Technical Appendix 9.1: Peat

Introduction

This Technical Note provides a summary of the findings of a peat desk study and peat walkover survey undertaken on the 15th May 2025 to identify peat character at the Proposed Development and inform an assessment of peat impacts.

Desk Study

Carbon and Peatland Map 2016

Peatland classification mapping (shown on **Figure 9.3**) indicates that the majority of the Proposed Development including the existing substation and proposed BESS are underlain by Class 1 peatland. These are described as potentially nationally important carbon-rich soils, deep peat and priority peatland habitat in areas likely to be of high conservation value.

A small extent of the proposed underground cable route is also shown to be underlain by Class 2 peatland, which are also considered to be potentially nationally important carbon-rich soils, deep peat and priority peatland habitat with conservation value and restoration potential.

Geological and Soils Mapping

An extract of 1:250,000 National Soil Map of Scotland is shown on **Figure 9.1** and illustrates that site is underlain by three main soil types; mineral podzols along the northern extent of the existing access track, peaty podzols to the north west, including the proposed substation extension, and peat to the south east, including the proposed BESS site. The majority of the proposed underground cable route is shown to be underlain by peaty podzols.

An extract of BGS superficial deposit mapping, as shown on **Figure 9.2**, indicates that majority of the proposed underground cable route and the proposed BESS is underlain by glacial till deposits of the Thormaid Till Member, which is made up of a diamicton with clasts of Caledonian igneous and Moine metamorphic rocks. Peat superficial deposits are shown in the northern extent of the Proposed Development, including the proposed substation extension.

An extract of the BGS bedrock and linear features geology mapping is shown in **Figure 9.4**. The northern extent of the Proposed Development, including the proposed substation extension, is underlain by igneous rocks of the Strath Halladale Granite which comprises biotite granites. The southern extent of the Proposed Development, including the majority of the proposed underground cable and the proposed BESS is underlain by sedimentary rocks of the Tobaireach Conglomerate member.

Peat Probing Data

Access Track

Existing forest/windfarm tracks will be used – no new tracks are required.

BESS Footprint and Cable Route

Previous probing in the area (Technical Appendix 13A Limekiln Wind Farm Section 36C Variation Application 2021) of the former construction compound for the consented Limekiln Windfirm shows the area of the BESS (Blue Crosshatch) to consist of soils with a depth of less than 0.5m. See Plate 1.

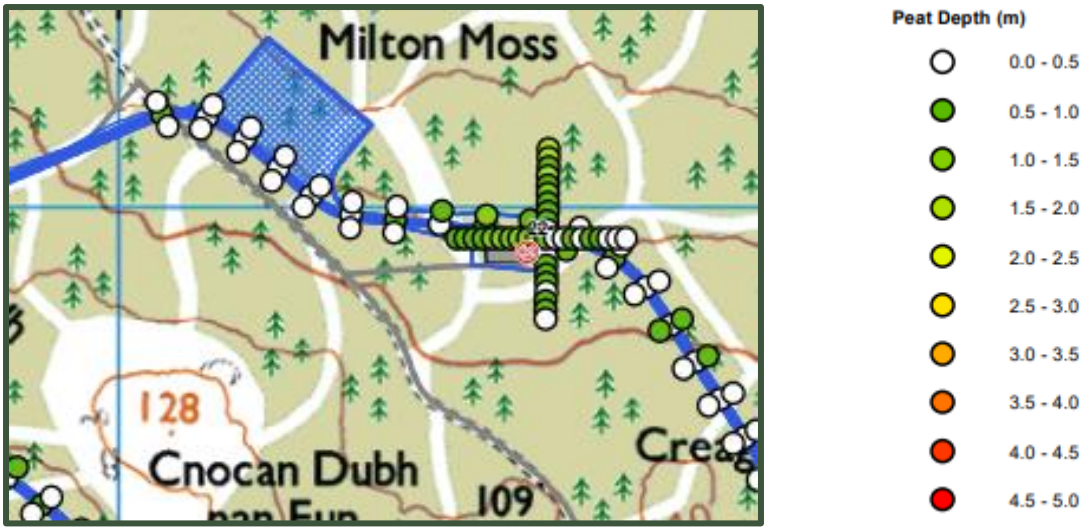

Plate 1 - Previous probing shows soils <0.5m (white circles) adjacent to the proposed BESS

