

Appendix 14.3: Outline Peat Management Plan

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1 Introduction

This Outline Peat Management Plan (OPMP) is an Appendix to **Chapter 14: Hydrology, Hydrogeology and Peat** and has been prepared by Fluid Environmental Consulting (Fluid) on behalf of the Applicant to support the Environmental Statement (ES) for Scout Moor II Wind Farm (the 'Project for Assessment'). The Assessment Boundary (**Figure 14.1: Hydrological Setting** of the ES) is located in the South Pennines, between Rawtenstall and Rochdale in North West England. Access to the Proposed Development site is proposed via the A56 / A680, followed by minor roads to the west of the Assessment Boundary.

The Project for Assessment will comprise 12 wind turbines, with a blade tip height typically of 180 m, associated infrastructure and ancillary development.

The total area of the proposed development infrastructure (footprint), including temporary and permanent infrastructure and earthworks, but not including existing tracks, is 249,190m², which has been determined from ArcGIS in support of calculating excavated peat volumes only.

The design of the Project for Assessment has been undertaken as an iterative process to avoid areas of peat as much as possible to limit peat excavation and to limit the potential for peat slide and supported by five peat probing campaigns during design iteration **Appendix 14.2 Peat Survey Report** of the ES.

The OPMP provides the framework for the preparation and implementation of a detailed Peat Management Plan ('PMP') by a specialist peat restoration contractor to work alongside the appointed Principal Contractor ('PC') prior to commencement of construction. The detailed PMP will be secured via planning condition and will be developed in consultation with key stakeholders including Natural England, the Environment Agency and the Local Planning Authorities (LPAs). This will include additional site investigations to be carried out prior to construction and to reflect any proposed micro-siting of infrastructure. Once the PMP has been approved, the specialist peat restoration contractor alongside the PC will be responsible for implementing it.

This OPMP has been developed due to identification of the presence of peatland (see **Chapter 14**) and peat habitats on the Assessment Boundary (**Chapter 9: Ecology**) and should be read in conjunction with the Peat Survey Report included as **Appendix 14.2: Peat Survey Report** of the ES.

The potential volumes of peat extracted and re-used have been calculated based on an area specific or infrastructure specific basis, using a modelled peat contour plan developed on a high-density probing grid where excavations will be undertaken. In this manner the peat contour is more accurate as a distinct boundary is produced where the peat depth changes, rather than the model smoothing out the variations.

This OPMP addresses the management of peat during the construction period for the Project for Assessment, as well as site restoration both during and following construction. In line with Environment Agency guidance¹, as much peat as possible will be reused onsite.

¹ Environment Agency (2004). *Guidance on the Management of Peat Soils and the Use of Peat in Construction*. Science Report SC030136.

2 Objectives

This OPMP has been developed to demonstrate that peat has been afforded significant consideration during the design and assessment process and will be afforded necessary protection during the construction stage of the Project for Assessment, should planning permission be granted. It proposes mitigation and enhancement measures that will minimise any impacts to peat and presents the long-term habitat restoration and management plans to enhance the Assessment Boundary.

The OPMP outlines the overall approach of minimisation of peatland disruption that has been adopted during the design stage. It aims to ensure that all further opportunities to minimise peat disturbance and extraction will be taken.

The OPMP seeks to demonstrate that appropriate proposals to re-use the surplus peat can be accommodated within the Assessment Boundary, without significant environmental or health and safety implications, to minimise risk in terms of carbon release and human health.

The OPMP is intended to be a working document to be used throughout the key stages of the design, construction, operation, decommissioning and re-instatement phases of the Project for Assessment as part of an overall restoration and management strategy. The overall aim is to minimise the impacts associated with excavation of peat by using the following hierarchy of design principles: prevent excavation; reduce volumes of peat excavated; and reuse excavated peat in a manner to which it is suited. This hierarchical approach comprises:

1. Initial assessment of peat coverage on-site based on a broad 75m grid;
2. Design of layout based on various constraints including peat occurrence on-site;
3. Further detailed site surveys undertaken to obtain peat depth across the proposed layout and micro-siting allowance and iteration as necessary;
4. Calculation of estimated volumes of excavated peat and potential reuse volume requirements based upon the proposed site design / layout;
5. Determine whether there is likely to be negative or positive overall peat balance, and whether the generation of excess material can be avoided, and, if not, where reductions in the volumes of excavated materials may be achieved;
6. Site layout is refined to improve avoidance of areas of peat and hence reduce carbon impacts of the project construction activities;
7. Further surveys undertaken if required in new sections of infrastructure;
8. Record specific examples of how overriding principles of prevention and minimisation of peat disturbance are to be taken into account in the design of the site infrastructure;
9. The assessment is to be consistent with and feed into the peat stability and carbon payback assessment; and
10. Identify limitations and make recommendations for further site investigation (post-consent) in order to steer detailed design and micro-siting such that opportunities for further reductions in excavated peat volumes can be implemented where possible.

2.1 Post-Consent and During Construction

The peat mass balance calculations may be further developed and refined post approval of planning permission, and prior to the relevant works commencing, as a consequence of any

further or more detailed ground investigation or survey works required to inform detailed design / micro-siting, or that may be required under planning conditions.

Actual peat volumes excavated during construction will be recorded against the overall predicted volumes provided in **Table 4** of this OPMP. Within micro-siting allowances, the alignment and design of tracks, hardstanding orientation and construction methods will be reviewed to avoid/minimise peat disturbance as far as possible taking account of the more detailed information available once construction commences. A regular review and update of the peat mass balance table will be undertaken by the appointed Contractor and monitored by the Ecological/Environmental Clerk of Works (ECoW) on-site, and made available to regulators as required.

3 Structure

The structure of the OPMP is as follows:

- **Section 4** presents the definition of peat, details of peatland characteristics and peat conditions on-site;
- **Section 5** states the principles of avoidance and minimisation of peat disturbance;
- **Section 6** presents the infrastructure and areas considered for excavation or floating sections and the assumptions that the calculations are based on;
- **Section 7** presents the peat excavation volumes associated with the Project for Assessment;
- **Section 8** presents the proposed reuse of excavated peat;
- **Section 9** details the general peat excavation and handling methods / controls and temporary peat storage;
- **Section 10** discusses the general methodologies for reuse in infrastructure construction restoration and in habitat enhancement; and
- **Section 11** provides a summary.

Tables are included showing:

- **Table 1:** a summary of depth of penetration probe data;
- **Table 2:** a summary of interpreted peat depth at infrastructure areas;
- **Table 3:** a summary of dimension and area details of the infrastructure and associated excavation areas on peat;
- **Table 4:** where excavated peat will be generated and the associated quantities;
- **Table 5:** presents the sensitivity of the peat where it interacts with the proposed infrastructure.

