atmos CONSULTING

Environmental Impact Assessment Report

Swarclett Wind Farm

Chapter 2: EIA Approach and Methodology

Swarclett Wind Energy Limited

wind2

June 2024

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None

Glossary of Terms

Term	Definition
The Applicant	Swarclett Wind Energy Limited
Environmental Advisors and Planning Consultants	Atmos Consulting Limited
Environmental Impact Assessment	Environmental Impact Assessment (EIA) is a means of carrying out, in a systematic way, an assessment of the likely significant environmental effects from a development.
Environmental Impact Assessment Regulations	The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 (EIA Regulations)
Environmental Impact Assessment Report	A document reporting the findings of the EIA and produced in accordance with the EIA Regulations
The Proposed Development	The Swarclett Wind Farm
The Proposed Development Footprint	The area within which the Proposed Development will be located
The Proposed Development Site	The full application boundary, ie the red line boundary (Figure 1-1 Site Location)

List of Abbreviations

Abbreviation	Description
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
IEMA	Institute of Environmental Management and Assessment
NNR	National Nature Reserve
NTS	Non-Technical Summary
SAC	Special Area of Conservation
SPA	Special Protection Area
SSSI	Sites of Special Scientific Interest
WLA	Wild Land Area

2 EIA Approach and Methodology

2.1 Introduction

This Chapter of the EIA Report sets out the approach taken to the EIA for the Proposed Development.

The preparation of this EIAR has been undertaken in accordance with the Scottish Government Planning Circular 1/2017: Guidance on The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 (Scottish Government, 2017a).

The EIAR has also been informed by relevant best practice guidance on EIA generally, for example the Institute of Environmental Management and Assessment (IEMA) Guidelines for Environmental Impact Assessment (2016), NatureScot and Historic Environment Scotland's Environmental Impact Assessment Handbook Version 5 (2018).

On specific environmental subjects (for example noise, air quality and landscape and visual assessment), technical guidance has been referred to in the appropriate chapters of this EIAR.

2.2 EIA Pre-Application and Scoping

2.2.1 The Requirement for EIA (Screening)

Schedule 1 of the EIA Regulations lists those developments for which an EIA is mandatory, whilst Schedule 2 describes projects for which the need for EIA is judged by Scottish Ministers on a case-by-case basis.

The Proposed Development is not a Schedule 1 development, but it does fall within Schedule 2 of the EIA Regulations under part 3(j) (ii) and (iii), as an installation for harnessing wind power for energy production with more than two turbines with a height exceeding 15 metres.

A Schedule 2 development is determined an EIA development if it is likely to have significant effects on the environment by virtue of factors such as its nature, size or location. Schedule 3 of the EIA Regulations sets out the criteria that should be considered by Scottish Ministers in determining whether a Schedule 2 development is likely to have significant environmental effects and requires an EIA.

It was recognised by the Applicant that the Proposed Development has the potential to have significant environmental effects. The Applicant has voluntarily undertaken an EIA and is submitting an EIAR. It is therefore, deemed an EIA Development, subject to the provisions of the EIA Regulations.

Whilst it is considered that the Proposed Development has the potential for significant environmental effects, it is important to note that this does not mean that this is the conclusion of the EIA. And hence, the EIA sets out to assess whether or not significant effects result.

The Applicant considers that EIA has an important role in developing the design of the Proposed Development to minimise adverse environmental effects and maximise positive benefits.

Embedding mitigation into the design or the incorporation of mitigation measures into the construction and/or operation of the Proposed Development has been undertaken to avoid, reduce and, if possible, remedy any significant adverse effects or enhance positive effects.

2.2.2 The Scope of the EIA Report

Pre-Application Consultation

Pre-Application Advice was sought from Highland Council (HC) on 22nd September 2021. Following a Pre-Application consultation meeting with THC on 6th October 2021, a Pre-Application Advice Report was produced (21/03943/PREMAJ).

The Report provided information on the planning history of the Proposed Development Site and the relevant local planning policy and guidance applicable to the Proposed Development including expected viewpoints that requiring consideration during technical assessment.

The advice produced in the Pre-Application Report, alongside consultation with THC and technical consultation carried out by technical experts (as detailed in Chapters 5-15) have informed the scope of the EIA.

A summary of Pre-Application consultation with various stakeholders is outlined in Table 2-1 below.

