



Kirkan Wind Farm Limited

Kirkan Wind Farm: Outline Peat Management Plan

Technical Appendix 9.4

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1 INTRODUCTION

- 1.1 This report provides an Outline Peat Management Plan for Kirkan Wind Farm and associated development infrastructure.
- 1.2 The report forms a Technical Appendix to the Environmental Impact Assessment Report (EIAR) for Kirkan Wind Farm and should be read in conjunction with this document. It has been produced to address the requirement 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

Location

- 1.4 The project area is located on Strathvaich Estate, in the Garve District of the Ross and Cromarty Region of the Highlands. The project area lies to the south of the A835 trunk road from Garve to Ullapool, and to the east of the operational Corriemoillie and Lochluichart wind farms.
- 1.5 The project area is approximately 5.3 km north-west of the village of Garve and approximately 19 km west-north-west of Dingwall. Ullapool is approximately 32 km to the north-west. The Aultguish Inn lies 490 m north-west of the project area's northern boundary.

Development proposals

- 1.6 The Kirkan Wind Farm proposal includes the following key elements:
- 17 turbines, of approximately up to 4.8 MW each and a maximum tip height of 175 m;
 - Hardstanding areas at the base of each turbine, with a maximum total area of 1,850 m²;
 - Up to two permanent meteorological masts and associated hardstanding areas;
 - 10,835 m of access track with associated watercourse crossings, of which 9,975 m is new access track, and 860 m is upgrade to existing track;
 - An operations control building with parking and temporary welfare facilities;
 - A substation compound;
 - A substation construction compound, providing space for a prospective modular energy storage facility;
 - Telecommunications equipment, including masts;
 - Up to three temporary construction compounds;
 - Two borrow pits, to provide suitable rock for access tracks, turbine bases and hard standings; and
 - Underground cabling linking the turbines with the substation.

1.7 Full details of the project design are provided in Chapter 2 of the EIAR.

Aims

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

Assessment method

1.9 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 (2018a) 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 less than 50 cm thick can also support peatland vegetation and as a result are also considered within Scotland's broader peatland system in Scotland's National Peatland Plan (SNH, 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, and as such have a lower sensitivity to excavation and reuse; however, they remain important within Scotland's peatland habitats and require sensitive handling.

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, 2018b). 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 50,000 hectares (ha) of degraded peatland by 2020 and 250,000 ha by 2030 (Scottish Government, 2018).

2.7 It is therefore important that developments in upland areas, where peat is most likely to be encountered, take recognition of 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.

Project setting

Topography and geomorphology

- 2.7.1 The project area is located on a broad slope with a north to north-easterly aspect. The highest ground is located along the south-western project area boundary at approximately 420 m above Ordnance Datum (AOD), with land continuing to rise beyond the boundary to the summit of Beinn nan Cabag at 474 m AOD. The lowest part of the project area is at the northern boundary, at approximately 220 m AOD.
- 2.7.2 Infrastructure is largely confined to areas with relatively gentle slopes for practical reasons, although the topography within the development area is undulating and varied on a local scale. Notably steep slopes have been avoided.

Habitats and vegetation

- 2.8 National vegetation classification (NVC) survey mapping of the project area indicates that there are three dominant communities present:
- M6 – *Carex echinata* – *Sphagnum recurvum/auriculatum* mire;
 - M15 – *Scirpus cespitosus* – *Erica tetralix* wet heath;
 - M17 – *Scirpus cespitosus* – *Eriophorum vaginatum* blanket mire.
- 2.9 The project area is largely covered with a mosaic of NVC communities M15 and M17. Areas of M6 mire have been identified along the main watercourse valleys.
- 2.10 Part of the project area is under native woodland planting, largely a mix of native hardwood species and Scots pine.
- 2.11 The higher plateau areas, notably around the col between Sìthean nan Cearc and Beinn nan Cabag, and the broad relatively flat region immediately below and east of Beinn nan Cabag, show development of extensive peatland communities. These areas correspond with the mapped M17 habitat in this part of the project area.

Hydrology

- 2.11.1 The site lies entirely within the catchment of the Glascarnoch River/Black Water system with site drainage principally directed to the north and north-east. The Glascarnoch River lies immediately north of the northern project area boundary.
- 2.11.2 From Inchbae, the Glascarnoch/Black Water catchment covers an area of 181 km². It includes two main waterbodies: Loch Glascarnoch located approximately 750 m west of the project area boundary, and Loch Vaich 4.5 km to the north of the project area. The Glascarnoch/Black Water forms a tributary to the River Conon. The catchment lies at an elevation between 165 m AOD at Inchbae to a maximum of 1084 m AOD at the summit of Beinn Dearg, north-west of Loch Glascarnoch.
- 2.11.3 Three main watercourses provide drainage within the project area. Allt Giubhais Beag drains the westernmost corner of the project area. This watercourse joins the Glascarnoch River approximately 750 m downstream from the Glascarnoch dam and immediately downstream of the Aultguish Inn. The Allt Giubhais Beag has a total catchment area of 4.5 km².

