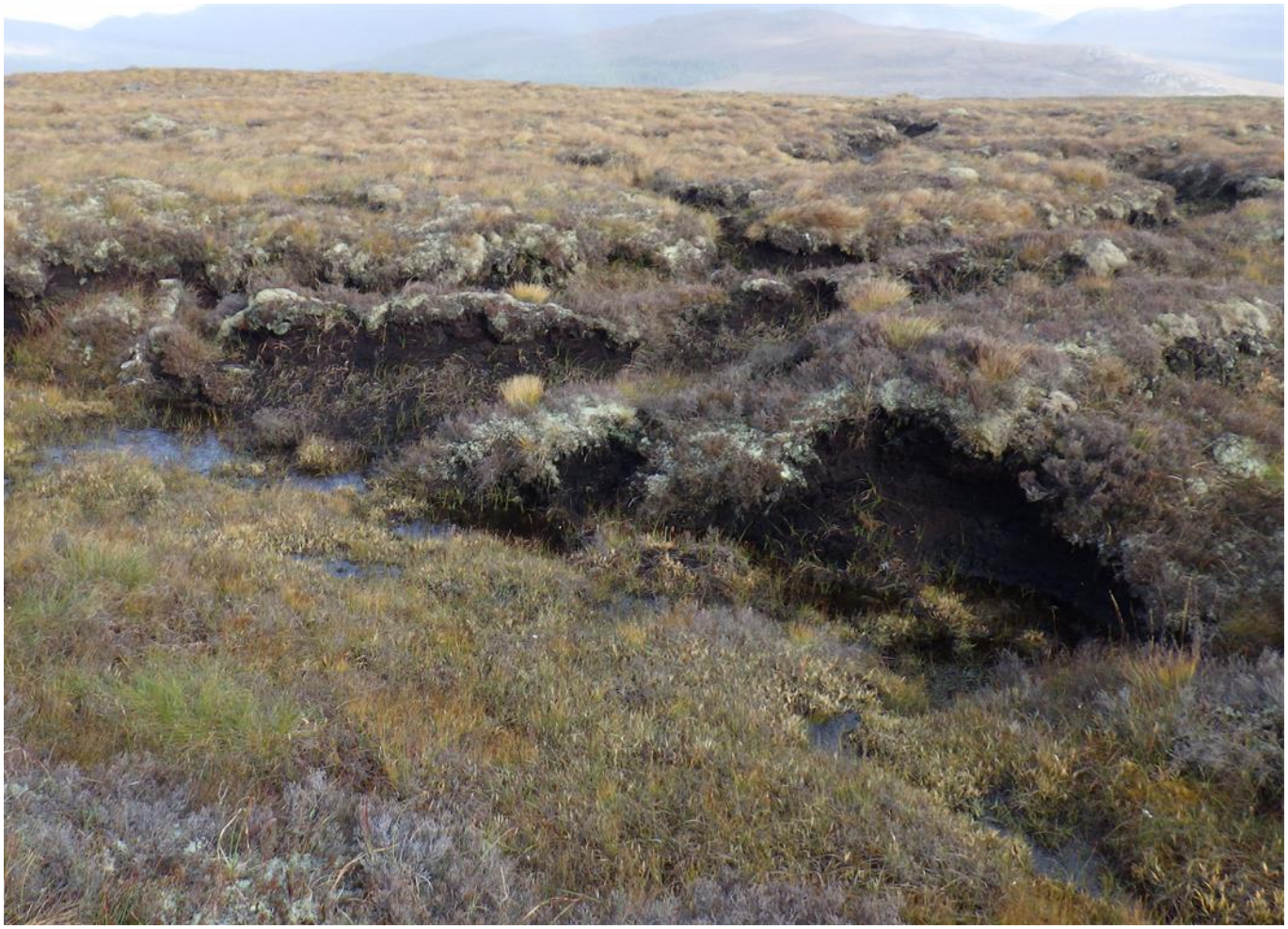

Renantis UK Limited

The Repowered and Extended Ben Aketil Wind Farm: Outline Peat Management Plan

Technical Appendix 9.2

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RSK GENERAL NOTES

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1 INTRODUCTION

1.1 This report provides an Outline Peat Management Plan for the Repowered and Extended Ben Aketil Wind Farm (hereafter referred to as the Proposed Development) and associated development infrastructure.

1.2 The report forms a Technical Appendix to the Environmental Impact Assessment Report (EIAR) for the Proposed Development and should be read in conjunction with this document. It has been produced to address the requirements for excavation of peat and peaty soils during the wind farm construction process.

1.3 This report will consider total volumes of peat that need to be excavated and will set out options for reuse of the excavated material. Guidance on management and handling of excavated peat and soils will be provided.

