western directions. Due to the barrier created by the watercourse, approaches to the castle would have been limited to its north and west. The modern farmstead surrounding the castle limits views both to and from the castle along these key western and northern approaches, as well as screening views to the south. There are eight turbine tips anticipated to be visible to the south east of the asset. The long-distance views towards the north, west, and south west remain unimpacted due to the turbines being oriented to the southwest. As such, key views outward from the castle which contribute towards its dominance and defensibility, would not be impacted by the Proposed Development. Long-distance views to the south east, in which the proposed development would feature, do not contribute to the asset's significance. Additionally, the approach to the asset from the north east would have turbine visibility in the backdrop, although due to the modern development of Murieston farm encircling the monument and altering the primary approach, the Proposed Development would not impact the castle's setting further. Therefore, it is scoped out of further assessment.
SM1184	Dalmahoy, cross slab, St Mary's Church	Crosses and carved stones: cross slab	7	0	9.3	South west	This asset comprises the remains of an early medieval cross slab, measuring 1.5m high. The slab was discovered whilst being used as a gatepost in the late 19th century, before being moved to the grounds of St Mary's Episcopal Church in Dalmahoy. Given that the slab's origin remains unknown, there is no indication of the stone's original setting. As such, the asset's original setting is no longer intact. Given that the original placement and setting of the asset is not able to be understood, appreciated or experienced, any turbine visibility will not impact the cultural significance of the asset. As such, the cross slab is scoped out of further assessment.
SM3247	Cock Rig to Linton Muir, Roman road	Roman: road	0	0	9.7	North west	Due to this asset and contemporary assets with intervisibility falling outwith the ZTV, this asset has been scoped out of further assessment.



Table 10.2.1: Additional Scheduled Monuments considered outwith 10km of the Proposed Turbine Locations.

Designation Reference	Designation Title	Category	Bare Earth ZTV Turbine Visibility (0-8)	Screened ZTV Turbine Visibility (0-8)	Distance To Nearest Turbine (km)	Direction To Nearest Turbine	Appraisal Comments
SM90053	Cairnpapple Hill	Prehistoric ritual and funerary: cairn	8	0-8	12.8	South east	Scoped in for further assessment.

Table 10.3.1: Category A Listed Buildings within 10km of the Proposed Turbine Locations

Designation Reference	Designation Title	Bare Earth ZTV Turbine Visibility (0-8)	Screened ZTV Turbine Visibility (0-8)	Distance to nearest turbine (km)	Direction To Nearest Turbine	Appraisal comments
LB7355	South Gateway Hatton Estate	8	0	7.6	South west	The asset comprises the historic southern entrance to the Hatton Estate. The gate is no longer in use but would have once framed the entrance and exit to the estate, providing an asset of architectural interest for those visiting the estate. They were originally situated to the east, at the entrance to the avenue; however, they were moved in the early 1800s. Whilst its cultural significance is primarily derived from its architectural interest, the gates' setting at the entrance to the estate does provide some significance, as it offers context for its function. The ZTV indicates that up to eight turbine tips would be visible from the asset, in views to the south west. Views when entering the estate would not contain the turbine tips. Due to the curvature of the drive, the gate is only visible when exiting the estate from the north. At this point within the journey, the driveway is surrounded by historic woodland, intended to screen outward and long-distance views and provide a sense of privacy and exclusion to the entrance to the estate. As such, any incidental long-distance views, which may contain the turbines, do not contribute to the asset's significance. The ability to understand, appreciate and experience the asset would be retained. The asset is scoped out of further assessment.
LB7365	Railway Viaduct, Linhouse Water	1	0	2.4	South	This asset is scoped in for further assessment.
LB7370	Almondell Bridge, River Almond	0	0	6.5	South	Due to this asset and contemporary assets with intervisibility falling outwith the ZTV, this asset has been scoped out of further assessment.
LB14228	Almondell Bridge	0	0	6.5	South	Due to this asset and contemporary assets with intervisibility falling outwith the ZTV, this asset has been scoped out of further assessment.
LB7371	Canal Feeder Aqueduct, River Almond	8	0	6.1	South west	The asset comprises an aqueduct and footbridge, designed to carry both water and pedestrians over the River Almond. The water eventually feeds the Union Canal. Whilst designated primarily for its architectural interest, as a very well-preserved and still functioning aqueduct from the 1800s, the asset's setting does contribute to its significance in part but is limited to the immediate views of the river and footbridge. The majority asset's significance is functional, directly relating to the asset's use to carry water and people over the river below. As such, long-distance views do not contribute to the asset's significance. Up to eight turbine tips are anticipated to be visible from the Proposed Development, located to the south. These turbine tips would not distract from the ability to understand, appreciate and experience the functional and localised setting of the asset. As such, it is scoped out of further assessment.
LB7419	Blackburn House	8	0-8	7.7	South east	Scoped in for further assessment.



Designation Reference	Designation Title	Bare Earth ZTV Turbine Visibility (0-8)	Screened ZTV Turbine Visibility (0-8)	Distance to nearest turbine (km)	Direction To Nearest Turbine	Appraisal comments
LB7430	Union Canal, Almond Aqueduct, River Avon Near Linn's Mill.	3	2	8.5	South west	Both assets refer to the same viaduct, constructed in c.1820 to carry the Union Canal over the River Almond. The aqueduct is primarily designated due to its architectural interest, as a very well-preserved and still in use asset from the early 19 th century. The asset's connection to the engineers Hugh Baird and Thomas Telford, as well as the aesthetics of its five arches contribute to its cultural significance. The viaduct carries the canal over the river from northwest to southeast, with points of appreciation for the architecture being from the banks of the river directly to the north and south. The asset's setting is functional and localised, as it was placed to carry the canal over the river. Up to three turbine tips are anticipated to be visible from the asset. With up to four from the lower ground along the river banks. Whilst potentially present in views to the south, these turbine tips are not anticipated to compete for attention when viewing the architecture of the bridge from the lower ground and would not be anticipated to impact the ability to understand, appreciate and experience the functional setting of the viaduct as it crosses the river. As such, the assets are scoped out of further assessment.
LB27793	Union Canal, Almond Aqueduct, River Almond At Lin's Mill	3	2	8.5	South west	
LB14144	Midcalder Village Mid Calder Parish Kirk (St. John's Church) Main Street	8	0	5.0	South	The asset comprises a gothic church, first constructed in the mid-1500s and subsequently added to in the 1800s. The church was constructed for the Sandilands family, on the site of an earlier kirk, and is placed within the historic estate of the family. Calder House (LB14153), the family seat, is located 0.13km to the southeast. The asset's significance is primarily derived from its architectural interest, as an extremely well-preserved 16 th century church in the gothic architectural style. The asset can be appreciated from the road to the east, which runs through the centre of Mid Calder village (to the asset's immediate north). The asset's setting comprises its placement within the historic estate, as it would have formed the place of worship for the Sandilands family and for the village of Mid Calder to the north. Immediate views of the church when entering and exiting the village from the south may have been of importance, as they provide context for the placement of the church; however, these views are localised to the immediate landscape and do not include external views. Whilst up to eight turbine tips are anticipated to be visible from the asset in views to the south-southeast, they would not be present in views of the church from the road to the east or in the approach northwards towards the village. They may be visible when leaving the village and heading southwards, but would not be within the same viewshed as the church and would not compete for dominance. As such, the ability to understand, appreciate, or experience the asset, its architectural interest, or its setting within the historic estate would not be impacted. The asset is scoped out of further assessment.
LB14153	Calder House	8	0-8	4.9	South	Calder House comprises a 16 th to 17 th century mansion, with evidence of earlier walls and additions from the 18 th and 19 th centuries. The house is primarily designated due to its architectural interest, as a good example of an early post-medieval mansion, and due to the multiple renovations and changes that have occurred throughout history. In addition, the asset's historical interest, as the home of the Lords of Torphichen (the Sandilands family), the place where John Knox celebrated his first reformed communion, and as a place where Chopin stayed. The asset's setting comprises its placement within the historic estate, which is preserved in part to the north, west and south. The key approach to the house would have been from the gateway to the southeast of the asset (LB14155), with the route from Main Street turning



