Appendix 9.2 Outline Peat Management Plan

Contents

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Introduction

This Outline Peat Management and Restoration Plan (PMP) document has been prepared by ITPEnergised (ITPE) on behalf of the Applicant for the construction of the Proposed Development, located approximately 8 km to the north of Lairg and 4 km to the east of Loch Shin in the Highland region. This will be by updated to a Detailed PMP by the Applicant and the contractor following pre-construction site investigation works, and will be agreed with The Highland Council (THC), the Scottish Environment Protection Agency (SEPA) and NatureScot (formerly Scottish Natural Heritage (SNH)).

The site comprises mainly plantation forestry and scrub birch interspersed with areas of open moorland. Areas of potentially regenerating woodland are observed on the banks of Feith Osdail. The site is currently used primarily by the landholder for deer stalking.

The infrastructure of the Proposed Development comprises four wind turbines and associated crane hardstanding and laydown areas, one permanent substation and associated energy storage compound, two temporary entrance compounds and one main temporary construction compound, a meteorological mast, and three borrow pit search areas. With respect to access, the development would include approximately 255 m of new track, of which 730 m would be reinstated post-construction. Existing rides through the forestry have been used to route tracks where possible, to limit felling requirements.

The design of the Proposed Development has been undertaken as an iterative process to avoid areas of deep peat as much as possible to limit peat excavation and to limit the potential for peat slide, as presented in Chapter 2: Site Selection and Design, and Chapter 9: Hydrology, Hydrogeology and Geology.

The PMP provides details on the approximate predicted volumes of peat that would be excavated during construction, the characteristics of the peat that would be excavated, and the principles of how and where this excavated peat would be stored, reused and managed. This PMP would be further developed and implemented subsequent to the Proposed Development receiving consent. Further details and specific plans would be determined during the detailed design process and once further pre-construction site investigations have been undertaken. These details would then be included in a detailed PMP as part of the detailed Construction Environment Management Plan (CEMP). The responsibility for the implementation of the PMP would be with the Principal Contractor.

The potential volumes of peat extracted and re-used has been calculated based on an area specific or infrastructure specific basis using a modelled peat contour plan developed on probing surveys where excavations would be undertaken. This has allowed high levels of confidence in the estimation of the volumes of peat that would be excavated and that would then require appropriate re-use.

Objectives

The PMP outlines the overall approach of minimising disruption to peatland, and it aims to ensure that all further opportunities to minimise peat disturbance and extraction would be taken during detailed design and construction of the development.

The PMP has been developed to demonstrate that peat has been afforded significant consideration during the construction phase of the Proposed Development, should consent be granted. It aims to propose mitigation measures that would minimise any impacts and the long-term habitat restoration and management plans.

The PMP seeks to identify that appropriate proposals to re-use excavated peat can be accommodated within the Proposed Development and associated Habitat Management Plan (HMP) proposals (presented in outline in

Appendix 8.7), without significant environmental or health and safety implications, to minimise risk in terms of carbon release and human health.

Layout

The layout of the PMP is as follows:

- summary of relevant policy and guidance;
- definition of peat, details of peatland characteristics and peat conditions at the site;
- potential impacts on peat and an overview of peat excavation principles;
- estimate of peat volumes to be excavated and reinstated;
- classification of the peat characteristics present at the site;
- peat excavations and handling methods/controls and temporary peat storage; and
- reuse in infrastructure construction restoration and habitat management proposals.

Tables are included showing:

- a summary of peat depth data;
- locations and quantities of excavated peat that would be generated, with summary information on interpreted peat depth, dimension and area details of the infrastructure areas;
- locations and available volumes for re-use of excavated peat; and
- a summary of the peat extraction and re-use balance.

