

Vegetation Survey of Proposed Turbine Locations Survey Report for Beinn Ghlas Wind Farm Repowering



Alba Ecology Ltd.

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Foreword Provided in July 2025

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Summary

Alba Ecology Ltd. was commissioned by Nadara to conduct a vegetation assessment at the proposed turbine locations at Beinn Ghlas, a proposed repowering wind farm site in Argyll, as part of the Environmental Impact Assessment process.

The proposed turbine locations, along with the proposed hardstanding, turning circles and track (together termed the Development Footprint), were walked in February 2023 using a design layout that was current at that time. Subsequently, based on detailed comment regarding the habitats, peatlands and areas of deep peat some of the Development Footprint was altered to deliberately avoid more sensitive peatland habitat and areas of deep peat, in line with best practice guidance. The final design layout was then re-visited in October 2023. The vegetation type at each proposed turbine location was assessed using quadrat and transect data.

The design layout was altered in 2025 to remove four turbines. The turbine number was then updated. A foreword is provided to give details and allow for cross referencing.

Impacts from grazing were noted throughout the vegetation, including hoof prints, bite marks, dung and deer tracks.

Given the lack of surface water-logging features, and the conditions described, overall, it is considered that the blanket bog habitat within the Development Footprint was likely to be largely inactive. This does not preclude that limited peat formation may occur at some locations under some circumstances.

The blanket bog habitat within the Development Footprint did not meet the SSSI selection criteria and is not considered to be of “*high quality and in a near-natural condition*”.

This document reports the findings of the vegetation assessment undertaken by Alba Ecology Ltd. in February and October 2023.

Foreword, July 2025

In 2025, four turbines were removed from the Proposed Development due to ornithological constraints. The location of the remaining seven turbines and track layout remains largely the same. However, the turbine numbering has been altered. Table i, and Figure ii provide the cross referencing. For full details of the design iterations see Chapter 2. No changes have been made to this document, other than to add the 2025 turbine numbering into the results and discussion where appropriate.

Turbine Number, 2023	Turbine Number, 2025	Comment
T01	T01	No Change
T02	T02	No Change
T03	-	Removed from design
T04	-	Removed from design
T05	T03	Updated
T06	T04	Updated
T07	-	Removed from design
T08	T05	
T09	T06	
T10	T07	
T11	-	Removed from design

Table i: Turbine numbering changes between December 2023 and submission.

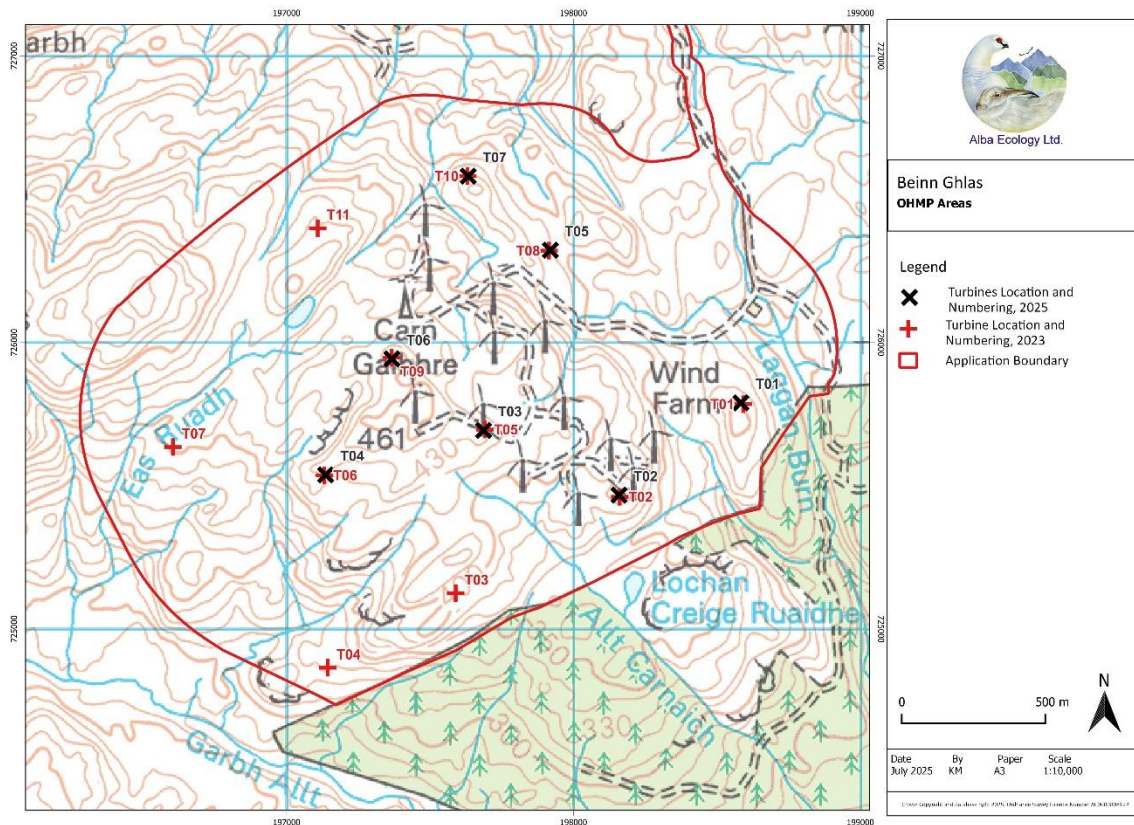


Figure ii: Turbine numbering changes between December 2023 and submission

Introduction

Beinn Ghlas Wind Farm is owned by Beaufort Wind Ltd which is a wholly owned subsidiary of Nadara Ltd (the Applicant). Beinn Ghlas Wind Farm (Beinn Ghlas) is located south-west of Taynuilt in Argyll, Scotland. It comprises of 14 wind turbines and has been operational since May 1999. In June 2022, planning consent was secured to operate the wind farm for an additional ten years to August 2033.

A repowering project has also been proposed at Beinn Ghlas by the Applicant. As part of the planning process, Alba Ecology Ltd. was commissioned to conduct a vegetation assessment at the proposed repowering turbine locations at Beinn Ghlas Wind Farm as part of the Environmental Impact Assessment (EIA) process.

A Peatland Condition Assessment was undertaken in 2022 by Alba Ecology Ltd and is reported in Technical Appendix 6.3.

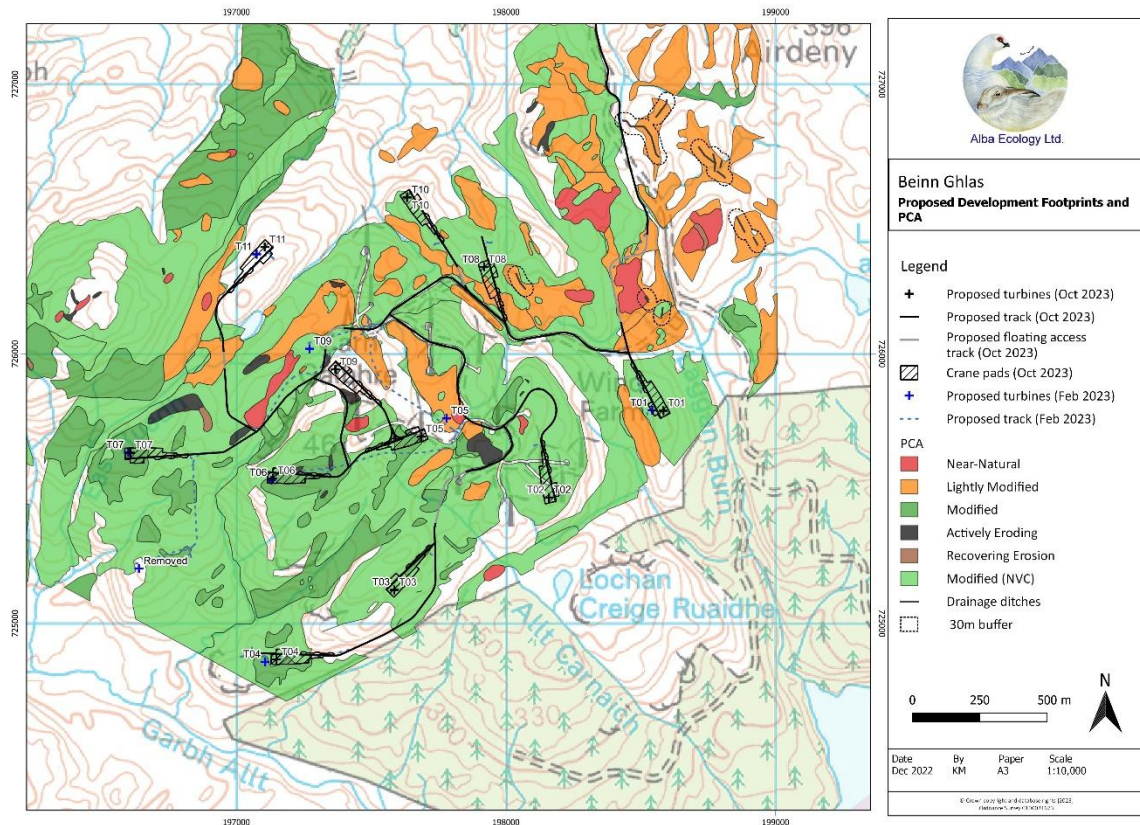
The proposed turbine locations, along with the proposed hardstanding, turning circles and track (together termed the Development Footprint), were walked in January and February 2023 using the design layout, as circulated in January 2023 by the Applicant (named Beinn Ghlas Repowering_Infrastructure Layout_060223) (Figure 1). The vegetation type at each proposed turbine location was assessed using quadrat and transect data. The track and infrastructure routes were carefully walked, and target notes made.

Initial findings were reported to the Applicant in February 2023, and a series of design changes were made to the wind farm layout in August and September 2023 to deliberately move the Development Footprint away from more sensitive peatland habitats and deep peat in accordance with best practice guidance. The updated proposed Development Footprint was walked in October 2023 (design layout Beinn Ghlas Layout H (Sept 2023)) and is also presented in Figure 1. An example quadrat and transect were also taken in blanket bog that was considered to be in 'Near-Natural' condition, which was deliberately avoided by the design layout.

The proposed Development Footprint and condition of the blanket bog habitat should be considered in the context of there already being a wind farm present within the proposed Development Boundary. Some of the Near-Natural blanket bog, identified in the PCA Survey Report (Technical Appendix 6.3), is within metres of the current Beinn Ghlas Wind Farm. This clearly demonstrates that Near-Natural bog and wind farm infrastructure can co-exist at Beinn Ghlas.

This document reports the findings of the vegetation assessment undertaken by Alba Ecology Ltd. in 2023 to inform the final design layout and EIA process.

Figure 1: Proposed Development Footprints Walked in February and October 2023 and the PCA (Technical Appendix 6.3).



Aims and Objectives

The objectives for this survey and report are to:

- Visit each proposed turbine locations and consider the habitat type and vegetation community present;
- Consider any blanket bog present at each of these locations in relation to the potential for the blanket bog to be actively forming peat;
- Consider the blanket bog at each of these locations in relation to SSSI selection criteria objectives; and
- Advise the Applicant of any infrastructure changes required as a consequence of these results.

Methods

Standard habitat and vegetation survey techniques were not repeated for this targeted vegetation assessment. A detailed Phase 1 Habitat, National Vegetation Classification (NVC), Groundwater Dependent Terrestrial Ecosystem (GWDTE) and Peatland Condition Assessment have been undertaken at an appropriate scale and time of year across the Site

Boundary and are reported in the Beinn Ghlas Wind Farm Habitat Survey Report (Technical Appendix 6.2) and PCA Survey Report (Technical Appendix 6.3).

