

Environmental Impact Assessment

Highland Wind Farm, Glencoe Region

DOCUMENT CONTROL

PROJECT	DOCUMENT NUMBER	CONSULTANT
Highland Wind Farm	HWF-EIA-2026-001	EcoConsult
CLIENT	REVI-	International
GreenEnergy	SION	STATUS
Developments	02 (Final)	Issued for Planning Submis-
Ltd	DATE	sion
LOCATION	8 July 2026	CLASSIFICATION
Glencoe Region, Highland, Scotland		Public

Revision History

Rev	Date	Description	Author	Reviewer	Approved
00	10 Mar 2026	Draft for internal quality assurance review	J. Martinez	S. Chen	—
01	15 May 2026	Issued for client and stakeholder comment	J. Martinez	S. Chen	R. Kumar
02	8 Jul 2026	Final — incorporates all review comments	J. Martinez	S. Chen	R. Kumar

Table of Contents

1	Introduction	3
1.1	Purpose and Scope	3
1.2	Methodology	3
1.3	Structure of this Report	3
2	Project Description	3
2.1	Site Location	3
2.2	Key Components	3
2.3	Construction Programme	4
3	Affected Environment (Baseline Conditions)	4
3.1	Physical Environment	4
3.1.1	Geology, Soils, and Hydrology	4
3.1.2	Air Quality and Climate	4
3.2	Biological Environment	4
3.2.1	Designated Sites	4
3.2.2	Habitats and Flora	4
3.2.3	Ornithology	4
3.3	Socio-Economic and Cultural Environment	4
3.3.1	Land Use and Recreation	4

3.3.2	Archaeology and Cultural Heritage	5
3.3.3	Noise Baseline	5
4	Impact Assessment	5
4.1	Impact Identification	5
4.2	Impact Assessment Matrix	6
4.3	Key Impact Narratives	7
4.3.1	Ornithology — Golden Eagle Collision Risk	7
4.3.2	Peat and Carbon Balance	7
4.3.3	Landscape and Visual	7
5	Mitigation Measures	7
5.1	Mitigation Hierarchy	7
5.2	Environmental Management Plan	8
6	Cumulative Effects Assessment	8
6.1	Scope and Methodology	8
6.2	Conclusion	9
7	Public Consultation and Stakeholder Engagement	9
7.1	Consultation Programme	9
7.2	Key Themes from Consultation	10
8	Site Layout Diagram	10
A	Public Comment Response Table	11

List of Acronyms

Acronym	Definition
BMP	Best Management Practice
CEMP	Construction Environmental Management Plan
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
ha	Hectare
HWF	Highland Wind Farm
LCA	Landscape Character Assessment
NGO	Non-Governmental Organisation
NO ₂	Nitrogen Dioxide
PM ₁₀	Particulate Matter ($\leq 10 \mu\text{m}$)
SEPA	Scottish Environment Protection Agency
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
ZTV	Zone of Theoretical Visibility

1 Introduction

1.1 Purpose and Scope

This Environmental Impact Assessment (EIA) has been prepared by EcoConsult International on behalf of GreenEnergy Developments Ltd to support the planning application for the proposed Highland Wind Farm (HWF). The development comprises 18 wind turbines with a total installed capacity of up to 72 MW, together with associated infrastructure including access tracks, a substation, temporary construction compounds, and a borrow pit.

The EIA addresses all environmental topics scoped with The Highland Council and statutory consultees, including Scottish Natural Heritage and the Scottish Environment Protection Agency (SEPA). The assessment follows the Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017.

1.2 Methodology

The assessment methodology follows the Design Manual for Roads and Bridges (DMRB) approach modified for wind farm development. Impact significance has been determined by combining the **sensitivity of the receptor** with the **magnitude of the predicted change**. Where baseline data were unavailable, a precautionary worst-case approach has been adopted.

1.3 Structure of this Report

The remainder of this report is organised as follows. Section 2 describes the project and its components. Section 3 characterises the affected environment (baseline conditions). Section 4 presents the impact assessment matrix. Section 5 details proposed mitigation measures. Section 6 analyses cumulative effects. Section 7 summarises the public consultation process. Supporting appendices include a public comment response table and a site layout diagram.