Policy and Guidance for Peat Management

This PMP has been compiled in accordance with the following policy and best practice guidance:

- Good Practice during Windfarm Construction (Scottish Renewables, SNH, SEPA & Forestry Commission Scotland, 4th Edition 2019);
- Guidance on Developments on Peatland: Site Surveys (Scottish Government, Scottish Natural Heritage and SEPA, 2017);
- SEPA Regulatory Position Statement – Developments on Peat (SEPA, 2010);
- Guidance on the Assessment of Peat Volumes, Reuse of Excavated Peat and the Minimisation of Waste (Scottish Renewables and SEPA, 2012);
- Peat Landslide Hazard and Risk Assessments. Best Practice Guide for Proposed Electricity Generation Developments (Scottish Government, 2017); and
- Developments on Peat and Off-Site Uses of Waste Peat (SEPA, 2017).

Peat Conditions

Definitions of Peat

The Scottish Government Peat Landslide Hazard Best Practice Guide (2017) uses the following Joint Nature Conservation Committee (JNCC) report 455 'Towards an Assessment of the State of UK Peatlands' definition for classification of peat deposits:

- **Peaty (or organo-mineral) soil:** a soil with a surface organic layer less than 0.5 m deep;

- **Peat:** a soil with a surface organic layer greater than 0.5 m deep which has an organic matter content of more than 60 %; and
- **Deep Peat:** a peat soil with a surface organic layer greater than 1.0 m deep.

Peat Conditions at the Site

Desk Study

A desk study has been undertaken to review published geological conditions, based on British Geological Survey (BGS) mapping, the SNH Carbon and Peatlands Map (2016), and aerial photography.

Site Survey

Following on from the desk study, field surveys were undertaken, to measure the peat depth and provide additional observations relating to slopes, general topography and ground cover. Peat survey work undertaken at the site is summarised below and further detail is provided in Appendix 9.1: Peat Slide Risk Assessment.

An initial 'Stage 1' peat survey was undertaken in 2015 as part of earlier work relating to a proposed development at the site. The surveys were undertaken by a team of suitably qualified and experienced surveyors, and provided a 100 m spaced grid, as per the above-noted guidance.

The Stage 1 survey identified relatively shallow peat across the site, with the deepest peat located in the north-east site area, as well as along the A836 in the western site area. Following re-start of the project in 2020, including review and revision of the site layout and design, Stage 2 peat surveys were required to confirm and expand on Stage 1 findings, targeting the proposed infrastructure locations.

The Stage 2 peat depth probing exercise included probes at and around proposed turbine and hardstanding locations, the substation and energy storage compound, temporary entrance and construction compounds, the met mast, and along access tracks (with offset probes either side of the proposed track centre to identify potential variations in peat depth and allow track alignment to be amended to minimise the requirement for peat excavation),

Following this Stage 2 survey work, some changes were made to the "design chill" layout, reducing the extent of infrastructure sited on areas of deeper peat. An area of track which would have crossed an area of peat with depths locally >1 m was removed from the design, and another section of road was realigned to avoid deep peat. Other road alignments were slightly amended for design reasons unrelated to peat, but within areas where minimal peat depths had been recorded. An ongoing dialogue with SEPA was maintained to confirm suitability of the survey programme in response to design proposals.

In total, data has been obtained from 605 peat probe locations across the site area.

Peat samples were extracted using a hand auger at seven locations, and were subject to laboratory testing for moisture content, carbon content, and bulk density to help characterise the nature of the peat and/or peaty soil.

Peat Survey Results

The peat depth survey identified shallow or absent peat across much of the site, with approximately 70% of probes recording peat depths less than 0.5 m (defined as peaty or organo-mineral soil). Less than 9% of probes identified deep peat (>1.0 m depth), largely in the west and north-east of the site.

Peat thicknesses recorded at the site, from Stage 1 and Stage 2 surveys combined, are summarised in Table 1.

