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Glen Earrach Pumped Storage Hydro

Environmental Impact Assessment Report

Volume 5: Appendices
Appendix 15.2: Outline Peat Management Plan (oPMP)

Glen Earrach Energy Ltd

Quality information

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Figure 15.2.1 Peat Excavation

1. Introduction

1.1. Context

- 1.1.1 As part of the assessment of the effects on geology and ground conditions, an outline Peat Management Plan (oPMP) has been prepared to set out the principles to be adhered to during design, construction and operation of the Proposed Development in relation to peat management.
- 1.1.2 This oPMP should be read in conjunction with **Chapter 15 Geology and Ground Conditions (Volume 2: Main Report)**, which outlines the significance, impact mitigation and effects on peatlands resulting from the construction and operation of the Proposed Development. All of the mitigation for reducing the impact on peatlands is embedded into the design of the Proposed Development, however, the excavation of peat is unavoidable and this oPMP provides details on the anticipated approximate volumes of excavated peat, its characteristics, and the principles and methods of how and where this excavated peat would be stored, re-used and managed. This oPMP does not discuss peatland restoration, ecology and habitats or carbon impacts. For these topics, please refer to
- **Chapter 7 Terrestrial Ecology (Volume 2: Main Report);**
 - **Appendix 7.6 Outline Peatland Restoration Plan (Volume 5: Appendices);** and,
 - **Chapter 17 Climate (Volume 2: Main Report).**
- 1.1.3 This oPMP seeks to avoid waste peat by applying the waste hierarchy of The Waste Management Licensing (Scotland) Amendment Regulations 2016 (Scottish Government, 2016), which is defined as follows:
- Prevention;
 - Preparing for re-use;
 - Recycling;
 - Other recovery e.g. energy recovery; and
 - Disposal.
- 1.1.4 This oPMP will be further developed and agreed after the Proposed Development receives consent. Further details and specific plans would be determined during the detailed design process and once further pre-construction ground investigation have been undertaken. These details would then be included in a detailed final PMP, which it is assumed will be agreed with The Highland Council (THC) as a condition of the Section 36 (of the Electricity Act 1989) (S36) consent.
- 1.1.5 Two options are proposed - Option A and Option B (see **Figure 2.4: Below Ground Infrastructure (Sheet 1 Option A, Sheet 2 Option B) (Volume 3: Figures)**), which largely vary only in the alignment / orientation of the below ground infrastructure. In alignment with **Section 2.5.3 Upper Control Works of Chapter 2: Project and Site Description (Volume 2: Main Report)** the assessment focuses on the above ground infrastructure of Option B - the worst-case scenario in terms of impact on geology and soils.
- 1.1.6 This oPMP is supported by **Figure 15.2.1 Peat Excavation**, which can be found at the end of this report. Other supporting figures relating to **Chapter 15 Geology and Ground Conditions (Volume 2: Main report)** can be found within **Volume 3: Figures**.

1.2. Policy and Guidance for Peat Management

- 1.2.1 The significance of peatlands is most evident in their protection by various legislation, policy and local, national or international initiatives including, but not limited to;
- United Kingdom Biodiversity Framework (UKBF, 2024);
 - Scotland's National Peatland Plan (Scottish Natural Heritage (now called NatureScot), 2015);

- European Council Habitats Directive 92/43/EEC (Council of the European Communities, 1992);
 - Scottish Biodiversity List (SBL) (NatureScot, 2020);
 - the European Council Water Framework Directive 2000/60/EC (Council of the European Communities, 2000);
 - The Scottish Soil Framework (Scottish Government, 2009);
 - Climate Change Plan (2018-2032) (Scottish Government, 2021);
 - Climate Change (Emissions Reduction Targets) (Scotland) Act 2019;
 - Scottish National Adaption Plan (2024-2029) (Scottish Government, 2024); and
 - Advising on peatland, carbon-rich soils and priority peatland habitats in development management (NatureScot, 2023).
- 1.2.2 The Scottish Environmental Protection Agency (SEPA) has a statutory and legislative duty to ensure that where peat spoil is generated during construction, that it is stored, re-used, treated or disposed of correctly; which may require authorisation or permits.
- 1.2.3 As such, this oPMP has been prepared in accordance with the following policy and best practice guidance:
- Guidance on Developments on Peatland: Site Surveys (Scottish Government, Scottish Natural Heritage (now called NatureScot), SEPA, 2017);
 - Peat Landslide Hazard and Risk Assessments: Best Practice Guide for Proposed Electricity Generation Developments (Scottish Government, 2017);
 - SEPA Regulatory Position Statement – Developments on Peat (SEPA, 2010);
 - Development on Peatland Guidance – Waste (SEPA, 2010);
 - Guidance on the Assessment of Peat Volumes, Re-use of Excavated Peat and the Minimisation of Waste (Scottish Renewables and SEPA, 2012);
 - Developments on Peat and Off-Site Uses of Waste Peat (SEPA, 2017); and
 - Good Practice during Windfarm Construction (Scottish Renewables, Scottish Natural Heritage (now NatureScot), SEPA & Forestry Commission Scotland, 2019).
- 1.2.4 The 'Good Practice during Wind Farm Construction' document was produced for wind farm developments, however, principles discussed can be considered as good practice for other similar scale developments in areas with similar infrastructure (access tracks) and typical ground conditions seen on wind farms, particularly peat and around the water environment.
- 1.2.5 Additionally, the publication of the National Planning Framework 4 (NPF4) (Scottish Government, 2023) has illustrated the importance of more considered practices within peatlands. Policy 5 of NPF4 states:
- *c) Development proposals on peatland, carbon-rich soils and priority peatland habitat will only be supported for: i) Essential infrastructure and there is a specific locational need and no other suitable site; ii) The generation of energy from renewable sources that optimises the contribution of the area to greenhouse gas emissions reductions targets; iv) Restoration of peatland habitats.*
 - *d) Where development on peatland, carbon-rich soils or priority peatland habitat is proposed, a detailed site-specific assessment will be required to identify:*
 - *i) the baseline depth, habitat condition, quality and stability of carbon rich soils;*
 - *ii) the likely effect of the development on peatland, including on soil disturbance;*
 - *iii) the likely net effect of the development on climate emissions and loss of carbon.*
- 1.2.6 As such, the details provided in NPF4 have been considered in this oPMP along with **Chapter 15 Geology and Ground Conditions (Volume 2: Main Report)**.