1.4 Within this Technical Appendix, the following definitions will be used: the 'Site' refers to everything within the application red line boundary and the 'Developable Area' refers to an area within the red line boundary defined by the applicant as the area where the turbines and associated infrastructure would be located.

Site Location

1.5 The Site is located on the Isle of Skye, in The Highland Council area, south-west of Coishletter and Edinbane, north-east of Dunvegan, and north of the settlements of Roskhill and Caroy. The Site incorporates the existing Ben Aketil Wind Farm comprising 12 operational wind turbines and associated wind farm infrastructure. Currently, access is gained to the operational Ben Aketil Wind Farm via a track leading southwards from the A850, 2 km west of Edinbane.

1.6 The land in the Developable Area slopes downward from north-east to south-west, generally consisting of upland moorland habitat, rough grazing and watercourses, most notably the Caroy River in the western part of the Site. There is an area of commercial forestry to the north of the Site boundary through which the Northern Site Access track runs.

Development Proposals

1.7 The Proposed Development infrastructure would include:

- decommissioning and removal of the twelve existing turbines and related infrastructure including hardstandings and the existing operational control building;
- erection of nine new turbines of approximately 5.6 to 6.6 MW each, with a maximum tip height of 200 m, a rotor diameter of approximately 140 m to 155 m and hub height of 115 to 122.5 m;
- hardstanding areas at the base of each turbine, each 3,820 m^2, with a maximum total area of 34,380 m^2;

- approximately 9 km of new track, of which 1.5 km will consist of floating track;
- approximately 2.3 km of upgraded track;
- two substations and associated compounds including parking and welfare facilities;
- an energy storage facility;
- up to six construction compounds;
- a storage bund area;
- two potential borrow pits, to provide suitable rock for access tracks, turbine bases and hardstandings; and
- underground cabling linking the turbines with substations.

1.8 Full details of the Proposed Development design are provided in **Chapter 2** of the EIAR.

Aims

1.9 This report aims to undertake a review of all available peat depth information for the Proposed Development and immediate environs, and to provide a series of calculations determining the estimated volumes of peat that will require excavation in order to allow the Proposed Development to progress. Options will be provided to address use of the excavated peat within necessary restoration of the Proposed Development's infrastructure. A series of good practice measures relating to peat and soil handling and storage will also be provided.

Assessment Method

1.10 The assessment has involved the following stages:

- desk study;
- peat depth surveys and infrastructure design;
- volume calculations for excavation and reuse;
- peat handling and storage guidance.

2 PEAT CONDITION

Developments on Peat

Definition of Peat

2.1 Scotland's Soils (2023) classifies peat as:

> *An accumulation of partially decomposed organic material, usually formed in waterlogged conditions. Peat soils have an organic layer more than 50 cm deep from the soil surface which has an organic matter content of more than 60%.*

2.2 Organic soils which are 50 cm or thinner can also support peatland vegetation and as a result are also considered within Scotland's broader peatland system in Scotland's National Peatland Plan (NatureScot, 2015). These are often described as 'peaty gleys' or 'peaty podzols', reflecting key aspects of the underlying soil. Peaty soils have a higher plant fibre content and are less decomposed than peat.

2.3 Active peatland typically consists of two layers: the surface layer or *acrotelm* and the deeper layer or *catotelm*. The acrotelm contains the living vegetation and consists of living and partially decayed plant material. It typically has a low but variable hydraulic conductivity and allows some through-flow of water within the plant material. The underlying catotelm is denser, with a very low hydraulic conductivity, and is formed from older decayed plant material. The catotelm varies in structure, in some areas retaining a proportion of fibrous material and in other areas being more humified and amorphous. The degree of humification typically increases with depth.

2.4 Underneath the peat-forming layers, the basal substrate can be a mineral soil, a superficial deposit such as glacial material, or bedrock. There may be a transition zone through a mineral-rich peaty layer at the base of the peat, although this is usually no more than 5 cm in thickness.

Importance of Peat

2.5 Peatland forms a key part of the Scottish landscape, covering more than 20% of the country's land area, and forming a significant carbon store (Scotland's Soils, 2019). In addition, peatland is an internationally important habitat.

2.6 Active and healthy peatlands develop continuously, removing carbon dioxide from the atmosphere and storing it within the peat soil. Peatland protection and restoration form key parts of the Scottish Government's Climate Change Plan, which targets restoration of 250,000 ha by 2030 (Scottish Government, 2018). As of March 2020, over 25,000 ha of peatland had begun restoration, and in 2020 the government announced a £250 million ten-year funding package to support the restoration of degraded peat (Scottish Government, 2020). Restoration will need to be conducted at a faster pace to reach targets.

2.7 It is therefore important that developments in peatland areas recognise the importance of peatland as a habitat and carbon store. Careful planning of developments, and careful infrastructure design, can remove or minimise the disturbance of peat that would be needed to allow the development to proceed.