Designation Reference	Designation Title	Bare Earth ZTV Turbine Visibility (0-8)	Screened ZTV Turbine Visibility (0-8)	Distance to nearest turbine (km)	Direction To Nearest Turbine	Appraisal comments
						through the gates, heading west, then curving to the north before entering a driveway to the north of the L-plan house. The driveway is lined by intentional tree planting. The house looks over surviving designed parkland to its south, west and north, with the main façade of the building appearing to be south facing. The house's setting is limited to the boundaries of the estate, with long-distance views not contributing to the significance of the asset. The ZTV indicates that up to eight turbine tips would be present in views to the south from the asset. Due to the placement of the driveway to the north of the house, the historic and intentional tree planting along the driveway and the distance from the turbines, it is unlikely that the turbine tips would be present in views along the key approach. The turbines may be present in views to the south from the house and any rooms that overlook the parkland to the south; however, a modern development, to the asset's south and southwest, would be more of a visual distraction to the ability to understand, appreciate, and experience the asset's placement within the estate. The views over the parkland to the south would be unchanged. As such, the asset is scoped out of further assessment.
LB14155	Gateway, Calder Estate, West Calder Road	8	0	4.8	South	The asset comprises the historic entrance at the approach to Calder House (LB14155). The gate is primarily designated for its architectural interest, as a preserved example of Renaissance architecture from 1670. The asset's setting comprises its association with Calder House and the surrounding estate, including its placement along Main Street, a key routeway through the village of Mid Calder. The asset is appreciated from Main Street, to its east, and from the driveway of Calder House, to the west. The driveway quickly turns northwards after entering the gate, and as such, the opportunity to appreciate the architecture is limited to the immediate vicinity. Long distance views do not contribute to the asset's significance. The ZTV indicates that up to eight turbine tips would be visible from the asset. These tips would not be present in views towards the gate from the east and the west, from its key points of appreciation. As such, the ability to understand, appreciate and experience the asset, its architecture, and its setting within the wider estate would not be impacted by the proposed development. It is scoped out of further assessment.
LB14156	Linhouse Mansion	8	0-8	1.2	South east	Scoped in for further assessment.
LB14243	Houstoun House	8	0-8	9.4	South east	The asset comprises a large hotel, originally an L-plan mansion constructed in the 1600s and continuously extended throughout the preceding centuries. The asset is well preserved, although altered from its original layout, and shows the architectural development of the asset throughout multiple periods and uses. The asset's setting comprises the historic estate, which has mostly been redeveloped and is no longer intact, though some of its planted woodland boundaries still survive. A golf course is located directly to the south of the asset, located on land formerly associated with the house. The A89 runs along its southern and northern borders and the village of Uphall is located to the northeast, with the large town of Livingston being located to the southwest. The historic and current approach to the house is along a tree-lined drive from the east. These trees intentionally obscured views beyond the limits of the drive and framed the house. In addition, any intended views from historically principal rooms will have been fundamentally changed by the aforementioned surrounding modern development. As such, whilst up to eight turbine tips may be visible from the asset, they would not be present in views along the key approach and would not further alter the already changed views across the historic estate. The asset is scoped out of further assessment.
LB26701	Bavelaw Castle With Stables And Outbuildings, Gatepiers And Boundary Wall	8	0-1	8.2	South west	This asset comprises the remains of Bavelaw castle and stables, which dates as early as 1628, with ongoing alterations taking place through later centuries. Situated at the foot of the Pentlands, the hill range provides the castle with protection from advances from the south, with its orientation facing the valley and Bavelaw Burn to the northwest and northeast. Historically, the castle and stables were accessed from the main



Designation Reference	Designation Title	Bare Earth ZTV Turbine Visibility (0-8)	Screened ZTV Turbine Visibility (0-8)	Distance to nearest turbine (km)	Direction To Nearest Turbine	Appraisal comments
						avenue to the east, which has now been replaced by a western approach. The main entrance to the castle is from the southeast, with the surrounding stables and outbuildings situated to the north and east of the castle. Views overlooking the land to the north, up to the historic Bavelaw burn contribute to the defensive setting of the asset. Whereby, the valley to the north would have been a primary route for travellers moving through the landscape. Therefore, the castle's strategic placement enabled inhabitants to monitor access along this route, demonstrating its defensibility. The castle would have been visible when approaching through the landscape, with its visual dominance contributing to its ability to control access through the landscape. The castle is currently surrounded by historic woodland and is no longer the most visually dominant aspect of the landscape. There are eight turbine tips anticipated to be visible to the south west. Views upon the southwestern approach will not be impacted by the turbines due to them being behind the viewer. The historic entrance from the east is no longer intact and so views from this entrance will not be further impacted by the proposed layout. Views from the castle are primarily focussed to the north, monitoring the landscape. The turbines will not be present in northward views. As such, the Proposed Development will not impact the ability to understand, appreciate, and experience the assets' defensibility and dominance within the landscape. Therefore, it is scoped out of further assessment.
LB26792	1 Cockburn Farm Cockburn House (Cockburn Farm Dairy) With Boundary Wall And Sundials	8	0-8	6.9	South west	This asset comprises a late 17th century laird's house built for William Chiesley. The asset derives its significance in part from its character and architectural features. There are also two sundials associated with the structure, one two-faced, wall-mounted sundial on the northeastern corner of the house, and another tabular dial on the southeast-facing wall of the building. The farm steading is situated to the west of Cock Burn and to the southwest of Balerno village, with the fields surrounding the house enclosed by a historic treeline, creating a sense of privacy from any views into the steading. The primary approach to the farmhouse is from the Cockburnhill Road to the southeast, with a historic treeline to the south of the drive preventing any views of the house until within its immediate vicinity. Views towards the house from the southeast form the primary point of appreciation for the house's architecture. Views from the house overlooking the surrounding fields are limited to the enclosed treeline, with a historic path to the northwest creating a link between the steading and Glenbrook. As such, views from the house are limited to its immediate surrounding gardens and are associated with the agricultural activities of the farm. There are eight turbine tips anticipated to be visible to the southwest of the asset. Views towards the steading from the southeastern approach will not be impacted by any views of turbines due to the development being orientated away from key viewsheds and the enclosing treeline providing shelter from external views. The orientation of the farm steading, being southeast to northwest, further directs any focus away from the development. Views from the front of the house remain able to be appreciated, and the limited long-distance views will also remain sheltered by the surrounding historic treeline. Long-distance views to the southwest along the footpath remain unimpacted. Overall, the Proposed Development will not impact the ability to understand, appreciate, and experience the asset. It is scoped out of further assessment.
LB26826	Bonnington House With Balustraded Wall	8	0-8	7.3	South west	These assets comprise Bonnington House (LB26826) and the associated Sundial (LB26853) and Dovecot (LB26839). Bonnington House, which dates back to 1622, is situated c. 1km northwest of Wilkieston and c. 1km east of Calderwood. Undergoing a series of alterations through the 18th and 19th centuries, the assets derive their cultural significance from their level of preservation and contribution to post-medieval architecture in Scotland. The assets are now found within the centre of Jupiter Artland, a sculpture park within the historic bounds of the Bonnington estate.
LB26839	Bonnington Dovecot	8	1	7.4	South west	
LB26853	Bonnington Sundial	8	0	7.3	South west	



