Environmental Impact Assessment Report

Swarclett Wind Farm

Chapter 16: Summary of Predicted Residual Effects

Swarclett Wind Energy Limited

June 2024

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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 Windfarm
The Proposed Development Footprint	The area within which the Proposed Development will be located
The Proposed Development Site	The full application boundary as per Figure 1-1

List of Abbreviations

Abbreviation	Description
CEMP	Construction Environment Management Plan
ECoW/EnvCoW	Ecological/Environmental Clerk of Works
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
LCT	Landscape Character Type

16 Summary of Predicted Residual Effects

16.1 Introduction

This Chapter of the EIA Report provides a summary of the key conclusions of the EIA namely the residual effects – the effects of the Proposed Development that are predicted to remain, following implementation of the proposed mitigation.

Under Schedule 4, Part 7 of the EIA Regulations, an EIA Report is required to include:

> "*A description of the measures envisaged to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment and, where appropriate, of any proposed monitoring arrangements*".

16.2 Residual Effects

The residual effects of the Proposed Development following the implementation of embedded and additional mitigation are assessed within each technical chapter of this EIA Report (Chapters 5 to 14).

No significant adverse effects are predicted for the following topics and as such no specific mitigation measures (as identified in Chapter 15 Schedule of Mitigation), in addition to embedded mitigation inherent within the design, are proposed:

- Socio-economics, Tourism and Recreation (Chapter 12);
- Climate Change and Carbon Balance (Chapter 13); and
- Other Issues: Aviation, telecommunication and Shadow Flicker (Chapter 14).

Following the implementation of mitigation measures as outlined in Chapter 15, no significant adverse residual effects are predicted within the following topics:

- Ecology (Chapter 6);
- Ornithology (Chapter 7);
- Hydrology, Geology and Hydrogeology (Chapter 8);
- Noise (Chapter 9);
- Cultural Heritage (Chapter 10)
- Transport and Access (Chapter 11)

Significant residual effects are predicted in relation to the Landscape and Visual. The effects on Landscape and Visual have been minimised in so far as possible through design modifications and input to the design process.

A summary of residual effects is presented in Table 16-1.

Table 16-1: Summary of Residual Effects

Receptor	Mitigation Measures	Residual Effect
Landscape and Visual		
Significant Construction Effects on the Landscape Fabric		
Direct effects on the landscape fabric	None – mitigation embedded in design	There will be a Moderate to Substantial magnitude of local change to the fabric of a small area of the landscape (the forestry/moorland vegetation and peatland in the location of the proposed tracks, turbines and other infrastructure) on the Proposed Development Site at the operational stage. The Proposed Development Site is of Medium sensitivity to change. Therefore, there will be a local Major/Moderate level of direct effect on a small area of the existing fabric of the landscape, which is considered to be Significant.
Significant Construction Visual Effects		
Views within 1-2km	None – mitigation embedded in design	The Proposed Development will give rise to a Major and Significant visual effect locally (within approximately 1km) during construction albeit this will be of limited duration.
Significant Operational Landscape Effects		
Landscape Fabric	None – mitigation embedded in design	The Proposed Development will give rise to local Major/Moderate and Significant effects on the landscape fabric of the Proposed Development Site.
Landscape Character Type 143 – Farmed Lowland Plain	None – mitigation embedded in design	The Proposed Development will give rise to locally Major/Moderate and Significant effects on those parts of the LCT that lie within c.2km of the site.
Significant Operational Visual Effects		
Settlement – Bowertower	None – mitigation embedded in design	The Proposed Development will give rise to Major and Significant local effects on the western edge of the dispersed settlement at Bowertower. Elsewhere within the settlement effects will be Major/Moderate and Significant.
Settlement - Durran	None – mitigation embedded in design	The Proposed Development will give rise to Major/Moderate and Significant local effects on the dispersed settlement at Durran.