- 2.11.4 Allt Bad an t-Seabhaig drains the eastern and south-eastern part of the project area and forms part of the eastern project area boundary. This watercourse joins the Black Water approximately 1,050 m upstream of Inchbae and has a total catchment area of 5.9 km².
- 2.11.5 Allt Glac an t-Sithein drains the central and northern part of the project area. This watercourse divides in its lower reaches, forming two separate watercourses: the Fèith Bhàite, which drains north to the Glascarnoch River, and the Allt Cearc an t-Slugain, which drains north-east to the Black Water. The total catchment has an area of 4.9 km².
- 2.11.6 Part of the access track lies within the catchments of a number of minor unnamed watercourses. This area is 1.6 km² in total.
- 2.11.7 The area of native woodland planting has had a network of drainage ditches excavated, to encourage drainage and better tree growth within the boundary of the planted area. This has had limited success, with the area largely remaining boggy underfoot and the drainage ditches serving principally as areas of *Sphagnum* growth.

Peat characteristics

- 2.12 Where present, the peat is mainly in the form of upland blanket peat with a relatively smooth and undulating surface. Some erosion is notable in the form of peat haggings, below the col between Sìthean nan Cearc and Beinn nan Cabag, and in the peatland area east of Beinn nan Cabag. Within the project area, haggings is not severe or extensive and mainly reflects the natural direction of surface water drainage across the hillslope.
- 2.13 The presence of the network of drainage ditches within the woodland planting has had some influence on the peatland quality in this part of the project area. The peat development has been partially disrupted by the attempted drainage and, as a result, the peat is not in pristine condition. The area would formerly have consisted of a patchwork of peaty soils, shallow peat and deeper peat reflecting the undulating topography.

3 PEAT CALCULATIONS

Peat at Kirkan Wind Farm

- 3.1 The project area was identified to include areas of peatland at an early stage, as indicated by superficial geology and soils mapping for the region. A broad-scale peat depth survey on a 100 m grid was undertaken by Quadrat Scotland Ltd in 2014 and 2016, with additional surveying carried out by Avian Ecology in July 2018. The peat depth data from these surveys were used to inform the infrastructure layout design process in August and September 2018.
- 3.2 A subsequent phase of peat depth surveying was undertaken by RSKW in October 2018, focusing on the proposed infrastructure layout. Further minor amendments to the layout to avoid one area of deep peat required a small amount of additional surveying in November 2018, also undertaken by RSKW.
- 3.3 The combined peat depth data were used to generate a detailed map of peaty soil and peat depth for the project area. This is provided on Figure 9.1.2. Measured peat and soil depths range from 0 (bedrock at surface) to 4.69 m. A total of 1,546 peat depth measurements have been recorded for the project area and immediate surroundings.
- 3.4 The intention has been to avoid peatland areas where possible, and to minimise incursion into peatland where it has not been possible to avoid it altogether. Approximately 62% of the development infrastructure including drainage is underlain by peaty soil or topsoil no greater than 0.5 m deep.

Peat excavation volumes

- 3.5 The tables below set out the calculated estimated volumes of peat that need to be excavated in order to allow construction 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'.
- 3.6 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 it 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.
- 3.7 Volumes of peaty soil and topsoil have not been included, in line with the definition of peat quoted above. Soils will also require excavation but are less sensitive than peat to both excavation and restoration.
- 3.8 Table 9.4.1 provides peat volumes that require excavation in order to allow construction of the access track network and associated drainage. The volumes include allowance for passing places at an average of one every 500 m and turning heads as necessary at some turbine locations. The track sections are identified on Figure 9.4.1 and peat volume calculations make use of measured peat depth data for the relevant track section.