This vegetation assessment provides a more detailed, localised consideration of the vegetation at each of the proposed turbine locations, although NVC communities were noted at each location for information.

NatureScot's recently published guidance (2023) sets out how they will provide developers, planning authorities and Scottish Government with advice on the assessment of likely effects of development proposals on peatland, carbon-rich soils and priority peatland habitats whilst taking into consideration National Planning Framework 4 (NPF4). The NatureScot (2023) guidance sets out the framework which will help NatureScot decide when proposals sited on peatland and carbon-rich soils raise natural heritage issues of 'national interest', and therefore where NatureScot may object to planned developments. It states:

- *"A key focus will be on helping to ensure that development is designed and constructed to follow the mitigation hierarchy set out in NPF4 and that, in addition, biodiversity enhancement is delivered through peatland restoration".*
- *"The framework involves an appraisal of whether there are peatlands on a development site which have vegetation features which are indicators of being high quality and in a near-natural condition. This assessment is based on the JNCC Guidelines for the selection of biological Site of Special Scientific Interest (SSSI) - Chapter 8 - Bogs, which is a peer reviewed standard that forms our best evidence".*

As a consequence of this, Dr Kate Massey of Alba Ecology, a highly experienced upland habitat surveyor, undertook this vegetation assessment to provide detailed, site-specific information for the proposed Development Footprint, particularly at the proposed turbine locations.

This vegetation survey of the proposed turbine locations draws upon various published information and guidance (e.g. Lindsay *et al.* 2014a-c, Lindsay, 1995, Glenk *et al.* 2017, SNH, 2016) and using well established vegetation assessment techniques, namely quadrats and transects to make an assessment for each turbine location. This has been completed to provide a detailed, up to date transparent assessment to address NatureScot's considerations of the blanket bog habitat in relation to the SSSI selection criteria and whether the blanket bog is of *"high quality and in a near-natural condition"*.

Each proposed turbine location was first visited in January and February 2023. At each location a 2m x 2m quadrat was placed over a representative vegetation sample and the percentage cover recorded for each plant species, along with the percentage of bare peat, the presences of any hoof prints, dung, and notes on any damage to the bog-moss layer where present.

The proportion of the proposed turbine location that was blanket bog, bare peat, rock or water was also quantified through a transect assessment. At each location, the proportion of the near landscape that was made up of vegetation, bare peat, rock or water (c. 50 m) was assessed in a south and north direction by walking the c. 50 m in each direction and calculating the portions.

The area surrounding the proposed turbine location was searched for bog pools, bog-moss hummocks, erosion features and any other features of note.

Points of note between proposed turbine locations, including at proposed hard standing areas, turning circles and the track were walked and notes made on potential features of interest. For example, bog pools and erosion features.

Comments, note and photographs were provided to the Applicant in February 2023 to inform project design. Some of the proposed Development Footprint, including proposed turbine locations were altered as a result of these comments and notes, as well as those regarding peat depth.

In October 2023, the updated Development Footprint was revisited and the same methods used to assess the vegetation where the Design Footprint had changed from the first visit in February 2023.

Each finalised proposed turbine location and the data collected were considered in relation the NatureScot (formerly Scottish Natural Heritage (SNH)) Peatland Condition Assessment Support Tool which describes if a bog habitat is likely to be actively forming peat or not (Glenk *et al.* 2017). Peatland activity is the formation of peat when plant material does not decompose due to water-logged conditions. Table 1 provides an outline of the criteria used in the Peatland Condition Assessment Support Tool to assess peatland activity. Consideration was also given to the IUCN descriptions of blanket bog activity (Lindsay, 2014a-c).

Signs	Good	Intermediate	Bad
Water	Plenty of water, visible on the surface.	Surface water is rarely visible.	Deep gullies have formed from wind and water erosion.
Vegetation	Small grasses, bog-mosses (<i>Sphagnum spp.</i>) common and very wet.	Taller plants, such as cottongrasses (<i>Eriophorum spp.</i>) and heather.	Rarely any plants grow on the areas that are exposed. Patches of grasses or heather are still found on 'islands' in between exposed bare peat.
Bare peat	Little to no bare peat patches.	Bare peat patches are occasional, burning may occur.	Bare peat areas will continue to expand, leaving less plant cover as protection on the surface. Peat will continue to be lost until the solid rock is exposed.
Water quality	Water flowing from good quality peatland is clear.	Water flowing from peatland likely to be slightly brown, especially after heavy rainfall.	Bad quality, it can be dark brown from the peat content.
Wildlife	Good for wildlife.	Wildlife less abundant than in good condition.	Home to little wildlife.
Resultant Activity	Active	Stopped growing, inactive	Inactive

Table 1: Peatland Condition Assessment Support Tool categories of 'good, intermediate and bad' peatland (Glenk *et al.*, 2017)

Limitations

These surveys were conducted outwith the usual survey period for vegetation surveys (which is broadly April to September). Therefore, some of the species were in a senescent or senescing state. However, the site and its associated species were well known to the surveyor and so there was a high degree of confidence in plant identification. There was no snow on the ground obscuring vegetation.

Beinn Ghlas is on a very complex topography of basins, hollows and rises (unlike some upland sites where relatively uniform habitats are dominant). GPS accuracy is typically only to c. 5-10 m. When visiting each location, the GPS was followed and the location found aiming to get as close as possible. A representative sample of vegetation was then assessed, avoiding atypical areas (e.g. hags, tracks). Therefore, the proposed turbine location and the quadrat data location may not precisely match, but the assessment was considered representative of the vegetation in the proposed turbine location.

The other limitations of this survey are common to most vegetation surveys and are reported in detail in the Phase 1 Habitat, NVC, GWDTE, PCA survey for the Access Track and are not repeated in full here for brevity but include acknowledgement that there is spatial and temporal variation in species appearance, and that the intention of the survey work was not to create a full inventory of all the botanical species in the site.

Nomenclature

Species common names only are used in this report.

Results

All proposed turbine locations were first visited in February 2023. Many of the proposed turbine locations appeared to be in a suitable location from a habitat perspective (e.g. were on acid grassland, dry heath or wet heath). However, some of the proposed turbine locations were impacting on blanket bog habitats and, where possible the locations were altered during design meetings (between February 2023 and October 2023) to deliberately avoid adversely impacting on priority blanket bog habitat and to comply with the relevant policies and best practice guidance (e.g. NPF4 and NatureScot, 2023). The revised turbine locations were then visited in October 2023.

Some of the design alterations were minor to reduce effects in that location, but some included greater changes to design to avoid areas of deep peat and/or more sensitive blanket bog habitat. This clearly demonstrates, through changes to the design layout, that peatland habitat considerations were at the forefront of the design iteration process and every opportunity was taken to avoid and minimise impacts on these important habitats which accords with the mitigation hierarchy and best practice guidance (e.g. NPF4).

Detailed accounts of vegetation at each proposed turbine location are provided in Plates 1-19. Tables 2 and 3 summarise the quadrat and transect data for each proposed turbine location and Table 4 provides mean peat depth data for each turbine location (provided by Fluid Ltd.). Target notes of features between the proposed turbine locations, along the

proposed track, hard standings and turbine circles are provided in Annex 1 and 2 and Figure 2.

Plate 1: Proposed Turbine Location T1 – February 2023 – Location Changed to Avoid Bog Pools with Likely Deep Peat at Crane Pad. T01, 2025.



Photo T1.1.1: Quadrat



Photo T1.1.2: North view



Photo T1.1.4: Sitka near quadrat



Photo T1.1.3: South view



Photo T1.1.5: Bog pool – in crane pad (NM 98509 25828)

Proposed Turbine Location T1:

Vegetation: Species poor M15/M17a vegetation with tussocks of hare's-tail cottongrass, with purple moor-grass, deergrass and small patches of heather on generally shallow soils <0.5m. Modified condition.

Moss layer: Patches of red bog-moss and papillose bog-moss. No hummocks.

Evidence of modification: Recent deer dung evident in quadrat. Vegetation associated with grazing regimes. Ca. 20 sitka spruce planted near to turbine location.

Erosion/ drainage features: None present in vicinity.

Pools: Bog pool located ca. 50m away within crane pad area.

Evidence for active peat formation: Area unlikely to be normally actively forming peat. Ground surface was dry. Bog-mosses did not form a continuous layer. Vegetation made up of thick, tussocky hare's-tail cottongrass and purple moor-grass.

Moved to avoid bog pools at crane pad area

Plate 2: Proposed Turbine Location T1 – October 2023 T02, 2025.



Photo T1.2.4: Single bog-moss hummock



Photo T1.2.5: Bite marks on vegetation



Photo T1.2.6: Dung in quadrat

Proposed Turbine Location T1 October 2023:

Vegetation: M15b vegetation, transitioning to dry heath with tussocks with deergrass, mat grass and heath rush. Mixture of heather species on generally shallow soils <0.5m.

Moss layer: Red bog-moss common with evidence of damage from deer. Single hummock present (outwith quadrat). Woolly fringe moss present.

Evidence of modification: Recent bite marks in the vegetation with deer dung evident in quadrat and surrounding area. Sitka spruce planted near to location.

Erosion/ drainage features: None present in vicinity.

Pools: None at turbine location. Small, shallow pools within wet heath present at south end of crane pad location. Bog pools present outwith the design layout to north of crane pad.

Evidence for active peat formation: Area unlikely to be normally actively forming peat. Ground surface was dry. Bog-mosses did not form a continuous layer. Vegetation made up of thick grasses and tussocky heather.

Plate 3: Proposed Turbine Location T2 – February 2023 N/A, 2025.



Proposed Turbine Location T2:

Vegetation: Near existing turbine location. Dry vegetation with tussocky heather, hare's-tail cottongrass, cross-leaved heath and red bog-moss (M15/M17a to tussocky modified M19).

Moss layer: Patches of red bog-moss with abundance of glittering wood-moss and common haircap.

Evidence of modification: Recent bite marks on heather, tussocky hare's-tail cottongrass indicative of grazing pressure.

Erosion/ drainage features: Small erosion feature nearby c. 1m deep.

Pools: No pools present in vicinity.

Evidence for active peat formation: Area unlikely to be normally actively forming peat. Ground surface was dry. Bog-mosses did not form a continuous layer. Vegetation made up of thick, tussocky hare's-tail cottongrass.

Plate 4: Proposed Turbine Location T3 Removed from Design, 2025.



Proposed Turbine Location T3:

Vegetation: This location was at end of an acid grass/dry heath outcrop and went into a basin with erosion features and a small loch. Vegetation dominated by deergrass, with common cottongrass and mat grass.

Moss layer: Few bog-mosses present.

Evidence of modification: Some bite marks on heather, and no bog pools, but lightly modified.

Erosion/ drainage features: Erosion feature was c. 1.5m deep, and actively eroding on the face. The base was damp with common cottongrass colonising.

Pools: Several pools in southern transect.

Evidence for active peat formation: Turbine location unlikely to be normally actively forming peat as there were little bog-mosses present, although it was wet. Some areas towards the lochan (southwest of turbine location and outwith design layout) could be actively forming peat. Ground surface was wet, bog-mosses did not form a continuous carpet, but areas with abundant bog-mosses and some bog pools.

Location unable to be moved due to design constraints. Careful micro-siting required to ensure more sensitive locations near loch are retained.

Photo T3.5: Self-sown sitka spruce nearby

Plate 5: Proposed Turbine Location T4 – February 2023 – Location Changed to Avoid Deep Peat in Basin N/A, 2025.