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						The historic approach to Bonnington comprises a north facing approach from the south, through treelined woodland, before reaching an open drive at the east of the house. The key points of appreciation for the house are from the formal gardens to the east and west, with outward views from the house being focused on the eastern approach, western gardens, and are restricted to the north and south by historic woodland. The sundial (LB26853), dating to the late 17th century is situated in the centre of the walled garden to the west of the house. Representing the later additions to the Bonnington Estate, the sundial is situated in the designed landscape as a centrepiece drawing attention from within the western garden and from views within the house. The dovecot (LB26839), is dated to the earliest building phase of the house, is located to the north of Bonnington House and comprises a circular structure. The eastern and northern entrances to the dovecot form the primary points of appreciation. The asset's setting is functional, providing food for the inhabitants of the house. No intended views to or from the dovecot beyond the parameters of the Bonnington Estate contribute towards its setting. There are eight turbine tips anticipated to be visible to the southwest in a bare earth scenario. The historic woodland along the approach from the south and to the north, west and south of the assets would screen any outward views, as evidenced by the Screened ZTV. The turbines would be peripheral at most in views of the house from the eastern gardens and would not impact the ability to appreciate the architectural value of the asset. As such, the Proposed Development will not impact the ability to understand, appreciate, and experience the architectural significance and character of the assets. Therefore, all assets are scoped out of further assessment.
LB26891	Clifton Hall With Stables, Outbuildings, Dovecot And Clifton Beag	8	0	9.0	South west	This asset comprises the remains of a late 16th century house, which has been incorporated into the current Clifton Hall, a Scots Baronial-style mansion, constructed by David Bryce in 1850. The associated dovecot, stables and lodge date to the early 19th century but have now fallen into dilapidation. The asset derives its significance from its character and architectural history, as well as the history of those who owned the property, including Thomas Gibson and Alexander Charles Maitland and his wife, Helen Gibson Wright. Situated to the east of the River Almond, north of the Union Canal and south of the M8, the east-west oriented mansion is primarily approached from an eastern driveway. A historic woodland frames the periphery of the house's grounds, creating a sense of privacy from external views. Additionally, a row of trees lines the main driveway, curating an enclosed approach before opening up in front of the building to form the primary point of appreciation for the asset's architecture. Views from the house include those to the west, south, and southeast, with views from the principal rooms focused to the east. There are eight turbine tips anticipated to be visible to the southwest. This may be visible in the periphery when approaching the house from the east; however, the historic treeline bordering the periphery of the southern boundary and the eastern driveway prevents any long-distance views, focusing any views towards the mansion. As such, the turbines will not encroach on the primary point of appreciation. Views overlooking the grounds to the south and southwest are further sheltered by a historic treeline, with no intended long-distance views in any direction contributing to the asset's setting. Therefore, the Proposed Development will not impact the ability to understand, appreciate, and experience the asset. As such, the asset is scoped out of further development.
LB26940	Dalmahoy Estate, Dalmahoy Bridge Gogar Burn	7	0	9.3	South west	This asset comprises a round, single-arched bridge, spanning Gogar Burn and forming part of the primary approach to Dalmahoy House. The bridge derives its significance in part from its architectural history, designed by William Adam and completed by Alexander Laing, featuring droved ashlar with ornamental moulding, and random rubble abutments with droved quoins. The bridge's setting is solely functional and includes Gogar Burn, which it crosses and contributes to the primary approach of Dalmahoy House. The seven anticipated turbine tips to the southwest would not impact any aspect of understanding, appreciating and experiencing