Table 1 – Distribution of Peat Depth Recorded at the Site

Peat Depth Interval (m)	Number of Occurrences	% of Probes
Nil	58	9.59
0.01 to 0.49	363	60.09

Peat Depth Interval (m)	Number of Occurrences	% of Probes
0.50 to 0.99	130	21.49
1.00 to 1.49	30	4.96
1.50 to 1.99	14	2.31
2.00 to 2.49	8	1.32
2.50 to 2.99	1	0.165
3.0 or more	1	0.165
Total	**605**	**100.0**

Laboratory testing results from samples of peat taken during peat depth surveys identified moisture contents generally within or slightly below the typical values for peat of 85 to 95% for most of the samples. Carbon contents were recorded as being substantially below the typical value of 55% for peat in most samples. This suggests that materials across the site may be considered peaty or organo-mineral soils, rather than peat.

Full details of the peat depth survey, together with a Peat Slide Risk Assessment, are provided in Appendix 9.1.

Potential Impacts on Peat During Construction

The initial construction phase for wind energy projects will often include soil and peat stripping and excavation activities associated with constructing the foundations for turbine bases, crane pads, access tracks, control compound and substation, temporary construction compounds, and borrow pits.

There are four main types of impact on peat which can occur during construction. These are:

- Loss of structural integrity and peat strength, due to stripping off or damaging the surface vegetation turf, excavation, handling and transporting peat (particularly wet, subsurface peat);
- Erosion and gullying, caused by exposure and desiccation of bare peat surfaces primarily caused by water erosion, due to surface runoff after rainfall;
- Contamination, caused by leaks, spillages or inappropriate laydown of materials; and
- Peat slide, caused by laying wet peat on top of wet peat, laying other heavy materials (including excavated mineral soil or other construction materials) on top of wet peat or by inappropriate stockpiling, such as attempting to create stockpiles of peat that are too high, without bunding, engineering or geotechnical support.

A range of methods and control measures are described below which are designed to prevent these impacts from occurring.

General Excavation Principles

The Proposed Development design required to take account of a number of environmental and technical constraints. The design has avoided areas of deep peat, and has largely avoided any areas where peat depth is greater than 0.5 m, i.e. the majority of proposed infrastructure is sited in areas underlain by peaty or organo-

mineral soils rather than peat. Only the proposed T1 location is within an area where the average depth of peat recorded by probes is marginally over 0.5 m.

During the construction of the Proposed Development, all reasonable measures will be taken to avoid or minimise excavations and minimise disturbance to peat and peatland habitats. For example, with probes around the T1 location recording an average depth of 0.53 m, and a number of the probes in the immediate vicinity of the turbine centre location recording peat depths less than 0.5 m, there is considered to be good opportunity for micro-siting following detailed pre-construction site investigations, to reduce the requirement for excavation of peat even further than is estimated in this assessment.

Ground disturbance areas around excavations will be kept to a minimum and will be clearly defined on-site. Access to working areas during construction will be restricted to specified routes, comprising constructed tracks.

Cable routes will in general follow access tracks. Any peat excavated will be replaced. Therefore, this has not been included within the excavation volumes; however, it will still need to be managed on-site and the details of this will be provided within the Detailed PMP for the Proposed Development, which will be prepared by the Applicant and the contractor and agreed with THC, SEPA and NatureScot.

Peat and topsoil excavated at the temporary construction compounds and the temporary stretch of access road south of the Feith Osdail watercourse will be stored and also reinstated. Therefore, peat generated from these areas has not been included within the excavation volumes; however, it will still need to be managed on-site. The details of site-specific storage methodology and locations will be provided within the Detailed PMP, which will be produced following preconstruction investigative works at site.