Photo T4.1.1: Quadrat



Photo T4.1.2: North view



Proposed Turbine Location T4:

Vegetation: Tussocky and modified bog (M20) dominated by hare's-tail cottongrass with purple moor-grass and some cross-leaved heath. It was located in a small basin and was near a sitka spruce plantation.

Moss layer: Patches of red bog-moss. No hummocks or lawns.

Evidence of modification: Tussocky hare's-tail cottongrass indicative of long-term grazing pressure. Three patches of deer dung within quadrat and bit marks on cross-leaved heath. Some bog-moss had been damaged by hoof prints.

Erosion/ drainage features: A small erosion features present in north transect.

Pools: No pools present in vicinity.

Evidence for active peat formation: Area unlikely to be normally actively forming peat. Ground surface was dry. Bog-mosses did not form a continuous layer. Vegetation made up of tussocky hare's-tail cottongrass and purple moor-grass.

Location changed to avoid basin of deep peat.

Photo T4.1.3: South view



Photo T4.1.4: Dominated by hare's-tail cottongrass and purple moor-grass



Photo T4.1.5: View around quadrat



Plate 6: Proposed Turbine Location T4 – October 2023 Removed from Design, 2025.



Photo T4.2.4: Bare patches in vegetation



Photo T4.2.5: Damaged hummock of red bog-moss on shallow soils

Proposed Turbine Location T4 October 2023 :

Vegetation: Vegetation was M15c wet heath on shallow soils. There was deergrass, mat grass and heath rush with patches of bare ground, some lichens.

Moss layer: Patches of and woolly fringe moss. No lawns. Single, damaged hummock of red bog-moss on shallow soils.

Evidence of modification: Bare ground patches common in the vegetation. Pulled and damaged bog-mosses. Two patches of dung present in quadrat.

Erosion/ drainage features: None in vicinity.

Pools: No pools present in vicinity.

Evidence for active peat formation: Area unlikely to be normally actively forming peat. Wet heath vegetation on shallow soils. Ground surface was dry. Bog-mosses did not form a continuous layer.

Plate 7: Proposed Turbine Location T5 – February 2023 - Location Changed to Avoid Bog Pools and Deep Peat N/A, 2025.



Photo T5.1.1: Quadrat



Photo T5.1.2: North view



Photo T5.1.6: Bog pool near quadrat



Photo T5.1.3: South view



Photo T5.1.4: Bog pool beside quadrat



Photo T5.1.5: Bog-moss lawn near quadrat

Proposed Turbine Location T5:

Vegetation: A small basin of wet M17a blanket bog vegetation. Hare's-tail cottongrass and deergrass were in an open growth form. Surrounded by complex topology and current wind farm. Area was in a Near-Natural condition. Deep peat present.

Moss layer: Low hummocks red bog-moss and some lawns of papillose bog-moss. Purple spoonwort was common.

Evidence of modification: Area was in a basin with wind farm infrastructure around it, which may have resulted in water being retained.

Erosion/ drainage features: None present in vicinity.

Pools: Several large bog pools within vicinity, including one beside the turbine location.

Evidence for active peat formation: Area could be actively forming peat. Ground surface was wet, bog-mosses did not form a continuous carpet, but there were substantial bog-moss lawns and low hummocks. Graminoids were in an open growth form.

Turbine location moved based on this information.

Plate 8: Proposed Turbine Location T5 – October 2023 T03, 2025.



Photo T5.2.4: View

Proposed Turbine Location T5 October 2023:

Vegetation: Close to base of current turbine. Acid grassland (U5) dominated by mat grass with a little heath over rocky substrate. Some modified bog present in the crane pad.

Moss layer: Dominated by glittering wood-moss.

Evidence of modification: Sheep nearby with dung and bite marks notable in the vegetation.

Erosion/ drainage features: None present in vicinity.

Pools: None present in vicinity.

Evidence for active peat formation: Area highly unlikely to be actively forming peat. Acid grassland over rocks.

Plate 9: Proposed Turbine Location T6 – February 2023 - Location Changed to Avoid Deep Peat in Basin N/A, 2025.



Proposed Turbine Location T6:

Vegetation: At a transition point of wet heath and tussocky modified bog in a basin and a patch of acid grassland. The quadrat was a mix of hare's-tail cottongrass, mat grass, deergrass and heath rush. Little dwarf shrubs present. M15 transitioning to M20.

Moss layer: Patches of red bog-moss with abundance of glittering wood-moss.

Evidence of modification: Tussocky hare's-tail cottongrass indicative of long-term grazing pressure.

Erosion/ drainage features: No drainage features in vicinity. Three old erosion features in southern transect.

Pools: No pools present in vicinity.

Evidence for active peat formation: Area unlikely to be normally actively forming peat. Ground surface was dry. Bog-mosses did not form a continuous layer. Vegetation made up of tussocky hare's-tail cottongrass.

Location moved to avoid area of deep peat.

Plate 10: Proposed Turbine Location T6 – October 2023 T04, 2025.

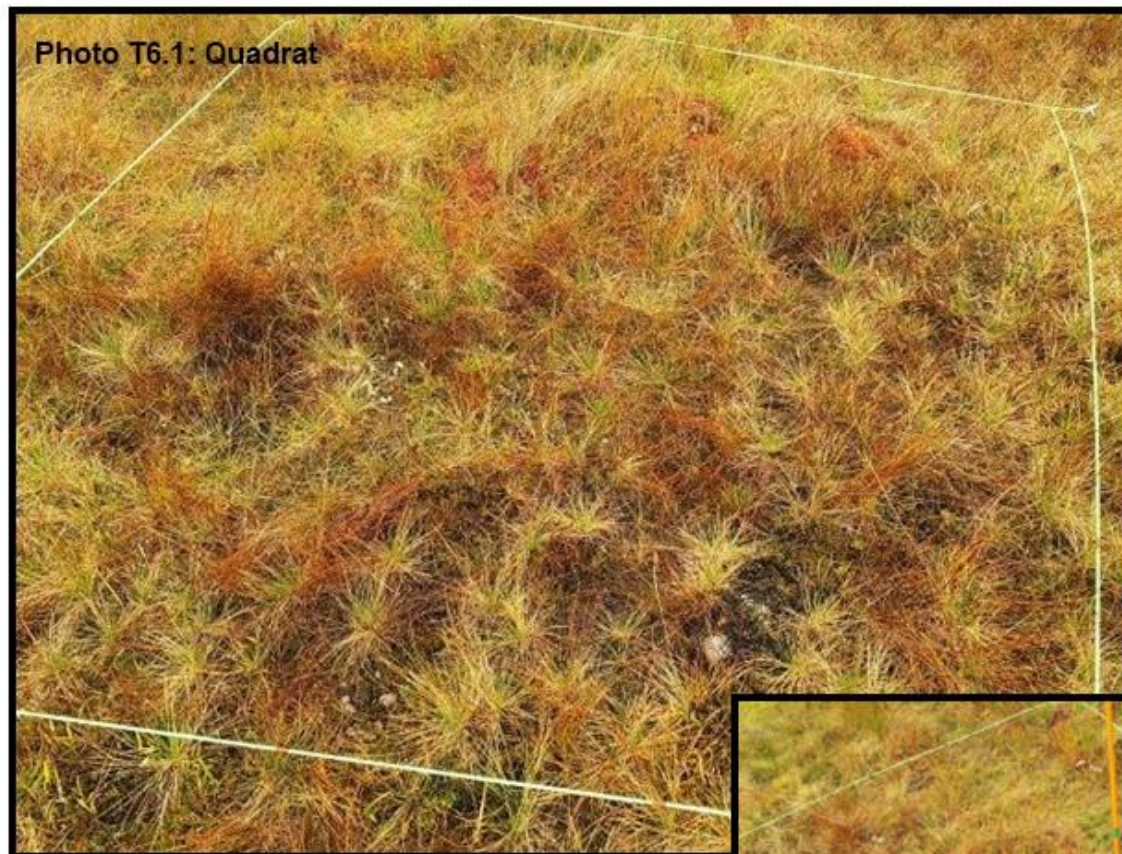


Photo T6.1: Quadrat



Photo T6.2: North view



Photo T6.4: Patches of red bog-moss on shallow soils.



Photo T6.3: South view



Photo T6.5: View of quadrat

Proposed Turbine Location T6 October 2023:

Vegetation: Mat grass and deergrass dominated acid grassland (U5) on hill slope. Crane pad goes over some areas of wet heath (M15b) and some tussocky hare's-tail cottongrass (M20) but on generally appeared to be on shallow soils.

Moss layer: Patches of red bog-moss on shallow soils with and woolly fringe moss.

Evidence of modification: Many patches of bare ground. Dung evident in the vegetation.

Erosion/ drainage features: No drainage features in vicinity.

Pools: No pools present in vicinity.

Evidence for active peat formation: Area unlikely to be normally actively forming peat. Acid grassland over shallow soils.

Plate 11: Proposed Turbine Location T7 – February 2023 – Location Changed to Avoid Deep Peat in Basin N/A, 2025.



Photo T7.1.1: Quadrat



Photo T7.1.2: North view



Photo T7.1.4: Small patches of red bog-moss within vegetation



Photo T7.1.3: South view



Photo T7.1.5: View around quadrat

Proposed Turbine Location T7:

Vegetation: At a transition point of wet heath and tussocky, modified bog in a basin. The quadrat was a mix of hare's-tail cottongrass, mat grass, deergrass and cross-leaved heath. M15 transitioning to M20. (Heather beetle damage was evident). Self-sown sitka spruce on crane pad.

Moss layer: Patches of red bog-moss. No hummocks or lawns.

Evidence of modification: Tussocky hare's-tail cottongrass indicative of long-term grazing pressure. Two patches of deer dung within quadrat.

Erosion/ drainage features: No drainage or erosion features present in vicinity.

Pools: No pools present in vicinity.

Evidence for active peat formation: Area unlikely to be normally actively forming peat. Ground surface was dry. Bog-mosses did not form a continuous layer. Vegetation made up of tussocky hare's-tail cottongrass.

Location changed to avoid area of deep peat.

Plate 12: Proposed Turbine Location T7 – October 2023 Removed from Design 2025,

Photo T7.2.1: Quadrat



Photo T7.2.2: North view



Photo T7.2.3: South view



Photo T7.2.4: Sheep at end of south transect



Photo T7.2.5 Damaged bog-moss and hoof marks

Proposed Turbine Location T7 October 2023:

Vegetation Location on hill of wet heath, M15b. small isolated basins of bog habitat have been deliberately avoided. Location was mix of heather, common cottongrass and deergrass with blaeberry, cowberry, cross-leaved heath, heath rush and mat grass.

Moss layer: High proportion of red bog-moss, but on shallow soils. Damage and hoof marks were seen in the bog-moss..

Evidence of modification: Tussocky growth form of vegetation and five patches of deer dung within quadrat.

Erosion/ drainage features: No drainage or erosion features present in vicinity.

Pools: No pools present in vicinity.

Evidence for active peat formation: Area unlikely to be actively forming peat. Ground surface was dry over shallow soils.

Plate 13: Proposed Turbine Location T8 – February 2023 T05, 2025.



Proposed Turbine Location T8:

Vegetation: H10a dry heath vegetation on shallow soils <0.5m. Tussocky heather, green-ribbed sedge and wavy hairgrass were common.

Moss layer: Moss layer dominated by glittering wood-moss and little shaggy-moss.

Evidence of modification: Recent deer dung recorded in quadrat.

Erosion/ drainage features: On southwest side, downslope there were some small erosion features within blanket bog habitat with deep peat which should be avoided if possible.

Pools: No bog pools in vicinity.

Evidence for active peat formation: Area highly unlikely to be normally actively forming peat as shallow soils with dry heath vegetation.