The following ES figures are referenced throughout where relevant:

- **Figure 14.8:** Peat Depth of Penetration and Probe Locations.
- **Figure 14.9:** Estimated Peat Depth.

- **Figure 14.10:** Peat Restoration Areas.

4 Peat Survey Results and Peat Characteristics

To obtain a detailed understanding of the spatial and depth distribution of peat and its properties, a series of tasks have been completed which include:

- National vegetation classification (NVC) habitat mapping (detailed within **Chapter 9: Ecology** of the ES);
- Depth penetration probing (see **Appendix 14.2** and **Figure 14.8: Peat Depth of Penetration and Probe Locations** of the ES) at 11,485 locations;
- Assessment of the characteristics of the peat; and
- Assessment of the condition of the peat on-site (see **Appendix 14.2** of the ES).

4.1 Peat Survey Results

The details of the various peat surveys completed, the methodology and data collected are presented in **Appendix 14.2**.

Each probe measured the depth of penetration and the potential substrate at the limit of penetration (see **Appendix 14.2** and **Figure 14.8** of the ES).

Of the 11,485 locations probed, a total of 4,820 probes (42.0%) recorded depths of 0.3 m or less (no peat), 964 probes (8.38%) recorded depths of penetration between 0.3 m and 0.4 m, 4,137 probes (36.0%) recorded depths of penetration between 0.4 m and 1.0 m, and 1,564 probes (13.6%) recorded depths of penetration >1.0 m as shown in Table 1.

Table 1: Depth of Penetration Distribution

Depth Range (m)	Number of Probes	Percentage of Probes
0 to 0.3 (no peat)	4,820	42.0%
>0.3 – 0.4	964	8.38%
>0.4 – 1.0	4,137	36.0%
>1.0 – 2.0	1,388	12.1%
>2.0	176	1.52%
Total	11,485	100.0%

The depth of penetration at each probe location within the Assessment Boundary is presented on **Figure 14.8** of the ES.

Based on the data collected an interpreted peat depth map (**Figure 14.9** of the ES) was produced to demonstrate the variation in peat across the Assessment Boundary and at the various infrastructure locations. A comparison of the peat depth with the infrastructure footprint is presented in **Table 2**.

Table 2: Peat Penetration Depth across the Infrastructure

Depth Range (m)	Peat depth distribution across infrastructure (m ²)	Peat depth percentage distribution across infrastructure
0 to 0.3 (no peat)	75,787	30.41%
>0.3 – 0.4	24,713	9.92%
>0.4 – 1.0	133,056	53.40%
>1.0 – 2.0	15,036	6.03%
>2.0	595	0.24%
Total	249,190	100.0%

Note: where rows do not exactly add up this is due to rounding of values.

These data indicate that peat >0.3 m depth is present across 69.59% of infrastructure; and no peat (0 – 0.3 m depth) is present across 30.41% of infrastructure. Peat >1.0 m depth is present at 6.27% of infrastructure which includes some floating track sections.

A distinct acrotelm layer was identified in 18 of the 22 coring locations. It ranged between 0.05m and 0.15m of thickness and averaged 0.10m where present.

4.2 Peat Characteristics

Samples of peat were observed in the field as part of the peat depth probing programmes and descriptions noted with respect to its characteristics, including fibre content, decomposition and moisture content.

The Von Post test was also carried out at core locations. Von Post scores for the acrotelm ranged between H2 and H5. A score of H2 is defined as *‘Almost entirely undecomposed peat which, when squeezed, releases clear or yellowish water. Plant remains still easily identifiable. No amorphous material present.’*

H3 is defined as *‘Very slightly decomposed peat which, when squeezed, releases muddy brown water, but from which no peat passes between fingers. Plant remains still identifiable, and no amorphous material present.’*

H4 is defined as *‘Slightly decomposed peat which, when squeezed, releases very muddy brown water. No peat is passed between the fingers but plant remains are slightly pasty and have lost some of their identifiable features.’*

H5 is defined as *‘Moderately decomposed peat which, when squeezed, releases very muddy water with a very small amount of amorphous granular peat escaping between the fingers. The structure of the plant remains is quite indistinct although it is still possible to recognize certain features. The residue is very pasty.’*

This means that there is no amorphous peat in category H1, H2 and H3. H scores of 5 or more begin to have amorphous material, with significant amorphous material occurring at scores of H9 and above.

For the catotelm, Von Post scores ranged between H5 and H8. A score of H5 is defined as *‘Moderately decomposed peat which, when squeezed, releases very muddy water with a very small amount of amorphous granular peat escaping between the fingers. The structure of the plant remains is quite indistinct although it is still possible to recognize certain features. The residue is very pasty.’*

H6 is defined as *‘Moderately highly decomposed peat with a very distinct plant structure. When squeezed, about one-third of the peat escapes between the fingers. The residue is very pasty but shows the plant structure more distinctly than before squeezing.’*

H7 is defined as *‘Highly decomposed peat. Contains a lot of amorphous material with very faintly recognizable plant structure. When squeezed, about one-half of the peat escapes between the fingers. The water, if any is released, is very dark and almost pasty.’*

H8 is defined as *‘Strongly decomposed peat with much amorphous material and very indistinct plant structure. On squeezing, two thirds of the peat and some water passes between the fingers. Residue consists of plant tissues capable of resisting decomposition (roots, fibres, wood, etc.).’*

No amorphous peat was identified on-site.

In terms of reuse, consideration has to be given to the increasingly amorphous and plastic nature of that catotelm with Von Post scores of H7 and above.

5 Avoidance and Minimisation of Peat Disturbance

5.1 Mitigation Hierarchy and Relevant Guidance

In line with the principles set out in national environmental policy and best practice guidance, the Proposed Development applies the mitigation hierarchy—**Avoid, Minimise, Restore, and Compensate/Offset**—to manage potential impacts on peatlands and carbon-rich soils. These principles are embedded in guidance from the UK Peatland Strategy and IUCN UK Peatland Programme guidance², NatureScot³ Natural England⁴, the Environment Agency, and the England Peat Action Plan⁵.