Estimation of Peat Volumes to be Excavated

The construction period for the Proposed Development would be approximately 12 months on-site. The programme, phasing and nature of construction activities are described in Chapter 3. Those activities which would generate volumes of peat are as follows:

- establishment of the temporary entrance and construction compounds and temporary access road, which would include stripping of topsoil and peat/peaty soils and careful stockpiling of the material for later reinstatement in accordance with the CEMP which would be prepared in advance by the appointed Principal Contractor;
- formation of cut track, which would involve the removal and temporary storage of turves, as appropriate, followed by excavation down to formation level;
- construction of the turbine foundations and crane hardstandings, which would require the excavation of peat and subsoil to expose underlying bedrock or other suitable founding stratum, and in some cases excavation of rock to form a suitable level platform for construction. The depth of the excavation in superficial soils would be dependent on the ground conditions and depth to bedrock, but it has been assumed that the full depth of peat would be excavated from the full development area of each turbine and hardstanding;
- excavation of trenches for underground cabling between the turbines and the substation, which would typically be 0.5 m deep and 1 m wide. These would be carefully reinstated with the stored peat once the cables have been laid; and
- construction of the permanent substation and energy storage compound and one permanent met mast.

Table 2 below provides an estimate of peat volumes to be excavated, as well as assumptions used in developing the estimates. It also provides an estimate of volumes of acrotelmic and catotelmic peat to be disturbed, with further information on the classification of materials provided below Table 2.

Table 2 – Calculated Peat Volumes to be Excavated

Infrastructure	Length (m)	Area (m2)	Peat depth (m)	Total Volume (m3)	Acrotelm (m)	Catotelm (m)	Volume Acrotelm (m3)	Volume Catotelm (m3)	Assumptions
T1 - base	N/A	154.0	0.53	81.6	0.40	0.13	61.6	20.0	Includes excavation of turbine foundation to base. Assumes 14m diameter, max excavation depth 3m depth.
T2 - base	N/A	154.0	0.32	49.3	0.32	0	49.3	0.0	
T3 - base	N/A	154.0	0.39	60.0	0.39	0	60.0	0.0	
T4 - base	N/A	154.0	0.28	43.1	0.28	0	43.1	0.0	
T1 hardstanding	N/A	1976.6	0.46	909.2	0.40	0.06	790.6	118.6	Assumes 1650m^2 hardstanding plus 314m^2 laydown area, plus 3.6m x 3.5m external transformer, excavation depth up to 1m.
T2 hardstanding	N/A	1976.6	0.30	593.0	0.30	0	593.0	0.0	
T3 hardstanding	N/A	1976.6	0.42	830.2	0.40	0.02	790.6	39.5	
T4 hardstanding	N/A	1976.6	0.32	632.5	0.32	0	632.5	0.0	
Energy storage and control room compound	N/A	2000.0	0.26	520.0	0.26	0	520.0	0.0	Assumes 100m x 20m storage and control room compound
Met mast	N/A	16.0	0.45	7.2	0.40	0.05	6.4	0.8	Assumes 4m x 4m base, excavation depth up to 2m.
Permanent tracks	1,925	13.0	0.41	5.4	0.40	0.01	5.3	0.1	Assumes 1,925m length x 5m width.
Borrow pit search area – North	N/A	1,600.0	0.35	560.0	0.35	0	560.0	0.0	Entire borrow pit search areas, full depth of peat to be excavated (conservative estimate as less than full area anticipated to be required).
Borrow pit search area – Central	N/A	1,600.0	0.34	544.0	0.34	0	544.0	0.0	
Borrow pit search area – South	N/A	1,600.0	0.32	512.0	0.32	0	512.0	0.0	
Total				**5,347.5**			**5,168.4**	**179.1**	

Classification of Excavated Material

There are two distinct layers within peat, the upper acrotelm and the lower catotelm. The acrotelm is the fibrous surface to the peatland, which exists between the growing peat surface and the lowest position of the water table in dry summers.

Peat soil generally below 0.5 m to up to 1 m in depth is classified as the catotelm, moderately decomposed with a high fibrous content and moderate water content. There are various stages of decomposition of the vegetation as it slowly becomes assimilated into the body of the peat.