Designation Reference	Designation Title	Bare Earth ZTV Turbine Visibility (0-8)	Screened ZTV Turbine Visibility (0-8)	Distance to nearest turbine (km)	Direction To Nearest Turbine	Appraisal comments
						the bridge. This is due to the great distance of the Proposed Development from the asset and the confinement of the bridge's setting to the Gogar Burn and approach to Dalmahoy House. As such, the bridge is scoped out of further assessment.
LB27014	527, Lanark Road West, Ravelrig Estate, Dovecot	8	0	8.8	South west	This asset comprises the remains of an early 18th century lectern dovecot associated with the location of the former Ravelrig Mansion, which is no longer extant. The asset derives its significance in part from its architectural value, including its rectangular shape, single chamber, rat course, ashlar margins and dressings, and 274 nesting boxes. The dovecots' setting comprises the Ravelrig grounds on which it is located along the southwestern periphery. Due to the asset's functional setting. There are no intended views to or from the dovecot. Rather, the primary point of appreciation is from its southeastern entrance. There are eight turbine tips anticipated to be visible to the southwest of the asset. The historic treeline framing the back of the dovecot prevents any peripheral distraction from the proposal when facing the entrance from the southeast. Due to the distance of the turbine layout and the functionality of the asset's setting, the Proposed Development will not erode the ability to understand, appreciate, and experience the architecture and character of the dovecot. As such, the asset is scoped out of further assessment.
LB27021	Dalmahoy House	7	0-7	8.9	South west	This asset comprises the remains of an early classical house, designed and constructed by William Adam in 1725. The asset derives its significance in part from its architecture and the later alterations throughout the 19th and 20th centuries. Oriented east to west, the primary approach to Dalmahoy House is from the northeast. The driveway travels from the northeast, branching off to approach the house from the west, north and east, with the eastern approach forming the primary point of appreciation. Views from the house to the east, overlooking the estate's gardens and pond, form another aspect of the asset's setting. The historic woodland to the north and south limits any long-distance views in these directions. The woodland frames the periphery of the grounds to the east and west, emphasising clear viewing of the gardens in these directions. There are seven turbine tips anticipated to be visible to the southwest. This will not impact any views from the west, which forms the primary point of appreciation or the assets setting, nor will the proposal impact any views from the house to the east. Views to the north remain unimpacted, and views to the south are limited by the historic woodland and do not include any long-distance views. The historic woodland within the estate screens any views of the turbines when approaching the house. As such, any turbine visibility will be limited to a passing moment upon the approach and will not distract from the ability to appreciate the house from its immediate approach. Therefore, the Proposed Development will not impact the ability to understand, appreciate, and experience the asset and is scoped out of further assessment.
LB27153	Malleny Estate, Dovecot	8	0	9.1	South west	These assets comprise the remains of Malleny Estate dovecot (LB27153) and Malleny House with associated features (LB27172). The assets derive their cultural significance from their architectural preservation and association with historic figures. The Dovecot features a rectangular plan, 2 stage, crowstepped gabled dovecot, entered from the southwest and consisting of 915 nesting boxes. The asset's setting is primarily associated with Malleny estate. Long-distance views are not intended to or from the asset. The primary point of appreciation for the dovecot's architectural design is from its southwestern entrance and a potential wider pathway leading from Malleny House to the northwest. Malleny House, including a walled garden, bothy, ironwork, gates, gatepiers, and green cottage and stables, form part of the wider Malleny estate, dating to the early 16th / late 17th century. The preservation and alterations that have taken place within the estate, through changes in ownership, form an aspect of the asset's setting from which it derives its cultural significance. The house is oriented southeast to northwest, with its primary approach from the northwest, which curves to the east, passing the stables and cottages before approaching the main
LB27172	Malleny House With Walled Garden, Bothy, Ironwork, Gates, Gatepiers, Green Cottage And Stables	8	0	9.2	South west	



Designation Reference	Designation Title	Bare Earth ZTV Turbine Visibility (0-8)	Screened ZTV Turbine Visibility (0-8)	Distance to nearest turbine (km)	Direction To Nearest Turbine	Appraisal comments
						entrance from the northeast. This approach is sheltered by a historic woodland treeline, creating a sense of privacy and preventing inward and outwards views. The walled gardens are situated to the north, with views in this direction forming the primary points of appreciation. The secluded nature of the estate remains as historic woodland and continues to shelter surrounding views. There are eight turbine tips anticipated to be visible to the southwest from the bare earth ZTV. The screened ZTV demonstrates that there would be no turbine tip visibility, a result of the modern development and expansion that has taken place within Balerno to the assets west, which screens any long-distance views to the west and southwest. As a result, the Proposed Development is not anticipated to impact the ability to understand, appreciate or experience the assets. Therefore, both assets are scoped out of further assessment.
LB27334	Hatton Estate, S Terrace Wall with Pavilions and Bathhouse	8	0-8	7.9	South west	This asset comprises a late 18th century bath house with associated eastern and western pavilions and the remains of a terraced garden and fountain. The assets are associated with former 17th century Hatton House, which was demolished in 1955. The features derive their significance from their association with the Hatton Estate, which is an inventoried garden and designed landscape (GDL00209). The bathhouse, two pavilions, and walled garden remain intact and appreciable, with the east to west oriented garden approached from the north, where the original Hatton House was located. There are northern entrances to the two pavilions, alongside a southern entrance to both pavilions and the bath house. The assets settings are primarily contained within the terraced garden and from the former Hatton House to the north. Aside from views towards the buildings from the north and within the garden, additional views from the lower gardens to the south contribute to the asset's settings, from which their architectural significance can be appreciated. There are eight turbine tips anticipated to be visible to the southwest. This will not impact views from the southern grounds when approaching and viewing the three buildings. Visibility of the tips may be present from within the terraced garden; however, given that the primary point of appreciation is limited to within the walled garden and long-distance views to the east and south of the estate are sheltered by historic woodland, suggests that the proposal will not impact the asset's significance. As such, the Proposed Development will not impact the ability to understand, appreciate, and experience the asset's setting. Therefore, the asset is scoped out of further assessment.
LB27341	Hatton Estate, East Avenue Gates	7	0	8.7	South west	This asset comprises the remains of a pair of ornate, rectangular plan gatepiers. The asset derives its significance from its architectural design, which includes a checkerboard pattern of smooth and rusticated ashlar blocks; the upper sections have grooves, topped with projecting moulded cornices. The gatepiers setting is limited to its immediate function and approach from the A71 to the south and its association with the setting of Hatton House. Due to their functionality and primary association with the approach to Hatton House, the seven turbine tips anticipated to be visible to the southwest would not impact the ability to understand, appreciate, and experience the asset. As such, the gatepiers are scoped out of further assessment.
LB51902	Bangour Village Hospital, Former Memorial Church	8	0-2	9.8	South east	This asset comprises the remains of Bangour Village Hospital, a former memorial church which was reconstructed by Harold O Tarbolton and completed in 1930. The asset derives its significance from its architectural history and character, comprising its lower aisle asymmetrical neo-Romanesque style features, square-plan tower and memorial chapel. The building was formerly positioned on an elevated ridge to ensure clear views towards the building which was maintained after its redevelopment. The asset's setting is associated with the Bangour village, for which it served as both a parish church and a hospital. In both historic uses, the asset's setting was localised to the surrounding settlement and inhabitants, with long-distance views not contributing towards its cultural significance.



Designation Reference	Designation Title	Bare Earth ZTV Turbine Visibility (0-8)	Screened ZTV Turbine Visibility (0-8)	Distance to nearest turbine (km)	Direction To Nearest Turbine	Appraisal comments
						There are eight turbine tips anticipated to be visible to the southeast. Due to the localised setting of the asset, the Proposed Development would not impact the ability to understand, appreciate, and experience the asset's setting. Therefore, the asset is scoped out for further assessment.
LB51903	Bangour Village Hospital, Former Recreation Hall	0	0	9.7	South east	This asset falls outside the ZTV, as do views from the asset when viewing associated features within the Bangor village. As such, the asset is scoped out of further assessment.