The following hierarchy has been applied:

1. **Avoid** – The design of the Project for Assessment has prioritised avoiding areas of deep peat and sensitive peatland habitat wherever feasible. Infrastructure layout has

² IUCN UK Peatland Programme (2018). UK Peatland Strategy 2018–2040. Available at: <https://www.iucn-uk-peatlandprogramme.org/resources/uk-peatland-strategy-2018-2040>
IUCN UK Peatland Programme. Peatland Restoration. Available at: <https://www.iucn-uk-peatlandprogramme.org/peatland-restoration>

³ NatureScot (2023). Advising on peatland, carbon-rich soils and priority peatland habitats in development management. Available at: <https://www.nature.scot/doc/advising-peatland-carbon-rich-soils-and-priority-peatland-habitats-development-management>

⁴ Forestry Commission, Forest Research, and Natural England (2021). *Decision Support Framework for Peatland Protection and the Establishment of Woodland*. Available at: <https://www.gov.uk/government/publications/decision-support-framework-for-peatland-protection-the-establishment-of-new-woodland-and-re-establishment-of-existing-woodland-on-peatland-in-england>

⁵ DEFRA (2021). *England Peat Action Plan*. Available at: <https://www.gov.uk/government/publications/england-peat-action-plan>

been guided by peat depth data and site-specific ground conditions to avoid unnecessary disturbance.

2. **Minimise** – Where impacts on peat cannot be entirely avoided, the layout of the Project for Assessment has been refined to reduce effects through minimising footprint areas, following existing tracks, and using construction techniques that limit excavation and compaction.
3. **Restore** – Where disturbance to peatland is unavoidable, restoration measures will be implemented. These may include re-establishing vegetation, blocking drains, reprofiling eroded areas, and enhancing degraded bog and fen features.
4. **Compensate/Offset** – Where residual impacts on peat remain, restoration or enhancement of equivalent peatland areas will be undertaken, preferably within the same catchment. This approach aligns with the principles of the England Peat Action Plan and Natural England's guidance on peatland management in development contexts.

This structured approach is intended to ensure that peatland ecosystems are protected, that any unavoidable impacts are minimised and appropriately managed, and that opportunities for restoration and long-term ecological gain are realised.

5.2 Avoidance

The design of the Project for Assessment has been an iterative process (as explained in the Planning, Design & Access Statement submitted with the Application) designed to avoid or minimise impact on blanket bog habitats and deep peat where possible. The mapping of peat depth through probing has therefore allowed a peat depth contour map to be generated with a greater level of detail at proposed infrastructure locations to inform further layout modifications to enable higher confidence in the avoidance of peat. Where avoidance of deep peat has been unavoidable for any section of track, a floating track design is proposed, if feasible. The infrastructure has also been designed to avoid areas where peat slide risk is moderate or higher (further details of this are presented in the **Appendix 14.4: Peat Landslide Hazard and Risk Assessment** of the ES). The final iteration of the infrastructure layout, as submitted with the Application, was informed by detailed peat probing across all infrastructure which resulted in layout modifications which further reduced the presence of infrastructure located on peat (>1.0m depth) to 6.27% of its footprint.

5.3 Further Minimisation

The disturbance of peat by the construction of the tracks, crane hardstandings, turbine foundations and other infrastructure will be minimised as much as practicably possible, taking into account the other constraints to the Project for Assessment. This approach seeks to reduce any peat waste on-site and the need for a waste management licence, as well as aiming to reduce potential carbon losses from the peat excavation process.

Throughout the construction process, the appointed PC (and / or Designer) in conjunction with a specialist peatland restoration contractor will aim to minimise the volumes of excavated peat. As far as possible, appropriate handling and storage of excavated materials will be undertaken such that their integrity and subsequent reuse is not jeopardised.

Adjustment of infrastructure within the micro-siting limits (proposed as up to 50 m) is likely to allow further improvements. Further measures to minimise peat disturbance will be incorporated in the construction process. The principles of the waste hierarchy (outlined above) will be followed to:

- avoid and/or minimise production of excavated peat;
- reuse, where possible, excavated peat on-site to facilitate habitat, ecological and hydrogeological restoration, improvement and enhancement; and
- avoid waste peat being sent for disposal, recovery and/or reuse off-site.

All contractors will be made aware of the sensitivity of peat and wetland habitats and will be required to work within the narrowest practical construction corridor when working in or near areas of peat.

All plans and method statements will be accompanied by justification of the final design and/or construction methods identified by the specialist peatland restoration contractor alongside the PC, including reasons for discounting alternative methods. This is required in order to demonstrate that all avenues for avoiding hydrological disruption and reducing the disturbance and excavation of peat have been considered.

It is anticipated that an ECoW will be appointed and will:

- identify areas of sensitive habitat;
- clearly mark sensitive habitats near to construction areas and make the Principal Contractor aware of the sensitivity of peat habitats and inform all sub-contractors;
- walk the areas affected by the Project for Assessment with engineers before construction commences;
- authorise minor movement of infrastructure within the 50m micro-siting areas where impact can be reduced; and
- monitor construction to ensure that any micro-siting does not result in movements into more sensitive habitats and deep peat unless unavoidable.

6 Peat Excavation Areas and Assumptions

The proposed development infrastructure and dimensions are summarised in **Table 3**. These are calculated exactly from the shapefiles of each infrastructure area and the earthworks provided by the civils team that have been modelled in 3D.

Table 3: Infrastructure Dimension Final Layout

Infrastructure	Dimensions	Area (m ²)
12 Turbine and Crane Hardstanding Areas (permanent)	Approx Rectangle 27m x 20m and 19m diameter circle	9,444
12 Turbine and Crane Hardstanding Areas (temporary)	Irregular shape	26,246
12 Turbine Clearance Areas	Irregular shape	49,446
12 Turbine Earthworks Areas	Irregular shape	49,695
Construction Compound	Approx Rectangle 55m x 100m and Rectangle 38m x 100m	9,408
Construction Compound Earthworks	Irregular Shape	4,165
Substation	Rectangle 75m x 75m	4,128
Substation Earthworks	Irregular Shape	642
Floating Track	785m length	4,514
Floating Track Earthworks	Irregular shape	1,428
Standard Track	11,050m length	60,555
Standard Track Earthworks	Irregular shape	29,519
Total		249,190

7 Excavation Volume Estimates

7.1 Excavated Volumes

Peat excavation volumes associated with the Project for Assessment have been calculated using the GIS package ArcGIS based on the data in **Table 3** and these further assumptions:

- A contour map of assumed peat depth based on interpolation of values from probing across the Assessment Boundary using the natural neighbour interpolation (shown in **Figure 14.9** of the ES);
- Dimensions of the proposed areas for excavation for site infrastructure on peat of >0.3m based on the Final layout shape files provided (shown in **Figure 14.9** of the ES) and detailed in **Table 3**;
- An estimated acrotelm depth of 0.10 m across the infrastructure area where peat (>0.5m organic soil) is present based on the peat core data;

- An estimated catotelm thickness of the average depth of the peat minus the acrotelm (0.10 m) across infrastructure areas where peat is present, and based on the peat core data;
- An assumption that the probe depth is representative of the actual depth of the peat; and
- Any peat excavated for cable trenches is stored adjacent to the trench while the track is laid and then replaced, therefore this volume is not applicable to the excavated volume.