The excavation volumes of acrotelm and catotelm presented in Table 2 are based on a simple assumption of the upper 0.4 m of peat being acrotelm and any deeper peat being catotelm.

It should be noted that laboratory testing results from samples of peat taken during peat depth surveys identified that most samples recorded moisture contents generally within or slightly below the typical values for peat of 85 to 95%, but carbon contents substantially below the typical value of 55% for peat. This suggests that materials across much of the site may be considered peaty or organo-mineral soils, rather than peat. The assumption of all peat deeper than 0.4 m at the site being catotelm is therefore considered to be quite conservative, with much of the volume of peat to be excavated actually likely to be drier, denser, exhibiting higher shear strength, and with lower carbon content than catotelmic peat. It should, however, be noted that the state of decomposition will increase as depth increases. It is also noted that the estimate of catotelmic peat to be excavated, even based on the above conservative assumptions, is very limited.

Peat Management Measures

Peat Protection Ahead of Soil Stripping

The development layout has already taken into account constraints relating to sensitive areas, including ecological, ornithological and archaeological receptors, forestry, and geology/peat characteristics. The Proposed Development layout, including working areas and access track routes, would be marked on an Access Plan and would be demarcated on the ground as appropriate. Off-road tracking of heavy plant would not be permitted outside the marked area.

The Access Plan and the route of the access tracks would provide a designated controlled route and a permissible corridor within which service vehicles and plant can operate prior to peat and topsoil stripping. The purpose of the Access Plan would be to protect in situ peat in areas that are not affected by the development and to prevent unnecessary vehicle and plant tracking across these areas. The following rules would apply to the Access Plan:

- There would be no vehicle access to site areas outside the area marked on the Access Plan and demarcated as appropriate on the ground;
- There would be no stopping of vehicles outside the area marked on the Access Plan;
- Servicing or refuelling activities would only take place within clearly designated areas within the Access Plan, identified in the CEMP; and
- Laydown of materials (either construction materials or waste materials) would take place only within designated areas within the Access Plan. There would be no laydown, unless identified in the construction drawings, of any type of materials either within the access route corridors or anywhere outside of designated areas. All laydown areas not already considered would be subject to a peat slide risk assessment prior to their designation.

Access routes and working areas would be clearly delimited throughout the construction phase to ensure that peat compaction and damage in areas not directly involved in the works would be avoided. The construction

works would be phased to ensure that peat was stripped in each part of the site ahead of mineral subsoil (if present).

Handling of Excavated Material

Excavation of soils would be undertaken in such a manner as to avoid cross-contamination between distinct acrotelmic and catotelmic horizons, where possible and if applicable (i.e. where catotelmic peat is present). The different horizons would be kept and stored separately for use at a later date.

During and after excavation, the storage, haulage and reuse of excavated material would be planned to minimise material movement around the site. Where possible, immediate reuse is preferred to temporary storage. For example, excavated peat to form access tracks will be used to form verges alongside the new tracks, thereby minimising the need for stockpiling and storage. The detailed construction works programme, setting out excavation and reuse proposals for each element of the build, will be set out by the Principal Contractor but will adhere to the principles presented in this PMP and the Outline CEMP (Appendix 3.2).

Turves would be stripped and handled with care and stored with the vegetation side upward, such that damage to the living vegetation mat would be prevented or minimised as far as possible.

To ensure the minimum amount of damage to peat during stripping activities, strict procedures would be adopted for heavy plant access, stripping and handling/transport of surface, intact, peaty turf, and subsurface wetter peat (where present). Antecedent moisture conditions are critical for this and peat stripping, and handling would not take place if there are heavy rainfall conditions.

Peat stripping and excavation would generally follow the methodologies recommended for mineral soil by MAFF (2000) and Defra (2009). However, peat is a very different material from mineral topsoils and subsoils. For example, it is recognised that subsurface wet peat lacks strength and its consistency in many cases is that of a slurry. Hence, the stripping and excavation method(s) to be used in each part of the site would be agreed in advance with the Environmental Clerk of Works (ECoW) and Geotechnical Engineer, taking account of the recorded peat depths and characteristics both from surveys undertaken to date, and from detailed pre-construction site investigation works.