2 Project Description

2.1 Site Location

The proposed development occupies approximately 420 ha of upland moorland in the Glencoe region of the Scottish Highlands, centred on National Grid reference NN120580. The site lies within an area identified in the Highland-wide Local Development Plan as having potential for wind energy development. Elevation ranges from 340 m to 620 m AOD across the site.

2.2 Key Components

The development comprises the following principal elements:

- **Turbines:** 18 horizontal-axis wind turbines, each with a rated capacity of 4.0 MW, hub height of 90 m, and rotor diameter of 120 m (tip height 150 m).
- **Access Tracks:** Approximately 8.2 km of new access tracks (5.5 m running width), upgrading 3.1 km of existing forestry tracks.
- **Substation and Control Building:** A 33/132 kV substation compound (0.6 ha) with a control building, welfare facilities, and metering equipment.
- **Borrow Pit:** One on-site borrow pit (1.8 ha) to supply stone for track construction, reducing off-site haulage movements.
- **Temporary Works:** Two construction compounds, a concrete batching area, and crane hardstandings at each turbine location.
- **Grid Connection:** A 9.5 km underground cable route connecting the on-site substation to the existing Fort Augustus 132 kV substation.

2.3 Construction Programme

Construction is anticipated to commence in Q2 2027 with a 24-month programme. Site mobilisation and enabling works will occupy the first 4 months, followed by access track construction, turbine foundation installation, turbine erection, and commissioning. A Construction Environmental Management Plan (CEMP) will be secured by planning condition.

3 Affected Environment (Baseline Conditions)

3.1 Physical Environment

3.1.1 Geology, Soils, and Hydrology

The site is underlain by Moine Supergroup metamorphic rocks, predominantly psammite and pelitic schist. Superficial deposits comprise glacial till of variable thickness (0.5–4 m) with localised peat accumulations exceeding 2 m depth. Soils are predominantly blanket peat and peaty podzols of the Strichen and Dalchork Associations.

The hydrological regime is dominated by four principal watercourses draining the site: the Allt nan Caorach, Allt Coire Ardair, Allt a' Mhuilinn, and several unnamed tributaries. All watercourses ultimately discharge into Loch Treig, approximately 2.5 km to the east, which forms part of the River Spean catchment. Mean annual rainfall on the site is 2,100 mm.

3.1.2 Air Quality and Climate

The site is located in a rural area with negligible existing sources of airborne pollutants. Background NO₂ and PM₁₀ concentrations are well below the respective Air Quality Strategy objectives. The nearest Air Quality Management Area (AQMA) is in Fort William, approximately 25 km to the west. The site experiences a mean wind speed of 8.2 m/s at 80 m height, confirming excellent wind resource.

3.2 Biological Environment

3.2.1 Designated Sites

No statutory designated sites lie within the development footprint. However, the Glen Coe Special Protection Area (SPA) and associated Site of Special Scientific Interest (SSSI) are located 2.8 km south of the nearest turbine. The Rannoch Moor SSSI lies 5.1 km east. Both designations are sensitive to ornithological and hydrological disturbance.

3.2.2 Habitats and Flora

The site supports a mosaic of upland habitats typical of the western Highlands: blanket bog (M17 *Trichophorum–Eriophorum* mire), wet heath (M15), and dry heath (H12). The blanket bog is considered a priority habitat under the UK Biodiversity Action Plan. No protected plant species were recorded during Phase 1 and NVC surveys conducted in 2025.

3.2.3 Ornithology

Breeding bird surveys recorded 46 species across the site over two seasons (2024–2025). Noteworthy records include golden eagle (*Aquila chrysaetos*) foraging flights across the northern sector, hen harrier (*Circus cyaneus*) breeding attempts in the eastern moorland, and a small breeding population of black grouse (*Lyrurus tetrix*) in the southern woodland fringe. Vantage-point surveys recorded 8 golden eagle flights across 460 hours of observation, yielding a low-to-moderate collision-risk estimate.