Using the interpreted peat depth contour map (**Figure 14.9** of the ES), the volumes of peat that would be excavated during construction were calculated based on the final layout infrastructure dimensions (ArcGIS shapefiles) as shown in **Table 3**. These calculations produced the following volume estimates and are summarised in **Table 4**:

- A total volume of peat to be excavated of 96,674m³;

This comprises:

- Total volume of acrotelm which will be excavated = 16,746m³; and
- Total volume of catotelm which will be excavated = 79,928m³.

These values are estimates based on the available data and the above assumptions.

Table 4: Summary of Excavated Peat Volumes Based on Actual Footprint

Infrastructure	Infrastructure area (m ²)	Average peat depth over infrastructure area (m)	Percentage of infrastructure with >0.3m depth of peat	Area of infrastructure with >0.3m depth of peat (m ²)	Average peat depth over area of infrastructure with >0.3m depth of peat (m)	Volume of peat excavated (m ³)	Volume of acrotelm peat excavated (m ³)	Volume of catotelm peat excavated (m ³)
Hardstanding Permanent 1	787	0.20	12.58	99	0.37	36.63	9.90	26.73
Hardstanding Temporary 1	2,188	0.09	0.14	3	0.31	0.93	0.30	0.63
Hardstanding Clearance 1	4,121	0.13	2.45	101	0.34	34.34	10.10	24.24
Earthworks 1	6,330	0.12	2.65	168	0.34	57.12	16.80	40.32
Hardstanding Permanent 3	787	0.40	71.41	562	0.47	264.14	56.20	207.94
Hardstanding Temporary 3	2,188	0.41	59.73	1,307	0.56	731.92	130.70	601.22
Hardstanding Clearance 3	4,121	0.37	51.83	2,136	0.54	1,153.44	213.60	939.84
Earthworks 3	3,297	0.44	62.85	2,072	0.58	1,201.76	207.20	994.56
Hardstanding Permanent 4	787	0.14	8.13	64	0.36	23.04	6.40	16.64

Infrastructure	Infrastructure area (m ²)	Average peat depth over infrastructure area (m)	Percentage of infrastructure with >0.3m depth of peat	Area of infrastructure with >0.3m depth of peat (m ²)	Average peat depth over area of infrastructure with >0.3m depth of peat (m)	Volume of peat excavated (m ³)	Volume of acrotelm peat excavated (m ³)	Volume of catotelm peat excavated (m ³)
Hardstanding Temporary 4	2,187	0.20	21.22	464	0.40	185.60	46.40	139.20
Hardstanding Clearance 4	4,121	0.24	28.17	1,161	0.44	510.84	116.10	394.74
Earthworks 4	4,889	0.25	27.39	1,339	0.51	682.89	133.90	548.99
Hardstanding Permanent 6	787	0.19	21.22	167	0.50	83.50	16.70	66.80
Hardstanding Temporary 6	2,187	0.18	22.68	496	0.58	287.68	49.60	238.08
Hardstanding Clearance 6	4,121	0.11	9.95	410	0.62	254.20	41.00	213.20
Earthworks 6	2,314	0.28	31.20	722	0.78	563.16	72.20	490.96
Hardstanding Permanent 7	787	0.06	0.00	0	0.00	0	0	0
Hardstanding Temporary 7	2,187	0.27	34.25	749	0.48	359.52	74.90	284.62
Hardstanding Clearance 7	4,120	0.26	31.46	1,296	0.49	635.04	129.60	505.44

Infrastructure	Infrastructure area (m ²)	Average peat depth over infrastructure area (m)	Percentage of infrastructure with >0.3m depth of peat	Area of infrastructure with >0.3m depth of peat (m ²)	Average peat depth over area of infrastructure with >0.3m depth of peat (m)	Volume of peat excavated (m ³)	Volume of acrotelm peat excavated (m ³)	Volume of catotelm peat excavated (m ³)
Earthworks 7	6,662	0.37	61.47	4,095	0.47	1,924.65	409.50	1,515.15
Hardstanding Permanent 8	787	0.29	100.00	787	0.29	228.23	78.70	149.53
Hardstanding Temporary 8	2,190	0.56	100.00	2,190	0.56	1,226.40	219.00	1,007.40
Hardstanding Clearance 8	4,121	0.54	100.00	4,121	0.54	2,225.34	412.10	1,813.24
Earthworks 8	3,300	0.61	100.00	3,300	0.61	2,013.00	330.00	1,683.00
Hardstanding Permanent 9	787	0.35	100.00	787	0.35	275.45	78.70	196.75
Hardstanding Temporary 9	2,189	0.38	100.00	2,189	0.38	831.82	218.90	612.92
Hardstanding Clearance 9	4,120	0.52	100.00	4,120	0.52	2,142.40	412.00	1,730.40
Earthworks 9	6,336	0.64	100.00	6,336	0.64	4,055.04	633.60	3,421.44
Hardstanding Permanent 10	787	0.19	100.00	787	0.19	149.53	78.70	70.83

Infrastructure	Infrastructure area (m ²)	Average peat depth over infrastructure area (m)	Percentage of infrastructure with >0.3m depth of peat	Area of infrastructure with >0.3m depth of peat (m ²)	Average peat depth over area of infrastructure with >0.3m depth of peat (m)	Volume of peat excavated (m ³)	Volume of acrotelm peat excavated (m ³)	Volume of catotelm peat excavated (m ³)
Hardstanding Temporary 10	2,189	0.27	100.00	2,189	0.27	591.03	218.90	372.13
Hardstanding Clearance 10	4,120	0.39	100.00	4,120	0.39	1,606.80	412.00	1,194.80
Earthworks 10	3,695	0.44	100.00	3,695	0.44	1,625.80	369.50	1,256.30
Hardstanding Permanent 11	787	0.72	100.00	787	0.72	566.64	78.70	487.94
Hardstanding Temporary 11	2,190	0.66	99.22	2,173	0.66	1,434.18	217.30	1,216.88
Hardstanding Clearance 11	4,121	0.56	94.88	3,910	0.58	2,267.80	391.00	1,876.80
Earthworks 11	4,436	0.42	87.98	3,903	0.45	1,756.35	390.30	1,366.05
Hardstanding Permanent 14	787	0.58	100.00	787	0.58	456.46	78.70	377.76
Hardstanding Temporary 14	2,188	0.68	99.86	2,185	0.68	1,485.80	218.50	1,267.30
Hardstanding Clearance 14	4,118	0.70	99.81	4,110	0.70	2,877.00	411.00	2,466.00