Wherever possible, a 360^{o} excavator would be used to permit stripping of large-scale peat turves, with their vegetation intact. Ideally these should be a minimum of 0.5 m deep and up to 1 m^{2}. However, the depth and scale would depend on the depth, consistency and condition of the surface peat at each location and the plant used for stripping. Where practicable, the largest possible turves that allow for the turves to remain intact would be stripped. This assists in maintaining the structural integrity of each excavated turf.

Temporary Storage

Temporary storage may be required where material is not needed for immediate reinstatement. Best practice measures for temporary and permanent peat storage during construction would be followed, in accordance with guidance including Developments on Peatland: Guidance on the Assessment of Peat Volumes, Reuse of Excavated Peat and the Minimisation of Waste (Scottish Renewables and SEPA, 2012).

To minimise handling and haulage distances, where possible, excavated material would be stored local to the site of excavation and/or local to the end–use site where it would be required for re-profiling, landscaping or structural purposes. The exact storage locations would be agreed with the Geotechnical Engineer and ECoW prior to commencement of the main phase of works. Details would be provided on a plan to accompany the PMP and relevant Method Statements, for agreement with NatureScot and SEPA.

Any temporary peat storage locations would be appropriately located and designed to minimise impact to sensitive habitats and species, prevent risks from material instability and runoff into watercourses.

Stripped materials would be carefully separated to keep peat and other soils apart and stored in appropriately designed and clearly defined separate piles. Peat would be excavated as turves which would be as large as possible and kept wet in order to minimise desiccation during storage.

Stockpiles would be isolated from any surface drains and a minimum of 50 m away from watercourses, and stockpiles would not be located on areas of deep peat, in order to avoid peat slide risks associated with

additional loading. Stockpiles would include appropriate bunding to minimise any pollution risks where required. Excavated topsoils would be stored on geotextile matting to a maximum of 1 m thickness.

The maximum height of any peat stockpiles would be carefully controlled in accordance with peat slide risk assessment considerations and nature of the material being stored, under the supervision of the ECoW and Geotechnical Engineer. Turf would be stockpiled separately. Peat would not be stockpiled for more than six months, unless otherwise agreed with SEPA.

Turves would be stored turf side up and would not be allowed to dry out. The condition of stored turves would be monitored by the ECoW.

Estimation of Peat Volumes to be Reinstated

Excavated peat from the construction process will be reused in the following ways:

- Reinstatement of temporary infrastructure (temporary construction compound, temporary laydown areas, temporary access road section);
- Appropriate landscaping and bunding of new infrastructure e.g. track sides, turbine base batters, and substation compound batter;
- Reinstatement of the borrow pit excavation areas;
- Use in restoration of peatland habitat at the proposed Habitat Management Plan area(s) as required and appropriate, i.e. re-use of excavated peat excavated in areas of felling, to create deeper areas of peat.

More information on the above-noted peatland restoration proposals is provided in the outline Habitat Management Plan, Appendix 8.7.

Table 3 shows estimated volumes of peat that can be used to reinstate infrastructure and provide appropriate landscaping, in line with the current best practice listed above. This also provides an indicative breakdown of estimated volumes of acrotelmic and catotelmic peat.