Table 9.4.1: Peat excavation volumes for access tracks, including passing places and turning heads, and trackside drainage

Scheme element	Acrotelm (m ³)	Catotelm (m ³)	Total (m ³)
Track section 1	2,298	276	2,574
Track section 2	5,777	4,287	10,063
Track section 3	7,540	5,920	13,460
Track section 4	6,207	6,083	12,289
Track section 5	3,338	3,093	6,431
Track section 6	7,899	8,639	16,539
Track section 7	5,131	6,624	11,755
Total	38,190	34,922	73,113

3.9 Table 9.4.2 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 9.4.2: Peat excavation volumes for turbines, hardstandings, crane pads and associated drainage

Scheme element	Acrotelm (m ³)	Catotelm (m ³)	Total (m ³)
Turbine 1	462	102	564
Turbine 2	No peat		
Turbine 3	359	40	399
Turbine 4	924	721	1,644
Turbine 5	1,010	1,124	2,134
Turbine 6	606	501	1,107
Turbine 7	1,386	1,843	3,229
Turbine 8	462	32	494
Turbine 9	404	445	849
Turbine 10	1,010	715	1,726
Turbine 11	No peat		
Turbine 12	808	740	1,721
Turbine 13	No peat		
Turbine 14	180	65	244
Turbine 15	1,010	736	1,746
Turbine 16	898	1,308	2,206
Turbine 17	202	12	214
Total	9,722	8,382	18,276

3.10 Table 9.4.3 provides peat volumes that require excavation in order to allow construction of additional infrastructure, such as construction compounds and the substation, and to allow excavation of the borrow pits, plus associated drainage. Calculations have been made for each footprint making use of peat depth data for the relevant infrastructure element.

Table 9.4.3: Peat excavation calculations for other infrastructure elements

Scheme element	Acrotelm (m ³)	Catotelm (m ³)	Total (m ³)
Construction compound 1	No peat		
Construction compound 2	No peat		
Construction compound 3	769	108	876
Substation building	1,526	498	2,024
Substation compound	750	240	990
Borrow pit 1	No peat		
Borrow pit 2	607	486	1,093
Met mast 1	No peat		
Met mast 2	No peat		
Total	3,652	1,332	4,983

3.11 A summary of the total peat volumes is provided in Table 9.4.4.

Table 9.4.4: Summary of estimated peat excavation volumes

Scheme element	Acrotelm (m ³)	Catotelm (m ³)	Total (m ³)
All tracks	38,190	34,922	73,113
All turbine infrastructure	9,722	8,382	18,104
All other infrastructure	3,652	1,332	4,983
Total	51,564 (54%)	44,636 (46%)	96,200

Peat reuse

3.12 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 the peat.

Dressing off edges of constructed infrastructure

3.13 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 undertaken to create a suitable tie-in to the surrounding topography. This has a twofold purpose – to reduce the visual effect of the infrastructure and to retain as much of the existing habitat as possible.

3.14 A secondary part of this would involve full reinstatement of elements of infrastructure only required for the construction phase, principally the additional construction footprint around the turbine bases. Parts of the turbine hardstandings may also be reinstated following installation of the turbines.

Verge reinstatement on cross-slope tracks

3.15 For areas where cut tracks cross slopes, the downslope margin can be reinstated to form a verge slightly raised above the track level. This acts as a visual screen when looking

upslope, and also acts to direct track surface runoff into the trackside drainage on the opposite side, where it can be better directed for treatment.

Verge reinstatement on other track sections

- 3.16 For cut tracks that do not cross slopes, and for the upslope verge, the track shoulders should be dressed off in a similar manner to the constructed infrastructure, as above.

Borrow pit restoration

- 3.17 Excavated peat has been used successfully in borrow pit restoration, where the method of reuse and the final restoration profile is in keeping with 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

- 3.18 Peat can provide a valuable material for ditch 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

- 3.19 Calculations have been made to determine where excavated peat can usefully be reused within the wind farm, for the purposes of reinstatement and restoration. Estimated volumes for reuse are provided in Table 9.4.5, subdivided by the different reinstatement and restoration methods that are appropriate for the project area.

Table 9.4.5: Estimated soil and peat volumes for different reuse options

Reuse option	Acrotelm (m ³)	Catotelm (m ³)	Total (m ³)
Dressing off edges of construction infrastructure	8,800	1,000	9,800
Reinstatement of construction infrastructure	10,100	1,100	11,200
Verge reinstatement, cross-slope tracks	9,700	-	9,700
Verge reinstatement, other tracks	13,600	-	13,600
Temporary drainage reinstatement	500	1,500	2,000
Borrow pit restoration	8,200	16,500	24,700
Peatland restoration	1,500	23,500	25,000
Totals	52,400	44,600	97,000

- 3.20 All figures provided in Table 9.4.5 have been rounded down to the nearest 100 m³, to make allowance for the uncertainties present within the figures.