Development Setting

Topography and Geomorphology

2.8 The Proposed Development lies on relatively low undulating ground which slopes gently from north-east to south-west. Elevations range from <5 m above Ordnance Datum (AOD) in the southernmost part of the Site, to 268 m AOD near the eastern margin.

2.9 The highest point within the Site is the peak of Ben Aketil on the eastern margin of the Site at 268 m AOD. From Ben Aketil, the ground slopes down to the north, west and south. The westernmost part of the site begins to rise again on the western side of the Caroy River. The southernmost part of the site is just above sea level, near where the Caroy River flows into the sea loch Loch Caroy.

2.10 The Northern Site Access slopes down from the existing Ben Aketil Wind Farm and joins the A850 at approximately 50 m AOD.

2.11 Within the main part of the Site, the existing Ben Aketil Wind Farm lies along a shallow ridge that runs from Ben Aketil and Ben Sca (283 m AOD), north-westwards towards Ben Horneval (264 m AOD) and Strone Geers (185 m AOD). This ridge forms a watershed between the Caroy River, draining south, and the Red Burn, draining north.

Geology

Habitats and Vegetation

2.12 The majority of the Proposed Development is mixed moorland where land use is predominantly rough grazing. Areas nearer the Southern Site Access are improved and semi-improved grassland and are predominantly used for agricultural purposes. The Northern Access Track runs through an area of commercial forestry. Much of the Developable Area is underlain by nationally important carbon-rich soils, deep peat and priority peatland habitat.

2.13 Site vegetation has been surveyed using the National Vegetation Classification (NVC) methods. The survey indicates that there are six main communities present:

- M15 *Scirpus cespitosus – Erica tetralix* wet heath;
- M17 *Scirpus cespitosus – Eriophorum vaginatum* blanket mire;
- M19 *Calluna vulgaris – Eriophorum vaginatum* blanket mire;
- M6 *Carex echinata – Sphagnum recurvum/auriculatum* mire;
- MG6 *Lollium perenne – Cynosurus cristatus* grassland;
- U4 *Festuca ovina – Agrostis capillaris – Gallium saxatile* grassland.

2.14 The habitats M15 wet heath, M17 blanket mire and M19 blanket mire are the dominant habitats within the Developable Area. M6 mire tends to be present within watercourse channels throughout the Proposed Development. MG6 grassland is largely in the southernmost part of the Proposed Development, where more agriculture and grazing activity have taken place. U4 grassland forms meadows alongside some of the watercourses, notably the Caroy River.

2.15 Other habitats are present, but as smaller areas within the Proposed Development.

Hydrology

2.16 The Site lies across two catchment areas: the Caroy River and the Red Burn. The majority of the Site and the Developable Area are located within the Caroy River catchment, while the north-east of the Site and the Northern Site Access are located in the Red Burn catchment. A small area in the south-east of the Site lies within the Allt nan Cat catchment, although minimal infrastructure is located within this catchment. Catchment areas are shown in **Figure 9.4**.

Caroy River Catchment

2.1 The Caroy River catchment has a total area of 13.06 km^2 and drains 86.6% of the Site.

2.2 The Caroy River flows south through the Site and provides the main drainage within this catchment. Several smaller tributaries drain into the Caroy River in the north of the Site around Gleann Eoghainn and in the south around Upper Feorlig. In the centre of the Site, the Rageary Burn and associated tributaries drain west into the Caroy River. In the south of the Site, the Aketil Burn drains south-west into the Caroy River.

2.3 The northern area of the Caroy River catchment is an upland region characterised by heather moorland, peatland and minor areas of forestry. The south is characterised by lower lying ground, peatland and areas of agricultural land.

Red Burn Catchment

2.4 The Red Burn catchment has a total area of 13.21 km^2 and drains 10.0% of the Site.

2.5 The Red Burn and its tributaries provide drainage for the north-west of the Site and the Northern Site Access. The Allt a' Choire and several associated tributaries drain north-west out of the Site towards the Red Burn. The Northern Site Access crosses two other minor tributaries which drain west towards the Red Burn: the Allt Donachaidh and an unnamed tributary.

9.5.1 The southern area of the Red Burn catchment is an upland area characterised by peatland; the rest of the catchment predominantly comprises areas of commercial forestry and rough open land, with some evidence of lazy bed cultivation in the lower reaches.

Catchment Statistics

2.6 Catchment statistics are derived from the Flood Estimation Handbook Web Service (CEH, 2023). The catchment wetness index (PROPWET) for both the Caroy River and Red Burn is 0.73, indicating that soils in the Site are wet for 73% of the time. Both catchments have a baseflow index (BFI HOST19) of 0.26, indicating a low input of groundwater baseflow to surface watercourses. The standard percentage runoff (SPR HOST) is 55-57%, indicating that this percentage of rainfall on-site is converted into surface runoff from rainfall events; this represents a high runoff risk where soils have a limited capacity to store rainfall and/or a slow infiltration rate and will quickly saturate, leading to rapid runoff.