Table 3 - Calculated Restoration Volume Available for Reuse of Excavated Peat

Infrastructure	Total Area (m^2)	Average Depth (m)	Total Volume (m^3)	Max Catotelm depth (m)	Remainder (acrotelm) (m)	Volume Catotelm (m^3)	Volume Acrotelm (m^3)	Assumptions
Turbine - base batters	465.0	0.5	232.5	0.2	0.3	93.0	139.5	Assumes base circumference of 116.24 x 0.5m high (average) x 1m wide. Acrotelm (turves) for upper 0.3m.
Hardstanding landscaping batters	2040.0	0.3	612.0	0.0	0.3	0.0	612.0	Assumes 3m wide batter x 1m high at highest end, grading down to ground level (0.3m average height). All acrotelm given limited depth.
Storage and control room compound landscaping batter	240.0	0.5	120.0	0.2	0.3	48.0	72.0	Assumes base circumference of 240m x 0.5m high x 1m wide

Infrastructure	Total Area (m^2)	Average Depth (m)	Total Volume (m^3)	Max Catotelm depth (m)	Remainder (acrotelm) (m)	Volume Catotelm (m^3)	Volume Acrotelm (m^3)	Assumptions
Permanent track verges	9625.0	0.5	4812.5	0.2	0.3	1925.0	2887.5	Verge either side of 1,925m of tracks. Assumes 2.5m wide verge x max. 1m high, grading down to ground level. Acrotelm (turves) for upper 0.3m.
Borrow Pits	4800.0	1.0	4800.0	0.7	0.3	3360.0	1440.0	Assumes maximum fill of 1m given generally shallow peat depth in surrounding area. Maximum of 0.7m catotelm given likely high water content and low strength.
Total volume of excavated peat that could be reused			5347.5			179.1	5168.4	
Total reinstatement volume available for reusing excavated peat			10577.0			5426.0	5151.0	
Remaining Excavated Peat			-5229.5			-5246.9	17.4	

The calculations provided above illustrate that there are clearly sufficient opportunities to utilise the total volume of excavated peat for reinstatement on-site following methods described in best practice guidance. The calculations suggest that there could be a small excess of excavated acrotelmic peat. Given the conservatisms employed in assumptions regarding peat versus peaty or organo-mineral soils, and the opportunities to micro-site infrastructure away from deeper peat following detailed pre-construction site investigations, it is considered that an excess of excavated acrotelm is very unlikely to be realised in practice, and there will be sufficient opportunity to reuse all excavated peat in site restoration.

It should also be noted that these calculations do not include for the potential use of peat in proposed habitat management measures.

Monitoring and Inspection

There would be frequent, routine and regular inspections of peat in all stockpiles and temporary storage areas as part of the PMP audit process. Inspections would assess in situ peat physical conditions, integrity of containment and temporary drainage conditions, and they would seek to confirm that stockpile design and management was adequate to prevent erosion and peat slide. These inspections would take place weekly during stockpile creation and storage.

Should any problems be observed during regular visual inspections of peat stockpiles, this would invoke implementation of an appropriate corrective action which would be recorded and monitored for effectiveness. Types of corrective actions would include, but would not necessarily be limited to: modification of temporary

drainage, additional or modified bunding, incorporating of sediment fencing if required, light re-grading to correct any areas of surface erosion, etc.

Regular, frequent inspections of peat conditions during construction and restoration phases of work would be carried out by the Geotechnical Engineer and ECoW as follows:

- Peat surface, peat profile and peat consistency conditions would be carried out as part of ground investigations prior to the start of construction. This information would provide detailed information on the baseline conditions for each part of the infrastructure footprint.
- Restored peat conditions would be inspected immediately after restoration to ensure that the methods detailed in the PMP had been correctly implemented and to inform any corrective actions should they be required.
- The physical condition of peats would be retained as carefully as possible both at the peat storage and the peat restoration stages. This is particularly important for vegetation establishment.

Conclusion

This PMP provides the guiding principles which would be applied to the detailed PMP for the Proposed Development. The detailed PMP would be prepared for agreement with SEPA and NatureScot and would form part of an overarching CEMP.

This PMP addresses the following peat-related issues:

- the volumes of peat that are predicted to be excavated;
- the capacity to reuse the peat on-site for restoration and landscaping;
- peat handling and temporary storage; and
- restoration and monitoring of peatland habitat.