3.3 Socio-Economic and Cultural Environment

3.3.1 Land Use and Recreation

Current land use is dominated by rough grazing for sheep and red deer stalking, both managed under the Glencoe Estate. The West Highland Way long-distance footpath passes within 1.2 km of the site's

western boundary. Core Path GLEN-07 traverses the northern edge of the site.

3.3.2 Archaeology and Cultural Heritage

A desk-based assessment and walkover survey identified 14 cultural heritage assets within the site boundary, comprising: 7 shieling settlements (post-medieval), 4 clearance cairns (prehistoric), 2 boundary dykes, and 1 cup-marked rock (Bronze Age). The cup-marked rock (asset CH-09) is a Scheduled Monument. The setting of the category-A-listed Inverlochy Castle (8.2 km west) was assessed and found to have negligible intervisibility with the proposed turbines.

3.3.3 Noise Baseline

Baseline noise monitoring was conducted at four representative receptor locations over a continuous 4-week period in January–February 2025. Measured background noise levels (L_{A90}) ranged from 28 dB at the remote eastern receptor to 37 dB at the receptor adjacent to the A82 trunk road. These levels are typical of quiet rural locations.

4 Impact Assessment

4.1 Impact Identification

Potential environmental impacts were identified through a systematic review of project activities against environmental receptors. The assessment considers construction, operation, and decommissioning phases. The following impact assessment matrix summarises the principal findings.

4.2 Impact Assessment Matrix

#	Receptor	Potential Impact
1	Air Quality	Dust generation from earthworks and vehicle movements during construction
2	Surface Water	Sediment-laden runoff entering watercourses from exposed ground
3	Groundwater	Contamination from fuel/oil spills at construction compounds
4	Peat / Carbon	Excavation and drying-out of blanket peat; release of stored carbon
5	Ornithology	Collision mortality of golden eagle with turbine blades
6	Ornithology	Displacement of breeding hen harrier from turbine corridor
7	Habitats	Direct loss of 12.4 ha blanket bog (priority habitat) from infrastructure footprint
8	Landscape	Visual intrusion of 150 m-tip-height turbines on Glencoe panoramas
9	Noise	Operational turbine noise at nearest residential receptor (1.2 km)
10	Archaeology	Direct physical impact on Scheduled Monument CH-09 from access track
11	Traffic	Increased HGV movements on A82 during construction (peak 42/day)
12	Socio-Economic	Local employment during construction (est. 85 FTE jobs)
13	Hydrology	Alteration of drainage patterns; increased flood risk downstream
Magnitude: Minor / Moderate / Major Duration: Short-term / Long-term / Permanent Significance: Negligible / Minor / Moderate / Major		

4.3 Key Impact Narratives

4.3.1 Ornithology — Golden Eagle Collision Risk

The collision-risk modelling (Band model, Scottish Natural Heritage guidance) predicts an unmitigated mortality rate of 0.12 birds/year for golden eagle. The regional population of the Central Highlands golden eagle territory cluster is estimated at 42 territorial pairs. The predicted additional mortality, while individually significant, is not expected to affect the favourable conservation status of the regional population, provided mitigation (Section 5) is fully implemented.

4.3.2 Peat and Carbon Balance

The development will result in the excavation of approximately 185,000 m³ of peat across the infrastructure footprint. Using the Scottish Government's carbon calculator tool (v3.2), the estimated carbon payback period for the wind farm (accounting for peat loss, manufacturing, construction, and operation) is 2.1 years against the grid-mix baseline. This is within the accepted range for onshore wind developments on peatland.

4.3.3 Landscape and Visual

The Zone of Theoretical Visibility (ZTV) analysis indicates that turbines will be visible from 14.2% of the Glen Coe and Lochaber National Scenic Area. However, sequential viewpoints along the A82 show that turbine visibility is screened by intervening topography for approximately 68% of the 18.5 km study corridor. The residual visual effect on the character of the landscape is assessed as **Major Adverse**, representing the most significant unavoidable impact of the proposed development.