Peat Characteristics

2.7 Most of the Site consists of a patchwork of peaty soils and blanket peat which vary in depth and distribution across the Site as a result of the underlying topography and hydrological setting.

2.8 One extended area of deep peat is present in the north-west part of the Site, near the new Turbine 2. Other areas of deep peat (2.0 m or deeper) are present in parts of the Site, mainly associated with watercourses and/or areas with shallow gradient. Areas of note include the headwaters of the Caroy River between Turbines 1, 2, 8 and 9; the relatively flat ridge crest west of Turbine 9; the area around the headwaters of the Allt a' Choire and some areas of gentle slope on the lower slopes of Ben Aketil, near and downslope of Turbines 6 and 7.

2.9 Peat is largely absent from the southern access route, although some pockets of peat are present. Peat is present along the Northern Site Access although is mainly <1.0 m in thickness.

2.10 There is evidence of modification to peatland areas within the Site, particularly in areas associated with the existing wind farm and associated infrastructure. Commercial forestry and cutting of channels to improve drainage provide further evidence of modification to the peatland areas in and around the Site.

Peat at the Proposed Development

2.11 The Site was identified to include areas of peat at an early stage, as indicated by superficial geology and soils mapping for the region. Some peat data within the Developable Area had been gathered previously and the results were provided to RSK. Additional Phase 1 survey work on a 100 m grid to cover additional parts of the Developable Area, the existing wind farm and a proposed access corridor was undertaken by RSK in June 2022. The combined peat survey results were used to inform the infrastructure design, in order to minimise incursion into areas of peat as far as possible.

2.12 A Phase 2 peat depth and condition survey was undertaken by RSK in August and November 2022 for areas of proposed infrastructure and access tracks.

2.13 The combined peat depth data were used to generate a detailed map of soil and peat depths for the Site. This is provided in **Figure 9.3**. Measured peat and soil depths range from 0 (bedrock at surface) to 5.4 m. A total of 1,331 peat depth measurements have been recorded for the Site.

2.14 The intention has been to avoid areas of peat where possible, and to minimise incursion into peat where it has not been possible to avoid it altogether. Approximately 39% of the Proposed Development infrastructure including drainage is underlain by peaty soil or topsoil no greater than 0.5 m deep, with 61% of infrastructure underlain by peat.

Peat Excavation Volumes

2.15 The tables below set out the estimated volumes of peat that need to be excavated in order to allow construction of the Proposed Development to proceed. The calculations are provided per 'scheme element', as totals for each element type, and as an overall total. Each set of calculations provides subdivision into 'acrotelm' and 'catotelm'.

2.16 For the purposes of these calculations, the acrotelm has been assumed to form the uppermost 0.5 m where peat is present. Acrotelm is known to vary in thickness, but is recommended that peat turves are excavated to approximately 0.5 m where possible, including the uppermost part of the catotelm to promote quicker regeneration of disturbed areas following reinstatement.

2.17 Volumes of peaty soil and topsoil have not been included, in line with the definition of peat quoted above. Soils would also require excavation but are less sensitive than peat to both excavation and restoration.

2.18 **Table 9.2.1** provides peat volumes that require excavation in order to allow construction of the access track network and associated drainage. The proposed new track width will be approximately 5.5 m, although may be up to 7 m for short sections, such as passing places and on bends. The working corridor for excavation calculations of proposed new access track includes an additional 5 m buffer on each side to calculate excavational width. Turning heads present directly adjacent to the access track have been included as part of the access track.

2.19 Upgraded existing access track final width will be between 5.5 m and 7 m. The existing track has assumed to be approximately 4 m wide. For excavation calculations an additional 1.5 m of track hardstanding and a 5 m buffer along one side of the track has been used to calculate excavational width. The Northern Access Track has been assumed to be of suitable construction standard in its current form, so the only additional excavation required would be a realignment of the junction off the A850.

Table 9.2.1: Peat Excavation Volumes for Access Tracks

Scheme Element	Acrotelm (m^3)	Catotelm (m^3)	Total (m^3)
New Track between T1 and T9	6,005	6,725	12,730
New Track between T1 and T2	0	0	0
New Track between T2 and T3	2,519	2,771	5,290
New Track to T4	198	257	455
New Track to T5	4,611	6,937	11,548
New Track from T6 to Crofters Track (inc T7)	7,726	7,515	15,241
New Track from Crofters Track to T8	2,683	1,222	3,905
New Track from T8 to T9	5,854	4,989	10,843
New Southern Access Track crossing Caroy River	1,414	1,131	2,545
New Southern Access Track from A863 to Crofters Track	4,125	3,300	7,425
Northern Access Junction	420	319	739

Scheme Element	Acrotelm (m^3)	Catotelm (m^3)	Total (m^3)
Existing Southern Access Track to T7	647	388	1,035
Existing Southern Access Track by Caroy River	3,535	1571	5,106
Total	**39,737**	**37,125**	**76,862**

2.20 **Table 9.2.2** provides peat volumes that require excavation in order to allow construction of the turbine foundations, hardstanding areas and crane pads, plus associated drainage. Calculations have been made for each turbine base plus necessary hardstanding areas, making use of peat depth data for the relevant turbine and hardstanding footprint.