Table 2-1: Summary of Pre-Application Consultation

Consultee	Pre-App Opinion (November 2021)	Applicant Response
THC	Detailed information and assessment will be required in order to establish the significance of any impacts. Design iteration should show how the proposed development has responded to these impacts. Assessment should also set out the benefits how the benefits of the proposed development outweigh the impacts.	Detailed assessments which address all potential environmental impacts, where necessary, are provided in the relevant chapters of the EIAR.
	The following are required in the EIAR: • Chapter detailing the design evolution of the wind farm; • Design and Access Statement; • Sustainable Design Statement; • statement on how the development is likely to contribute to the Scottish Government Energy Efficient Scotland roadmap and provide the Highlands with secure and clean electricity supplies	A Sustainable Design Statement is provided in the EIAR Design and Access Statement.
Landscape and Visual		
NatureScot	**Landscape Impact** Assessment of landscape and visual impacts, including cumulative impacts will be required. Reference should be made to the landscape sensitivity study for Caithness.	Chapter 5 Landscape and Visual Impact Assessment provides a comprehensive assessment of all potential impacts on sensitive landscape and visual receptors. The requirement for aviation lighting is

Consultee	Pre-App Opinion (November 2021)	Applicant Response
	Visibility appears to extend to Wild Land Areas (WLAs) 36: Causeymire – Knockfin Flows and WLA 39: East Halladale Flows. The EIAR should assess the impact on these WLAs. NatureScot welcome further discussion on the scope of Wild Land assessment methodology with the Applicant. As a starting point they recommend the assessment includes: • Clear information on the positions and intensity of lighting proposed with a plan showing which turbines are lit; • ZTV map; • Table detailing how many lit turbines will be visible from each viewpoint; • Assessment on effects of lighting on landscape character; • Night-time visualisations from a limited/proportionate number of representative viewpoints. NatureScot encourage the Applicant to explore all forms of lighting mitigation and consider the potential for proximity activated lighting.	discussed within Chapter 14 Other Considerations.
Highland Council Landscape Officer	**Landscape Impact** The LVIA should pay specific attention to the visibility and appearance of the battery storage facility. Assessment should include a good number of viewpoints, as visibility will cover much of Caithness. Assessment should include the road and rail network, covering the B876, A882, A9 and North Highland Line, and recognise the additional sensitivity of routes promoted for recreation such as the National Tourists Route, the North Coast 500 and National Cycle Route 1. **Visual Impact** Visual assessment should include receptor locations particularly areas of settlement, transport routes and visitor and recreational attractions and routes. **Visualisations** Assessment should cover all components of the Proposed Development and not only the turbines. Proposed viewpoints should be shared with THC and NatureScot for further consideration.	Chapter 5 Landscape and Visual Impact Assessment provides a comprehensive assessment of all potential impacts on sensitive landscape and visual receptors.
Ecology and Ornithology		
NatureScot	Advise that the Proposed Development has potential to impact nearby	Assessments detailed in Chapters 6 - 8 of the EIAR fully address all points raised

Consultee	Pre-App Opinion (November 2021)	Applicant Response
	protected areas, in particular the Caithness Lochs Special Protection Area (SPA). Survey work should follow NatureScot recommended guidance. **Caithness Lochs SPA** Potential for adverse effects on protected areas should be assessed, both alone and cumulatively. The potential for effects on Protected Species and proposed mitigation should be included. Impacts to SPA species should be assessed against the conservation objectives for the Proposed Development. Impacts on wider countryside species should be assessed against the relevant Natural Heritage Zone. The cumulative impact needs to be considered in relation to birds and where a collision risk is identified, NatureScot would be happy to advise. **Loch of Durran Site of Special Scientific Interest (SSSI)** The SSSI lies upstream of the Proposed Development. Changes in water quality and water level could negatively affect SSSI features. Potential impact should be assessed. **Caithness and Sutherland Peatlands SPA** If diver activity is identified during survey work, connectivity with the SPA should be considered. If deer are present or will use the Proposed Development Site, an assessment of potential effects should be considered. Where significant effects may be caused, a draft deer management statement will be required to address impacts **Forestry/Woodland** If tree felling will be required, it is recommended that the applicant consults Scottish Forestry to discuss the Control of Woodland Policy and the implications. **CEMP** Advise that a Construction Environmental Management Plan (CEMP) should be produced.	by NatureScot. An outline CEMP is provided in Technical Appendix 15-1.
Cultural Heritage		
HES	Recommend that any assessment focuses on impacts on cultural	The potential effects of the Proposed Development have been assessed in