Receptor	Mitigation Measures	Residual Effect
Settlement – Halcro/ Brabsterdorran	None – mitigation embedded in design	The Proposed Development will give rise to Major/Moderate and Significant local effects on the dispersed outer edges of the settlement to the north and south of Halcro/ Brabsterdorran.
Settlement - Bower	None – mitigation embedded in design	The Proposed Development will give rise to Major/Moderate and Significant local effects on the dispersed settlement at Bower.
Viewpoint 1, Minor road south west of site	None – mitigation embedded in design	The Proposed Development will give rise to Major/Moderate and Significant effects on road users who are of Medium sensitivity.
Viewpoint 2, Stone Lud standing stone, Bowertower	None – mitigation embedded in design	The Proposed Development will give rise to Major and Significant effects on visitors/walkers who are of High sensitivity from this viewpoint.
Viewpoint 3, B876 west-bound at Bower	None – mitigation embedded in design	The Proposed Development will give rise to Major/Moderate and Significant effects on road users who are of Medium sensitivity.
Viewpoint 4, B876 east-bound, at Cooper's Hill	None – mitigation embedded in design	The Proposed Development will give rise to Major/Moderate and Significant local effects on Residents who are of High sensitivity.
Viewpoint 5, Easter Durran	None – mitigation embedded in design	The Proposed Development will give rise to Major and Significant local effects on Residents who are of High sensitivity and Major/Moderate and Significant effects on road users who are of Medium sensitivity.
Viewpoint 7, Hill of Olrig including Core Path CA03.05	None – mitigation embedded in design	The Proposed Development will give rise to Major/Moderate and Significant effects on walkers who are of High sensitivity.
Significant Operational Cumulative Visual Effects		
Settlement - Bowertower	None – mitigation embedded in design	Major/Moderate and Significant total cumulative effect on the settlement at Bowertower when seen in successive views with the Red Moss scoping stage site.
Settlement - Bower/Bowermadden	None – mitigation embedded in design	Major/Moderate and Significant total cumulative effect on the settlement at Bower/Bowermadden when seen in successive views with the Hollandmey planning stage site

Receptor	Mitigation Measures	Residual Effect
		and the Red Moss and Lochend Extension scoping stage sites.
Settlement - Barrock	None – mitigation embedded in design	Major/Moderate and Significant total cumulative effect on the settlement at Barrock when seen in successive views with the Hollandmey planning stage site and the Red Moss, Greenland and Lochend Extension scoping stage sites.
National Cycle Route 1	None – mitigation embedded in design	Major/Moderate and Significant total cumulative effect on the route when seen in successive views with the Hollandmey planning stage site and the Red Moss, Greenland and Lochend Extension scoping stage sites.
Viewpoint 1, Minor road south west of site	None – mitigation embedded in design	Major/Moderate, Significant total cumulative effect when seen in combination with the Red Moss scoping stage site and in successive views with the Watten scoping site.
Viewpoint 2, Stone Lud standing stone, Bowertower	None – mitigation embedded in design	Major/Moderate, Significant total cumulative effect when seen in combination with the Hollandmey planning stage site, and the Lochend Extension, Greenland, Red Moss and Watten scoping stage sites.
Viewpoint 3, B876 west-bound at Bower	None – mitigation embedded in design	Major/Moderate, Significant total cumulative effect when seen in combination with the Hollandmey planning stage site, and the Lochend Extension, Greenland, Red Moss and Watten scoping stage sites.
Viewpoint 4, B876 east-bound, at Cooper's Hill	None – mitigation embedded in design	Major/Moderate, Significant total cumulative effect when seen in combination with the Hollandmey planning stage site, and the Lochend Extension, Red Moss and Watten scoping stage sites.
Viewpoint 5, Easter Durran	None – mitigation embedded in design	Major/Moderate, Significant total cumulative effect when seen in combination with the Hollandmey planning stage site, and the Lochend Extension, Red Moss and Watten scoping stage sites.
Viewpoint 9, Loch Watten picnic spot	None – mitigation embedded in design	Major/Moderate, Significant total cumulative effect when seen in combination with the Watten scoping stage site.
Viewpoint 11, Inkstack	None – mitigation embedded in design	Major/Moderate, Significant total cumulative effect when