Table 9.2.2: Peat Excavation Volumes for Turbines, Hardstandings and Associated Drainage

Scheme Element	Acrotelm (m^3)	Catotelm (m^3)	Total (m^3)
Turbine 1	1,175	926	2,101
Turbine 2	1,616	2,145	3,761
Turbine 3	1,337	1,222	2,559
Turbine 4	1,433	2,021	3,454
Turbine 5	1,528	1,095	2,623
Turbine 6	1,433	680	2,113
Turbine 7	1,637	2,292	3,929
Turbine 8	1,215	504	1,719
Turbine 9	1,433	2,117	3,550
Total	**12,807**	**13,002**	**25,809**

2.21 **Table 9.2.3** provides peat volumes that require excavation in order to allow construction of additional infrastructure, such as construction compounds and borrow pits, plus associated drainage. Calculations have been made for each footprint, making use of peat depth data for the relevant infrastructure element.

2.22 Compounds 3-6 are all located on the existing hardstanding areas associated with existing wind turbines, and as a result no additional excavation would be required.

Table 9.2.3: Peat Excavation Calculations for Other Infrastructure Elements

Scheme Element	Acrotelm (m^3)	Catotelm (m^3)	Total (m^3)
Borrow Pit 1	4,200	1,470	5,670
Borrow Pit 2	1,241	2,357	3,598
Construction compound south access (no 1)	293	176	469
Main Construction Compound (no 2)	1,332	599	1,931
Compound no 3	0	0	0
Compound no 4	0	0	0
Compound no 5	0	0	0

Scheme Element	Acrotelm (m^3)	Catotelm (m^3)	Total (m^3)
Compound no 6	0	0	0
Substation Repower	999	899	1,898
Substation Extension	815	530	1,345
Total	**8,880**	**6,031**	**14,911**

2.23 A summary of the total peat volumes is provided in **Table 9.2.4.**

Table 9.2.4: Summary of Estimated Peat Excavation Volumes

Scheme Element	Acrotelm (m^3)	Catotelm (m^3)	Total (m^3)
All tracks	39,737	37,125	76,862
All turbine infrastructure	12,807	13,002	25,809
All other infrastructure	8,880	6,031	14,911
Total	**61,424**	**56,158**	**117,582**

Peat Reuse

2.24 The guidance document *'Developments on Peatland: Guidance on the Assessment of Peat Volumes, Reuse of Excavated Peat and the Minimisation of Waste'* (Scottish Renewables/SEPA, 2012) identifies a number of reuse options for excavated peat within wind farm developments. These have all been tested in practice and found to be effective, if undertaken with care and appropriate handling of peat.

Dressing-off Edges of Constructed Infrastructure

2.25 Excavated peat can provide a valuable means for dressing-off and reinstating the slopes and edges of constructed infrastructure. This should be undertaken as soon as practicable after construction and should be managed such that a suitable tie-in to the surrounding topography is created as part of the process. This has a two-fold purpose – to reduce the visual effect of the infrastructure and to retain as much of the existing habitat as possible.

2.26 A secondary part of this would involve full reinstatement of elements of infrastructure only required for the construction phase, principally temporary construction compounds. Temporary parts of the turbine hardstandings may also be reinstated following installation of the turbines.

Verge Reinstatement on Track Sections

2.27 For cut tracks, the track margins can be reinstated to form a verge slightly raised above the track level. This acts as a partial visual screen for the track network. Well-designed track margins also help to direct track surface runoff into trackside drainage, where it can be directed for treatment.

2.28 Where existing tracks require upgrading, new works are typically focused on one side of the track and reinstatement would also usually be focused on the track side with new works. Reinstatement of the already-existing track verge can be undertaken where the ground has been left raw or where previous reinstatement has not been effective.

Borrow Pit Restoration

2.29 Excavated peat has been used successfully in borrow pit restoration, where the method of reuse and the final restoration profile is in keeping with the overall habitat and environmental reinstatement objectives. Care must be taken to ensure that no residual risks from pollution of the environment or harm to human health results from the restoration. Unconsolidated peat may be the most suitable material for this purpose, depending on the local situation. Fencing of the restored area may be appropriate if required to exclude grazing in order to encourage vegetation recovery or to allow stabilisation of the surface until vegetation cover has established.