Infrastructure	Infrastructure area (m ²)	Average peat depth over infrastructure area (m)	Percentage of infrastructure with >0.3m depth of peat	Area of infrastructure with >0.3m depth of peat (m ²)	Average peat depth over area of infrastructure with >0.3m depth of peat (m)	Volume of peat excavated (m ³)	Volume of acrotelm peat excavated (m ³)	Volume of catotelm peat excavated (m ³)
Earthworks 14	2,727	0.77	91.20	2,487	0.82	2,039.34	248.70	1,790.64
Hardstanding Permanent 15	787	0.54	40.03	315	1.21	381.15	31.50	349.65
Hardstanding Temporary 15	2,178	0.21	27.09	590	0.62	365.80	59.00	306.80
Hardstanding Clearance 15	4,121	0.16	13.69	564	0.78	439.92	56.40	383.52
Earthworks 15	2,910	0.24	25.88	753	0.71	534.63	75.30	459.33
Hardstanding Permanent 16	787	0.29	100.00	787	0.29	228.23	78.70	149.53
Hardstanding Temporary 16	2,185	0.40	100.00	2,185	0.40	874.00	218.50	655.50
Hardstanding Clearance 16	4,121	0.39	100.00	4,121	0.39	1,607.19	412.10	1,195.09
Earthworks 16	2,799	0.48	100.00	2,799	0.48	1,343.52	279.90	1,063.62
Construction Compound	9,408	0.33	100.00	9,408	0.33	3,104.64	940.80	2,163.84

Infrastructure	Infrastructure area (m ²)	Average peat depth over infrastructure area (m)	Percentage of infrastructure with >0.3m depth of peat	Area of infrastructure with >0.3m depth of peat (m ²)	Average peat depth over area of infrastructure with >0.3m depth of peat (m)	Volume of peat excavated (m ³)	Volume of acrotelm peat excavated (m ³)	Volume of catotelm peat excavated (m ³)
Earthworks Construction Compound	4,165	0.65	100.00	4,165	0.65	2,707.25	416.50	2,290.75
Substation	4,128	0.22	16.11	665	0.35	232.75	66.50	166.25
Earthworks Substation	642	0.26	26.17	168	0.39	65.52	16.80	48.72
Excavated Track	60,555	0.52	75.42	45,670	0.64	29,228.80	4,567.00	24,661.80
Earthworks Access Track	29,519	0.60	77.57	22,899	0.73	16,716.27	2,289.90	14,426.37
Floating Track	4,514	0.89	99.96	4,512	0.89			
Earthworks Floating Tracks	1,428	0.94	99.93	1,427	0.94			
Total						96,674.48	16,746.30	79,928.18

Note: where rows do not exactly add up this is due to rounding up of values

7.2 Peat Sensitivity

The sensitivity of the peat is determined by both the depth and the condition of the peat, as heavily eroded, drained or afforested peat has little carbon within the upper layer and therefore the sensitivity of the peat is considered to be lower. This is presented in detail in **Chapter 14: Hydrology, Hydrogeology and Peat**.

The sensitivity of peat across individual infrastructure, excluding floating track where no excavation will be undertaken, is also considered and is detailed below in **Table 5**.

Table 5: Peat Sensitivity

Peat Presence	Peat Condition	Infrastructure	Sensitivity
Probes <0.3m (No Peat)	Modified	Turbine and Crane Hardstanding T1, Temporary Hardstanding T1, Clearance T1, Earthworks T1, Temporary Hardstanding T3*, Clearance T3*, Turbine and Crane Hardstanding T4, Temporary Hardstanding T4, Clearance T4, Earthworks T4, Turbine and Crane Hardstanding T6, Temporary Hardstanding T6, Clearance T6, Earthworks T6, Turbine and Crane Hardstanding T7, Temporary Hardstanding T7, Clearance T7, Turbine and Crane Hardstanding T15*, Temporary Hardstanding T15, Clearance T15, Earthworks T15, Substation, Earthworks Substation.	Low
Peat 0.3m to 1m	Heavily Eroded	Turbine and Crane Hardstanding T14*, Clearance T14*.	Low
	Modified	Turbine and Crane Hardstanding T3, Temporary Hardstanding T3*, Clearance T3*, Earthworks T3, Earthworks T7, Turbine and Crane Hardstanding T8, Temporary Hardstanding T8, Clearance T8, Earthworks T8, Turbine and Crane Hardstanding T9, Temporary Hardstanding T9, Clearance T9, Earthworks T9, Turbine and Crane Hardstanding T10, Temporary Hardstanding T10, Clearance T10, Earthworks T10, Turbine and Crane Hardstanding T11, Temporary Hardstanding T11, Clearance T11, Earthworks T11, Turbine and Crane Hardstanding T14*, Temporary Hardstanding T14, Clearance T14*, Earthworks T14, Turbine and Crane Hardstanding T15*, Turbine and Crane Hardstanding T16, Temporary Hardstanding T16, Clearance T16, Earthworks T16, Construction Compound, Earthworks Construction Compound, Excavated Track, Earthworks Access Track, Floating Track, Earthworks Floating Track.	Medium

Items marked with an asterisk straddle two categories ($\leq 20\%$ difference between primary and secondary depth or condition) and have been listed in both rows.

8 Peat Restoration Areas and Reuse Volumes

8.1 Peat Restoration Areas

The peat on-site is experiencing erosion in numerous locations and will continue to do so without intervention. There are numerous gullies of varying size which are draining and dewatering the peatlands, and transferring peat particles away from the Assessment Boundary and into watercourses. There are areas of bare peat at the base of the gullies, and at the margins peat is often exposed and is resulting in continued gradual degradation. The restoration of these areas is presented in the Moorland Restoration and Management Plan ('MRMP') submitted with the Application and does not include the reuse of excavated peat.

Peat excavated from infrastructure footprints will be used to reconnect an isolated area of high-quality peatland habitat within Cragg Quarry to the Cowpe Moss summit mire. This elevated area is hydrologically isolated and free draining on all sides and therefore susceptible to further oxidation, carbon loss and vegetation change. Transport of peat from source locations (wind farm infrastructure) to target locations, including careful removal and reinstatement of vegetated acrotelmic peat is referred to here as translocation.

In order to reconnect this peatland with the wider bog on Cowpe Moss, existing quarry material (of which there is ample quantity) will be used to raise and level the area between the stranded habitat and the main summit mire. Perimeter rock bunds will be built at the northeast and southwest limits of the reinstatement area, with a limited number of subcells defined using internal bunds. The top surface of the quarry fill and faces of rock bunds will be blanked with quarry derived aggregate and then lined with clay (to provide an impermeable seal), locally derived from wind farm works if possible, or with imported material if the former is unavailable. Peat excavated from wind farm infrastructure locations will then be translocated to the bunded cells, with catotelmic peat placed first, and then when reinstatement is within 0.3 m (approx.) of the target depth, with acrotelmic turves that have been set aside for this purpose. The uplifted and peat covered surface will allow hydrological connection of the stranded bog to Cowpe Moss, while being sufficiently large in extent to minimise exposed faces, hold water and provide a large contiguous surface for bog vegetation to re-establish.