Table 10.4. 1: Category B Listed Buildings within 5km of the Proposed Turbine Locations

Designation Reference	Designation Title	Bare Earth ZTV Turbine Visibility (0-8)	Screened ZTV Turbine Visibility (0-8)	Distance To Nearest Turbine (km)	Direction To Nearest Turbine	Appraisal Comments
LB7358	Ormiston house	8	0	4.5	South west	Ormiston House is a mid-19th century manor, designed by the Scottish architect David Bryce for Archibald Wilkie of Ormiston. The castle-inspired Scottish Baronial architecture contributes to the significance of the building, including the high-quality ashlar masonry and stugged finish, angle turrets with conical roofs. Ormiston House estate consists of surrounding farmland with Leyden Road to the west, and Gogar Burn and Ormiston Hill to the east. The house has a north-facing entrance, with a point of appreciation for the architecture of the house being from lawn to the north of the house. The Gogar Burn flows to the south and east of the house, forming a natural boundary alongside woodland coverage. Views from the house would have primarily focused northward towards the open parkland with additional views from principal rooms in the south of the house being screened in part by the historic woodland. There are eight turbine tips anticipated to be visible to the southwest. The primary point of appreciation for the asset from the north would have some turbine visibility, however, the turbines would be peripheral at most and would not detract from the ability to understand, appreciate and experience the asset's architectural value. The primary views from the house overlooking the parkland to the north remain unimpacted by the turbines and the intentionally planted historic woodland to the south would screen any views in this direction. Therefore, the ability to understand, appreciate, and experience the architectural and cultural significance of Ormiston House remains unimpacted by the Proposed Development. As such, the asset is scoped out of further development.
LB7363	Ainville farm-house	4	0-2	2.3	South west	This asset comprises a well-preserved late 18th century Georgian farmhouse. The house's architectural features contribute to its character and cultural significance, including the slated roof, round-headed gable windows, and cornice modillions. Situated to the west of the A70 and the Water of Leith. The main driveway to the house is from the southeast, off the A70, with the main point of appreciation upon the house's immediate approach from the north, facing the house. Additionally, views from the house primarily overlook the agricultural land to the northeast, with agricultural building developments now blocking long-distance views in this direction. There is a walled garden surrounding the back of the house to reduce visibility of the main A70 to the south of the house; therefore, views in and out of the property are reduced. There is some visibility to the southwest, with a historic walled garden still in use as an isolated field, contributing to the wider cultural significance associated with the building. There are four turbine tips anticipated to be visible to the southwest of the house. The main approach and point of appreciation when facing Ainville remain unimpacted by the proposal. Views overlooking the walled garden to the south remain unaffected, and the views to the north associated with the asset are outside the turbine visibility. Whilst a turbine tip is anticipated to be visible to the southwest when looking across to the walled garden, this is not a primary point of appreciation for understanding the cultural significance associated with the farmhouse. Therefore, the ability to understand, appreciate and experience the asset remains unaffected by the Proposed Development. As such, the asset is scoped out of further assessment.
LB14134	Murieston house, easter murieston	8	0	2.9	South east	This asset comprises a 19th century Georgian style home built for Henry Jamieson of Murieston, a banker from Edinburgh. The house derives its significance from its architectural preservation, including a hipped slate roof, classical cornice and pilastered doorway. The primary approach to the house is from the northeast and southwest, approaching the primary point of appreciation from the southwestern entrance of the house. The channel of historic woodland along the approach to the house creates a sense of privacy and prevents views into the house and surrounding grounds. The historic woodland continues to surround the house and shields external views. The woodland surrounds the house from the north around to the southeast of the property. The



Designation Reference	Designation Title	Bare Earth ZTV Turbine Visibility (0-8)	Screened ZTV Turbine Visibility (0-8)	Distance To Nearest Turbine (km)	Direction To Nearest Turbine	Appraisal Comments
						land to the south and southwest of the house, which once incorporated sheds and a sundial are no longer present or associated with the house, undergoing modern redevelopment. As such, the points of appreciation towards the house from the southwest are no longer maintained. The house's orientation, with the front facing southwest, evinces that key views from the back garden to the northeast form a primary point of appreciation in order to understand the architectural and cultural setting of the asset. Views from the house would have focused on overlooking the garden to the northeast and the land to the southeast, where Murieston Water flows. There are eight turbine tips anticipated to be visible to the southeast of the property. The primary approach and point of appreciation from the southwest remains unimpacted by the proposal. Views from the house overlooking the garden to the northeast will also remain unaffected, as will any reciprocal views from the garden towards the house from the northeast and southeast. Any visibility from the house looking to the southeast will be limited due to the shielding of historic woodland, with long-distance views not associated with the ability to understand, appreciate, and experience the cultural significance and character of the asset. As such, the house is scoped out of further assessment.
LB14157	Doocot, linhouse	8	8	1.3	South east	This asset comprises an early 18th century oblong dovecot. The dovecot derives its significance from its preservation and architecture, including corbie-stepped gable ends, two circular openings with land ledges, two interior chambers, and 768 nest-holes. The dovecot is situated on the Linhouse estate, to the northwest of Linhouse House (LB14156), with three historic paths directed towards the dovecot, the primary channels directly from Linhouse, which continues past the dovecot towards the northern end of the garden before turning west. An additional path from the west connects to the dovecot from the driveway leading up to Linhouse. The dovecots setting comprises the Linhouse estate in which it is located, with no intended views from the structure spanning beyond the estate. Views towards the dovecot are primarily limited to Linhouse, with additional views from the northwest and western pathways. Views from the grounds and Linhouse are limited due to modern tree planting, although the main route from Linhouse to the dovecot remains intact. There are eight turbine tips anticipated to be visible to the southeast. This will not disrupt key views towards the dovecot from Linhouse, nor will the proposal encroach on internal views within the grounds when viewing the dovecot from the north and west. The modern tree planting and garden landscape have altered the historic openness of the grounds, which once surrounded the dovecot. As such, any turbine visibility will not further impact the ability to understand, appreciate, and experience the asset and its relationship with Linhouse estate, which remains primarily connected via a long driveway. Therefore, the dovecot is scoped out of further assessment.
LB14158	The old schoolhouse causeway end kirknewton	8	0-8	1.1	North west	This asset derives its significance from its architectural preservation and historic character. Constructed in 1823 by James Gillespie Graham, the former inn was sold to the Mid Calder School Board during the 1870s. The front of the structure and gables still contain their original timber and glass, with each window and door comprising a sloping protective stone hood incorporated into the lintel. These are just a couple of the architectural features which contribute to the character of the buildings. Following the closure of the school, the building was sold as a bothy in 1915. Located to the north of the A70, the old school building was accessible to the surrounding hamlets of Wester Causewayend and Easter Causewayend. Due to the functionality of the building, there are no intended views associated with the school. Views of the building from the north when entering the building form the primary points of appreciation for the assets architecture and character. There are eight turbine tips predicted to be visible to the northwest of the asset. This will not impact the primary point of appreciation from the north when entering the building. Therefore, the Proposed Development will not impact the ability to understand, appreciate, and experience the cultural and architectural aspects of the asset, which contribute towards its setting. Therefore, the asset is scoped out of further assessment.