Plate 14: Proposed Turbine Location T9 – February 2023 – **Location Changed to Avoid Blanket Bog and Deep Peat** N/A, 2025.



Photo T9.1.1: Quadrat



Photo T9.1.2: North view



Photo T9.1.4: View of area



Photo T9.1.5: Self-sown sitka spruce nearby

Proposed Turbine Location T9:

Vegetation: Location was at the edge of large area of blanket bog. It was at the transition to shallow soils but was wet and bog-moss rich and linked to better quality bog. There was open growth form of hare's-tail cottongrass and deergrass with little heather.

Moss layer: Bog-moss rich making up c. 56% of quadrat, including lawns of papillose bog-moss and patches of red bog-moss, feathery bog-moss and soft bog-moss. No hummocks.

Evidence of modification: Some bite marks on heather, and no bog pools, but lightly modified.

Erosion/ drainage features: No erosion or drainage features in the vicinity.

Pools: No pools present in vicinity but wet surface of bog.

Evidence for active peat formation: Area could be actively forming peat. Ground surface was wet, bog-mosses did not form a continuous carpet, but there was a relatively high abundance of a mixture of bog-moss species. Graminoids were in an open growth form.

Turbine location moved based on this information.

Plate 15: Proposed Turbine Location T9 – October 2023 T06, 2025.



Photo T9.2.1: Quadrat



Photo T9.2.2: North view



Photo T9.2.4: Vegetation



Photo T9.2.3: South view



Photo T9.2.5: View

Proposed Turbine Location T9 October 2023:

Vegetation:

Location was on a rocky dry heath hillslope. It was heather dominated with green ribbed sedge and some great wood rush.

Moss layer: The moss layer was dominated by glittering wood-moss with no bog-mosses present.

Evidence of modification: Some bite marks in vegetation including on heather.

Erosion/ drainage features: No erosion or drainage features in the vicinity.

Pools: There was a single pool (on shallow soils) downslope and to the west, which is avoided.

Evidence for active peat formation: Area highly unlikely to be actively forming peat. Dry heath vegetation on a rocky slope.

Plate 16: Proposed Turbine Location T10— February 2023 T07, 2025.



Photo T10.4: Dung in quadrat

Proposed Turbine Location T10:

Vegetation: H10a dry heath vegetation on shallow soils. Short compact heather, crowberry, blaeberry and cowberry were all present with mat grass the most common graminoid.

Moss layer: Thick layer of forked-moss with abundant glittering wood-moss. Occasional patches of red bog-moss.

Evidence of modification: Recent deer dung evident in quadrat and recent bite marks on heather.

Erosion/ drainage features: None present in vicinity.

Pools: No pools present in vicinity.

Evidence for active peat formation: Area highly unlikely to be normally actively forming peat as shallow soils with dry heath vegetation.

Plate 17: Proposed Turbine Location T11 – February 2023 – **Moved to Avoid Deep Peat at Crane Pad** N/A, 2025.

Photo T11.1.1: Quadrat



Photo T11.1.2: North view



Photo T11.1.3: South view



Photo T11.1.4: View



Photo T11.1.5: View



Proposed Turbine Location T11:

Vegetation: Location was on an area of acid grassland and dry heath dominated by heather with mat grass (H10a and U5).

Moss layer: Moss layer was dominated by glittering wood-moss and forked-moss. No bog-mosses recorded.

Evidence of modification: Grazing pressure evident from bite marks on heather.

Erosion/ drainage features: There was a single small erosion feature within the southern transect.

Pools: North transect had a bog pool at the end of the 50m.

Evidence for active peat formation: Area highly unlikely to be normally actively forming peat. Acid grassland/dry heath on shallow soils.

Moved to Avoid Deep Peat at Crane Pad

Plate 18: Proposed Turbine Location T11 – October 2023 **Removed from design, 2025.**



Photo T11.2.4: Dung in quadrat



Photo T11.2.5: View of erosion feature

Proposed Turbine Location T11 October 2023:

Vegetation: Location was on an area of M15b wet heath with heather and cottongrasses. There was complex topography in the wider area, with patches of M19, but it was largely M15b.

Moss layer: Moss layer was dominated by glittering wood-moss. There was a very small amount of red bog-moss recorded.

Evidence of modification: Grazing pressure evident from bite marks on heather and recent piles of dung.

Erosion/ drainage features: None in vicinity. There was a single erosion feature beyond the transects.

Pools: None in vicinity. Large bog pool beyond crane pad and transects which has been deliberately avoided.

Evidence for active peat formation: Area unlikely to be normally actively forming peat. Limited amount of bog-moss present in relatively dry soil.

Plate 19: Example of Near-Natural Bog



Photo NN1.6: Hummocks and hollows

Photo NN1.7: Bog-mosses

Example of Near-Natural blanket bog:

Vegetation: Location selected to demonstrate Near-Natural blanket bog. M17a vegetation with open vegetation of cottongrasses, deergrass, heather and cross-leaved heath over thick, near continuous carpet of bog-mosses.

Moss layer: Near continuous carpet of bog-mosses including papillose, red, soft and magellanic bog-moss. Bog-moss and woolly fringe moss hummocks were present.

Evidence of modification: Some modification recorded including evidence of grazing pressure evident from bite marks on heather and recent piles of dung.

Erosion/ drainage features: None in vicinity.

Pools: Frequent bog pools all around, usually with feather bog-mosses within the pool and bog-moss lawns beside the pools.

Evidence for active peat formation: Area was bog-moss rich and waterlogged. Highly likely to be actively forming peat under certain conditions.

Vegetation Assessment of Proposed Turbine Locations for Beinn Ghlas

Turbine No. 2025	Survey Period	Proposed Turbine No.	OS grid ref	NVC community	Cover of heather (%)	Cover of bog-mosses (%)	Cover of woolly fringe moss (%)	Total vegetation cover	Cover of forbs (%)	Bare peat (%)	Dung present?	Mean bog-moss depth (cm)	Max bog-moss depth (cm)
-	Feb-23	T1	NM 98542 25788	M15/M17a	5	40	30	215	10	1	Y	4	7
T01	Oct-23	T1	NM 98583 25792	M15b	30	30	25	178	6	1	Y	2.2	3
T02	Feb-23	T2	NM 98158 25466	M15/M17a	30	11	0	175	0	0	N	4.7	5
-	Feb-23	T3	NM 97590 25123	H10a:U5	1	7	0	141	4	1	Y	0	0
-	Feb-23	T4	NM 97108 24853	M20	1	32	0	127	3	1	Y	6	10
-	Oct-23	T4	NM 97149 24866	M15c	20	15	20	139	7	15	Y	3.8	18
-	Feb-23	T5	NM 97779 25760	M17a	2	25	10	123	1	5	N	4	6
T03	Oct-23	T5	NM 97687 25687	U5	10	0	0	152	4	0	Y	0.0	0
-	Feb-23	T6	NM 97132 25528	M15/M20	1	21	0	152	6	0	N	4.8	7
T04	Oct-23	T6	NM 97137 25538	U5	2	35	30	166	5	0	Y	4.0	10
-	Feb-23	T7	NM 96599 25633	M15/M20	2	21	0	131	3	0	Y	7.3	19
-	Oct-23	T7	NM 26609 25631	M15b	10	52	0	209	5	0	Y	3.7	5
T05	Feb-23	T8	NM 97918 26321	H10a	50	0	0	199	0	0	Y	0	0
-	Feb-23	T9	NM 97314 26051	M17a	3	56	10	143	0	2	N	7.5	11
T06	Oct-23	T9	NM 97366 25940	H10a	75	0	5	179	3	0	N	0.0	0
T07	Feb-23	T10	NM 97633 26573	H10a	40	22	0	198	0	0	Y	3.7	6
-	Feb-23	T11	NM 97080 26372	H10a:U5	40	0	2	195	0	0	N	0	0
-	Oct-23	T11	NM 97105 26394	M15-M19	40	5	0	163	2	0	Y	2.5	3
-	Oct-23	Example of Near-Natural	NM 98458 26271	M17a	5	97	0	167	8	0	Y	6.8	11

Table 2: Summary of quadrat data collected at proposed turbine locations (February and October 2023) Bold indicates data for final proposed turbine locations.

Vegetation Assessment of Proposed Turbine Locations for Beinn Ghlas

Turbine No. 2025	Survey Period	Proposed turbine location	Transect direction	Vegetation cover (%)	Bare peat cover (%)	Rock cover (%)	Water cover (%)	Drains present (Y/N)	Erosion gullies present (Y/N)
-	Feb-23	T1	N	100	0	0	0	N	N
			S	100	0	0	0	N	N
T01	Oct-23	T1	N	99	0	1	0	N	N
			S	100	0	0	0	N	N
T02	Feb-23	T2	N	99	1	0	0	Y	N
			S	100	0	0	0	N	N
-	Oct-23	T3	N	97	0	2	1	N	N
			S	92	2	0	6	Y	N
-	Feb-23	T4	N	95	2	3	0	Y	N
			S	100	0	0	0	N	N
-	Oct-23	T4	N	96	2	2	0	N	N
			S	100	0	0	0	N	N
-	Feb-23	T5	N	92	0	0	8	N	N
			S	90	0	0	10	N	N
T03	Oct-23	T5	N	90	0	10	0	N	Road
			S	96	0	4	0	N	N
-	Feb-23	T6	N	95	0	5	0	N	N
			S	99	0	1	0	Y	N
T04	Oct-23	T6	N	100	0	0	0	N	N
			S	98	0	2	0	N	N
-	Feb-23	T7	N	100	0	0	0	N	N
			S	99	0	1	0	N	N
-	Oct-23	T7	N	100	0	0	0	N	N
			S	100	0	0	0	N	N
T05	Feb-23	T8	N	100	0	0	0	N	N
			S	90	2	0	8	Y	N
-	Feb-23	T9	N	99	0	0	1	N	N
			S	95	0	1	4	N	N
T06	Oct-23	T9	N	94	0	6	0	N	N
			S	70	0	30	0	N	N
T07	Oct-23	T10	N	100	0	0	0	N	N
			S	100	0	0	0	N	N
-	Feb-23	T10	N	95	0	1	4	N	N
			S	96	2	1	1	Y	N
-	Oct-23	T11	N	100	0	0	0	N	N
			S	100	0	0	0	N	N
-	Oct-23	Near-Natural	N	76	0	0	24	N	N
			S	82	0	0	18	N	N

Table 3: Transect data collected at proposed turbine locations (February 2023).

Turbine No. 2025	Turbine	Easting	Northing	Area (m²)	Mean peat depth (m)
T01	T1	198584	725789	563	0.36
T02	T2	198159	725467	563	0.27
-	T3	197586	725124	563	0.49
-	T4	197149	724866	563	0.17
T03	T5	197686	725693	563	0.14
T04	T6	197136	725538	563	0.56
-	T7	196607	725633	563	0.49
T05	T8	197919	726322	563	0.88
T06	T9	197367	725942	563	0.12
T07	T10	197633	726580	563	0.27
-	T11	197105	726396	563	0.51

Table 4: The mean peat depth for a 25m radius around each proposed turbine location (provided by Fluid Ltd.).

Consideration of Peat Formation at Proposed Turbine Locations

Blanket bog activity is the formation of peat when plant material does not decompose due to water-logged conditions.

The majority of the proposed turbine locations are not situated on blanket bog habitat. This is due to deliberate design alterations to avoid peatland and consequently blanket bog habitat. For example, T5 (T03, 2025) was initially set in a basin of blanket bog that was considered to be in Near-Natural condition and included a high proportion of water in the transects with bog pools and occasional bog-moss hummocks. Consequently, T5 (T03, 2025) was moved from the basin of blanket bog on to some acid grassland beside a turbine base of the current Beinn Ghlas Wind Farm. In addition, T9 (T06, 2025) was originally on the edge of a unit of blanket bog and was considered relatively wet in February 2023. T9 (T06, 2025) was subsequently moved onto a rocky dry heath hillslope to deliberately avoid the blanket bog habitat.