Consultee	Pre-App Opinion (November 2021)	Applicant Response
	significance particularly in relation to the Stone Lud (SM 487). The setting of scheduled monuments in close proximity to the Proposed Development should be carefully considered. Visualisations are requested on which HES can provide further advice.	Chapter 10 Cultural Heritage.
Hydrology, Hydrogeology and Peat		
NatureScot	**Peat Management Plan (PMP)** Information on Peat Volumes, Reuse of Excavated Peat and Minimisation of Waste and SEPA's Developments on Peat and Off-Site uses of Waste Peat should be provided in a PMP.	The potential impact of the Proposed Development on peat is presented in Chapter 8 Hydrology and Hydrogeology.
THC	**Peat** The EIAR should demonstrate how the layout has been designed to minimise disturbance of peat and consequential release of CO_2 and outline mitigation measures to avoid significant drying or oxidation of peat. The Applicant should outline any local peatland restoration opportunities which could help compensate for disturbance of peat. The EIAR must include: • a detailed map of peat depth; and • a table which details quantities of catotelmic and amorphous peat which will be excavated, where it will be reused, and where it will be re-used during reinstatement. **Flood Risk** Should any permanent infrastructure be located within close proximity to a watercourse, a Flood Risk Assessment should be submitted to demonstrate that the development is not at risk from flooding and will not increase flood risk elsewhere. A minimum buffer strip of 50m should be kept free from development from the top of bank(s) of any watercourse or waterbody. **Drainage** A Drainage Impact Assessment (DIA) is required and should include details relating to any existing field drains and the management of surface water drainage, **Ground Water Dependant Terrestrial Ecosystems (GWDTE)** The layout and design of the	The potential impact of the Proposed Development on hydrology, hydrogeology and peat is presented in Chapter 8 Hydrology and Hydrogeology.

Consultee	Pre-App Opinion (November 2021)	Applicant Response
	development must avoid impact on such areas. The application should include proposals for habitat improvement or creation to mitigate any loss of GWDTE. **Pollution Prevention** A schedule of mitigation supported by site specific construction maps and plans must be submitted. **PWS** The applicant will be required to carry out an investigation to identify any private water supplies, including pipework, which may be adversely affected by the development and to submit details of the measures proposed to prevent contamination or physical disruption. **Borrow Pits** Detailed information should be provided.	Borrow pits do not form part of the Proposed Development. The potential use of local borrow pits is detailed in Chapter 3 Description of Development.
Noise		
THC	A noise assessment is required to include the following: • the operational phase of the development; • the potential cumulative effect from any other existing or consented or, in some cases, proposed wind turbine development in addition to consideration to any increase in exposure time • construction noise where there is potential for disturbance; and • a mitigation scheme where appropriate. The applicant should agree appropriate limits and monitoring locations with the Council's Environmental Health Officer.	The potential impact of the Proposed Development on noise is presented in Chapter 9 Noise.
Transport and Access		
Transport Scotland	A threshold assessment is required. Potential trunk road related environmental impacts will required to be considered and assessed where appropriate such as: • driver delay • pedestrian amenity • severance • safety etc A full Abnormal Loads Assessment report should be provided and swept path analysis undertaken.	The potential impact of the Proposed Development on transport and access is presented in Chapter 11 Transport and Access whilst an Abnormal Loads Assessment is presented in Technical Appendix 11-2.

Consultee	Pre-App Opinion (November 2021)	Applicant Response
THC	A Transport Assessment will be required. The B874 is noted as being particularly vulnerable to the effects of prolonged heavy construction traffic with mitigation works likely to be required. A detailed review of the preferred route to site for AIL's, to include swept path assessment and consideration of structures along the route, shall be undertaken. A Framework Construction Traffic Management Plan (CTMP) should be included in the planning submission.	The potential impact of the Proposed Development on transport and access is presented in Chapter 11 Transport and Access whilst a Transport Assessment is presented in Technical Appendix 11-1. Additionally a CTMP is presented in Chapter 11.
	A Recreational Access Management Plan will be expected.	The potential impact of the Proposed Development on transport and access is presented in Chapter 11 Transport and Access.