Designation Reference	Designation Title	Bare Earth ZTV Turbine Visibility (0-8)	Screened ZTV Turbine Visibility (0-8)	Distance To Nearest Turbine (km)	Direction To Nearest Turbine	Appraisal Comments
LB14159	Stables, the old schoolhouse, causeway end kirknewton	8	0-8	1.1	North west	This asset derives its significance from its architectural preservation and historic character. Constructed in 1823 by James Gillespie Graham, the U-shaped stables aligned with the previous adjacent inn. The asset's setting is primarily functional and can be associated with the Causewayend Inn (LB14158) located across the road to the north. The stable's primary point of appreciation is from the road to the north, and from the west and north when approaching the bend in which both contemporary assets are situated. This reinforces the stable's former connection with the inn. Aside from views towards LB14158 to the south, there are no additional intended views. There are eight turbine tips anticipated to be visible to the northwest of the asset. This will have no impact on any approach from the main A70 road from the west and north, nor will it impact views towards LB14158. Views from the previous inn may have peripheral visibility of visibility of T6 when viewing the old stables. However, due to the proximity between the two structures and their functional relationship, affirms that the proposal would not impact the ability to understand, appreciate, and experience the stable's setting nor its cultural and architectural character. Therefore, the asset is scoped out of further assessment.
LB14160	Brucefield farmhouse and steading	8	0-8	4.0	South east	This early 19th century farmhouse comprises two wings creating a U-plan courtyard. The asset derives its significance from its architectural history, with ongoing developments occurring throughout the 19th century, including that of the North Range section. Despite being bricked up, the farmhouse maintains a well-preserved staircase with a classical cast-iron balustrade. The farmhouse's function served that of its surrounding agricultural landscape, with views intended to overlook the agricultural land associated with the farmsteading to the south. There are no intended views towards the steading which contribute to its cultural character, aside from its immediate approach from the north. Modern development has transformed the entirety of the infrastructure surrounding the farmhouse. Brucefield Industrial Estate now encompasses the farmhouse and what was previously agricultural land. As such, the anticipated eight turbine tips to the southeast will not distract from the ability to understand, appreciate and experience the structure's architecture any further than the existing infrastructure. Therefore, the asset is scoped out of further assessment.
LB14215	Harburn house (hayfield)	8	0-3	2.6	North east	This asset comprises the remains of an early 19th century Georgian, two-storey house, constructed for Alexander Young. The building derives its significance from its cultural character and architecture, including its piended roof and dormers, entrance porch and classical mutuled cornice detailing. Harburn House's setting comprises its winding approach from the north and south, views overlooking the spring and open landscape to the west, north, east, and southeast of the associated grounds. Views from the eastern entrance form the primary point of appreciation for the asset's architecture. Views overlooking the Harburn monument (LB14216) and dovecot (LB14218) to the east, and the stables (LB14217) to the north contribute to the character of Harburn House and its associated grounds in which it is centred in the core of. There are eight turbine tips predicted to be visible to the northeast. Views of the house from the eastern entrance remain unimpacted, as do views from the house overlooking the landscape to the west, north, and southeast. Views towards the dovecot and monument may have peripheral visibility of the turbines; however, these were likely to be appreciated when exploring the grounds and not from the house itself. As such, the architectural appreciation of the house is maintained from the approaches, and the cultural character associated with the house is also not affected by the Proposed Development. As such, the house's setting can still be understood, appreciated, and experienced, and is therefore, scoped out of further assessment.
LB14216	Charles X monument, harbun policies	8	0	2.5	North east	This asset comprises a monument erected around 1835 to commemorate the last visit of Charles X of France in 1832. The asset's setting comprises the Harburn estate in which it is located, with views to and from contained within the grounds. No long-distance views contribute towards its setting.



Designation Reference	Designation Title	Bare Earth ZTV Turbine Visibility (0-8)	Screened ZTV Turbine Visibility (0-8)	Distance To Nearest Turbine (km)	Direction To Nearest Turbine	Appraisal Comments
						As such, any anticipated turbine tip visibility will not impact the ability to understand, appreciate, and experience the asset; therefore, it is scoped out of further assessment.
LB14217	Harburn stables	8	0	2.6	North east	This asset comprises the remains of Harburn stables, constructed in the early 19th century. The stable derives its significance from its architecture and cultural preservation, featuring a piended slated roof and elliptical arch passageway where the stables were entered from the east. The functional role of the stables demonstrates that there would not have been any intended views associated with the stables. However, their impressive design contributes to its character and wider association with Harburn House (LB14215). There are eight turbine tips anticipated to be visible to the east. This will not encroach on the eastern approach through the passageway, nor will the turbines encroach on the driveway connecting the stable with Harburn house to the south. As such, the Proposed Development does not impact the ability to understand, appreciate, and experience the asset. Therefore, the stables are scoped out of further assessment.
LB14218	Harburn doocot	7	0-2	2.5	North east	This asset comprises an early 19th century Gothic square dovecot. The dovecot derives its significance from its preservation and architecture, including pointed windows, a crenelated parapet, blind arches constructed around the doorway frame, and 297 nest-holes. The dovecots' setting comprises the Harburn grounds on which it is located in the northeastern corner. There are no intended views to or from the dovecot, with a historic path leading up to the asset from the south, forming the primary point of appreciation for the structure's architecture. There are seven turbine tips anticipated to be visible to the northeast. These will not be present within the immediate vicinity of the dovecot when approached and viewed from the south and west, given the enclosed nature of the estate grounds and lack of long-distance views. Due to the lack of intended views to and from the dovecot, the Proposed Development will not erode the ability to understand, appreciate, and experience the architecture and character of the dovecot. As such, the asset is scoped out of further assessment.
LB14219	Hermand house	8	0-8	4.3	South east	This asset comprises the remains of Hermand House (LB14219), built in 1797 and derives its significance from its Georgian architecture, including that of a piended slate roof and pedimented doorway. Constructed for George Fergisss, the stables (LB14220) were built as a slightly later edition, in the early 19th century, also in the Georgian style, featuring a piended slate roof and later kennel additions to the east end.
LB14220	Hermand coach-house and stables	8	0-7	4.2	South east	The house's main approach from the east forms the primary point of appreciation for the building's architecture. This driveway passes round to the south of the house, where it connects up to the stables, which are primarily appreciated from the north and east. There are no intended views associated with the stable due to its functional role, rather its character and proximity to Hermand house form another aspect of its significance. Views from Hermand House primarily focus on the landscape to the north, west, and south, with a series of pathways distributed around the site. Considerable modern developments have altered the views associated with Herman house in these proximities; as such, the primary point of appreciation in which the house's character and architecture can be appreciated remains the main entrance from the east and southeast. As such, the anticipated visibility of the Proposed Development will not erode the ability to understand, appreciate, and experience the architectural significance of the house, nor will it impact the character of the house any further than the existing infrastructure. The turbines are also outside the visibility of the main driveway passing between the house and the stables. As such, both assets can be scoped out of further assessment.
LB14221	Limefield house	8	0	4.1	South east	This asset comprises a Georgian house, built in 1804 and belonged to Thomas Gloag in 1840. Situated to the east of Harwood Water and A71, Limefield house was situated along the long drive approach to Limefield Mains. The house's architecture and character can be appreciated from the southeast entrance and driveway approach. The house and driveway are surrounded by historic woodland, providing a sense of privacy