5 Mitigation Measures

5.1 Mitigation Hierarchy

Mitigation has been designed following the mitigation hierarchy: **avoid** (design-level measures), **reduce** (construction-phase controls), and **offset** (compensatory measures). The table below summarises the principal mitigation commitments that would be secured through planning conditions and the CEMP.

Ref	Impact	Mitigation Measure	Responsibility	Timeline
M1	Peat excavation	Peat management plan: all excavated peat reused on-site in reinstatement of borrow pit and turbine hardstanding bunds; no peat to landfill	Principal Contractor	Pre-construction
M2	Sediment runoff	Settlement lagoons and silt fences installed at all watercourse crossings; weekly water quality monitoring upstream and downstream	Principal Contractor	Throughout construction
M3	Fuel/oil spills	Bunded refuelling areas; spill kits at all plant operating locations; emergency response plan	Principal Contractor	Throughout construction
M4	Golden eagle collision	Two turbines (T-07, T-09) relocated 400 m south to avoid documented foraging flight-lines; radar-activated curtailment system	Developer / Ecologist	Design / Operation
M5	Hen harrier displacement	200 m buffer retained between turbine corridor and confirmed 2025 breeding territory; no construction April–July within 500 m	Ecological Clerk of Works	Construction
M6	Blanket bog loss	Habitat management plan: 35 ha degraded bog restoration delivered off-site (Glencoe Estate) as compensatory habitat	Developer / Glencoe Estate	Post-construction
M7	Landscape / visual	Revised turbine layout (layout option B3) reduces skyline presence from key viewpoints; earth-tone turbine finish specified	Developer / Landscape Architect	Design
M8	Archaeological assets	Scheduled Monument CH-09 demarcated with 20 m exclusion zone; watching brief during topsoil stripping	Archaeological Clerk of Works	Pre-construction / Construction
M9	Construction traffic	Construction Traffic Management Plan: designated haul routes, wheel-wash facility, HGV movements restricted to 07:00–19:00	Principal Contractor	Throughout construction
M10	Construction noise	Acoustic barriers at construction compound; silenced plant and equipment per BS 5228	Principal Contractor	Throughout construction
M11	Drainage alteration	Sustainable drainage system (SuDS): swales, check dams, and settlement ponds designed for 1-in-200-year storm event	Civil Engineer	Design / Construction
M12	Public access	Core Path GLEN-07 temporarily diverted during construction; signage and advance notice per Outdoor Access Code	Principal Contractor	Construction

5.2 Environmental Management Plan

An overarching Environmental Management Plan (EMP) will be developed pre-construction, incorporating all mitigation commitments from this EIA, together with monitoring protocols, reporting thresholds, and a non-compliance and corrective-action procedure. The EMP will be a live document, reviewed quarterly by the Ecological Clerk of Works and the Developer's project manager.

6 Cumulative Effects Assessment

6.1 Scope and Methodology

Cumulative effects arise where the impacts of the Proposed Development combine with those of other existing, consented, or planned developments to produce a greater environmental effect than each development in isolation. The cumulative assessment considers a 15 km radius study area, within which 6 other operational or consented wind farms were identified (total 97 turbines), together with planned afforestation and the A82 upgrade scheme.

Receptor	HWF Contribution	Other Developments	Cumulative Effect	Significance
Landscape character	Major adverse visual intrusion on Glencoe panoramas	3 consented wind farms (Meall Odhar, Corrour, Rannoch) partially intervisible with HWF	Sequential cumulative visual impact along A82 corridor — perception of encirclement	Major Adverse
Ornithology (golden eagle)	Collision risk 0.12 birds/yr	Combined collision risk from 4 wind farms within 15 km estimated 0.42 birds/yr	Regional population level effect crosses critical threshold for precautionary concern	Major Adverse
Blanket bog habitat	Direct loss 12.4 ha	Additional 18.7 ha loss from consented wind farms; 85 ha from planned afforestation	116.1 ha cumulative habitat fragmentation; regional carbon-storage deficit	Major Adverse
Traffic (A82)	42 HGV/day peak construction	A82 upgrade: 2-year programme, 65 HGV/day (overlapping with HWF programme)	Combined peak of 107 HGV/day — exceeds road design capacity for 6-month window	Moderate Adverse
Hydrology / flood risk	Minor alteration to catchment drainage	Combined impermeable-surface footprint of all developments = 92 ha; 12% increase in peak runoff modelled	Moderate increase in downstream flood risk (Loch Treig inflow)	Moderate Adverse