EIA Scoping

An EIA Scoping Opinion was requested from THC on 18th February 2022 through the submission of an EIA Scoping Report (Ref. 22/00790/SCOP). The EIA Scoping Report contained details of the Proposed Development Site baseline and the Proposed Development design. It also proposed which environmental impacts would be assessed in the EIA, and the assessment methodologies that would be used.

THC consulted with a variety of statutory and non-statutory consultees before providing an EIA Scoping Opinion on 28th March 2022.

In accordance with the EIA Regulations (Regulation 4) this EIAR is based on the Scoping Opinion obtained from THC in March 2022 and the advice contained within it regarding assessment methodology, topics and consultee comments.

Throughout the design and assessment process, consultation has been undertaken with relevant parties to obtain baseline information and to agree aspects of methodology. More details of the consultation feedback relevant to each discipline are outlined in Table 2-2 below.

Table 2-2: Summary of Scoping Consultation

Consultee	Scoping Opinion (March 2022)	Applicant Response
THC – Case Officer	EIAR should provide the following: • Description of Development; • Details of Alternatives; • An assessment of the aspects of the environment likely to be effected by the Proposed Development, including: - Land Use and Policy; - Sustainability including a Sustainable Design Statement; - Landscape and Visual including a cumulative	Detailed assessments and mitigation which address all potential environmental measures, where necessary, are provided in the relevant chapters of the EIAR, Volume 2 Chapters 5 -14 and associated technical appendices.

Consultee	Scoping Opinion (March 2022)	Applicant Response
	assessment, impact on recreational routes and core paths, residential visual amenity (RVAA); - Cultural Heritage including direct impacts, impacts on non-designated heritage assets, impacts on setting and decommissioning impacts; - Ecology, Habitats and Ornithology including consideration of the Loch Watten SAC, Loch of Durran SSSI and Caithness and Sutherland Peatlands SPA and a Habitats Regulations Appraisal (HRA) due to the connectivity with the Caithness Lochs SPA - Hydrology, Geology, Hydrogeology and Peat; - Noise including operational noise, cumulative noise, and agreement with the Environmental Health Officer on proposed methodology; - Traffic and Transport including a Transport Assessment and Framework CTMP; - Socio-economics, Recreation and Tourism including an access management plan; - Aviation and Safety..	
HIAL	Preliminary calculations show that the wind farm may infringe the safeguarding criteria and operation of Wick Airport. Request that the applicant commission an Aviation Impact Feasibility Study (AIFS) to assess the following requirements: • Aerodrome Obstacle Limitation Surfaces (See CAP738) ; • Safeguarding of technical sites (CAP670 & CAP764); • Instrument Flight Procedures (IFPs) (see CAP785); • Aviation Lighting; and • Crane and Lifting equipment	Chapter 14 Other Considerations details the outcome of consultation and mitigation agreements which have been discussed with HIAL.

Consultee	Scoping Opinion (March 2022)	Applicant Response
	use during construction. Continuous engagement with HIAL is desirable in order to for HIAL to fully understand any issues which may impact a surveillance solution.	
MOD	The proposed development will occupy Low Flying Area 14 within which military fixed wing aircraft are permitted to fly down to 250 feet (76.2 metres) above terrain features. The development proposed will cause a potential obstruction hazard to these military low flying training activities.	Chapter 14 Other Considerations details the outcome of consultation and mitigation agreements which have been discussed with consultees.
THC – Contaminated Land Officer	The proposed infrastructure is not near an underground storage tank (UST) therefore a contaminated land assessment is not necessary.	No action required.
THC – Flood Risk Management Team	The Flood Risk Management Team does not wish to comment on the application.	No action required.
THC – Environmental Health Officer	The Applicant is required to submit an assessment of the following in relation to Noise: • Operational Noise; • Cumulative Noise including noise exposure and a mitigation scheme should noise levels be found to be exceed consented levels; • Background Noise Measurements; • Construction Noise – only if the works will take place outside of working hours (8am-7pm Monday to Friday and 8am-1pm Saturday) The Applicant is also required to identify Private Water Supplies (PWS) and depending on the proximity of the Proposed Development, the Applicant may be required to consider a scheme for suppression of dust during construction.	A full assessment of operational noise including cumulative and background noise is presented in Volume 2 Chapter 9 Noise. A PWS survey and assessment is detailed in Volume 2 Chapter 8 Hydrology and Hydrogeology. The possibility of the requirement for a scheme to supress the presence of dust is considered in Chapter 11 Transport and Access.
SEPA	The following are requested to accompany the application: • Groundwater Dependent Terrestrial Ecosystems (GWDTE) map and assessment; • Peat depth survey and re-use	A detailed assessment of GWDTE is presented in Volume 2 Chapter 8 Hydrology and Hyrdogeology. Technical Appendix 8-1 Peat depth survey details the peat depth on site. Borrow pits will not form part of this