The calculations provided above illustrate that there are sufficient opportunities to utilise arising peat for reinstatement on-site and potentially for habitat management measures if required and appropriate, following methods described in best practice guidance.

The various calculations presented here would be updated and expanded upon as part of detailed design works, taking account of pre-construction site investigations and micro-siting, to confirm actual quantities of arising peat. The Applicant would achieve an actual balance between arising peat and reinstatement by prioritising the areas for reinstatement, following advice from the project ECoW and Geotechnical Engineer. It is anticipated that a detailed, construction phase PMP would be conditioned, and maintenance and updating of this plan in conjunction with an updated geotechnical (peat) risk register by a Geotechnical Engineer would also be conditioned.

The implementation of the detailed PMP would ensure a robust commitment to excavating, storing and reinstating peat in a manner that follows best practice and ensures the protection of peat throughout the construction and post-construction phases. The detailed PMP and the CEMP for the Proposed Development would also include detailed Construction Method Statements and a 'live' Geotechnical Risk Register. These documents and the associated management and monitoring onsite would ensure the active consideration and protection of peat in all aspects of the construction process.

References

Joint Nature Conservation Committee. (2011). Towards an Assessment of the State of UK Peatlands. Available at:

https://data.jncc.gov.uk/data/f944af76-ec1b-4c7f-9f62-e47f68cb1050/JNCC-Report-445-FINAL-WEB.pdf

NERC. (2012). Geology of Britain. Available at: http://mapapps.bgs.ac.uk/geologyofbritain/home.html Accessed most recently in May 2020.

Scottish Government, SNH and SEPA. (2017). Guidance on Developments on Peatland - Site Surveys. Available at:

https://www.gov.scot/binaries/content/documents/govscot/publications/advice-and-guidance/2018/12/peatland-survey-guidance/documents/peatland-survey-guidance-2017/peatland-survey-guidance-2017/govscot%3Adocument/Guidance%2Bon%2Bdevelopments%2Bon%2Bpeatland%2B-%2Bpeatland%2Bsurvey%2B-%2B2017.pdf

Scottish Natural Heritage (2016). Carbon and Peatland Map. Available at:

https://www.nature.scot/professional-advice/planning-and-development/planning-and-development-advice/soils/carbon-and-peatland-2016-map

Scottish Renewables and SEPA (2012).Guidance on the Assessment of Peat Volumes, Reuse of Excavated Peat and the Minimisation of Waste. Available at:

https://www.gov.scot/binaries/content/documents/govscot/publications/advice-and-guidance/2014/07/assessment-of-peat-volumes-reuse-of-excavated-peat-and-minimisation-of-waste-guidance/documents/guidance-on-the-assessment-of-peat-volumes-reuse-of-excavated-peat-and-the-minimisation-of-waste/guidance-on-the-assessment-of-peat-volumes-reuse-of-excavated-peat-and-the-minimisation-of-waste/govscot%3Adocument/Guidance%2Bon%2Bthe%2Bassessment%2Bof%2Bpeat%2Bvolumes%252C%2Breuse%2Bof%2Bexcavated%2Bpeat%252C%2Band%2Bthe%2Bminimisation%2Bof%2Bwaste.pdf

Scottish Renewables, SNH, SEPA & Forestry Commission Scotland (2019). Good Practice during Windfarm Construction, 4th Edition. Available at:

https://www.nature.scot/sites/default/files/2019-05/Guidance%20-%20Good%20Practice%20during%20wind%20farm%20construction.pdf

SEPA (2010). SEPA Regulatory Position Statement – Developments on Peat. Available at:

https://www.sepa.org.uk/media/143822/peat_position_statement.pdf

SEPA (2017). Developments on Peat and Off-Site Uses of Waste Peat. Available at:

https://www.sepa.org.uk/media/287064/wst-g-052-developments-on-peat-and-off-site-uses-of-waste-peat.pdf