Post-reinstatement, if bare peat is present on the reinstated surface, seed stock from locally derived (or appropriate) bog species will be used to seed the bare surface to encourage vegetation growth, and regular monitoring used to ensure target outcomes are achieved. Target outcomes will be based on a minimum of recovery to the source acrotelmic vegetation transported to the area.

This type of restoration is beneficial as:

- The excavated peat can be placed directly into the restoration area so there is no storage required where the peat be subject to weathering, dewatering and erosion; and
- The isolated area of peat will only diminish further if not protected and become more vulnerable.
- Connecting the isolated area and the wider area will both expand the extent of peat and protect both areas from current ongoing erosion.

Excavated peat will also be placed upgradient of the track leading to turbine T15 in an eroded peat area. The peat in this location will be bunded by the track and will connect with the adjacent

peat habitat. This restoration will prevent further erosion in the area and allow the peat to stabilise.

Peat will also be reused in the reinstatement of the temporary infrastructure where peat can be reinstated and connected to the existing peat habitat. This will include:

- placement of peat on track margins up to 0.5m depth where it will connect to existing peat habitat;
- reinstatement of temporary crane hardstandings, clearance areas and earthworks at depth consistent with the depths of peat excavated. There may be the requirement to remove hardcore used in the construction to engineer bunds for peat retention; and
- reinstatement of peat across the construction compound.

The reinstatement will follow similar principles to the reconnection of the isolated area but on a smaller scale and the peat will be required to be stored until construction is complete.

8.2 Peat Reuse Volumes

From **Table 4** above, the volume of peat that will be removed by excavation of the infrastructure is 16,746m³ of acrotelm, and 79,928m³ of catotelm.

This volume of peat will be reused around the Assessment Boundary in the following areas, as detailed in **Table 6** and presented on **Figure 14.10**:

- Reinstatement of temporary hardstanding and earthworks areas of 99,418m² that are on and adjacent to peat;
- Reinstatement of the Construction Compound (and earthworks) of 13,573m² that is on and adjacent to peat;
- Reinstatement of the Floating Track Earthworks and Standard Track Earthworks of 1,428m² and 29,519m² respectively that are on or adjacent to peat; and

Table 6 Estimated Potential Reuse Volumes for Excavated Peat

Reuse Type	Reuse Summary	Total Volume (m ³)
Temporary Hardstanding T3	Backfill temporary area of 2,188m ² where peat was previously located / is adjacent to 0.56m depth	1,225.3
Clearance T3	Backfill temporary area of 4,121m ² where peat was previously located / is adjacent to 0.54m depth	2,225.3
Earthworks T3	Backfill temporary area of 3,297m ² where peat was previously located / is adjacent to 0.58m depth	1,912.3
Temporary Hardstanding T4	Backfill temporary area of 2,187m ² where peat was previously located / is adjacent to 0.3m depth	656.1

Reuse Type	Reuse Summary	Total Volume (m ³)
Clearance T4	Backfill temporary area of 4,121m ² where peat was previously located / is adjacent to 0.3m depth	1,236.3
Earthworks T4	Backfill temporary area of 4,889m ² where peat was previously located / is adjacent to 0.3m depth	1,466.7
Temporary Hardstanding T6	Backfill temporary area of 2,187m ² where peat was previously located / is adjacent to 0.3m depth	656.1
Earthworks T6	Backfill temporary area of 2,314m ² where peat was previously located / is adjacent to 0.3m depth	694.2
Temporary Hardstanding T7	Backfill temporary area of 2,187m ² where peat was previously located / is adjacent to 0.3m depth	656.1
Clearance T7	Backfill temporary area of 4,120m ² where peat was previously located / is adjacent to 0.3m depth	1,236
Earthworks T7	Backfill temporary area of 6,662m ² where peat was previously located / is adjacent to 0.47m depth	3,131.1
Temporary Hardstanding T8	Backfill temporary area of 2,190m ² where peat was previously located / is adjacent to 0.56m depth	1,226.4
Clearance T8	Backfill temporary area of 4,121m ² where peat was previously located / is adjacent to 0.54m depth	2,225.3
Earthworks T8	Backfill temporary area of 3,300m ² where peat was previously located / is adjacent to 0.61m depth	2,013
Temporary Hardstanding T9	Backfill temporary area of 2,189m ² where peat was previously located / is adjacent to 0.38m depth	831.8
Clearance T9	Backfill temporary area of 4,120m ² where peat was previously located / is adjacent to 0.52m depth	2,142.4
Earthworks T9	Backfill temporary area of 6,336m ² where peat was previously located / is adjacent to 0.64m depth	4,055
Temporary Hardstanding T10	Backfill temporary area of 2,189m ² where peat was previously located / is adjacent to 0.3m depth	656.7
Clearance T10	Backfill temporary area of 4,120m ² where peat was previously located / is adjacent to 0.39m depth	1,606.8
Earthworks T10	Backfill temporary area of 3,695m ² where peat was previously located / is adjacent to 0.44m depth	1,625.8
Temporary Hardstanding T11	Backfill temporary area of 2,190m ² where peat was previously located / is adjacent to 0.66m depth	1,445.4

Reuse Type	Reuse Summary	Total Volume (m ³)
Clearance T11	Backfill temporary area of 4,121m ² where peat was previously located / is adjacent to 0.58m depth	2,390.2
Earthworks T11	Backfill temporary area of 4,436m ² where peat was previously located / is adjacent to 0.45m depth	1,996.2
Temporary Hardstanding T14	Backfill temporary area of 2,188m ² where peat was previously located / is adjacent to 0.68m depth	1,487.8
Clearance T14	Backfill temporary area of 4,118m ² where peat was previously located / is adjacent to 0.7m depth	2,882.6
Earthworks T14	Backfill temporary area of 2,727m ² where peat was previously located / is adjacent to 0.82m depth	2,236.1
Temporary Hardstanding T16	Backfill temporary area of 2,185m ² where peat was previously located / is adjacent to 0.4m depth	874
Clearance T16	Backfill temporary area of 4,121m ² where peat was previously located / is adjacent to 0.39m depth	1,607.2
Earthworks T16	Backfill temporary area of 2,799m ² where peat was previously located / is adjacent to 0.48m depth	1,343.5
Construction Compound	Backfill temporary area of 9,408m ² where peat was previously located / is adjacent to 0.5m depth	4,704
Earthworks Construction Compound	Backfill temporary area of 4,165m ² where peat was previously located / is adjacent to 0.5m depth	2,082.5
Earthworks Access Track	Backfill temporary area of 29,519m ² where peat was previously located / is adjacent to 0.3m depth	8,855.7
Earthworks Floating Tracks	Placement of 0.3m depth of peat on floating track side slopes over an area of 1,428m ² .	428.4
Subtotal Infrastructure Reinstatement		63,812
Peat Restoration	Placement of peat to the north of the access track leading to turbine T15 to restore an eroded peat gully. A depth of approximately 1.0xm over the 600m ² area	600