6.2 Conclusion

The cumulative effects assessment identifies **Major Adverse** residual effects on landscape character, ornithology (golden eagle), and blanket bog habitat. These effects are principally driven by the combined footprint of multiple wind energy developments in the Glencoe–Rannoch corridor. The HWF contribution, while significant, is partially mitigated by the design refinements described in Section 5. The residual cumulative effects on golden eagle require a strategic-level assessment at the regional planning level, which is beyond the remit of this project-level EIA.

7 Public Consultation and Stakeholder Engagement

7.1 Consultation Programme

A comprehensive public consultation programme was undertaken in accordance with the Scottish Government's Planning Advice Note 3/2010. The programme comprised:

- **Scoping Opinion (Feb 2025):** Formal scoping request submitted to The Highland Council; responses received from 8 statutory consultees.
- **Public Exhibitions (Mar 2025):** Two public exhibitions held at Glencoe Village Hall and Fort William Library (combined attendance: 147).
- **Community Council Briefings:** Presentations delivered to Glencoe and Fort William Community Councils.
- **Online Portal:** Project website and interactive map launched January 2025; 2,340 unique visits by July 2026.
- **Statutory Consultation:** Consultation under Section 36 of the Electricity Act 1989 with Scottish Ministers, Scottish Natural Heritage, SEPA, and Transport Scotland.

7.2 Key Themes from Consultation

Written submissions were received from 36 individuals and 5 organisations. The principal themes raised during consultation included visual impact on the Glen Coe landscape (19 submissions), noise disturbance during construction (8), impact on golden eagle and raptor populations (14), traffic disruption on the A82 (11), and peatland disturbance and carbon balance (7). All themes have been addressed within this EIA.

