



Technical Appendix 9.5: Soil and Peat Management Plan

Balgray Wind Farm

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Basis of Report

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1.0 Introduction

1.1 General

SLR Consulting Ltd (SLR) was commissioned by Fred. Olsen Renewables Ltd (the 'Applicant'), to undertake a Stage 1 Outline Soil and Peat Management Plan (SPMP) for the proposed Balgray Wind Farm (the Proposed Development). The location and layout of the Proposed Development are detailed on **Figure 9.5.1** with the red line defining the boundary of the "site".

The assessment has been undertaken in line with best practice guidance¹ published by the Scottish Environment Protection Agency (SEPA) and wind farm construction good practice guidance.

The work has been undertaken by a team of Geotechnical Engineers and Geologists, with over 10 years' experience in undertaking peat assessments. The team was led by a Chartered Hydrogeologist with 30 years' consultancy experience and specialising in the assessment of soils, geology and water for renewable power projects in Scotland.

The report should be read in conjunction with **Chapter 9: Geology, Hydrology and Hydrogeology**.

1.2 Proposed Development

The Proposed Development would include the following infrastructure as shown on **Figure 9.5.1**.

- 6 Turbine foundations and associated crane and laydown hardstandings;
- Access tracks;
- Substation and Substation Control Room;
- Temporary Construction Compound;
- 2 Borrow Pit search areas; and
- Battery Energy Storage System (BESS).

Full details of the Proposed Development are provided in **EIA Report Volume 2: Chapter 3: Description of the Development**.

1.3 Objectives

This Stage 1 Outline SPMP 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 Proposed Development.

1.4 Role of the Peat Management Plan

The SPMP 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 Proposed Development as part of an overall Construction Environmental Management Plan (CEMP). These stages are outlined below.

¹ Scottish Government, Scottish Natural Heritage, SEPA., (2017) Peatland Survey. Guidance on Developments on Peatland, on-line version only.



Stage 1: Environmental Impact Assessment (EIA)

This report forms the Outline SPMP and is submitted as part of the EIA Report. From this initial report the SPMP will be developed further into a Stage 2 Pre-Construction SPMP.

Stage 2: Post Consent / Pre-Construction

The soil and peat mass balance calculations may be further developed prior to the works commencing, following detailed ground investigation or further survey works required to inform detailed design, or that may be required under planning consent conditions.

Stage 3: Construction Stage

Actual soil and peat volumes excavated during construction will be recorded against the overall predicted volumes. Within micro-siting allowances, the alignment and design of tracks, turbine and infrastructure foundations and associated construction methods will be reviewed to avoid/minimise peat disturbance as much as possible considering 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 Principal Contractor (PC) and monitored by the Ecological Clerk of Works (ECoW) on-site and made available to regulators as required.

1.5 Legislation and Guidance

The SPMP has been compiled in accordance with the following legislation and best practice guidance:

- National Planning Framework for Scotland 4 (NPF4) (Scottish Government, February 2023)²;
- Scottish Government, Scottish Natural Heritage, SEPA (2014) 'Peat Survey Guidance; Developments on Peatland: Site Surveys'³;
- SEPA Regulatory Position Statement - Developments on Peat (Scottish Environment Protection Agency, 2010)⁴;
- NatureScot (July 2024), Good Practice During Wind Farm Construction.⁵;
- Guidance on the Assessment of Peat Volumes, Reuse of Excavated Peat and the Minimisation of Waste (Scottish Renewables and SEPA, 2012)⁶;
- The Waste Management Licensing (Scotland) Regulations 2011⁷;
- Peat Landslide Hazard and Risk Assessments: Best Practice Guide for Proposed Electricity Generation Developments (Scottish Government, January 2017)⁸; and
- Floating Roads on Peat - Report into Good Practice in Design, Construction and Use of Floating Roads on Peat with reference to Wind Farm Developments in Scotland (Forestry Commission Scotland & Scottish Natural Heritage, 2010)⁹.