- 3.21 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.
- 3.22 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.
- 3.23 Reinstatement and dressing off have assumed a maximum depth of 0.6 m and an average width of 2.5 m from the infrastructure or track margin, to be varied in practice as best suits the local ground conditions. Reinstatement of cross-slope track verges has assumed a maximum depth of 1.0 m, to allow the verge to sit slightly higher than the track surface in order to act as a visual screen.
- 3.24 Approximately 40% of the catotelmic peat would be used for borrow pit restoration, with acrotelm providing a surface layer. Calculations assume that approximately 10% of each borrow pit would remain accessible during the wind farm operation, to provide aggregate for track repair. Final restoration of the remaining 10% would be undertaken using stored topsoil and unusable aggregate material from the borrow pit areas. The borrow pits have been designed with a shallow bowl-shaped profile in order to facilitate restoration with available peat from the site, with a restored depth of up to 2 m where appropriate.
- 3.25 Temporary drainage restoration would involve filling trackside cut-off drains required during the construction phase, plus any other temporary drainage around infrastructure elements. This would make use of some catotelmic peat with a surface acrotelm layer to promote re-establishment of vegetation.
- 3.26 The balance of excavated peat from the development construction would be used for peatland restoration, within the project area boundary and also within the wider Strathvaich Estate, where peat surveys undertaken by Quadrat Scotland indicate that there is considerable potential for peatland restoration (Quadrat Scotland, 2015). Within the project area, peatland that might be suitable for restoration include sections of the woodland, where an extensive network of drainage ditches has been excavated, and the area of developing peat hags in the western part of the development area, around Turbines 4 and 7, where restoration work may help to minimise future peatland erosion. Figures 1 and 2 within Technical Appendix 6.6 (Habitat Management Plan) indicate areas identified as potential restoration areas within the project area and other parts of Strathvaich Estate.

4 PEAT HANDLING & STORAGE

Peat excavation

4.1 During the construction of the wind farm infrastructure, the Contractor will adopt the following good practice guidelines with relation to peat excavation:

- Where peat conditions are suitable, peat turves will 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 will be removed as divots or mulch rather than as turves. Careful handling will help to keep the vegetated blocks largely the right way up.
- Underlying peat will be extracted as close to intact as is feasible within the constraints of the site. Remoulding of the peat by the excavator will be kept to a minimum.
- Excavated materials will be classified depending on their composition, and each type will be stored separately. Anticipated material classes are: peaty soils and topsoil, subsoil, acrotelmic peat, catotelmic peat, mineral soil, and rock.
- Excavated peat will be transported as short a distance as practicable for either reuse or temporary storage, in order to minimise loss of structure during transport.

4.2 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):

'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

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

Temporary storage

4.4 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 will help to retain its structural integrity as far as possible, will minimise volumes of peat requiring storage and will help to prevent the peat drying out.

- 4.5 The Environmental Clerk of Works will maintain a schedule of reuse and restoration areas and will 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.
- 4.6 Soils, peat turves and peat will all be stored separately. The following outline good practice will be applied to all areas of peat and soil storage:
- Excavated materials will 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 will be avoided for excavated material storage, including peat.
 - Peat turves will be stored vegetation-side up.
 - Careful handling of upper-layer peat divots, from areas where peat turves cannot be excavated, will help to retain vegetated blocks the right way up.
 - Catotelmic peat will 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 will help to shed rainwater and prevent ponding of water on the stockpile.
 - In periods of dry weather, light spraying of the temporary peat stores will be applied in order to minimise drying.
 - All temporary storage areas for excavated peat and soils will be at least 50 m from any watercourse.
 - Runoff from stored peat and soils will be managed to avoid impacts to habitats and watercourses. Where necessary, drainage control measures such as use of silt fences or straw bales will 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 Clerk of Works.
- 4.7 Areas identified as potentially suitable for peat and soil stockpiles are shown on Figure 9.4.1.

Reinstatement and restoration

- 4.8 The following principles will be applied in all situations where peat is being reinstated or used in restoration:
- Reinstatement of peat turves and vegetated peat divots will 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 will 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 will be minimised in order to prevent or limit dewatering and desiccation.
- Where reinstatement of peat or soil is required on steeper slopes, a biodegradable geotextile may be appropriate to provide additional stability to the slope until vegetation becomes re-established.

Updated peat management

- 4.9 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 specified by the Environmental Clerk of Works, 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.

5 SUMMARY

- 5.1 This Outline Peat Management Plan provides an assessment of the likely volumes of peat that will require excavation during the project construction, and of the volumes of peat that can legitimately be used in reinstatement and restoration of project infrastructure. The assessment has included consideration of all proposed project infrastructure that will require construction and excavation work where peat would require removal.
- 5.2 The 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 project area or for essential peatland restoration work within the wider Strathvaich Estate area. Approximately 54% 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.

6 REFERENCES

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