Peat Restoration Placement of peat in engineered cells to connect the main peat bog to the disconnected peat raft. Peat		97,537
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will be placed to an approximate depth of 1.25m of peat will be placed over the 26,500m ² area. 33,125Total		
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The re-use of the excavated peat has taken a conservative approach in terms of the areas that will be possible to restore and the depths achievable.

8.3 Net Peat Balance

The total volume of peat predicted to be excavated as part of the Project for Assessment is 96,674 m³. A total of 97,537 m³ of peat has been identified for reuse, including restoration activities across the Assessment Boundary, as detailed in **the MRMP**. This reuse volume slightly exceeds the volume to be excavated, indicating that all excavated peat will be beneficially reused on-site, with restoration proposed in areas of degraded peat. The large peat cells that will be constructed in the north west of the site can be increased in size if necessary and will be refined during the construction period depending on the actual volume of peat excavated and the suitability for each of the temporary hardstanding areas for peat reinstatement.

The peat balance demonstrates that peat will be retained and reused as far as practicable, supporting the principles of peat minimisation and site restoration. The summary of volumes is provided in **Table 7** below and indicates that there is a potential to use more than the excavated volume of peat for peat reinstatement and restoration.

Table 7 Net Peat Balance

	Total Volume (m ³)
Excavated Peat	96,674
Peat Reuse	97,537
Total Balance	863

9 Handling Excavated Materials

The following section summarises the management of excavated peat and reference should be made to **Appendix 14.1: Good Practices** for details on the good practice environmental management practices to be employed during construction of the Project for Assessment.

9.1 Excavation

The following methodologies for excavation of peat are recommended:

- Areas of peat within the footprint of any excavation will have the top layer of vegetation stripped off as turf, prior to construction by an experienced specialist contractor. When excavating areas of peat, the excavated turfs should be kept as intact as possible. Often it is easiest to achieve this by removing large turfs up to 500mm in order to keep the peat intact.
- These turfs should either be transferred immediately for use in peat restoration areas or stored adjacent to the construction area such that they remain moist and viable (see temporary storage below). Excavated turfs should be as intact as possible so as to minimise carbon losses. Stacking of turfs will be avoided in order to best preserve the viability of the vegetation layer.
- Peat will then be removed, stored separately and kept damp⁶.
- Excavated soils and turfs will be handled so as to avoid cross contamination between distinct horizons and allow reuse potential to be maximised.
- Mineral soil and aggregate will be kept separate from peat or peaty soils in order to avoid contamination (which could result in a change in chemical or hydrological properties in the peat, reducing the likelihood of successful reinstatement on placement).
- Prior to any excavations, the PC will produce a detailed Method Statement identifying where and how excavated peat will be used in reinstatement works. Specific requirements for the excavation, handling, storage and reinstatement of peat will be outlined in this Method Statement. The PC will consider potential impacts on downstream hydrological receptors, and also the potential for instability issues with the excavated material.
- Care will be taken when stripping and removing topsoil and peat turfs and appropriate storage methods used on-site, i.e. excavated material will be stored in separate horizons and vegetation rich top layers will be stored vegetation side up.
- Classification of excavated materials will depend on their identified re-use in reinstatement works. At this site it is anticipated that the material to be excavated will comprise peat (which may be sub-divided into turf, acrotelm and catotelm/amorphous), peaty soils and mineral soils (subsoil and topsoil).

9.2 Temporary Storage

Following excavation, peat will be required to be temporarily stored before reuse, where the material is planned for placement in either, the auxiliary construction compound or the areas of temporary hardstanding, as these will not be available until after the construction period. Excavated peat should be stored in stockpiles to minimise carbon losses while being stored.

Where possible, excavated turfs will be stored adjacent to the construction area such that they remain moist and viable.

Areas of temporary storage required for peat will be identified in the detailed PMP prepared by the PC, taking into account constraints and mitigation requirements identified in further pre-

⁶ The Carbon and Water Guidelines. Carbon Landscapes and Drainage (2012);

construction investigations. This will describe any intended drainage, pollution prevention and material stability mitigation measures that may be required. The following general guidelines will apply:

- The appropriate temporary storage areas for excavated peat will be as close to the excavation as practicable;
- Temporary peat storage areas require the ground conditions to be suitable for loading, the peat slide risk and the topographical gradients to be low and to be located outside of the main watercourse buffers.;
- The design and location of stockpiles, including incorporated drainage elements, will be agreed with the ECoW and Geotechnical Consultant / Geotechnical Clerk of Works prior to excavation works commencing;
- Temporary peat storage areas should be located so that erosion and run off is limited, leachate from the material is controlled, and stability of the existing peatland in the vicinity is not affected;
- Excavated material is to be stockpiled at least 50m away from watercourses. This will ensure that any wetting required on stored peat does not runoff and discharge into adjacent watercourses.
- Any edges of cut peat that may remain exposed, or areas of peat excavation on steep slopes, will be covered with geotextile or similar approved. This will allow re-turfing and re-vegetation and reduce erosion risks;
- Suitable storage areas are more appropriately sited in areas with lower ecological value and low slopes. Cleared areas of forestry are preferred to areas of higher ecological value or areas close to watercourses;
- Temporary peat storage should be in locations where the water table can be kept artificially high;
- An up-gradient cut off ditch should be installed around the edge of the storage bund in order to collect up-gradient surface water runoff and divert water runoff from eroding the toe of the bund;
- It is desirable to keep haul distances of excavated peat as short as possible, and as close as possible to intended re-use destinations, to minimise plant movements in relation to any earthworks activity, including peat management, in order to minimise the potential impact on the peat structure. It is important that temporary storage is safe and keeps the material suitable for its planned reuse;
- The handling and storage of peat will seek to ensure that excavated peat does not lose either its structure or moisture content. Peat turfs require careful storage and wetting and to be maintained to prevent drying out and subsequent oxidisation to ensure that they remain fit for re-use;
- Stockpiling of peat should be in large volumes, taking due regard to potential loading effects. Piles should be bladed off at the side to minimise the available drying surface area;

- Higher piles are more likely to become dewatered, while smaller piles expose a greater area to evaporation. Reducing mound size may also increase likelihood of erosional losses as particulate organic carbon (POC);
- Stockpile areas and dimensions will be determined following detailed investigations and subject to conditions at individual locations, will not exceed a height to be approved by the Environment Agency;
- Stockpiles should be battered so as to limit instability and erosion and should be bunded or covered using impermeable material. The bunds should extend to a level above the toe of the stockpiled material to provide restraint to surface runoff;
- When planning the temporary storage areas any additional disturbance areas should be minimised; and
- Transport of peat to temporary storage areas, restoration areas or designated spoil areas will be by low ground pressure vehicles to avoid excessive compaction of the peat.