2 Scottish Government (2023). <https://www.gov.scot/binaries/content/documents/govscot/publications/advice-and-guidance/2022/11/national-planning-framework-4-revised-draft/documents/national-planning-framework-4-revised-draft/national-planning-framework-4-revised-draft/govscot%3Adocument/national-planning-framework-4-revised-draft.pdf>

3 Scottish Natural Heritage (SNH), SEPA, Scottish Government & James Hutton Institute. (2014) 'Peat Survey Guidance; Developments on Peatland: Site Surveys'.

4 Scottish Environment Protection Agency. 2010. Regulatory Position Statement – Developments on Peat

5 NatureScot (July 2024), Good Practice During Wind Farm Construction. <https://www.nature.scot/doc/good-practice-during-wind-farm-construction>

6 Scottish Renewables, Scottish Environment Protection Agency. 2012. Guidance on the Assessment of Peat Volumes, Reuse of Excavated Peat and the Minimisation of Waste

7 Scottish Government 2011, The Waste Management Licensing (Scotland) Regulations 2011. <https://www.legislation.gov.uk/sdsi/2011/9780111012147/contents>

8 Peat Landslide Hazard and Risk Assessments (Scottish Government, April 2017)

9 Scottish Natural Heritage, Forestry Commission (August 2010). Floating Roads on Peat



Requirements of National Planning Policy 4

The intent of Policy 5 (Soils) of National Planning Policy 4 (NPF4)² is “to protect carbon rich soils, restore peatlands and minimise the disturbance of soils from development”.

The Policy states [5(a)] that development proposals should only be supported if they are designed and constructed:

- *in accordance with the mitigation hierarchy by first avoiding and then minimising the amount of disturbance to soils on undeveloped land; and*
- *in a manner that protects soils from damage including from compaction and erosion, and that minimises soils sealing”.*

Further [5(c)] confirms “that development proposals on peatland, carbon rich soils, and priority peatland will only be supported if they are:

- *essential infrastructure and there is a specific locational need and no other suitable site;*
- *the generation of energy from renewable sources that optimises the contribution of the area to greenhouse gas emissions reductions targets;*
- *small-scale development directly linked to a rural business, farm or croft;*
- *supporting a fragile community in a rural or island area; or*
- *restoration of peatland habitats”.*

And [5(d)] confirms “that where development on peatland, carbon-rich soils or priority peatland habitat is proposed, a detailed site-specific assessment will be required to identify:

- *the baseline depth, habitat condition quality and stability of carbon rich soils;*
- *the likely effects of the development on peatland, including on soil disturbance; and*
- *the likely net effects of the development on climate emissions and loss of carbon”.*

Policy 5 also confirms that the site specific (above) assessment [5(d)] “should inform careful project design and ensure, in accordance with relevant guidance and the mitigation hierarchy, that adverse impacts are first avoided and then minimised through best practice. A peat management plan will be required to demonstrate that this approach has been followed, alongside other appropriate plans required for restoring and/ or enhancing the site into a functioning peatland system capable of achieving carbon sequestration”.

Mitigation Hierarchy

SEPA⁴ has published guidance regarding the mitigation hierarchy for developments on peat which is summarised below:

- Prevention – avoiding generating excess peat during construction (e.g. by avoiding peat areas or by using construction methods that do not require excavation such as floating tracks);
- Re-use – use of peat produced on-site in restoration, provided that its use is fully justified and suitable;
- Recycling / Recovery / Treatment – modify peat produced on-site for use as fuel, or as a compost / soil conditioner, or dewater peat to improve its mechanical properties in support to re-use; and
- Storage – applying the SEPA guidance, storage of peat up to a depth of 2 m is not classified as a waste and, however clarification should be sought from the waste



regulator prior to re-use and care must be taken to ensure that it does not cause environmental pollution.