Peatland Restoration

2.30 Peat can provide a valuable material for ditch and channel blocking as part of a peatland restoration plan on blanket bog. In areas with wider ditches, it may be appropriate to use saturated or unconsolidated peat behind dams in order to speed up the restoration process and regeneration of associated vegetation.

Peat Reuse Volumes

2.31 Calculations have been made to determine where excavated peat can usefully be reused within the Proposed Development, for the purposes of reinstatement and restoration. Estimated volumes for reuse are provided in **Table 9.2.5**, subdivided by the different reinstatement and restoration methods that are appropriate for the Proposed Development.

Table 9.2.5: Estimated Soil and Peat Volumes for Different Reuse Options

Reuse option	Acrotelm (m^3)	Catotelm (m^3)	Total (m^3)
Dressing-off edges of turbine hardstandings	3,600	400	4,000
New access track verge reinstatement	7,500	0	7,500
Existing access track verge reinstatement	3,600	0	3,600
Floating track verge reinstatement	2,200	0	2,200
Construction compounds and substation	6,400	700	7,100
Borrow pit restoration	24,700	24,700	49,400
Peatland restoration	13,500	30,400	43,900
Totals	**61,500**	**56,200**	**117,700**

2.32 All figures provided in **Table 9.2.5** have been rounded down to the nearest 100 m^3, to make allowances for the uncertainties present within the figures.

2.33 It has been assumed that limited catotelmic peat would be reused for dressing-off edges and reinstatement of construction infrastructure. In areas with natural hollows, use of some catotelmic peat may be appropriate but it is likely in practice that most of this work would make use of acrotelmic peat.

2.34 It has been assumed that all of the existing turbine hardstanding areas would be completely reinstated using excavated peat from the new construction.

2.35 It has been assumed that all track verge reinstatement would use entirely acrotelmic peat, although some catotelmic peat may be used in areas with natural hollows.

2.36 Reinstatement and dressing-off have assumed a maximum depth of 0.6 m and a maximum width of 2.5 m from the infrastructure or track margin, to be varied in practice as best suits the local ground conditions.

2.37 Approximately 44% of the catotelmic peat would be used for borrow pit restoration, with acrotelm providing a surface layer. Calculations assume that approximately 20% of Borrow Pit 1 would remain accessible during wind farm operation, to provide aggregate for track repair. The borrow pits have been designed to have a shallow bowl-shaped profile for restoration in order to facilitate restoration with available peat from the Site, with a restored depth of up to 2 m where appropriate.

2.38 The remaining excavated peat from construction would be used for peatland restoration within the Proposed Development. Peatland restoration works would focus on the main areas where peat hagging and erosion have been identified, plus blocking of drainage ditches within the Site.

2.39 **Figure 1** within **Technical Appendix 7.6** (Outline Habitat Management Plan) indicates areas identified as potential restoration areas within the Proposed Development.

3 PEAT HANDLING & STORAGE

Peat Excavation

3.1 During the construction of the Proposed Development infrastructure, the Contractor would adopt the following good practice guidelines with relation to peat excavation:

- where peat conditions are suitable, peat turves would be excavated as intact blocks of the uppermost 0.5 m including the vegetated surface acrotelm layer and the upper part of the catotelm.
- in areas where peat conditions do not allow clean removal of peat turves, the upper layer of peat would be removed as divots or mulch rather than as turves. Careful handling would help to keep the vegetated blocks largely the right way up.
- underlying peat would be extracted as close to intact as is feasible within the constraints of the area. Remoulding of the peat by the excavator would be kept to a minimum.
- excavated materials would be classified depending on their composition, and each type would be stored separately. Anticipated material classes are: peaty soils and topsoil, subsoil, acrotelmic peat, catotelmic peat, mineral soil and rock.
- excavated peat would be transported as short a distance as practicable for either reuse or temporary storage, in order to minimise loss of structure during transport

3.2 Peat and soil stripping can be adversely affected by wet weather. The following 'stop' conditions are recommended to guide any peat and soil stripping activity (CH2M & Fairhurst, 2018):

Table 9.2.6: Recommended 'Stop' Conditions (CH2M & Fairhurst, 2018)

'Stop' Rule	Requirements
High intensity rainfall	Rainfall during construction greater than 10 mm per hour
Long duration rainfall	Rainfall in the preceding 24 hours greater than 25 mm
7-day cumulative rainfall (1)	Preceding 7 days of rainfall greater than 50% of the monthly average
7-day cumulative rainfall (2)	Preceding 7 days of rainfall greater than 50 mm

3.3 Monitoring of rainfall for 'stop' conditions would require access to a suitable local source of data, such as the UK Meteorological Office's monitoring station at Prabost, or a site-specific rainfall station, to allow identification of these conditions being exceeded in order to allow appropriate action to be taken.