After design alterations, only proposed turbine bases of T2 (T02, 2025) and T11 (removed from design, 2025) are now set in NVC communities that could indicate blanket bog habitat (M15/M17 and M15/M19 respectively). The peat depth data demonstrates that these proposed turbine locations are on peat <0.5m in depth, and so technically were wet heath, although they clearly showed some affinity to blanket bog vegetation (e.g. high proportion of hare's-tail cottongrass). The vegetation data collected from these proposed turbine locations has been considered using the PCA Support Tool which describes if a bog is likely to be actively forming peat (Glenk *et al.* 2017). These considerations are presented in Table 5.

All the other turbine locations were on wet heath (M15b or M15c), acid grassland (U5) or dry heath (H10a) which were on shallow soils and which are not considered likely to be actively peat forming. The mean peat depth for T8 (T05, 2025) was 0.88m, this is due to a basin of deep peat to the west of the dry heath hillock (pictured in Plate 13).

Signs	Blanket bog at Beinn Ghlas Turbine Locations T2 (T02, 2025) and T11 (removed from design, 2025)
Water	No pools were in the vicinity of T2 or T11 within non recorded in these transects. Although one pool was noted beyond the transect of T11 which had been deliberately avoided by the design layout. Surface water was rarely visible in pools. Where water was seen it was often associated with erosion features.
Vegetation	The vegetation as T2 was generally dry with tussocky heather, hare's-tail cottongrass, cross-leaved heath. There were patches of red bog-moss with abundant glittering wood-moss and common haircap. T11 was on an area of M15b/M19 with heather and cottongrasses. The moss layer was dominated by glittering wood-moss. There was a very small amount of red bog-moss recorded. These areas were generally, species poor, with species such as sundew or bog-mosses indicative of peat formation (e.g. magellanic bog-moss) not recorded. Bog-mosses were commonly present but were patchy in their extent. There was c. 11% and 5% bog-moss cover reported for T2 and T11 respectively.
Bare peat	Bare peat patches were occasional present within the vegetation as micro-erosion features. Larger erosion features were occasional with bare peat at the sides and base, but erosion features were not common.
Water quality	Water flowing from the bogs was stained brown.
Wildlife	Specialist blanket bog species, such as dunlin were not recorded within the Study Area, although there were some records of greenshank.
Good/ intermediate/bad	Considered to be in intermediate condition.
Corresponding activity level	Likely to be inactive.

Table 5: Assessment of blanket bog activity using SNH's support tool at proposed Turbine Location T2 (T02, 2025) and T11 (removed from design, 2025).

The blanket bog/wet heath habitats at the proposed turbine locations T2 (T02, 2025) and T11 (removed from design, 2025) were considered to be in an intermediate condition which, according to Glenk and co-workers (2017), is unlikely to be active.

This can be compared with the data collected for an example of Near-Natural blanket bog (Plate 19), which had c. 97% bog-moss cover with open mix of cottongrasses, deergrass and heather. There were multiple bog pools recorded resulting in the c. 24% of the north transect and 18% of the south transect being reported as water. The blanket bog habitats at the example Near-Natural location were considered to be in a good condition which, according to Glenk and co-workers (2017), is likely to be active.

Consideration of Peat Formation across the Development Footprint

Whilst the majority of the proposed turbine locations are not positioned on blanket bog, some of the Development Footprint, including crane pads and track do go over areas of blanket bog habitat. In 2022 a PCA was conducted across Beinn Ghlas. The PCA provided a map of the Peatland habitats giving the categories Near-Natural, Lightly Modified, Modified, Modified and Drained and Actively Eroding. The PCA Survey Report (Technical Appendix 6.3) stated that:

The condition and likely activity of the blanket bog in the Study Area was assessed using the PCA support tool. The blanket bog in, or approaching, Near-Natural condition was considered

to be in a 'good' condition and, given the evidence, was considered likely to be actively forming peat.

The blanket bog in a Lightly Modified or Modified or Recovering Erosion condition was considered to be in intermediate condition with areas of 'bad' condition where there was considered to be areas Actively Eroding.

Using the evidence provided here, and the PCA Support Tool, the blanket bog in a Lightly Modified, Modified, Recovering Erosion or Actively Eroding condition could be judged to have stopped being active and so may be a carbon source, rather than a carbon sink, in its current condition. However, this is a broad-brush, subjective tool, and does not take into account subtleties and variation within the blanket bog. The blanket bog, which was Modified to the point of being dominated by large tussocks of hare's-tail cottongrass or purple moor-grass or heather was considered unlikely to be actively forming peat. Likewise, the Actively Eroding areas were considered unlikely to be actively peat forming. But, given the wet, warm climate in the westerly location of the Study Area, and the reasonable quality of at least some of the blanket bog which was Lightly Modified and at the low surface in the Recovering Erosion category there is a degree of uncertainty to the peat forming activity level. These areas may have patches e.g. around pools or areas that retained some wetness with bog-mosses present that were partially active under some conditions (Massey, 2022).

Following this advice, all of the blanket bog considered to be in or approaching a Near-Natural condition was deliberately avoided by the proposed Development Footprint and included alterations in the design to avoid it.

The proposed Development Footprint was walked in February and October 2023 giving consideration to the blanket bog habitat that would be likely impacted by the Development Footprint (Appendix 1: Target Notes). Peatland habitat points of interest such as bog pools and hummock of bog-mosses were particularly looked out for and commented upon where noted. The design of the proposed track was subsequently altered to take account of these comments.

As a consequence, and the proposed Development Footprint has deliberately avoided blanket bog habitat that is considered in Near-Natural condition, and deliberately avoided areas where there were large bog pools, or pools with bog-moss lawns in accordance with best practice guidance (e.g. Target Note 3; Annex 2). Whilst some small, isolated pools may be lost (e.g. Target Note 10; Annex 2), these were generally not considered indicative of peat formation but rather related to small erosion features. Consequently, in line with the PCA Survey Report (Technical Appendix 6.3), the proposed Development Footprint is considered to be impacted peatland habitat that is either in an Intermediate condition or Bad condition (Glenk *et al.* 2017), and unlikely to be actively forming peat.

Lindsay and co-workers (2014a-c) give details on peatland condition and activity and describe that much of the blanket bog in the UK is likely to be in a degraded state with weak or very limited peat formation activity. Given the lack of surface water-logged features, and the conditions described, overall, it is considered that the blanket bog within the Development Footprint was likely to be largely inactive. However, this does not preclude that limited peat formation may occur at some locations under some circumstances.

Consideration of SSSI selection criteria

Following NatureScot's new guidance (2023), the data collected from the proposed turbine locations and the proposed Development Footprint has been considered in relation to key aspects of the SSSI selection criteria (JNCC, 1994) in Table 6.

In summary, the blanket bog habitat within the Development Footprint does not satisfy SSSI selection criteria. It does meet some aspects of the selection criteria, for example, the blanket bog does extend to more than 25ha in some areas, although the extent is quite variable and usually limited to being in relatively small, disconnected basins due to the complex topography. Peat cuttings, erosion features and drains were not a particularly common feature around the Development Footprint, but woodland and scrub invasion was frequently recorded. The Development Footprint is also lacking in most of the species that are mentioned in the SSSI selection criteria, and it is considered that there is a lack of hummocks and hollows or natural surface patterns.

SSSI selection criteria (paragraph number)	Information from the Development Footprint at Beinn Ghlas	Criteria met?
<p>3.4 To help prioritise sites above the minimum standards of size and peat formation capability (section 3.5), there are certain general features which indicate the most natural sites, which may be assumed to have the greatest quality.</p> <ol style="list-style-type: none"> 1. Parts of the original lagg fen still present (in raised bogs particularly); 2. In raised bogs, a high proportion of the original central dome sill physically intact; 3. Low frequency of drains and peat-cuttings; 4. Presence of plant species indicating peat formation capability and/or lack of disturbance, notably <i>Sphagnum pulchrum</i>, <i>S. fuscum</i>, <i>S.imbricatum</i>, <i>S. balticum</i>, <i>S. magellanicum</i>, <i>Dicranum bergeri</i>, <i>Rhynchospora alba</i>, <i>R. fusca</i>, <i>Drosera anglica</i>, <i>Carex limosa</i>, <i>C.magellanica</i> (= <i>C. paupercula</i>) and locally <i>Schoenus nigricans</i>. Other component species are described in Annex 1. 5. An area of natural surface pattern (as defined in 3.1.4) within the mire expanse; and 6. Absence of invasion by woodland or scrub, though some high-quality sites may contain trees and scrub with a bog bryophyte floor. <p>There should be a presumption toward selection of any site exhibiting two or more of these characteristics. Furthermore, this presumption should apply to all sites above the minimum standards of size and peat formation capability (section 3.5).</p>	<p>None of the blanket bog resource within the Development Footprint was considered to be Near-Natural in terms of its condition, areas which were in a potentially Near-Natural condition and original had proposed infrastructure on or near them were moved to avoid this sensitive habitat.</p> <ol style="list-style-type: none"> 1. N/A – No lag fen present within the Development Footprint or the wider Study Area. 2. N/A – No raised bog within the Development Footprint or the wider Study Area. 3. There was no evidence of recent peat cuttings within the Development Footprint or the wider Study Area. Drains were recorded in some areas, e.g. near T2 (T02, 2025), T3 (removed from design, 2025) and T4 (removed from design, 2025) and small erosion features were commonly recorded e.g. near T11 (removed from design, 2025). 4. <i>S. magellanicum</i> was not recorded near the Development Footprint. It was recorded near original T5 (February 2023, T03, 2025), but this subsequently was moved to deliberately avoid this sensitive area. None of the other species mentioned were recorded within the Development Footprint or in the wider Study Area. 5. This criteria refers to a series of hummocks and pools, or hummocks and hollows within a site. The hummock-hollow structure within the Development Footprint was considered to be absent or poorly developed. 6. Invasion of self-sown sitka spruce was recorded in several locations around the Development Footprint and in the wider Study Area. 	<p>None of the blanket bog within the Development Footprint was considered to be Near-Natural using the PCA.</p> <p>The blanket bog characteristics within the Development Footprint does not closely match any two of these specified criteria.</p>
<p>3.5 Raised bogs larger than 10ha and blanket bogs larger than 25ha should be considered for SSSI status in all parts of Britain if capable of forming peat. Smaller raised bog sites of high quality may be selected in Areas of Search where few or no larger sites remain (Bold is my emphasis).</p>	<p>There are two main relevant considerations for this selection criteria (note, raised bog habitat is not present so irrelevant in the Beinn Ghlas context). Firstly, that the blanket bog should be >25ha and secondly that it should be actively peat forming.</p> <p>There was more than 25ha of blanket bog within the Development Footprint and more widely in the Study Area. However, much of the bog</p>	<p>The blanket bog within the Development Footprint is greater than 25ha in extent.</p>