2.0 Baseline Conditions

2.1 Definition of Peat

Peat is defined as an organic soil comprising the partly decomposed plant remains that have accumulated in-situ, rather than being deposited by sedimentation. When peat forming plants die, they do not decay completely as their remains become waterlogged due to regular rainfall. The effect of waterlogging is to exclude air and hence limit the degree of decomposition. Consequently, instead of decaying to carbon dioxide and water, the partially decomposed material is incorporated into the underlying material and the peat 'grows' in-situ.

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 is characterised by low density, high moisture content, high compressibility and low shear strength, all of which are related to the degree of decomposition and hence residual plant fabric and structure. To some extent, it is this structure that affects the retention or expulsion of water in the system and differentiates one peat from another.

Lindsay¹⁰ defined two main types of peat bog, raised bog and blanket bog, which are prevalent on the West coast of Europe along the Atlantic seaboard. In Britain, the dominant peatland is blanket bog which occurs on the gentle slopes of upland plateaux, ridges and benches and is predominantly supplied with water and nutrients in the form of precipitation. Blanket peat is usually considered to be hydrologically disconnected from the underlying mineral layer.

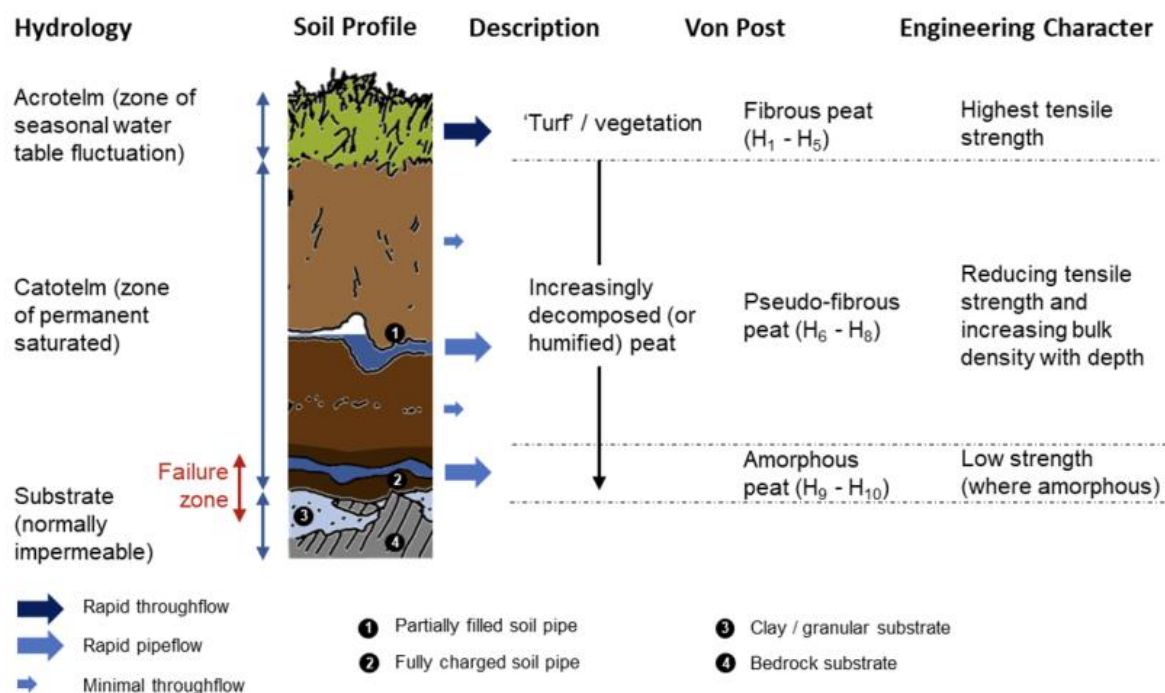
There are two principal types of peat in a near natural peatland (see **Plate 1 below**):

- The upper (acrotelm) layer in which the water table fluctuates, which is fibrous and comprises plant roots etc. The acrotelm is relatively dry and has some tensile strength and its thickness typically ranges from 0.1 m to 0.6 m deep.
- The lower (catotelm) layer, which is saturated, sitting permanently below the water table. The catotelm layer is highly decomposed, generally becoming more amorphous/liquid in nature and losing structure with increasing depth. The structure of catotelmic peat tends to disrupt completely on excavation and handling.