Designation Reference	Designation Title	Bare Earth ZTV Turbine Visibility (0-8)	Screened ZTV Turbine Visibility (0-8)	Distance To Nearest Turbine (km)	Direction To Nearest Turbine	Appraisal Comments
						and preventing views into the house from the main road and Limefield Mains to the east, which have fallen into a state of ruin. Views from the house overlooking Harwood Water would have incorporated part of its wider character and placement in the landscape as an impressive manor house from the Georgian period. There are eight turbine tips anticipated to be visible to the southeast of the house. This does not impact any views of the surrounding woodland and glen to the northwest of the house; additionally, the turbines are outside of the primary point of appreciation from the main southeastern entrance to the house. As such, the Proposed Development does not encroach on the ability to understand, appreciate, and experience the asset. Therefore, the house is scoped out of further assessment.
LB18442	Westfield house	8	0-8	3.0	South east	This asset comprises a Georgian house, built in 1760 and was potentially constructed by John West, before being acquired in 1825 by John Keir and Dr Robert Young, respectively. Situated to the west of Murieston and southwest of Bellsquarry, the house remains relatively secluded from surrounding properties and infrastructure. The primary approach to the house is from the northeast, with a 0.5km long driveway which is framed by a treeline, creating a sense of privacy. The main entrance and point of appreciation for the house's architecture is from the south, facing the house. A secondary approach from the southwest of the house is also sheltered by treeline coverage, as are the gardens and immediate grounds surrounding the house. The original layout appears to have been maintained, alongside a walled garden to the southeast of the house. As such, views towards the house are isolated to its immediate approach. Views from the house are centred on its immediate garden and grounds in all directions from the property. There are eight turbine tips anticipated to be visible to the southeast. This will not impact the primary northeastern approach, nor the western approach. The primary point of appreciation remains unaffected due to the direction of the proposal. Views from the house overlooking the grounds may have the turbine tips visible when looking southeast; however, views are intended to remain within the boundary of the home's gardens. As such, the Proposed Development will not affect the ability to understand, appreciate, and experience the asset. Therefore, the house is scoped out of further assessment.
LB18833	Bridge, Murieston House	8	0	2.8	South east	This asset comprises a single arch, rubble bridge, forming the driveway approach to Murieston House, spanning Murieston Water. The bridge derives its significance from its architectural features, including that of roughly droved voussoirs against decorated blocks at the end of each parapet, which are topped with pyramid-shaped tops. The bridge's setting is solely functional and includes Murieston Water, which it crosses and contributes to the primary approach to Murieston House. Given the locality of the bridge's setting, the eight anticipated turbine tips to the southeast would not impact any aspect of understanding, appreciating and experiencing the architectural features and function of the bridge. As such, the bridge is scoped out of further assessment.
LB18980	Wester Causewayend farmhouse and steading	8	0-8	0.9	North west	This asset comprises the remains of a Georgian-style farmhouse constructed in 1802. The steading consists of multiple building phases, forming a courtyard with a southern entrance from the A70, with the buildings adjacent to the south not previously constructed. The preservation of the steadings design and the character associated with numerous agricultural practices form the basis of the assets significance. The steadings setting is primarily functional, with the surrounding agricultural landscape to the north, east, and west, providing parcels of land for cultivating practices and open grazing. The approach to the farm steading from the south forms a primary point of appreciation for the steading's architecture. There are eight turbine tips anticipated to be visible to the northwest of the asset. Due to the functionality of the steading and the lack of long-distance views incorporated into the asset's setting, any turbine tip visibility will not distract from appreciating the architecture of the steading from the south. Therefore, the Proposed Development will not erode the ability to understand, appreciate, and experience the asset, and as such, it is of further assessment.



Designation Reference	Designation Title	Bare Earth ZTV Turbine Visibility (0-8)	Screened ZTV Turbine Visibility (0-8)	Distance To Nearest Turbine (km)	Direction To Nearest Turbine	Appraisal Comments
LB19672	Bankton house	8	0-5	3.7	South east	This asset comprises a Georgian house built in 1812 for James Bruce of Bankton. The asset derives its significance in part from its architectural features, including its piended slate roof, dressed stone chimneys, and distyle porch. Situated to the west of Murieston Water, the historic approach was from the north, which is now reduced to Bankton Lane and Close. The primary point of appreciation for the house's architecture is from the northern approach. The grounds of Bankton House historically comprised woodland, forming screening from any reciprocal long-distance views. The woodland to the south of the house is now publicly accessible, and the garden to the north has been redeveloped into a housing estate. As such, the eight visible turbine tips to the southeast will not erode or impact the ability to understand, appreciate, and experience the asset due to long-distance views not contributing to the asset's setting from which it derives its cultural significance. Therefore, the house is scoped out of further assessment.



Table 10.5.1: Inventoried Garden & Designed Landscapes (GDLs) within 10km of the Proposed Turbine Locations