Substation Extension

Previous probing in the area (Technical Appendix 13A Limekiln Wind Farm Section 36C Variation Application 2021) prior to the construction of the substation area show peat depths ranging from 0-2m in the area of the proposed substation extension (**Plate 2).**

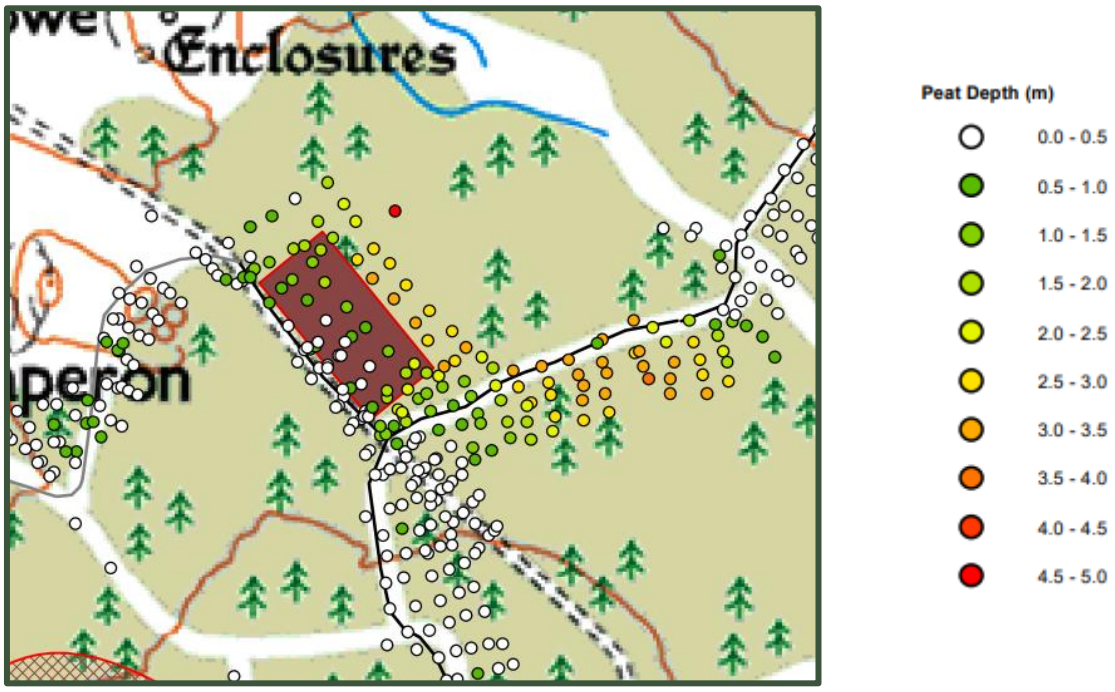

Plate 2 - Previous peat probing showing peat depth prior to substation construction[1].

[1] Technical Appendix 13B Peat Landslide Hazard Risk Assessment (PLHRA) of the Limekiln Wind Farm Section 36C Variation Application 2021

Peat Landslide Risk Assessment

In Technical Appendix 13B Peat Landslide Hazard Risk Assessment (PLHRA) of the Limekiln Wind Farm Section 36C Variation Application 2021) the entirety of the Proposed Development lies within the negligible risk category. Given the minimal changes since this time it is unlikely that peat landslide risk has changed, especially given much of the Proposed Development lies on mineral soils. As such this previous analysis is considered sufficient to scope out peat landslide risk as a significant risk at the Proposed Development.