¹⁰ Lindsay, R.A., (1995), 'Bogs: The ecology, classification and conservation of Ombrotrophic Mires.' Scottish Natural Heritage, Perth.



Plate 1 - Typical Peat Profile¹¹



The acrotelm is the fibrous surface to the peat bog¹², typically less than 0.6m thick, which exists between the growing bog surface and the lowest position of the water table in dry summers.

For geotechnical purposes the degree of decomposition (humification) can be estimated in the field by applying the 'squeezing test' proposed by von Post and Grunland¹³ (1926) and as shown in Plate 1. The humification value ranges from H1 (no decomposition) to H10 (highly decomposed). The extended system set out by Hobbs¹⁴ provides a means of correlating the types of peat with their physical, chemical and structural properties.

The relative position of the water table within the peat controls the balance between accumulation and decomposition and therefore its stability, hence artificial adjustment of the water table by drainage requires careful consideration.

2.2 Topography

From review of OS mapping, the topography across the Proposed Development ranges from approximately 170 metres Above Ordnance Datum (mAOD) within the northwestern extent along Hewke Burn and Hallhills Loch, to approximately 250 mAOD within the eastern extent, at the summit of Firtree Hill. The main access track for the Proposed Development starts from Corsehill off an unnamed minor road spurring off the B723 (215 mAOD). The elevation ranges from 240 mAOD at Corse Hill summit to 209 mAOD near White Hill.

¹¹ Mills, A.J. and Rushton, D. 2023. A risk-based approach to peatland restoration and peat instability. NatureScot Research Report 1259.

¹² Ingram, H.A.P., (1978), 'Soil layers in mires: function and terminology'. Journal of Soil Science, 29, 224-227.

¹³ Von Post, L. and Grunland, E., (1926), 'Sodra Sveriges torvillganger 1' Sverges Geol. Unders. Avh., C335, 1-127.

¹⁴ Hobbs, N.B., (1986), 'Mire morphology and the properties and behaviour of some British and foreign peats.' Quarterly Journal of Engineering Geology, London, 19, 7-80.



2.3 Geology

2.3.1 Artificial Ground

Based on the information available from the British Geological Survey (BGS) Geoindex¹⁵, no made ground deposits are noted across the Proposed Development.

2.3.2 Superficial Geology

The BGS Geoindex¹² indicates the superficial deposits, where present, predominately comprise of the Langholm Till. An area of peat is recorded in the east of the Proposed Development and extends further to the east of the Site at Whitehill Moss. The hill tops within the Proposed Development are shown to be absent of any superficial deposits.

Figure 9.3 shows the superficial geology BGS mapping and the Proposed Development.

2.3.3 Bedrock Geology

A review of the BGS Geoindex¹² indicates that the west of the Proposed Development is underlain by Carghidown Formation (metasandstone and metamudstone) bedrock. The east is underlain by Hawick Group formed of greywacke and siltstone.

Figure 9.5 shows the bedrock geology BGS mapping and the Proposed Development.

2.4 Peatland Classification

The Carbon and Peatland Map 2016¹⁶ shows that the majority of the Proposed Development is located within mineral soils (Class 0) which are not considered representative of peatland habitats. An area of Class 3 peatland is shown within the east, located on the eastern slopes of Firtree Hill. Class 3 peatlands are not considered priority peatland habitats however occasional peatland habitats can be found with areas of carbon rich soils and deep peat.