SSSI selection criteria (paragraph number)	Information from the Development Footprint at Beinn Ghlas	Criteria met?
	<p>habitat around the Development Footprint was found in disconnected and relatively small basins that were related to the complex topography.</p> <p>The likelihood of the blanket bog being active has been considered above. It was determined that the blanket bog within the Development Footprint was of Intermediate or Bad condition and largely inactive, with some activity possible in limited, wetter locations. Peatland Condition Assessment Support Tool describes peatland in an 'Intermediation' condition as:</p> <p><i>"Peatlands in Intermediate condition have stopped growing. No additional peat layers are added. Instead, peat layers gradually shrink, releasing a moderate amount of carbon to the atmosphere, where it contributes to climate change".</i></p> <p>Some areas were clearly actively eroding. Although, it should be noted that some of the actively eroding peatland had some re-vegetation.</p>	<p>The blanket bog resource within the Development Footprint is considered to be in an Intermediate condition.</p> <p>The Peatland Action support tool and information from other sources (i.e. Lindsay <i>et al.</i>, 2014b) indicates that most of the blanket bog resource within the Development Footprint is not likely to be forming peat but is likely to be currently inactive (or very locally, occasionally active, under certain conditions).</p>
6.1 Blanket bog is a type which should be represented by the selection of exemplary sites showing the full range of ecological variation.	<p>Some of the peatland habitats in the wider Study Area were considered to be in or approaching Near-Natural condition and may have been reaching 'exemplary', but the formation of these areas may have, in some instances, been influenced/supported by the current wind farm infrastructure impeding drainage. However, all of the blanket bog in or approaching Near-Natural condition was deliberately avoided by the design layout.</p> <p>The blanket bog habitat within the Development Footprint was considered Modified with some areas clearly impacted by a long history of management resulting in tussocky formation of hare's-tail cottongrass or purple moor-grass.</p>	<p>The blanket bog resource within the Development Footprint is not considered to be an exemplary example of this habitat type with evidence long-term modification through grazing impacts.</p>
6.5 (part 2) Blanket bog mesotopes showing any of the following microtopic and vegetation features are near-natural and of high quality. Subject to the minimum standard so size and peat formation capability set out	<p>It should be noted that the microforms referred to in this section are not clearly represented within the NVC. The NVC provides <i>"a summary of plant communities at the site level, but its vegetation units are not intended to be used in defining the intricate finer scale mosaics of patterned surfaces"</i> (Lindsay, 1995). Microforms were considered in more</p>	<p>None of these criteria were met within the Development Footprint at Beinn Ghlas.</p>

SSSI selection criteria (paragraph number)	Information from the Development Footprint at Beinn Ghlas	Criteria met?
<p>above, there should be a presumption towards the selection of sites which contain:</p> <ol style="list-style-type: none"> 1. An abundance of <i>Sphagnum</i>-rich ridges (T1) 2. An abundance of <i>Sphagnum</i>-rich ridges (T2) 3. Ridges of <i>Sphagnum</i> - <i>Betula nana</i> (T2) 4. Bryophyte hummocks of <i>Sphagnum fuscum</i> or <i>S. imbricatum</i> (T3/2) 5. Peat mounds (T5) 6. Hollows of <i>Sphagnum</i> or bare peat-<i>Rhynchospora fusca</i> (A2). 	<p>detail during the recent field visit in February and October 2023 as well as during the PCA survey in 2022.</p> <ol style="list-style-type: none"> 1. An abundance of <i>Sphagnum</i> rich ridges (T1) were not recorded within the Development Footprint. Areas of the blanket bog considered to be in or approaching a Near-Natural condition may have had area that would be considered having an abundance of <i>Sphagnum</i> rich ridges (T1) but these were deliberately avoided by the design. 2. An abundance of <i>Sphagnum</i> rich ridges (T2) were not recorded within the Development Footprint. There were occasionally hummocks of red bog-moss and woolly fringe moss. Areas of the blanket bog considered to be in or approaching a Near-Natural condition may have had area that would be considered having an abundance of <i>Sphagnum</i> rich ridges (T2) but these were deliberately avoided by the design. 3. <i>Betula nana</i> was not recorded within the Development Footprint or the wider Study Area. 4. No <i>S. imbricatum</i> or <i>S. fuscum</i> was recorded within the Development Footprint or in the wider Study Area. 5. Not recorded within the Development Footprint or in the wider Study Area. 6. Not recorded within the Development Footprint or in the wider Study Area. 	

Table 6: Assessment of the blanket bog within the Development Footprint in relation to the SSSI selection criteria.

NatureScot's Site Visit 'Template'

NatureScot's peatland guidance provides an excel spreadsheet entitled Site visit template for the assessment of peatland on proposed development sites'. This 'Site Visit Template' gives spurious binary 'yes/no' questions relating to peatland habitats. It has been filled in based on the evidence provided in this document. However, it should be noted that questions such as "*Blanket bog support vegetation capable of peat forming? – yes/no*" are rather more complex than a 'yes/no' answer can provide as peat formation is based on a variety of conditions including species composition, water table, surface water conditions, grazing pressure and climate; it can't simply be assessed in such a binary manner. In addition, some of the so-called 'indicator species' that NatureScot base part of their template assessment on, such as rusty bog-moss, are not necessarily only found in near-natural conditions and so their use in this context is also erroneous (e.g. Massey, 2022). However, this template has been filled in for completeness and is shown in Table 6, but because of its substantial limitations is considered to be of only limited value and this document provides the basis for a transparent, robust and evidence-based assessment.

The NatureScot template suggests an assessment of peatland habitat within 250m of the Development Footprint. Clearly, in this document and in the PCA survey report (2022) blanket bog habitats in more than 250m of the proposed Development Footprint have been considered. However, given the complex terrain and the clear and detailed effort put in to avoiding and minimising impact on blanket bog habitat, particularly that which is considered to be in or approaching a Near-Natural condition, a more focussed approach has been taken. The Development Footprint and condition of the blanket bog habitat should also be considered in the context of their already being a wind farm present, which demonstrates that Near-Natural bog and wind farms can co-exist at this site, given the habitats' proximity to existing infrastructure.

In Table 6 the peat depth measure is provided at the average for the 25m² turbine area, rather than a single measurement. All but one of the turbine locations have an average peat depth less than 0.5m, which are termed 'peaty soils' rather than deep peat. T8 (T05, 2025) gives a peat depth of 0.88m, but the NVC community is H10a. This is due to a deep basin of peat to the west of the hillslope T8 (T05, 2025) is situated upon.

Vegetation Assessment of Proposed Turbine Locations for Beinn Ghlas

ASSESSMENT CRITERIA - Within a 250m of development footprint																		
				Peat Depth (cm)		Criteria 1 Raised bog	Criteria 2 Montane bog	Criteria 3 Blanket bog										
Beinn Ghlas Wind Farm				as shown in ES	as measured during NaturScot site visit	Raised bog present supporting typical bog vegetation	Montane bog present supporting typical bog vegetation	Within a continuous unit of blanket bog (>25ha)	Blanket bog support vegetation capable of peat forming	Few drains/pea t cutting?	Peat forming sp/flow disurbanc e?	Natural surface pattern?	absence of invasion by woodland/ scrub?	Abundant <i>Sphag</i> - rich ridges	<i>Sphagnum</i> - <i>Etanana</i> ridges	<i>S.fuscum</i> or <i>S.austini</i> hummock s?	Peat Mounds?	<i>Rhynchos</i> <i>fusca</i> ?
						<i>Yes is good Likely</i>	<i>Yes is good Possible national</i>	<i>Yes is good</i>	<i>Yes is good</i>	<i>Yes is good</i>				<i>Rare features</i> <i>Yes is very good. No is neutral. One or more yes = possible national interest</i>				
Infrastructure assessed label	Easting	Northing	NVC	depth > 50 cm = carbon rich soil		No -> check for other type of bog	No -> check for other type of bog	No -> advise on mitigation measures		No -> check rare features				No -> advise on mitigation measures				
e.g. Turbine 1	123456	654321	M19	85	100	No	No	Yes	Yes	No	Yes	No	Yes	Yes	No	No	No	No
e.g. Track section X	654321	123456	M15	45	40	No	No	No	Yes	No	No	No	Yes	No	No	No	No	No
e.g. borrow pit A	987561	125367	H12	35	30	No	No	No	No	No	No	No	No	No	No	No	No	No
Turbine 1	198591	725784	M15b	0.36		No	No	No	No (see further details)	Y	No	No	N (see Target Notes)	No	No	No	No	No
Turbine 2	198161	725461	M15/M17a	0.27		No	No	Yes	Unlikely (see further details)	N	No	No	Y	No	No	No	No	No
Turbine 3	197589	725125	H10a/U5	0.49		No	No	No	No (see further details)	N	No	No	N (see Plate 4)	No	No	No	No	No
Turbine 4	197143	724865	M15c	0.17		No	No	No	No (see further details)	Y	No	No	Y	No	No	No	No	No
Turbine 5	197692	725696	U5	0.14		No	No	No	No (see further details)	Y	No	No	Y	No	No	No	No	No
Turbine 6	197131	725536	U5	0.56		No	No	No	No (see further details)	Y	No	No	N (see Target Notes)	No	No	No	No	No
Turbine 7	196603	725635	M15b	0.49		No	No	No	No (see further details)	Y	No	No	N (see Target Notes)	No	No	No	No	No
Turbine 8	197915	726320	H10a	0.88		No	No	No	No (see further details)	Y	No	No	Y	No	No	No	No	No
Turbine 9	197366	725947	H10a	0.12		No	No	No	No (see further details)	Y	No	No	Y	No	No	No	No	No
Turbine 10	197630	726581	H10a	0.27		No	No	No	No (see further details)	Y	No	No	Y	No	No	No	No	No
Turbine 11	197108	726399	M15/M19	0.51		No	No	No	Unlikely (see further details)	Y (but erosion feature nearby)	No	No	Y	No	No	No	No	No

Table 6: Extract from NatureScot's Site visit template for the assessment of peatland on proposed development sites for Beinn Ghlas Wind Farm Turbine Locations.

Discussion and Conclusion

The new NatureScot guidance (2023) identifies that NatureScot may object to proposed wind farm developments if the peatland habitats are considered, by NatureScot, to meet SSSI selection criteria and be of '*high quality and in a near-natural condition*'. However, it should be noted that "*the majority of the UK peatbog habitat is currently in a state of degradation or recovery. Very little is in a state which can be regarded as 'near pristine'. Consequently the likelihood is that, when looking at a peat bog system, it will be a system which is in degradation state ... This should be taken as the default position until closer examination is able to prove otherwise*" (Lindsay *et al.* 2014b).

NatureScot provide a binary tick box exercise for consideration (by their staff) for each turbine location in the form of a 'site visit template' and an excel spreadsheet. However, there is no accompanying transparent, robust and objective approach provided for staff to follow to allow the binary tick box exercised to be completed. Consequently, this vegetation assessment of the proposed turbine locations at Beinn Ghlas has been provided, using a transparent and robust approach with the use of specially targeted quadrat and transect data, to allow assessment of whether the blanket bog within the Development Footprint is likely to be active, meets the SSSI selection criteria and consequently whether it is considered on the basis of evidence to be of the highest quality or not.

The proposed Development Footprint and condition of the blanket bog habitat should be considered in the context of there already being a wind farm present within the proposed Development Boundary. Some of the Near-Natural blanket bog, identified in the PCA Survey Report (Technical Appendix 6.3), is with a few metres of the current Beinn Ghlas Wind Farm. This clearly demonstrates that Near-Natural bog and wind farms infrastructure can co-exist at Beinn Ghlas.

All the proposed turbine locations were visited and the vegetation present was systematically reported on during 2023, providing up to date, detailed and robust empirical data for consideration and assessment. Due to careful design, the vegetation at the turbine locations were typically not blanket bog or peatland habitat but were typically either acid grassland, dry heath or wet heath. Where the original proposed Development Footprint (Feb 2023) coincided with better quality blanket bog habitat, the proposed Development Footprint was deliberately relocated to avoid these sensitive habitat types substantially reducing the potentially impact on the blanket bog habitat. Where the Development Footprint remains within blanket bog habitat the bog-moss layer was patchy with only occasional, poorly developed hummocks. Bog pools were not a common feature and where found were small and isolated.