Consultee	Scoping Opinion (March 2022)	Applicant Response
	proposals including measures to reduce the disturbance of peat and release of CO_2; • Map and site layout of borrow pits; • Schedule of mitigation including pollution prevention measures; • Decommissioning statement; • Details of forestry removal.	application as the Applicant intends to utilise existing nearby borrow pits. Volume 2 Chapter 15 Schedule of Mitigation details the schedule of mitigation for the Proposed Development. No felling will occur as a result of the Proposed Development.
HES	Based on wireframes provided by the Applicant, HES note that there is the potential for a significant adverse impact on the setting of Stone Lud (SM 487). It is requested that a photomontage demonstrating the setting on the Stone Lud is provided by the Applicant.	Consideration of the potential setting effects on Stone Lud are set out in and supported in Chapter 10 Cultural Heritage and illustrated in Figures 5-2-2, 5-3-2 and 10-20.
NatureScot	The Applicant should assess the direct and indirect impacts on protected areas including the Caithness Lochs Special Protection Area (SPA), Loch Watten Special Area of Conservation (SAC) and Loch of Durran Sit of Special Scientific Interest (SSSI), Caithness and Sutherland Peatlands SPA. Additionally, impacts on the natural heritage and impacts on Wild Land Areas (WLA's) should be considered.	The potential effect on protected areas and natural heritage are assessed in Volume 2 Chapter 6 Ecology, Chapter 7 Ornithology and Chapter 8 Hydrology and Hydrogeology. Following the publication of NPF4, effects of development outwith wild land areas are not considered to be a significant consideration therefore they have not been considered in this EIAR.
Transport Scotland	Request that a Transport Assessment (TA) is included in the EIAR with particular emphasis on the B874. A Framework Construction Traffic Management Plan (CTMP) is requested to be included in the EIAR.	A detailed assessment including a Transport Assessment is detailed within Chapter 11 Transport and Access. A CTMP is included in Chapter 11 the EIAR.
Scottish Forestry	Recommends that as the Proposed Development includes an area of woodland, all impacts on forestry should be set out in the EIA.	Following scoping the red line boundary was reduced, removing the area of forestry. Forestry will not be affected by the Proposed Development.
Scottish Water	No objection, however, the applicant must identify any potential conflicts with Scottish Water assets.	A detailed assessment is included in Chapter 8 Hydrology and Hydrogeology.

2.3 Location of Information in the EIA Report

The EIA Regulations require a description of the likely direct and indirect significant effects on the following factors:

- Population and human health;
- Biodiversity;
- Land, soil, water, air and climate; and
- Material assets, cultural heritage and the landscape.

Along with the potential interactions between those factors, the Regulations also require identification, description and assessment of the expected effects deriving from the vulnerability of the development to risks of major accidents and disasters in so far as these risks are relevant to the development.

In accordance with Regulation 5(2) the EIA Report must include:

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

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

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

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

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

f) *and any other information specified in schedule 4 relevant to the specific characteristics of the development and to the environmental features likely to be affected."*

Table 2-3 identifies the location within this EIAR of the information required for inclusion in accordance with Schedule 4 of the EIA Regulations.

Table 2-3: Information contained within the EIA Report

Required information (EIA Regulations)	Relevant Section of this EIA Report
A description of the development, including in particular: (a)a description of the location of the development; (b)a description of the physical characteristics of the whole development, including, where relevant, requisite demolition works, and the land-use requirements during the construction and operational phases; (c) a description of the main characteristics of the operational phase of the development (in particular any production	A description of the location of the Proposed Development and its characteristic of the construction and operation phases is presented in Chapter 3 Description of Development. The predicted materials and natural resources used, and the expected residues and emissions of the Proposed Development, are reported in Chapters 5 to 14.