Receptor	Mitigation Measures	Residual Effect
		seen in combination with the Hollandmey planning stage site, and the Lochend Extension, Greenland, Red Moss and Watten scoping stage sites.
Viewpoint 12, Dunnet Head including Core Path CA05.10	None – mitigation embedded in design	Major/Moderate, Significant total cumulative effect when seen in combination with the Hollandmey planning stage site, and the Lochend Extension, Greenland, Red Moss and Watten scoping stage sites.
Viewpoint 13, Castle Sinclair Girnigoe, Noss Head including Core Path CA15.29	None – mitigation embedded in design	Major/Moderate, Significant total cumulative effect when seen in combination with the Hollandmey planning stage site, and the Lochend Extension, Greenland, Red Moss and Watten scoping stage sites.
Viewpoint 14, Ben Dorrery including Core Path CA06.03	None – mitigation embedded in design	Major/Moderate, Significant total cumulative effect when seen in combination with the Hollandmey planning stage site, and the Lochend Extension, Greenland, Red Moss and Watten scoping stage sites.
Ecology		
Habitats Direct loss of habitat and indirect habitat disturbance	Incidental habitat loss will be avoided by minimising the footprint of construction activities. The operation of machinery and storing materials should be limited to within the footprint of permanent construction features where practical. Best practice techniques for vegetation and habitat reinstatement will be adopted and implemented on areas subject to disturbance, such as the temporary construction compound area, as soon as is practicable.	No significant effect
M15 *Trichophorum germanicum – Erica tetralix* wet heath	None required	N/A – No significant effect
M17 *Trichophorum germanicum – Eriophorum vaginatum* blanket mire	None required	N/A – No significant effect

Receptor	Mitigation Measures	Residual Effect
M23 *Juncus effusus / acutiflorus – Galium palustre* rush-pasture	None required	N/A – No significant effect
MG9 *Holcus lanatus – Deschampsia cespitosa* grassland	None required	N/A – No significant effect
Common Pipistrelle	A distance of at least 50m between turbine blade tip and the nearest element of the proposed woodland planting to be maintained as per current bat guidance (NatureScot et al., 2021).	N/A – No significant effect
Loch Watten SAC/SSSI	None required	N/A – No significant effect
River Thurso SAC	None required	N/A – No significant effect
Caithness and Sutherland Peatlands SAC	None required	N/A – No significant effect
Loch of Durran SSSI	None required	N/A – No significant effect
Loch Scarmdale SSSI	None required	N/A – No significant effect
Dunnet Links SSSI	None required	N/A – No significant effect
Loch Heilen SSSI	None required	N/A – No significant effect
Stroupster Peatlands SSSI	None required	N/A – No significant effect
Ornithology		
Caithness Lochs SPA and Ramsar	None required	Negligible, not significant
Caithness and Sutherland Peatlands SPA & Ramsar	None required	Negligible, not significant
North Caithness Cliffs SPA	None required	Negligible, not significant
Loch of Durran SSSI	None required	Negligible, not significant
Loch Scarmclate SSSI	None required	Negligible, not significant
Loch Watten SSSI	None required	Negligible, not significant
Loch Heilen SSSI	None required	Negligible, not significant

Receptor	Mitigation Measures	Residual Effect
Dunnet Head SSSI	None required	Negligible, not significant
Shielton Peatlands SSSI	None required	Negligible, not significant
Loch of Wester SSSI	None required	Negligible, not significant
Loch of Mey SSSI	None required	Negligible, not significant
Loch Calder SSSI	None required	Negligible, not significant
Greylag goose	None required	Negligible, not significant
Pink-footed goose	None required	Negligible, not significant
Whooper swan	None required	Negligible, not significant
Lapwing	None required	Negligible, not significant
Golden Plover	None required	Negligible, not significant
Curlew	None required	Negligible, not significant
Whimbrel	None required	Negligible, not significant
Snipe	None required	Negligible, not significant
Redshank	None required	Negligible, not significant
Herring gull	None required	Negligible, not significant
Arctic Skua	None required	Negligible, not significant
Cormorant	None required	Negligible, not significant
Osprey	None required	Negligible, not significant
Hen Harrier	None required	Negligible, not significant
Barn Owl	None required	Negligible, not significant
Peregrine	None required	Negligible, not significant
Hydrology		
Sediment pollution of watercourses	All infrastructure and drainage to be positioned a minimum of 50m from watercourses. Where this is not possible, DIA and DMP will ensure precautionary drainage features will be put in place.	Minor