Figure 9.4 shows the peatland classification mapping and the Proposed Development.

2.5 Peatland Geomorphology

The Proposed Development is generally characterised as a mosaic of moorland and improved grassland with the site access track passing through plantation forestry. The Proposed Development features moderately sloping hills with wide hilltops and breaks in slope. The northern and central areas of the Proposed Development are situated around the slopes of Firtree Hill and White Hill. The western areas of the Proposed Development trend downslope to Hallhills Loch. The southern extents of the Proposed Development are situated on the slopes of Rockhillflat Hill.

The shallow soils across the Proposed Development are predominantly organic mineral soils. Peat is largely absent across the Proposed Development with only some isolated pockets noted in topographic breaks in slope. An isolated pocket of deeper peaty soils of 0.5m is located adjacent to the proposed new access track, south-east of T2. There is one other pocket of deeper peaty soils adjacent to the access track to the west of T6 with depths of 0.5m recorded. The site entrance contains pockets of peaty soils of up to 0.8m in depth. One location with 1.09m in depth was recorded at the access track near T2. However, this area was constrained by <0.5m depths on either side and not considered peat.

¹⁵ BGS Online Viewer, available at [https://mapapps2.bgs.ac.uk/geoindex/home.html?_ga=2.133433804.376188765.1646739904-1030004651.1646739904]

¹⁶ NatureScot, Carbon and Peatland Map 2016, Available online at: map.environment.gov.scot/soil_maps/



From a review of available aerial imagery peat erosional features were not observed across the Proposed Development.



3.0 Fieldwork

3.1 Surveys

Peat probing was undertaken by Atmos Consulting between the 16th and 20th of September 2024. It is noted within **TA 9.4: Peat Assessment Report**¹⁷, that surveys were undertaken in accordance with best practice guidance for developments on peatland¹⁸. Further details on the surveys are contained within **TA 9.4: Peat Assessment Report**¹⁷.

3.2 Survey Results

As detailed in Section 2.1, peat is generally defined as a soil with a surface organic layer in excess of 0.5 m. Where the probing recorded less than 0.5 m thick, it is considered to be a peaty soil (or organo-mineral soil). Soils with a peaty organic horizon over mineral soil are often referred to as 'peaty soils'. These organo-mineral soils are extensive across the UK uplands, but do not meet recognised definitions of peat as they are either shallower than true peat or have a lower carbon density.

Negligible peat deposits were encountered across the Proposed Development with only localised areas of peat recorded, which have been largely avoided during the design iteration process. The vast majority of shallow soils encountered were recorded as organic-mineral soils rather than peat.

A total of 978 probes were undertaken across all survey phases. Table A summarises the probing results below. The average probe depth measured across the Proposed Development was 0.2 m. The maximum depth of probing was 1.09 mbgl, located in one probe point on the proposed access track at T2.

Eleven soil augers were collected as part of the Peat Assessment Report¹⁷. Samples were undertaken across the Proposed Development to depths of between 0.1 and 0.4 mbgl. The cores were described as peaty soils. Further details are available within **Technical Appendix 9.4: Peat Assessment Report**¹⁷.

Table A: Probing Results

Thickness (m)	No. of Probes	Percentage (of total probes undertaken on-site)
0 (no peat)	14	1.4
0 – 0.49	946	96.7
0.50 – 0.99	17	1.7
1.00 – 1.49	1	0.1
1.50 – 1.99	0	0.0
2.00 – 2.49	0	0.0
2.50 – 2.99	0	0.0
3.00 – 3.49	0	0.0
3.50 – 3.99	0	0.0
> 4.0	0	0.0

¹⁷ Fred. Olsen Renewables, Technical Appendix 9.4: Peat Assessment Report– Environmental Impact Assessment, June 2025

¹⁸ Scottish Government, Scottish Natural Heritage, SEPA (2017) Peatland Survey. Guidance on Developments on Peatland, on-line version only.