Designation Reference	Designation Title	Bare Earth ZTV Turbine Visibility (0-8)	Screened ZTV Turbine Visibility (0-8)	Distance To Nearest Turbine (km)	Direction To Nearest Turbine	Appraisal Comments
GDL00209	Hatton House	0-8	0-8	7.8	South west	This asset comprises the remains of a 17th century garden and designed landscape, associated buildings, terraces, and ornamental gateways. The designed landscape experienced a phase of redevelopment, with its earliest designs for Lord Hatton, before further design changes throughout the 18th and 19th centuries. Despite degradation, the remains of the gardens offer insight into unique post-medieval landscape architecture, alongside the seven listed buildings associated with Hatton House, which all contribute to the character and cultural significance of the asset. The estate's core comprises Hatton House (no longer existent), the terrace garden and fountain, bath house, as well as two pavilions to the east and west of the terrace (LB27334). The surrounding grounds incorporate woodland and parkland areas with footpaths distributed throughout the grounds to the north and east of the estate. There are two main approaches to the estate, one from the east gate house (LB27341), which afforded the house a direct link with Hatton Mains. This approach, along with an almost 1km driveway, reinforced the prestigious class and wealth of the estate. The second entrance to the south of the estate merges with the main A71 road and winds through the woodland and parkland areas before converging with the eastern approach, both of which enter the house from the north. The south gateway (LB7355) and approach remains in use, with the eastern driveway now incorporated into surrounding agricultural land with little trace of the original planting and design. Despite the degradation of Hatton House and the surrounding architectural features, the premise of the landscape design, the walled gardens, and associated pavilions and gatehouses remain intact, as do portions of the primary approaches and points of appreciation. For example, the southern approach remains unaltered, and the original northern entrance has been incorporated into the modern Hatton House. The walled terrace ensures that views from the house are concentrated on this section of the GDL, with the bathhouse, eastern, and western pavilions well-preserved. The preservation of the Garden Temple (LB27348) to the west of the estate is uncertain, but it remains well concealed within woodland, as was its original design. As such, key views within the estate, towards the house and gardens, remain understandable and appreciable. The gatehouse and a stone wall remain along the southern perimeter, preserving the intentional privacy designed by the 17th century architects. The woodland in the southwestern corner of the estate afforded limited views along the southern driveway before opening up within the parkland area so as to appreciate the terraced garden to the south of the house before looping around to face the house from the northern entrance. The preservation of this driveway, the sheltering woodland and parkland areas, affords the same approach to the estate. Views from Hatton House incorporated the open parkland to the east of the estate; this area has been incorporated into a more functional open grazing landscape, ensuring the surrounding landscape remains appreciable in respect to the character of the estate. There are up to eight turbine tips anticipated to be visible to the southwest of the GDL. The southern approach to the estate, through the designed landscape, remains unimpacted by the proposal. The eastern approach, which remains appreciable despite its disuse, remains unimpacted by the turbine layout. Views towards the estate are confined to within the parameters of the estate, except for the eastern approach, which has already been confirmed as unaffected. The grounds of the estate focus on views to the south and are contained within the estate grounds, with the terrace garden and associated listed structures still appreciable and sheltered from any peripheral views by the existing historic woodland sheltering the southern and western perimeter of the house. Views towards the terrace garden and Hatton House from the parkland area to the north and east of the grounds may have some peripheral visibility of the turbines; however, these are not anticipated to be views of significance which contribute to understanding the character and cultural significance of the asset. As such, the Proposed Development will not impact the ability to understand, appreciate, and experience the asset and is therefore scoped out of further assessment.
GDL00208	Harburn House	8	0-8	2.6	East	Scoped in for further assessment.
GDL00297	Newhall	0	0	9.8	North west	Due to this asset and contemporary assets with intervisibility falling outwith the ZTV, this asset has been scoped out of further assessment.
GDL00272	Malleny	8	0-5		South west	This asset comprises the remains of a semi-formal walled garden, which would have formed part of the larger Malleny Estate. The asset is situated to the west of Balerno Village and within Balerno conservation area (CA33). The asset is associated with the early 17th century Malleny House (LB27172). The designed landscape has undergone a series of phases throughout the 17th to 20th centuries.



Designation Reference	Designation Title	Bare Earth ZTV Turbine Visibility (0-8)	Screened ZTV Turbine Visibility (0-8)	Distance To Nearest Turbine (km)	Direction To Nearest Turbine	Appraisal Comments
						There are nine listed buildings within the GDL, eight of which are category A (LB27172 & LB27153) and one of which is category C (LB27162). There are two approaches to Malleny House through the GDL, from the north and from the east, both merging before facing the front of the house from the east. A series of footpaths are distributed throughout the historic woodland, providing scenic routes through the landscape. The designed gardens to the north of Malleny House form a primary point of interest within the GDL. The walled garden comprises a sundial and bothy, with views from the garden contained by the surrounding historic woodland. The remainder of the GDL consists of mature mixed woodland which borders the GDL. The topography rises in the eastern woodland section and slopes down towards Bavelaw Burn in the west. Views are contained within the GDL by the historic woodland bordering Malleny. Views within the estate are focussed on the house, walled garden, and along the woodland footpaths. There are eight turbines anticipated to be visible to the southwest, although the screened ZTV demonstrates that from the majority of the GDL there would be no visibility of the turbines. This is the result of the bordering Balerno village, whereby modern infrastructure and expansion forms screening, as well as the historic woodland bounding the estate. There is a small section within the centre of the GDL to the northeast of Malleny House which is anticipated to have up to three turbine tips visible. Given that the setting of the GDL is contained to the immediate grounds associated with Malleny House, the minor visibility of only a few turbine tips would indicate that the Proposed Development would not impact the overall ability to understand, appreciate, and experience the asset's setting from which it derives its significance. Therefore, it is out of scope out of further assessment.



Table 10.6.1 Conservation Areas within 5km of the Proposed Turbine Locations

Designation Reference	Designation Title	Bare Earth ZTV Turbine Visibility (0-8)	Screened ZTV Turbine Visibility	Distance To Nearest Turbine (km)	Direction To Nearest Turbine	Appraisal Comments
CA374	Mid Calder	0-8	0-8	4.4	South	This asset comprises Mid Calder village, situated to the south of the River Almond, west of East Calder, east of Livingston and to the north of the A71. The conservation area incorporates Almond Park and the River Almond to the north, Almondell and Calderwood Country Park, and 22 listed buildings. The village is surrounded by estate grounds, the River Almond, and woodland, which form the primary character and cultural significance of the conservation area. The main built aspects of Mid Calder’s conservation area includes three category A listed buildings: Mid Calder Parish Church (LB14144), Calder House (LB14153), and East Gateway (LB14155), all situated along Main Street. The centre of the village is concentrated along Bank Street, which forms the primary route through the conservation area. The majority of the village's development is focused in the north, with 14 listed buildings situated along Bank Street. The historic layout of the village has remained largely uninterrupted, including much of Calder House estate grounds, Calder Wood and the landscape which is now associated with Almondell and Calderwood Country Park. As such, the character of the conservation area is related to the preservation of Calder House, its estate grounds and their relationship with the town of Mid Calder. Views which contribute to the character and architecture of Mid Calder comprise the historic buildings along Bank Street, the parish church (LB14144), and surrounding woodlands and parks, maintaining the scenic setting. As such, views towards the village are concentrated upon its approach from Calder Park Road to the southwest, Pumpherston Road to the north, Market Street to the west, and Main Street, which passes through the centre of the village before rearing east towards East Calder village. Additionally, views are contained within Almondell and Calderwood Country Park by extensive woodland coverage, creating a sense of privacy. As such, the key views associated with the village's character are primarily associated with moving through the village, as opposed to views extending outside the conservation area and beyond to the surrounding landscapes. There are eight turbine tips anticipated to be visible from the proposed turbine layout to the south. Views approaching Mid Calder from the south, east and west remain unimpacted by the proposal. Views approaching from the north are primarily associated with crossing the River Almond and the surrounding woodland landscape; therefore, any turbine tip visibility would not distract from the ability to appreciate and experience the village. All other views are internal and as such, no anticipated views towards the development would impact the ability to understand, appreciate and experience the conservation area. Therefore, Mid Calder conservation area is scoped out of further assessment.





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