Temporary Storage

3.4 Temporary storage of peat should be avoided or minimised wherever possible. This is best achieved by transporting the peat to an allocated reuse location as soon as practicable following excavation. This would help to retain its structural integrity as far as possible, would minimise volumes of peat requiring storage and would help to prevent the peat drying out.

3.5 The Environmental Manager would maintain a schedule of reuse and restoration areas and would direct whether excavated peat should be stored or transported directly to a suitable reuse location. Immediate reuse is likely to be more practicable in the later stages of construction.

3.6 Soils, peat turves/divots and peat would all be stored separately. The following outline good practice would be applied to all areas of peat and soil storage:

- excavated materials would not be stored immediately above excavation faces, in order to prevent overburden-induced failure.
- local drainage lines, areas of very wet ground and locally steep slopes would be avoided for excavated material storage, including peat.
- peat turves would be stored vegetation-side up where possible.
- careful handling of upper-layer peat divots, from areas where peat turves cannot be excavated, would help to retain vegetated blocks the right way up.
- catotelmic peat would be stored separately from vegetated peat blocks, in mounds up to 1 m high.
- limited smoothing or 'blading' of stockpiled catotelm peat, topsoil and subsoil would help to shed rainwater and prevent ponding of water on the stockpile.
- in periods of dry weather, light spraying of the temporary peat stores would be applied in order to minimise drying.
- all temporary storage areas for excavated peat and soils would be at least 50 m from any watercourses.
- runoff from stored peat and soils would be managed to avoid impacts to habitats and watercourses. Where necessary, drainage control measures such as use of silt fences would be put in place.
- monitoring of peat storage areas may be required during wet weather or snowmelt. This would be undertaken by the Contractor, with findings reported to the Environmental Manager.

3.7 Areas identified as potentially suitable for peat and soil stockpiles are detailed in **Table 9.2.7** and shown on **Figure 9.2.1**. Storage areas would be assessed for suitability during construction works and priority would be given to areas near to the material source; key constraints would be slope, watercourses and sensitive habitats.

Table 9.2.7: Potential Areas for Peat and Soil Stockpiles

Location	Grid Reference
Adjacent to track between T1 and T2	NG 3069 4882
Adjacent to track between T2 and substations	NG 3140 4840
Adjacent to T4 turning head	NG 3234 4742
Adjacent to track between T7 and T8	NG 3128 4717

Reinstatement and Restoration

3.8 The following principles would be applied in all situations where peat is being reinstated or used in restoration:

- Reinstatement of peat turves and vegetated peat divots would ensure that surface re-vegetation is encouraged as early as possible. Vegetated peat must only be used for surface layer reinstatement and restoration.
- Re-seeding of any significant areas of bare peat would be undertaken with a suitable species mix appropriate to the surrounding habitats. Careful planning of reinstatement should minimise areas of bare peat by appropriate distribution of vegetated peat turves and divots.
- Grazing by livestock and deer may need to be prevented in sensitive areas, by selective use of fencing, until re-vegetation has become established.
- In the event that stored peat becomes dewatered or desiccated, this material would not be exposed in the upper part of any reinstatement or restoration area in order to minimise any further character loss. Storage of excavated peat would be minimised in order to prevent or limit dewatering and desiccation.

Updated Peat Management

3.9 The Outline Peat Management Plan presented here would be updated and refined as necessary with further site-specific detail once site investigation results become available. This would involve recalculation of peat volumes requiring excavation and storage. Location-specific reinstatement and restoration would be directed by the environmental manager, taking account of specific local variation in topography and natural ground conditions. The Construction Peat Management Plan would be a live document, with revisions added as necessary during the construction process.

4 SUMMARY

4.1 This Outline Peat Management Plan provides an assessment of the likely volumes of peat that would require excavation during the construction of the Proposed Development, and of the volumes of peat that can legitimately be used in reinstatement and restoration of development infrastructure. The assessment has included consideration of all proposed infrastructure that would require construction and excavation work where peat would require removal.

4.2 This assessment indicates that there would be a balance in peat volumes and that all peat excavated for construction would be able to be reused within the Proposed Development.

4.3 Approximately 52% of the excavated peat would be acrotelmic, which provides good opportunities for promoting re-establishment of peatland vegetation around construction areas. Sensitive reinstatement would help to minimise the visual impact of the construction works as well as minimising the habitat loss from construction.