4.0 Management and Mitigation

The Proposed Development design took account of a number of environmental and technical constraints. The design sought to avoid areas of peat where technically feasible, whilst taking into account other environmental and technical factors such as ecology, ornithology, archaeology, hydrology, topography and existing infrastructure. The Proposed Development design evolution has typically avoided areas where peat is >1 m.

Where peaty soils are to be excavated, re-used or reinstated, the following good practice applies to protect carbon rich soils.

4.1 Excavation

Excavated peaty soil should be excavated as turves, including the surface vegetation typically up to 0.5 m thick in total.

- the turves should be as large as possible to minimise desiccation during storage, though the practicalities of handling should be considered;
- the mixing of peaty soils with substrate materials to be avoided at all times; and
- consider timing of excavation activities to avoid very wet weather and avoid multiple handling.

4.2 Re-use

It is anticipated that the volume of material excavated for the construction of the Proposed Development can be entirely reused for a variety of restoration purposes, including around constructed structures, restoration of temporary hardstanding areas, borrow pits and road verges.

4.3 Storage

The following good practice applies to the storage of peaty soils:

- stripped materials should be carefully separated to keep peaty soils and substrate materials apart;
- to minimise handling and haulage distances, excavated material should be stored local to the site of excavation or end point of restoration;
- turves should be stored in wet conditions or irrigated in order to prevent desiccation;
- stockpiling of soil should be in large volumes to minimise exposure to wind and sun (and desiccation), but with due consideration for slope stability, but should not exceed 1 m in height to maintain stability of stockpile;
- stockpiles should be isolated from watercourses or drains with appropriate bunding to minimise pollution risks;
- to be stored a minimum of 10 m from any watercourse; and
- storage areas should be monitored during periods of very wet weather, or during snowmelt, to identify early signs of instability.

Any peaty soils to be removed during construction would require a temporary storage area near to the construction works/area of re-use. Where soil cannot be transferred immediately to an appropriate restoration area, short term storage will be required. In this case, the following good practice applies:



- soil should be stored around the excavation perimeter at sufficient distance from the cut face to prevent overburden induced failure;
- local gullies, diffuse drainage lines (or very wet ground) and locally steep slopes should be avoided for storage; and
- drying of stored soil should be avoided by irrigation or by seeding (although this is unlikely to be significant for materials stored for less than 2 months).

4.4 Transport

The following good practice applies to transport:

- movement of turves should be kept to a minimum once excavated, and therefore it is preferable to transport soil planned for translocation and reinstatement to its destination at the time of excavation; and
- if heavy goods vehicles (HGVs)/dump trucks that are used for transporting non-organic soil material are also to be used for organic materials, measures should be taken to minimise cross-contamination of soils with other materials.

4.5 Handling

Following refinement of the model, a detailed storage and handling plan should be prepared forming part of the detailed CEMP, including details of:

- best estimate excavation volume at each infrastructure location which would be achieved by undertaking additional probing in line with current guidance;
- volume to be stored locally and volume to be transferred directly on excavation to restoration areas elsewhere (e.g. storage areas) in order to minimise handling;
- location and size of storage area relative to turbine foundations and infrastructure locations and geomorphology / drainage features; and
- irrigation requirements and methods to minimise desiccation of excavated soil during short term storage.

These parameters are best determined post-consent, informed by detailed ground investigation with the micro-siting areas for each element of infrastructure.

4.6 Restoration

The methodologies detailed in any future restoration scheme should be followed as well as the following best practice:

- carefully evaluate potential restoration sites, such as storage areas for their suitability, and agree that these sites are appropriate with the ECoW, landowners and relevant consultees;
- undertake restoration and revegetation or reseedling work as soon as practically possible;
- where required, consider exclusion of livestock from areas of the Proposed Development undergoing restoration, to minimise impacts on revegetation; and
- as far as reasonably practicable, restoration will be carried out concurrently with construction rather than at its conclusion.