Required information (EIA Regulations)	Relevant Section of this EIA Report
process), for instance, energy demand and energy used, nature and quantity of the materials and natural resources (including water, land, soil and biodiversity) used; (d)an estimate, by type and quantity, of expected residues and emissions (such as water, air, soil and subsoil pollution, noise, vibration, light, heat, radiation and quantities and types of waste produced during the construction and operation phases.	
2. A description of the reasonable alternatives studied by the developer, which are relevant to the development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the development on the environment;	Chapter 3 Description of Development discusses the reasonable alternatives considered.
3. A description of the relevant aspects of the current state of the environment (the "baseline scenario") and an outline of the likely evolution thereof without implementation of the project as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of relevant information and scientific knowledge.	The baseline description is included in each of the technical chapters of the EIAR, Chapters 5 to 14.
4. A description of the factors specified in regulation 4(3) likely to be significantly affected by the development: population, human health, biodiversity (for example fauna and flora), land (for example land take), soil (for example organic matter, erosion, compaction, sealing), water (for example hydromorphological changes, quantity and quality), air, climate (for example greenhouse gas emissions, impacts relevant to adaptation), material assets, cultural heritage, including architectural and archaeological aspects, and landscape.	Chapters 5 to 14 discuss the aspects likely to be affected. Effects on population and human health are considered in relation to visual aspects in Chapter 5, traffic aspects in Chapter 11, noise aspects in Chapter 9, socio-economic aspects in Chapter 12 and shadow flicker, telecommunications and aviation radar aspects in Chapter 14. Effects on biodiversity are considered in Chapters 6 and 7. Effects on land, soil and water are considered in Chapter 8. Effects on Climate are considered in respect of climate change and carbon balance in Chapter 13. Effects on material assets and cultural heritage assets are considered in Chapter 10. Effects on Landscape are considered in Chapter 5.
5. A description of the likely significant effects of the development on the environment	The predicted significant effects of the Proposed Development are presented as residual effects after relevant stated mitigation measures in Chapters 5-14.
6. A description of the forecasting methods or evidence, used to identify and assess the significant effects on the environment, including details of difficulties (technical deficiencies or lack of knowledge) encountered compiling the required information and the main uncertainties	Chapters 5 – 14 set out the specific methodologies and evidence used to assess significant effects and describe assumptions and limitations as relevant.

Required information (EIA Regulations)	Relevant Section of this EIA Report
involved.	
7. A description of the measures envisaged in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment	Specific mitigation measures are reported in each relevant technical chapter (Chapters 5-14) and summarised in Chapter 15 Schedule of Mitigation in a tabular form.
8. A description of the expected significant adverse effects of the development on the environment deriving from the vulnerability of the development to risks of major accidents and/or disasters which are relevant to the project concerned. Where appropriate, this description should include measures envisaged to prevent or mitigate the significant adverse effects of such events on the environment and details of the preparedness for and proposed response to such emergencies.	The Proposed Development Site is not in a location of natural disasters and construction will be undertaken in accordance with good construction practice and relevant health and safety regulations and requirements, The overall approach to construction is presented in Chapter 3 Description of Development. Chapter 8 Hydrology and Hydrogeology considers risks associated with flooding and peat landslide hazard.
9. A Non-Technical Summary of the information provided under points 1 to 8 above.	A Non-Technical Summary (NTS) accompanies this EIA Report as Volume 1.
10. A reference list detailing the sources used for the descriptions and assessments included in the EIA report.	Chapters 1 – 16 set out the reference list for each chapter that is used for the descriptions and assessments.

2.4 EIA Methodology

Regulation 4 of the EIA Regulations requires that the EIA must identify, describe and assess in an appropriate manner the direct and indirect significant effects of the Proposed Development.

The reporting of the assessment of environmental impacts in Chapters 5 to 14 of this EIAR has been undertaken in a consistent, structured format, with reference to relevant technical standards, guidelines and legislation and consultation undertaken.

The EIA Regulations refer to the requirement to report the significance of effects. A two-stage assessment has generally been undertaken whereby the potential change experienced by an environmental receptor is defined as the environmental impact and the consequence of this impact and its significance is then assessed as the environmental effect.