5 REFERENCES

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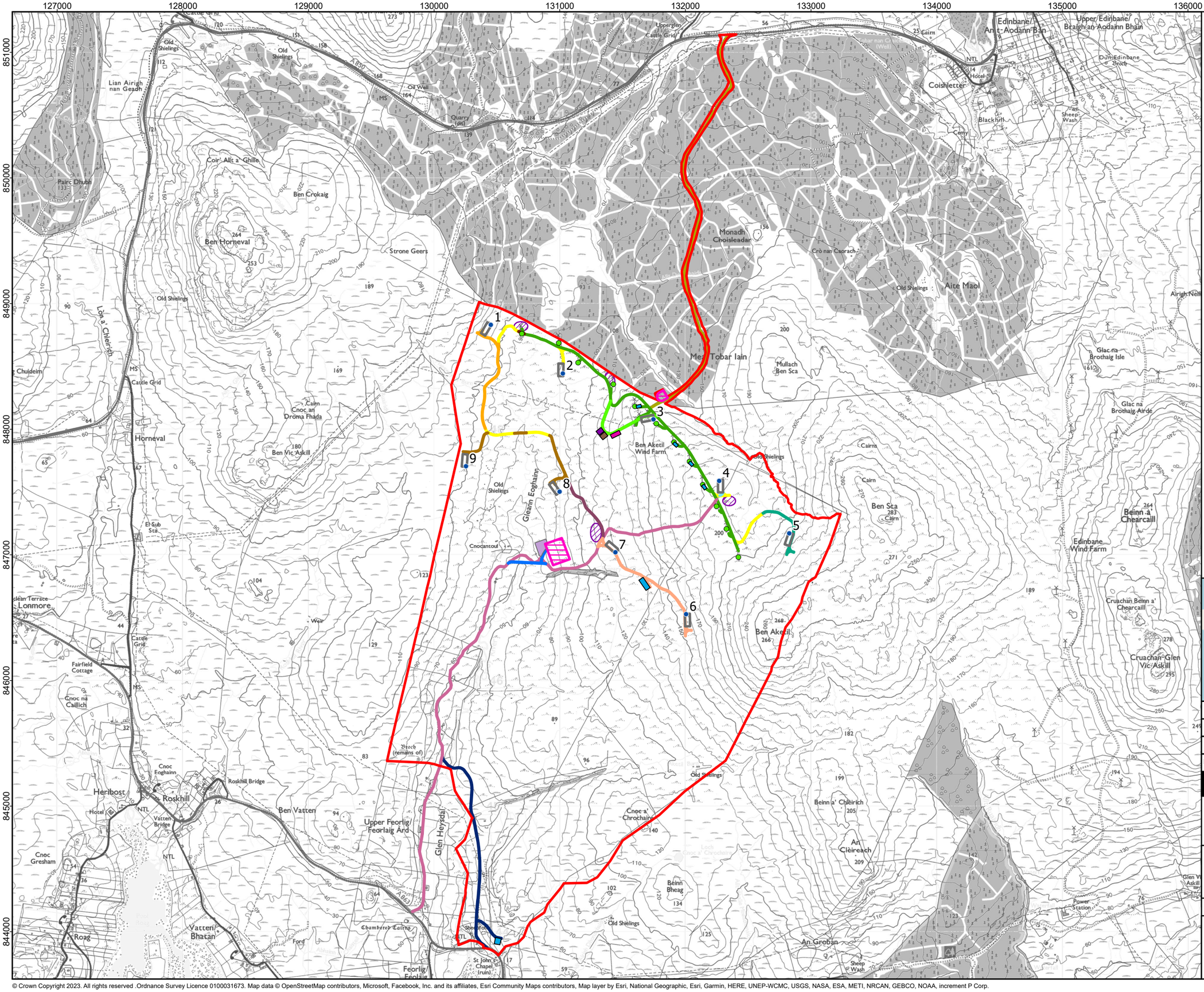
FIGURES

Figure 9.2.1: Track sections for peat calculations and areas for potential peat storage

127000 128000 129000 130000 131000 132000 133000 134000 135000 136000

851000 850000 849000 848000 847000 846000 845000 844000



Legend:

- The Site
- Proposed New Turbine Locations
- Existing Turbine Layout
- Hardstanding
- Construction Compound
- Substation and Compound Area (Repower)
- Substation and Compound Area (Extension)
- Storage Bund
- Borrow Pit
- Battery Storage
- Existing Crofters Track
- Existing Wind Farm Track
- Floating Track
- Northern Access Track
- New Southern Access Track from A863 to Crofters Track
- New Southern Access crossing Caroy River
- Track from T1 to T2
- Track from T1 to T9
- Track from T2 to T3
- New track to T5
- New track to T4
- New Track from T6 to Crofters Track including T7
- New Track from Crofters Track to T8
- New Track from T8 to T9
- Peat storage options

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936
Units: Meter

Rev	Date	Description	Drn	Chk	App
00	02/05/2023	Peat Storage/Tracks	DL	EB	CI

Ben Aketil Wind Farm

RSK Renantis Falck Renewables

TITLE: Figure 9.2.1:
Track sections for peat calculations and areas for potential peat storage

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0 0.5 1
Kilometres
Scale: 1:28,000 @ A3

N W E S

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