Walkover Survey

BESS Footprint

The walkover survey conducted on the 15th of May 2025 confirmed previous probing results associated with the assessments for the Limekiln Windfarm and the absence of organic rich soils in the area of the proposed BESS. The entire area was unvegetated with exposed soils comprising mixed sand and silt with occasional rocky clasts corresponding with the till deposits indicated by BGS mapping **(Photo 1).** The absence of peat on the walkover survey also negates any modelled distribution of peat soils shown in the Carbon and Peatland Map 2016 and soil mapping in the area. Consequently further peat probing was not considered necessary within this area and peat impacts are absent.

Photo 1 - Area of Proposed BESS showing extensive mineral soils over the entire footprint

Access Track

As with the BESS development area, the walkover survey conducted on the 15th of May 2025 confirmed previous peat probing results associated with assessments for the Limekiln Windfarm. The access from the existing tracks to the BESS development area lies on exposed

mineral soil and therefore further investigation was not considered necessary. All other proposed tracks are pre-existing and do not require further upgrading, as such further investigation is also not considered necessary and peat impacts of the proposed development are negligible.

Cable Route

As with the BESS development area, a walkover survey conducted on the 15th of May 2025 confirmed previous peat probing results presented in support of the Limekiln Windfarm. The route of the proposed cable trenching comprised mineral soils similar to those observed within the Proposed BESS development area with thin organic rich soils (<0.1m) in some wetter areas **(Photo 2)**. This was true of the entire route with the exception of the area of access track and carparking associated with the existing substation and an area of made ground to the east of the substation comprising a mix of mineral, peat soil and cobble to boulder sized rock clasts **(Photo 3 and 4).** Given the majority of the route lies on mineral soils or made ground the potential to impact deposits is negated.

Photo 2 - Exposed Soil Profile adjacent to the Core path along the Proposed Cable Route showing a thin layer of organic soil overlying mineral soil. This is typical of the soils present up to the Control Building/Substation

Substation Extension

The proposed substation extension lies on an area of unvegetated made ground comprising a mixture of peat, mineral and bedrock fragments (Cobble to boulder sized) forming a verge around the edge of the existing substation **(Photo 3 & 4)** and formed during forestry activities (ploughing and forest road construction. This represents a peaty spoil with disrupted peat structure and contamination by large rock fragments **(Photo 4)** which is ubiquitous across to the east of the existing substation. All made ground is considered suitable for restoration works post development as has been applied at the existing substation. Consequently due to the highly disrupted nature of soils in this area it is considered peat impacts are largely avoided.

Photo 3 – Soil profile of made Ground comprising mixed organic rich soils, mineral soils and underlying bedrock overlying mineral soil in proposed substation extension area.

Photo 4 – Made ground consisting mixed peat soil, mineral soil and underlying bedrock in proposed substation extension area

Summary and Conclusions

A visual inspection of the site on the 15th May 2025 identified a formerly forested site dominated by mineral soils within the area of the proposed BESS and cable route. The area around the proposed substation extension whilst formerly on peat is predominantly comprised of made ground composed of a complex mix of mineral soils, peat soils and rock fragments across the footprint of the proposed substation extension.

Examination of the wind farm PLHRA indicates a negligible risk of peat landslide within the Proposed Development.

Following the peat survey, in accordance with National Planning Framework 4 (NPF4) mitigation hierarchy and NatureScot guidance of avoid, minimise, restore and offset the design of the Proposed Development it has been confirmed that no element of the Proposed Development lies on peat. Consequently, peat impacts are considered to have been avoided.

In the case of the substation extension the made ground presents a mixed peat spoil from past land-use on the site that be beneficially reused in restoration works on site.

SLR Consulting Limited

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Dr Chris Marshall, PhD, MSc, BSc (Hons)
Principal Consultant