The assessments have been split into the three development phases as each phase has the potential to give rise to different effects:

- **Construction;** generally temporary/short-term effects that occur during the construction of the Proposed Development;
- **Operation;** Effects resulting from the use of the Proposed Development Site; and
- **Decommissioning;** Effects arising from the removal of infrastructure and restoration of the Proposed Development Site.

In most of the chapters within this EIAR, the significance of an effect is described as a function of magnitude of effects and receptor sensitivity.

Where best practice guidance exists, for example from a professional institution, some chapters follow slightly different methodologies (for example Landscape and Visual Effects have been established/assessed in accordance with industry guidance specifically for that subject and details are provided within that chapter and appendix).

General guidelines on the assessment methodology used within chapters are presented in the following sections.

2.4.1 Receptor Sensitivity

Receptors are affected depending on their setting, size and importance. Where appropriate, it may be necessary to relate the extent of the effects to the importance of the features, i.e. international, national and local standards and an appreciation of the relationship with relevant planning policy.

Additionally, consideration of the reversibility and duration of the predicted effect is required in order to determine significance (Table 2-4).

Table 2-4: Receptor Sensitivity

Sensitivity	Importance	Feature Examples
High	National/ International	Residential (occupied) properties, Scheduled Ancient Monuments, Sites of schedulable quality, A-listed buildings or buildings of equivalent quality, some Conservation Areas, Sites of Special Scientific Interest (SSSI)/National Parks, Special Areas of Conservation (SAC) Ramsar designated sites, Special Protection Area (SPA), National Nature Reserve (NNR), National

Sensitivity	Importance	Feature Examples
		Marine Reserve, Habitat Directive sites, large or moderate water bodies of good ecological status, salmonid waters, primary/high productivity aquifer, properties at risk of flooding, public and private water supplies for human consumption.
Medium	Regional	B-listed buildings or buildings of equivalent quality, some Conservation Areas, archaeological remains of regional importance, Receptor of medium environmental importance or of local regional value, water bodies of good or moderate ecological status and/or Cyprinid waters, sites containing viable areas of threatened habitats listed in a Regional Biodiversity Action Plan, private water supplies for non-potable supply, moderate productivity or secondary aquifer.
Low	Local	C(s)-listed buildings or buildings of equivalent quality; archaeological remains of local importance, local nature reserve, water body of low environmental importance, low productivity aquifer.
No importance	Lesser/Unknown	Archaeological remains of lesser importance/unknown importance; greenfield; non-productive aquifer.

2.4.2 Magnitude of Effect

The extent of potential effect is based on the scale of the potential effect and will vary from site to site and location to location. Table 2-5 provides examples of the magnitude of the effect as used within the assessment of the Proposed Development.

Table 2-5: Magnitude of Effect

Magnitude of Effect	Definition
Substantial	Total loss of or major alteration to key elements or features of the pre-development conditions, such that the post-development character or composition of the feature will be fundamentally changed.
Medium	Loss of or alteration to key elements or features of the pre-development conditions, such that the post-development character of the feature will be partially changed.
Low	Minor alteration from pre-development conditions.
No change	No or unquantifiable change to pre-development conditions.

2.4.3 Assessment of Significance

In the determination of the significance of effect, the following criteria have been used:

- Extent (local, regional or national) and magnitude of the effect;
- Effect duration (whether short, medium or long-term);
- Effects nature (whether direct or indirect, reversible or irreversible, adverse, neutral or beneficial);
- Whether the effects occur in isolation, are cumulative or interactive;
- Performance against environmental quality standards;
- Sensitivity of the receptor; and
- Compatibility with environmental policies.

Where it has not been possible to quantify effects, qualitative assessments have been carried out, based on available knowledge and professional judgment. Where any

uncertainty exists, this has been noted in the relevant technical chapter in the Limitations section.

The significance of potential effects arising from the Proposed Development has been categorised throughout this EIAR using the scale as follows:

- **Negligible** – no discernible deterioration or improvement to the existing environment;
- **Minor** (positive or negative) – where the Proposed Development will cause a small improvement (or deterioration) to the existing environment;
- **Moderate** (positive or negative) – where the Proposed Development will cause a noticeable improvement (or deterioration) to the existing environment; and
- **Major** (positive or negative) – where the Proposed Development will cause a substantial improvement (or deterioration) to the existing environment.