Impacts from deer grazing were noted throughout the vegetation, including hoof prints, dung and deer tracks. Deer have clearly had, and continue to have, a detrimental impact on condition of the blanket bog resource at Beinn Ghlas.

A total of two turbines locations were recorded on NVC communities indicative of blanket bog (T2 (T02, 2025) and T11 (removed from design 2025)). The peat probing demonstrated that they were on shallow soils (Table 4). The vegetation was a tussocky form of M15/M17a or M15/M19. Bog-mosses were limited in extent and surface water and bog pools were not a feature of these areas. The blanket bog at the turbine locations was not considered likely to be normally peat forming.

Tussocky vegetation of hare's-tail cottongrass and purple moor-grass was common in the Development Footprint, this vegetation is indicative of a long history of grazing impacts and possibly historic burning.

Given the lack of surface water-logging features, and the conditions described, overall, it is considered that the blanket bog at the proposed Development Footprint at Beinn Ghlas was likely to be largely inactive. However, this does not preclude that limited peat formation may occur at some locations under some circumstances.

As shown in Table 5 the blanket bog within the Development Footprint demonstrably did not meet the SSSI selection criteria and so is not considered to be of the highest quality. This assessment is also supported by the Phase 1 and NVC survey and the detailed PCA undertaken more widely across the Study Area (Technical Appendix 6.2 and Technical Appendix 6.3).

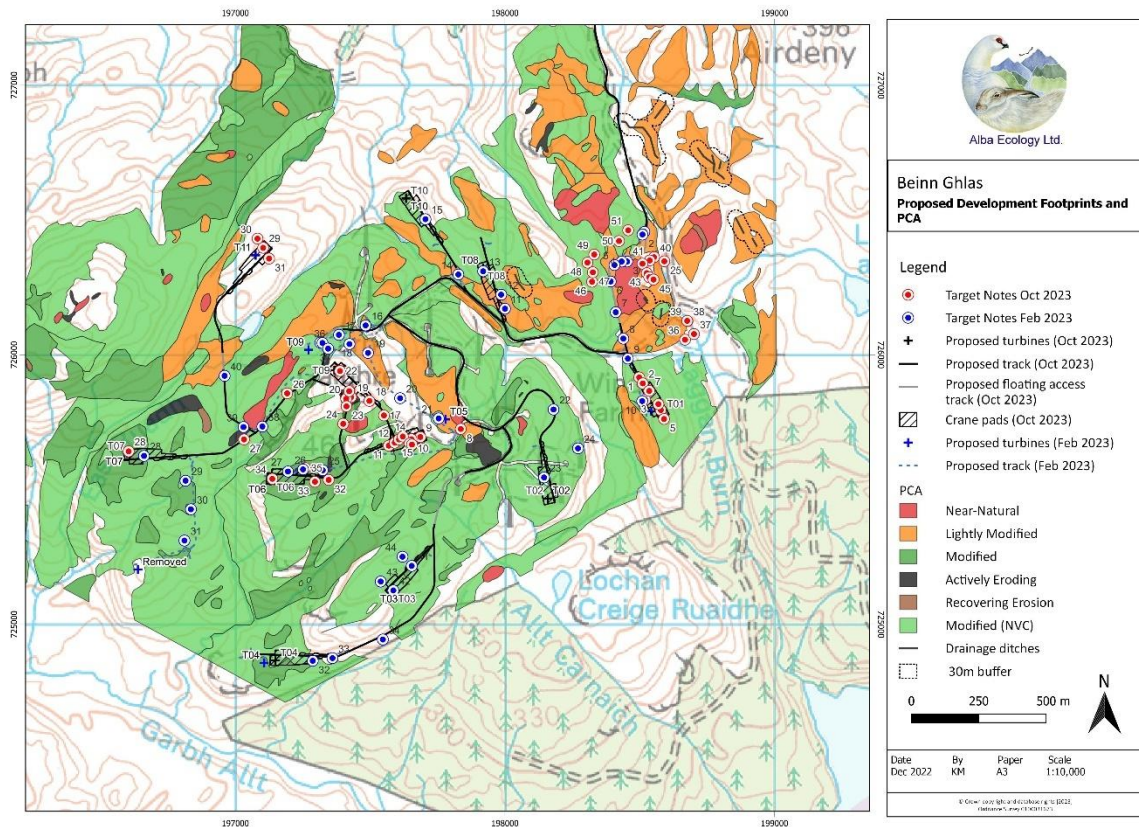
In accordance with best practice guidance and recent policy advancements such as NPF4, this document clearly demonstrates where the design layout has changed to avoid preventable detrimental impacts on blanket bog habitats. The amended design iteration walked in October 2023 was much better from a blanket bog habitats perspective than the earlier February 2023 version and addressed most of the earlier recommendations made. Occasionally changes were not possible due to other constraints, and these are highlighted when detrimental impacts are considered unavoidable.

It should be noted that the localised movement of proposed repowering infrastructure through micro-siting would occur where possible for several locations with sensitive habitats nearby. This micro-siting is considered effective embedded mitigation and will be led/overseen by a competent and experienced Ecological Clerks of Work (ECoW) who understands the habitat sensitivities present. If the project ECoW does not have the experience to do this, then an experienced habitats surveyor should be brought in for support when working in these particular areas as necessary.

References

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- Lindsay, R., Birnie, R. and Clough, J. 2014a. *IUCN UK Committee Peatland Programme Briefing Note No.1 Peat Bog Ecosystems: Key Definitions*. IUCN UK Peatland Programme.
- Lindsay, R., Birnie, R. and Clough, J. 2014b. *IUCN UK Committee Peatland Programme Briefing Note No.2 Peat Bog Ecosystems: Structure, Form, State and Condition*. IUCN UK Peatland Programme.
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- Massey, K. 2022. *Is rusty bog-moss and indicator of undisturbed blanket bog?* In Practice CIEEM, Issue 117, September 2022.
- NatureScot. 2023. *Advising on carbon-rich soils, deep peat and priority peatland habitat in development management – Guidance*. Available at: <https://www.nature.scot/doc/advising-peatland-carbon-rich-soils-and-priority-peatland-habitats-development-management>.
- Peatland Action, 2016. *Peatland Condition Assessment Guide*. <https://www.nature.scot/sites/default/files/2017-10/Guidance-Peatland-Action-Peatland-Condition-Assessment-Guide-A1916874.pdf>.






Figure 2: Target Note Locations












Annex 1: Target Notes - February 2023





Target Notes from February 2023. Note many of the comments to move/avoid blanket bog features were subsequently acted upon.





TG	Grid reference	Comment	Photo1
1	NM 98517 26456	<p>Proposed track to T1. Potential GWDTE M11 flush beside route of track. It was c. 5m x 5m in size with common yellow sedge over open stones. Avoid. Advice required from hydrologist.</p> <p>Track was moved based these recommendations.</p>	






2	NM 98510 26446	Track to T1 appears to follow higher ground on slope and so avoids the blanket bog in the basin. Tussocky hare's-tail cottongrass. No action required. Demonstrates avoidance of blanket bog.	
3	NM 98453 26346	The proposed track to T1 would cross a wet section of blanket bog at this location. There were no pools or hummocks and hollows, but it is very wet and it is likely that deep peat is present. Recommend the track be moved c. 15m north where there was a small rise which was drier (2 nd photo). Track was realigned based on this information.	 
4	NM 98433 26346	Here track to T1 goes on slightly drier, raised ground. No action required.	 





5	NM 98406 26333	Small bog pools. Avoid if possible through micro-siting at construction stage.	
6	NM 98392 26272	Track runs along very small, un-mapped and un-named watercourse (possibly ephemeral). Good location as it is not in the wet blanket bog but further consideration of the tiny watercourse is recommended– advice required from hydrologist.	
7	NM 98411 26158	View of small, un-mapped and un-named watercourse (possibly ephemeral). It was c. 30cm wide, flowing south. Vegetation is very thin (c. 1m) line of M6a. Advice required from hydrologist.	
8	NM 98439 26060	Track goes onto slope of dry heath which extends to the existing track. No action required.	
9	NM 98456 25986	View back along the valley. No action required.	





10	NM 98509 25828	<p>Bog pools at crane pad T1. Small pocket of likely deep peat with bog pools. C. 10m x 20m in size. Some hummock-hollow structures. Surrounded by wet heath on likely shallow soils. The bog pools were in a small basin. Recommend the crane pad be moved.</p> <p>Crane pad was moved based on this information.</p>	
11	NM 98000 26171	<p>Track to T8 goes across blanket bog. Very tussocky vegetation. Quite a bit of a red bog-moss and shaggy moss. No pools, not wet underfoot. No hummocks.</p>	
12	NM 97986 26223	<p>Track to T8. Photo looking south along line of proposed track to existing track.</p>	
13	NM 97919 26310	<p>Crane pad of T8. Several pools likely associated with deep peat in small basin and some small erosion features. Patches of bog-mosses and carpets around pools. Avoid if at all possible. Erosion features c. 50cm deep.</p>	





14	NM 97827 26298	Track to T10. On blanket bog vegetation (likely deep peat). Wet, patches of bog-moss. Further consideration of this section recommended. Track floated to minimise impacts.	
15	NM 97705 26503	Crane pad to T10 mostly over dry heath and acid grassland on rocky outcrops. Between outcrops there was a very small section with likely deep peat and bog vegetation (small and modified). Likely can't avoid. The Turbine location seemed suitable from a habitat perspective. No action required.	
16	NM 97483 26109	Track to T9. Could the turning circle be moved out of this hollow of deep peat (e.g. east)? Further consideration of this section recommended. Track minimised and rerouted around this location based on this recommendation.	
17	NM 97384 26074	Crane pad goes on a rise of dry heath between two areas of blanket bog. Good position at this location. No action required.	

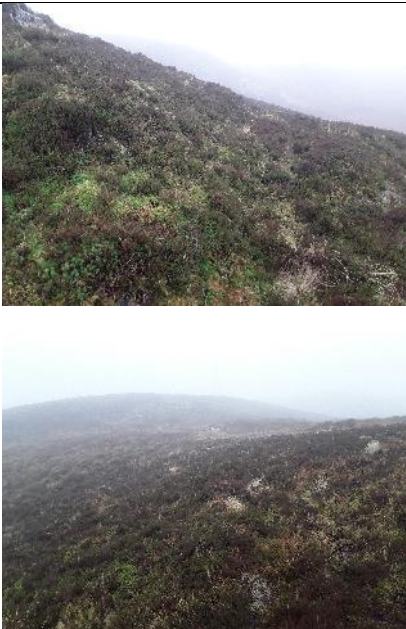



18	NM 97423 26040	Track crosses this basin of blanket bog which was in a Lightly Modified condition twice. Could this be minimised? Further consideration of this section recommended. Track minimised and rerouted around this location.	
19	NM 97492 26007	Could track move off this area of Lightly Modified bog? Further consideration of this section recommended. T5 moved based on this recommendation.	
20	NM 97611 25839	View to T5. T5 is positioned in a basin of Near-Natural blanket bog. Further consideration of this section recommended. T5 moved based on this recommendation.	
21	NM 97754 25764	This was a drier position (likely shallow soils). Could T6 be moved here or on rise of dry heath and acid grassland to the southwest? Further consideration of this section recommended. T5 moved based on this recommendation.	