4.7 Access Tracks

There is guidance^{5,9} available to support access track design. Guidance is generally focused on floating tracks and excavated tracks and is summarised below.

Based on the avoidance of peat with tracks all present on peat <1 m then the use of excavated tracks is proposed. Floating tracks are not considered to be necessary due to the absence of peat within the areas of infrastructure.

Excavated tracks require complete excavation of soil to a competent substrate. This soil would require storage ahead of re-use elsewhere within Proposed Development. Good practice guidance relates mainly to drainage in association with excavated tracks:

- trackside ditches should capture surface water before it reaches the road;
- interceptor drains should be shallow and flat bottomed (and preferably entirely within the acrotelm to limit drawdown of the water table);
- any stripped turves should be placed back in the invert and sides of the ditch to assist regeneration and prevent wash out that could occur; and
- culverts and cross drains should be installed under excavated tracks to maintain subsurface drainage pathways (such as natural soil pipes or flushes). Discharge from constructed drainage should allow for as much diffuse dispersion of clean (silt free) water as possible while minimising disturbance to existing peatland as far as possible. Silt mitigation measures will be incorporated into all constructed drainage as per the requirements of the CEMP.

Regular routine monitoring should be scheduled post-construction to ensure that hydrological pathways and track integrity have been suitably maintained.

4.8 Monitoring and Inspection

There would be frequent, routine and regular inspections of soil in all stockpiles and temporary storage areas as part of the SPMP audit process. Inspections would assess in situ 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 instability. These inspections would take place weekly during stockpile creation and storage.

Should any problems be observed during regular visual inspections of 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.



5.0 Excavated Material Assessment

Table B provides an estimate of peaty soil volumes to be excavated and re-used during the construction of the Proposed Development. The soil excavation and re-use volumes are detailed for each infrastructure element in **Annex A**.

5.1 Excavated Volumes

Material excavation volumes associated with the construction of the Proposed Development have been calculated using the results from the surveys and interpolation using the GIS package ArcGIS. Excavation volumes are summarised in Table B and detailed in **Annex A** and based on the following assumptions:

- Interpolation of probe depth was undertaken using the Spline interpolation method;
- An assumption that the probe depths are representative of the actual depth of soil/peaty soils and validated by site observations; and
- The excavated volumes will comprise primarily peaty soils.

5.2 Reuse Volumes

The volume of material to be reused around the Proposed Development is detailed in Table B and **Annex A** and based on the following assumptions:

- Reuse would be undertaken in appropriate locations around the infrastructure perimeter such as track verges, the edges of permanent structures within a 2 m wide strip either side of the track and up to a maximum thickness of 0.5 m;
- Reuse would be undertaken in appropriate locations around the perimeter of turbines and hardstandings within a 2 m wide strip and up to maximum thickness of 0.5 m;
- Reuse would be undertaken in such a manner as to ensure integration with the adjacent habitat areas, where possible;
- For temporary infrastructure including temporary hardstandings and compounds – full re-instatement of excavated material would be undertaken at each location back to original depth; and
- Borrow pits to reuse material with a maximum thickness of up to 0.5 m depth whilst ensuring integration with the adjacent habitat areas where possible.



5.3 Net Balance Assessment

Table B provides an estimate of material volumes to be excavated and reused during the construction of the infrastructure. The soils are predominantly peaty organo-mineral soils.

Table B: Peat Balance Assessment

Infrastructure	Volume of Material Excavated (m ³)	Volume of Material Reused (m ³)
New Access Track	12,455	13,616
Turbine & Permanent Hardstandings	3,803	2,400
Temporary Hardstandings	1,775	3,792
Control Room	364	40
Substation	330	40
Battery Energy Storage System (BESS)	1,413	180
Temporary Construction Compound (TCC)	1,052	1,499
Borrow Pit 1	902	2,498
Borrow Pit 2	1,772	3,460
Total	23,865	27,525

The total volume of soil predicted to be excavated of **23,865m³**, does not exceed the intended total material reuse volume of **27,525m³**, therefore no excess material is required to be disposed off-site as a consequence of the Proposed Development.