To enable consistent understanding of the EIA findings, standard terms are used wherever possible to classify effects throughout the EIA (major, moderate, minor and negligible), and effects are also described as being adverse, neutral or beneficial.

Where the quality standards for each technical discipline result in deviations in the standard assessment methodology, these are described in the relevant chapters as applicable.

In general, the classification of an effect is based on the magnitude of the effect and sensitivity or importance of the receptor, using the matrix shown at Table 2-6.

Where there are deviations away from this matrix (due to the technical guidance for a specific assessment topic), this is highlighted within the relevant technical chapter and the reason for the variation explained.

Table 2-6: Classification of Effects

Receptor Sensitivity Importance	Magnitude of Effects			
	Substantial	Medium	Low	No Change
High	Major	Major	Moderate	Negligible
Medium	Major	Moderate	Minor	Negligible
Low	Moderate	Minor	Negligible	Negligible
No importance	Minor	Negligible	Negligible	Negligible

Significant Effects are only considered to be classified as 'Major' or 'Moderate'. Effects classified as 'Minor' or 'Negligible' are considered to be Non-Significant.

2.4.4 Mitigation Measures

Mitigation measures have been considered for each significant adverse effect identified. These measures can include:

- Changes to the Proposed Development design;
- Physical measures applied on site; and
- Measures to control particular aspects of the construction or operation of the Proposed Development.

Wherever possible, mitigation has been developed to ensure that no significant residual (negative) environmental effects are predicted. A summary of mitigation measures proposed is presented in Chapter 15 Schedule of Mitigation.

2.4.5 Cumulative and Combined Effects

In addition to the assessment of direct effects of the Proposed Development, an assessment (where appropriate) is also undertaken of the likely interrelationship and cumulative effects of the development proposal.

The assessment of interrelationship effects is required by the EIA Regulations and refers to the interaction between the different environmental aspects, for example water and ecology.

The EIA Regulations also require that the cumulative effects of the Proposed Development in combination with other existing or approved projects is taken into account.

Under cumulative effects, adjacent wind energy schemes either operational, consented or in planning are considered in conjunction with the Proposed Development in order to assess whether the resulting effect of all developments is of greater significance than that of the individual constituents.

This is of particular importance when considering potential landscape and visual effects. Therefore Chapter 5: Landscape and Visual of this EIAR considers developments (operational, consented and in planning) within a 40km radius of the Proposed Development.

The general criteria for the inclusion of developments in the assessment of cumulative landscape and visual effects are as follows:

- Only wind energy generation developments have been included;
- No single turbine developments have been included; and
- No turbines of less than 50m blade tip height have been included.

This is explained further in Chapter 5: Landscape and Visual Impact Assessment.

It should be noted that not all developments within these radii will be relevant to each discipline and therefore, will be considered on case-by-case basis in the relevant cumulative impact sections.

2.4.6 Assumptions and Limitations

The EIA process is designed to enable good decision-making based on the best possible information about the environmental implications of a proposed development. However, there will always be some uncertainty inherent in the scale and nature of the predicted environmental effects.

This uncertainty arises because of the level of detailed information available at the time of the assessment, the potential for minor alterations to project designs following completion of the EIAR and/or due to the limitations of the prediction process. Where specific assumptions have been made in relation to the technical environmental assessments, these are reported in the relevant chapters of this EIAR.

The environmental effects identified in this EIAR and the level of mitigation described effectively set the minimum standard which will be achieved by the Proposed Development.

The Applicant has a commitment to ensuring that, where details of the Proposed Development differ from those assessed in the EIAR, the Proposed Development will not

have adverse environmental effects which are significantly worse than those which have been assessed in the EIA and reported in this EIAR.

2.5 References

Institute of Environmental Management and Assessment (IEMA) (2016). Environmental Impact Assessment Guide to: Delivering Quality Development. Available at: https://www.iema.net/articles/iema-launches-quality-development-guide-for-eia [Accessed: 01/05/2024].

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Scottish Government. (2017a). The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017. [Online] Available at: http://www.legislation.gov.uk/ssi/2017/102/contents/made [Accessed: 01/05/2024].

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