Receptor	Mitigation Measures	Residual Effect
	Develop and implement PPP.	
Watercourse crossing disturbance	All watercourse crossings to be bottomless arch designed based on best practice guidelines	Minor
Chemical and hydrocarbon pollution of surface water	Develop and implement PPP.	Minor
Integrity of Burn of Durran SSSI	Water Quality Monitoring Plan will focus on connectivity with the Burn of Durran.	Negligible
Integrity of GWDTE	Micrositing allowance of up to 50m to be overseen by EnvCOW working with contractor on basis of local field surveys. Include hydrological management and monitoring of GWDTE water supply and conditions in the HMP. This Include potential for minor ditch blocking to maintain groundwater levels in M23 GWDTE.	Minor
Cultural Heritage		
Direct Impacts - Known heritage assets recorded within the Proposed Development Site	Demarcation of non-linear assets and micro-siting of infrastructure in vicinity of Assets 70c and 70d to avoid direct impacts If avoidance is not feasible, implementation of an archaeological watching brief to ensure preservation by record Limiting the degree of impact upon linear heritage assets which fall within the construction footprint by breaching only the necessary widths required to accommodate access and archaeological watching brief conditions	Negligible if direct impacts avoided, and Negligible but offset if direct impacts sustained under archaeological watching brief conditions
Direct Impacts - Unknown sub-surface heritage assets within the Proposed Development Site (direct impacts)	Archaeological watching brief to be maintained on a proportion of all ground-breaking works and within 50m of all known	The residual effect would be dependent upon the significance of the as-yet unknown archaeological remains identified and the predicted magnitude of impact

Receptor	Mitigation Measures	Residual Effect
	heritage assets to assess the potential for hitherto unrecorded sub-surface archaeological remains to survive, to assess the significance of such remains, and to allow for appropriate mitigation to be undertaken (such as avoidance, minimising the scale of direct impact, or else preserving by record the remains). Further archaeological works may be required, such as further excavation and post-excavation works	
Setting Effects – Setting effects upon designated assets within the surrounding 1km, 5km and 10km Study Areas	No direct mitigation is possible for setting effects (beyond embedded mitigation by design) and therefore residual effects on the setting of heritage assets would be the same as predicted for the operational phase.	Negligible to Moderate adverse
Transport and Access		
Severance, Driver Delay, Pedestrian Delay, non-motorised user amenity, fear & intimidation, road safety, large roads	Implementation of a CTMP, provision of construction traffic road signage, convoy escorts for AIL movements, AIL traffic management plan and provision of localised road improvement works. All works undertaken in agreement with THC prior to construction activities commencing.	Minor (Not Significant)
Noise		
Lower Bowertower	Noise reduced mode of operation (if required within cumulative context)	Not Significant
Oakwood	Noise reduced mode of operation (if required within cumulative context)	Not Significant
SW of Oakwood	Noise reduced mode of operation (if required within cumulative context)	Not Significant

16.3 Conclusions

As detailed in Chapter 3 of this EIA Report: Description of Development, the Proposed Development will comprise up to 2 wind turbines (maximum of 149.9m tip height) and associated infrastructure; battery storage, hardstandings, cabling, and access roads. The wind turbines have an indicative output of 9.6W and the battery storage will have an indicative capacity of 12MW.

The only significant residual effects established through the EIA and reported in this EIAR relate to Landscape and Visual. All other residual effects are determined to be not significant.

The significance of these effects has been mitigated against through design modifications and input to the design process. Through the implementation of best practice, the potential effects of construction activities will be controlled following the preparation of a CEMP.

16.4 References

UK Government (2017). The Town and Country Planning (Environmental Impact Assessment) Regulations 2017. Available: https://www.legislation.gov.uk/uksi/2017/571/contents/made [Accessed 21/04/2024]