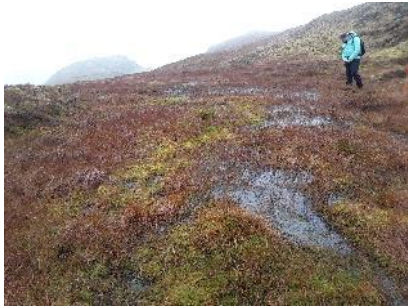


22	NM 98180 25797	Track to T2. Wet heath, shallow soils. Good location. No action required.	
23	NM 98145 25545	Track to T2. Some c. 1m deep erosion features here. Pool associated with feature. Avoid if possible (micro-siting).	
24	NM 98271 25653	M11 Flush east of T2. C. 2m wide, 5m long. Advice required from hydrologist.	
25	NM 97324 25572	Turning circle of T6 with tussocky hare's-tail cottongrass dominated this area. No action required.	
26	NM 97251 25575	Area of Active Erosion, with pools at base. Erosion features c. 1.2m deep with pools at base. Pool fairly bog-moss rich for ca 5m. Avoid if possible. Further consideration of this section recommended. T6 was moved based on this recommendation.	



			
27	NM 97195 25567	Crane pad T6. M11 flush goes towards turbine location. C. 3m wide, 10m long. Advice required from hydrologist. T6 was moved based on this recommendation.	
28	NM 96661 25625	Sitka spruce, c. 0.3m high in area of T7 crane pad. No action required.	
29	NM 96815 25533	Track between T7 and the removed T5. Crosses seepage line of bog vegetation. No action required. Original T5 was removed.	

30	NM 96835 25427	Small bog pool. Avoid if possible through micro-siting at the construction stage. Original T5 was removed.	
31	NM 96811 25311	M11 flush. C. 5m wide 10 m long. Advice required from hydrologist. Original T5 was removed.	
32	NM 97287 24865	M11 Flush by track to T4. C. 2m wide, 10m long. Advice required from hydrologist.	
33	NM 97360 24875	View from track between T4 and T3. Potentially deep peat under coniferous plantation. No action required.	



34	NM 97547 24944	M11 flush. C. 10m, wide 50m long. Advice required from hydrologist.	 
35	NM 97315 26045	<p>Small area of dry heath at this location which would avoid the blanket bog vegetation. Could T9 be moved to this location? Further consideration required.</p> <p>T9 was moved based these recommendations.</p>	
36	NM 97323 26044	<p>M11 flush near T9. C. 1m wide, 20m long. Advice required from hydrologist.</p> <p>T9 was moved based these recommendations.</p>	






37	NM 97344 26023	<p>Top of large dry heath outcrop. Suitable from a habitat point of view for T9. Could T9 be moved here? Further consideration required.</p> <p>T9 was moved based these recommendations.</p>	
38	NM 97100 25734	<p>Track to T11. Head of watercourse. Wet, M29 pool with bog pond weed. C. 5m long. Advice required from hydrologist.</p>	
39	NM 97030 25732	<p>Old erosion features with pools at base. Preferable location than crossing basin of blanket bog. No action required.</p>	
40	NM 96960 25922	<p>Track to T11. Large basin of blanket bog linked to lochan. Further consideration required.</p> <p>Track floated based on this advice.</p>	






			
41	NM 97654 25217	Bog pools and bog-moss lawns in crane pad of T3. C. 15m x 3m. Avoid if possible through micro-siting.	 
42	NM 97586 25126	<p>Could T3 location be moved c. 75m onto the ridge in the north? Further consideration required.</p> <p>Consideration was given to moving T3, but other constraints prevented it from being moved.</p>	 






43	NM 97539 25159	Shallow soils, away from pools onto ridge at this location. Could T3 be moved to this location? Further consideration required. Consideration was given to moving T3, but other constraints prevented it from being moved.	
44	NM 97620 25251	Flat area, potentially good location from a habitat perspective. Further consideration required. Consideration was given to moving T3, but other constraints prevented it from being moved.	






Annex 2: Target Notes - October 2023






No	Grid ref	Note	Photo
1	NM 98498 25916	Crane pad for proposed T1. Pools largely in shallow soils (<10cm deep). Some feathery bog-moss, but largely common cottongrass dominated M3 (note there was recent heavy rain, so ground potentially appeared unusually wet).	
2	NM 98511 25894	Frequent sheep dung in deer fenced area.	



No	Grid ref	Note	Photo
3	NM 98520 25833	These deep bog pools surrounded by lawns of bog-mosses have been deliberately avoided by the design, following best practice.	
4	NM 98578 25795	View from proposed T1 looking across the proposed crane pad which deliberately avoids bog pools, following best practice.	
5	NM 98590 25762	Small and isolated bog pool beyond the T1 crane pad (so it will be avoided). It was c. 4m x 2m in size. Sitka spruce beside it (to be removed).	
6	NM 98569 25817	Large patches of sheep/deer dung were very common around proposed T1 (within deer fenced area).	
7	NM 98535 25866	Crane pad for proposed T1 goes through area planted with sitka spruce.	






No	Grid ref	Note	Photo
8	NM 97836 25725	This area with Near-Natural blanket bog is now entirely and deliberately avoided by the design, following best practice.	
9	NM 97686 25695	Proposed T5 location is positioned on the hard standing of a current turbine, with U5 acid grassland. The proposed crane pad crosses towards the turbine in the distance. Some sections of blanket bog habitat, adjacent to the current track, would be unavoidably impacted (given other constraints).	
10	NM 97653 25687	Proposed T5 crane pad. Small pool, associated with base of small erosion feature. Near current infrastructure. Erosion feature was c. 0.7m deep.	
11	NM 97569 25663	Dry heath and wet heath on hillock within proposed T5 crane pad. Photo looking back across section of blanket bog. Note small erosion feature.	
12	NM 97591 25674	Proposed T5 crane pad. The blanket bog at this location is species poor and tussocky M17 with abundant hare's-tail cottongrass, common cottongrass and cross-leaved heath. Bog-mosses were patchy.	
13	NM 97607 25686	Proposed T5 crane pad. Occasional very small bog pools present. A pool at	No photo.






No	Grid ref	Note	Photo
		this location was c. 0.5m x 0.30m in size and isolated.	
14	NM 97621 25697	Proposed T5 crane pad. Small erosion feature c. 0.7m deep. There was sheep wool around the erosion feature showing that sheep regularly use it as shelter.	
15	NM 97647 25671	Proposed T5 crane pad. Small erosion feature with a block of broken off peat. The feature was c. 2m long by 0.7m deep.	
16	NM 97655 25667	Proposed T5 crane pad. Another small erosion feature with wool hanging off the sides demonstrating regular sheep use the feature for shelter. The erosion feature was at a transition from blanket bog to wet heath. It was c. 5m long and 0.7m deep.	
17	NM 97551 25775	Track between proposed T5 and T9. Small area of tussocky and modified bog habitat dominated by hare's-tail cottongrass with patches of heather and red bog-moss.	
18	NM 97497 25829	View of proposed crane pad area for proposed T9 on undulating terrain with mostly dry and wet heath.	






No	Grid ref	Note	Photo
19	NM 97429 25843	Shallow pool with a stoney substrate. In area with multiple erosion features that were c. 1.5m deep. Avoided by design. Potentially could use this area to infill/restore with peat won from construction elsewhere.	
20	NM 97411 25837	Erosion features (Actively Eroding) were c. 1.5m deep with bare peat at the base.	
21	NM 97422 25865	View of area with erosion features (outwith the proposed design layout).	
22	NM 97388 25940	Proposed T9 was located on top of a hill of dry heath. Entirely and deliberately avoids blanket bog in the valley below (Photo 1), following best practice. Photo 2 shows hill summit and erosion features in distance.	 





No	Grid ref	Note	Photo
23	NM 97412 25809	Beside proposed track to proposed T6. Bog pool c. 2m x 8m. Associated with water forming as base of erosion features.	
24	NM 97400 25744	Track avoids wet hollow of blanket bog by staying on slopes, following best practice.	
25	NM 98591 26347	Note how the fenced area by Laggan Burn has eared willow and deep, tall heather present. This vegetation recovery is due to a reduction in grazing pressure.	
26	NM 97192 25857	Track to proposed T7 goes along acid grassland on slope. Photo looking back towards proposed T9.	
27	NM 97032 25686	Erosion features at this location could be infilled with peat won from the construction.	

No	Grid ref	Note	Photo
28	NM 96604 25642	Proposed T7 location. On hillock of wet heath (M15b). Deliberately avoids small bowls of bog habitat, following best practice.	
29	NM 97103 26397	Proposed T11 location. On complex of wet heath and patches of blanket bog (M15b and M19).	
30	NM 97082 26431	Bog pool has been deliberately avoided by the design. It was c. 2m x 6m, with a bog-moss lawn.	
31	NM 97125 26357	Proposed T11 crane pad. There was a c. 1m deep, 25m long erosion feature.	
32	NM 97346 25536	Proposed T6 crane pad. Tussocky hare's-tail cottongrass (M20) on what appeared to be generally shallow soils (c. <1m).	

No	Grid ref	Note	Photo
33	NM 97295 25529	Proposed T6 crane pad. Possible heather beetle damage on heather in tussocky hare's-tail cottongrass. Species poor M20.	
34	NM 97137 25540	Proposed T6 location on acid grassland (U5) hill slope.	
35	NM 97259 25580	Wet area of blanket bog avoided by design, following best practice.	
36	NM 98668 26056	Proposed location of extended control building. U4 acid grassland and soft rush dominated MG10 around current control building.	
37	NM 98701 26077	Proposed location of extended control building. U4 acid grassland and soft rush dominated MG10 with patches of eared willow around current control building.	

No	Grid ref	Note	Photo
38	NM 98677 26125	The fenced area along Laggan Burn has some dense and tall heather and blaeberry with several eared willow.	
39	NM 98676 26126	View of proposed location of extended control building. U4 acid grassland.	
40	NM 98553 26362	Proposed location of construction compound on hill of largely wet heath (M15b) and acid grassland (U5) but also areas with many hare's-tail cottongrass tussocks (M20) on likely deep peat.	 
41	NM 98537 26350	Proposed location of construction compound. Some modified M20 with tussocks of hare's-tail cottongrass. Sitka spruce present in the modified bog.	

No	Grid ref	Note	Photo
42	NM 98510 26338	Proposed location of construction compound is very close to an area defined as Near-Natural blanket bog. This should be carefully avoided, following best practice.	
43	NM 98526 26303	Proposed location of construction compound. There was wet heath (M15b) and acid grassland (U5) at top of hill.	
44	NM 98535 26288	Proposed location of construction compound. Sitka and some eared willow present in this area.	
45	NM 98551 26279	Proposed location of construction compound. Line of tussocky M20. There were some bog-mosses present in patches between large thick tussocks of hare's-tail cottongrass and cross-leaved heath also some purple moor-grass present.	
46	NM 98323 26271	Proposed onsite BESS location. Flattish area set within valley of blanket bog and likely deep peat. Recommend avoiding this area of blanket bog, following best practice. This area was avoided based on this advice.	

No	Grid ref	Note	Photo
47	NM 98326 26306	Modified blanket bog M17 through small valley. Sheep seen all around area. Recommend avoiding this area of blanket bog, following best practice. This area was avoided based on this advice.	
48	NM 98306 26342	Proposed onsite BESS location. View of valley. This area was avoided based on this advice.	
49	NM 98331 26372	Potential alternatively location for onsite BESS location. Wet heath on hill slope. BESS location was positioned elsewhere based on this advice.	
50	NM 98423 26422	Potential alternatively location for onsite BESS location. Wet heath on a hill slope. BESS location was positioned elsewhere based on this advice.	
51	NM 98457 26462	Potential alternatively location for onsite BESS location. Wet heath on a hill slope. BESS location was positioned elsewhere based on this advice.	