10 Reuse of Peat in Infrastructure Restoration

10.1 Bare Peat

There are a number of important methodologies regarding the exposure of bare peat including:

- The amount of time any bare peat will be exposed will be minimised to preserve its integrity;
- The phasing of work should be carried out to minimise the total amount of exposed ground at any one time. By stripping turf and replacing as soon as reasonably possible after peat has been re-distributed there will be minimal areas of bare peat;
- Any peat areas on steep ground or that remains partially bare will be covered using geotextile or a similar method to stop erosion;
- Any areas of bare peat, where vegetation is not re-growing, will be seeded with a seed mixture obtained from the existing habitat. Stock exclusion in these areas will continue until vegetation is properly established;
- The re-vegetated areas will be monitored; and
- Areas where full recovery is complete will have fences removed.

This approach has been shown to be effective on other peat sites and the turfs re-grow quickly both establishing vegetation and consolidating the peat.

10.2 Infrastructure Re-use

Peat reuse around and within infrastructure areas is an important aspect of the Project for Assessment, as it allows an opportunity to maintain the integrity of the excavated peat, enhance habitats and create new habitats. This will be undertaken through:

- The PC will be required to provide appropriate plant for undertaking all reinstatement works such that no unnecessary disturbance of the ground surface occurs. In order to

minimise disturbance and damage to the ground surface, any mobile plant required for reinstatement works will be positioned on constructed access tracks, hardstanding areas or existing disturbed areas wherever possible. The use of a long reach excavator for excavations and reinstatement works is preferable as it enables sufficient room to allow initial side casting and subsequent pulling back of turfs over reinstated peat or soil.

- Excavated catotelm or amorphous peat will only be used in restoration works where the topography allows straight forward deposition with no pre-treatment or containment measures and without risk to the environment. Suitable scenarios may be present in those disturbed areas where natural topography profile allows such use. A fibrous layer of acrotelm and turf will be placed above any catotelm or amorphous peat reinstated.
- Reinstatement of vegetation will be focused on natural regeneration utilising peat vegetated turfs. To encourage stabilisation and early establishment of vegetation cover, where available, peat turfs (acrotelmic material) or other topsoil and vegetation turfs in keeping with the surrounding vegetation type will be used to provide a dressing for the final surface.
- Any reinstatement and re-profiling proposals will consider, and mitigate against, identified significant risks to environmental receptors. In particular, in areas of replaced peat, water management will be considered in the PC's Construction Method Statements to ensure that as far as possible an appropriate hydrological regime is re-established within areas of disturbance. Particular attention will be paid to maintaining hydrological continuity and preventing the creation of preferential subsurface flow paths (for instance within backfilled cable trenches).
- When cutting the track the vegetation layer (approx. 500mm thick) will be undercut and rolled back. A geotextile layer will then be installed on the side slopes of the track immediately after track construction to prevent erosion. The undercut vegetation layer will then be rolled back over the verge of the installed track. Through careful management of upgradient water and track cambers to shed water to the peat on the verges the level of saturation can be maintained.
- Peat placed on track verges should gently taper in to the adjacent land form, with the peat blocks placed snugly together and the edge of the peat placed furthest from the track should be firmed in to the adjacent ground to form a seal, in order to minimise water loss through evaporation.
- Track edges and passing places would be reinstated post construction through the removal of capping material and the reuse of peat turfs. Where peat turfs are used to reinstate track edges this will be done in a manner to ensure works tie in with the surrounding topography, landscape and ground conditions.
- The design and construction of tracks on peat shall be done in such a way so as to reduce impacts on the existing peat hydrology at the Assessment Boundary. The built track should allow for the transmittance of water, so natural drainage can be maintained as far as possible.
- Where possible drains will be blocked as soon as they are no longer required to reduce impacts on adjacent peat habitat and allow recovery of the drains to peat habitat.

11 Summary

A high-density grid of 11,507 peat probes and associated cores has been completed at all site infrastructure between May 2024 and April 2026 to obtain a detailed understanding of peat variability, depth and characteristics at the Assessment Boundary.

Of the 11,485 locations probed, a total of 4,820 probes (42.0%) recorded depths of 0.3 m or less (no peat), 964 probes (8.38%) recorded depths of penetration between 0.3 m and 0.4 m, 4,137 probes (36.0%) recorded depths of penetration between 0.4 m and 1.0 m, and 1,564 probes (13.6%) recorded depths of penetration >1.0 m.

The total volume of excavated peat associated with the infrastructure footprint and the excavated slopes and drains has been calculated at 96,674m³ with 16,746m³ of acrotelmic peat and 79,928m³ of catotelmic peat.

The potential reuse of excavated peat has been calculated based on Environment Agency guidance within the temporary infrastructure and reuse in an extensive restoration area in north west of the Assessment Boundary which results in full reuse of excavated peat with potential for further reuse opportunities if required.

Based on the peat depth, characteristics and distribution investigations undertaken across the development area and the final layout, a surplus of peat is not expected to be generated by the Project for Assessment. All estimated excavated peat is planned for re-use for restoration work during the construction and post-construction phases of the Project for Assessment.

Further investigations will be undertaken prior to works commencing to confirm peat depth, distribution and characterisation. The additional survey data will be used to inform any micro-siting, and potentially further minimise the volume of peat extracted.

A detailed PMP will be prepared by the PC, having regard to any additional survey data and micro-siting of infrastructure, as well as consultation with key stakeholders (including the Environment Agency, Natural England and the LPA's). This is proposed to be secured via planning condition.

The PC will maintain a record of actual peat volumes excavated and the subsequent peat re-use to compare the predicted and actual peat volumes. This record during the construction, operation and decommissioning phases of the Project for Assessment will be made available for review by regulators as and when required.

12 References

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- *Scottish Natural Heritage (2015) Scotland's National Peatland Plan: Working for Our Future.*
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- *SEPA (2010) Regulatory Position Statement – Developments on Peat.*