6.0 Conclusion

This Stage 1 Outline SPMP presents a pre-construction assessment of the expected material extraction and reuse volumes associated with the works phase of the construction of the Proposed Development.

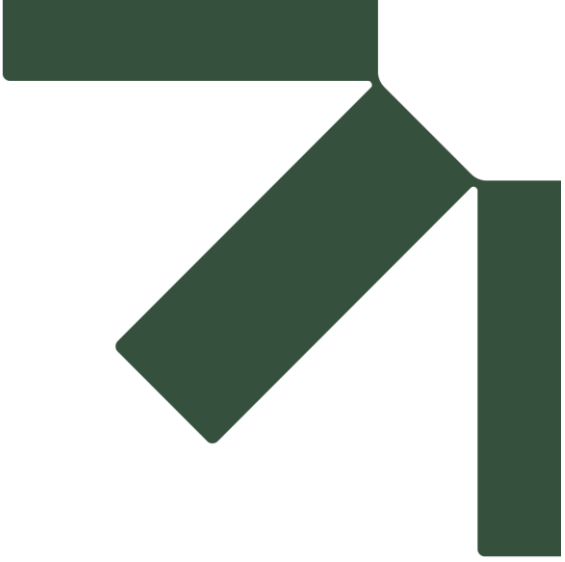
Peat is generally defined as a soil with a surface organic layer in excess of 0.5 m. Where the probing recorded less than 0.5 m thick, it is considered to be a peaty soil (or organo-mineral soil).

Negligible peat deposits were encountered across the Proposed Development with only localised areas of peat recorded, which have been largely avoided during the design iteration process. The soils encountered are deemed to be organic-mineral soils rather than peat.

A total of 978 probes were undertaken across all survey phases. The average probe depth measured across the Proposed Development was 0.2 m. The maximum depth of probing was 1.09 mbgl, located in one location along the proposed access track at T2.

Through a process of continued design refinement (focused on minimising peat excavation volumes) and adoption of best practice working method, the Proposed Development is expected to achieve an overall material balance, i.e. the volume (and character) of excavated material compliments requirements for re-use and reinstatement. Thus, all excavated material will be required for reuse as part of the works and no surplus material is anticipated.





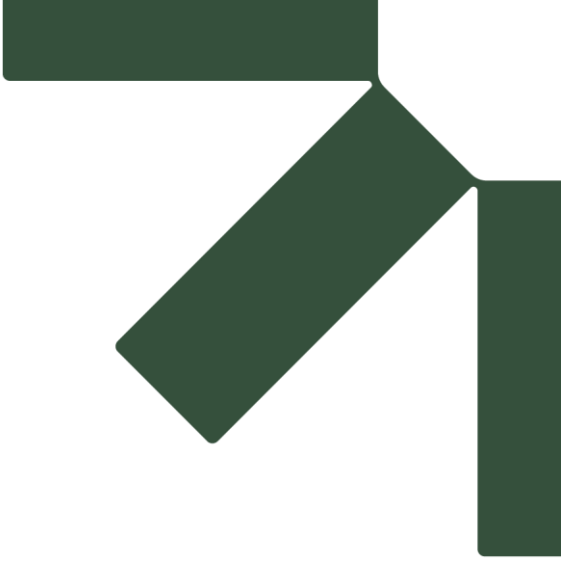
Figures

Technical Appendix 9.5: Soil and Peat Management Plan

Balgray Wind Farm

Fred. Olsen Renewables Ltd

SLR Project No.: 405.065655.00001



Annex A Excavated Materials Calculations

Technical Appendix 9.5: Soil and Peat Management Plan

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