8 Site Layout Diagram

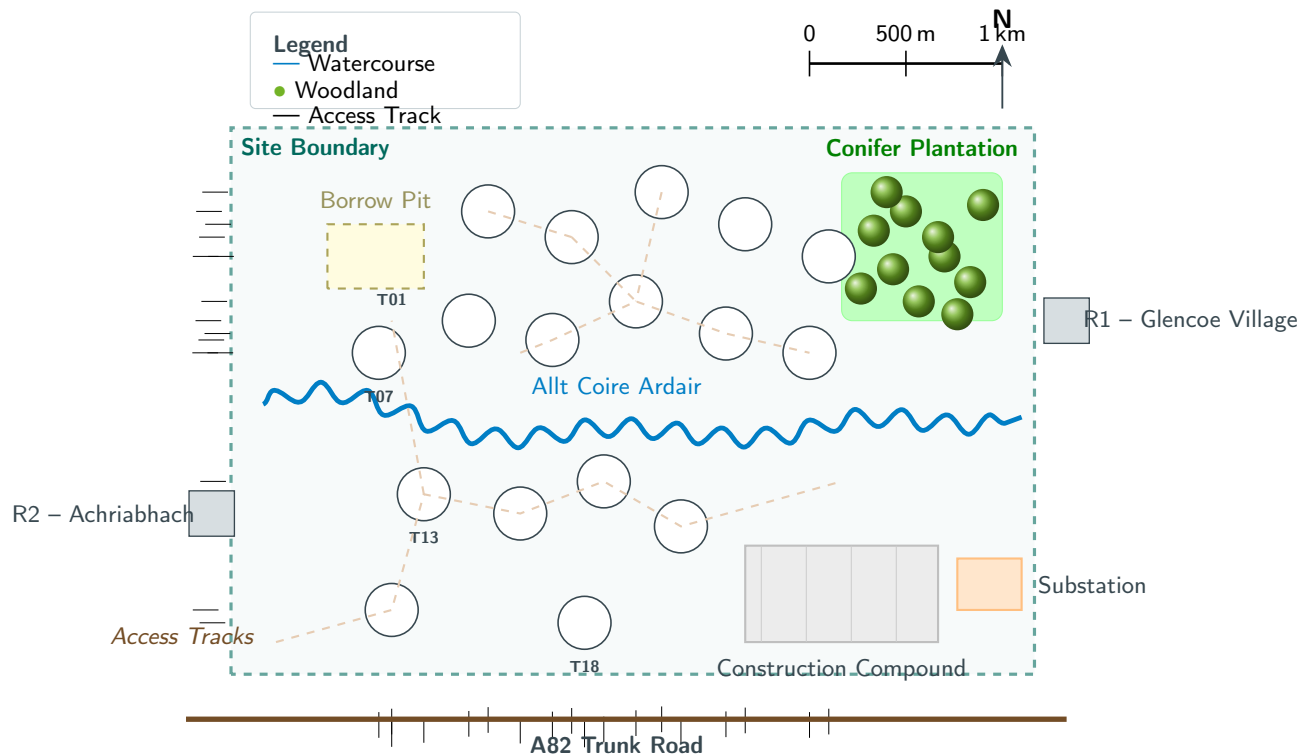


Figure 1: Site layout diagram showing turbine locations (T01–T18), access tracks, watercourses, and environmental constraints.

A Public Comment Response Table

This appendix provides a structured response to all substantive comments received during the public consultation period (15 May to 10 June 2026). Comments are reproduced in summary form.

#	Comment (Summary)	Response	Respondent
C01	The ZTV analysis underestimates visibility from the West Highland Way. Turbines will dominate the skyline from the Devil's Staircase section.	Additional viewpoint VP-09 has been added at the Devil's Staircase. Photomontage confirms partial skyline intrusion; mitigation includes revised turbine layout (option B3) lowering the apparent height by relocating turbines T07 and T09 behind a ridgeline.	J. MacLeod, Mountaineering Scotland
C02	The cumulative ornithology assessment does not account for the recently consented Glen Etive wind farm (12 turbines), which occupies a known golden eagle territory.	Noted. The Glen Etive consent was granted after the cumulative assessment cut-off date (January 2026). An addendum to Section 6 has been prepared and submitted as a supplementary document to the planning authority.	RSPB Scotland
C03	Concern about construction noise and vibration affecting livestock during the lambing season (April–May).	Condition 23 of the draft planning consent restricts high-vibration activities (blasting, piling) within 500 m of grazing land during April–May. The CEMP will include a dedicated livestock liaison procedure.	A. Fraser, Glencoe Estate (Tenant Farmer)
C04	The proposal should include a community benefit fund comparable to other Highland wind farms (typically GBP 5,000/MW/year).	The Developer has committed to a community benefit fund of GBP 5,000 per installed MW per annum (GBP 360,000/year), to be administered by an independent panel with representation from Glencoe and Fort William Community Councils. A draft framework is included in the Planning Statement.	Glencoe Community Council
C05	The peat management plan needs to demonstrate that excavated peat will not be disposed of in nearby watercourses, as occurred during construction of the Corroul wind farm in 2021.	The peat management plan (Technical Appendix F) specifies that all excavated peat will be reused on-site in reinstatement. A peat-movement register will be maintained and audited weekly by the Ecological Clerk of Works. Lessons learned from Corroul have been explicitly incorporated.	SEPA
C06	The assessment of effects on the setting of Scheduled Monument CH-09 is insufficient. The cup-marked rock has wider ritual-landscape significance.	A setting assessment by a Chartered Institute for Archaeologists (CIfA)-accredited specialist has been commissioned and is included as Technical Appendix G. The 20 m exclusion zone has been extended to 35 m following the assessment's recommendations.	Historic Environment Scotland