1.3. Definition of Peat

- 1.3.1 Peat is defined as ‘an organic soil which contains more than 60% of organic matter and exceeds 50 cm in thickness’ (NatureScot, 2023). Scotland’s National Peatland Plan (Scottish Natural Heritage, 2015) also includes organic soil less than 50 cm which can support typical peatland vegetation in their definition of peat. Thus, organic deposits less than 50 cm in thickness are considered in this oPMP as ‘peaty soils’. The Joint Nature Conservation Committee (JNCC, 2011) and Scottish Government guidance on peat surveys also follows this peaty soil definition. ‘Deep peat’ is considered to be a peat soil with a surface organic layer greater than 1.0 m thickness (Bruneau & Johnson, 2014).
- 1.3.2 SEPA’s guidance on development on peat and off-site uses of waste peat described the two peat layers as follows:
- Acrotelmic – quite fibrous and contains plant roots etc. acrotelmic peat is relatively dry and has some tensile strength; and
 - Catotelmic – highly amorphous, with very high water content and tend to have very low tensile strength. The structure of catotelmic peat tends to disrupt completely on excavation and handling.
- 1.3.3 ‘Peatland survey: Guidance on Developments on Peatland’ (NatureScot) states that the Acrotelmic layer (the surface layer) of peatland within which all living vegetation exists, is usually less than 300 mm thick but may be up to 500 mm.
- 1.3.4 Based on project experience and previous consultation with SEPA, in the absence of detailed peat characteristics within the Proposed Development Site it has been assumed that the Acrotelmic layer is 450 mm thick with the remaining peat below this depth being Catotelmic.

2. Peat Conditions

2.1. Introduction

- 2.1.1 As described in **Chapter 15 Geology and Ground Conditions (Volume 2: Main Report)**, two peat probing surveys have been completed for the Proposed Development and these are described below.
- 2.1.2 Prior to commencing the surveys, a desk-based assessment was undertaken to assess the estimated presence of peat across the Proposed Development Site. A review of the BGS Onshore GeoIndex indicated isolated deposits of peat across the Proposed Development Site, particularly around the Headpond, along with areas of Till to the east towards Loch Ness. This lack of large superficial deposits is an indication that bedrock is at or near the ground surface.
- 2.1.3 In accordance with best practice guidance, due to the presence of peatlands mapped across the Proposed Development during the desk-based, peatland surveys were conducted to verify the presence and extent of peat across the Proposed Development Site.
- 2.1.4 The survey was split into two phases, with Phase 1 taking place in June 2024 over 2 weeks, and Phase 2 being undertaken for 1 week in October 2024.

2.2. Peat Surveys

Phase 1 Peatland Survey (June 2024)

- 2.2.1 The Phase 1 peatland survey was undertaken across the Proposed Development Site in June 2024. The probing regime was developed in line with best practice guidance, as follows:
- 100 m x 100 m grid across the Headpond, the expected construction compound and the access road locations;
 - 500 m x 500 m grid across the area to the northwest of the Headpond where there is no expected development; and
 - Check probes in areas of deeper peat across the survey area.

- 2.2.2 It should be noted that at the time of the Phase 1 peatland Survey, breeding birds were present around Saddle Dam 1 and Saddle Dam 2. In accordance with guidance from ecology, a buffer of 200 m was placed on the breeding habitat. All peat probing locations within this buffer were therefore missed, with the intention to cover them in the Phase 2 Peatland survey.

Phase 2 Peatland Survey (October 2024)

- 2.2.3 The Phase 2 Peatland Survey was undertaken in October 2024. Prior to mobilisation, consultation was undertaken with SEPA and the following probing regime was agreed upon:

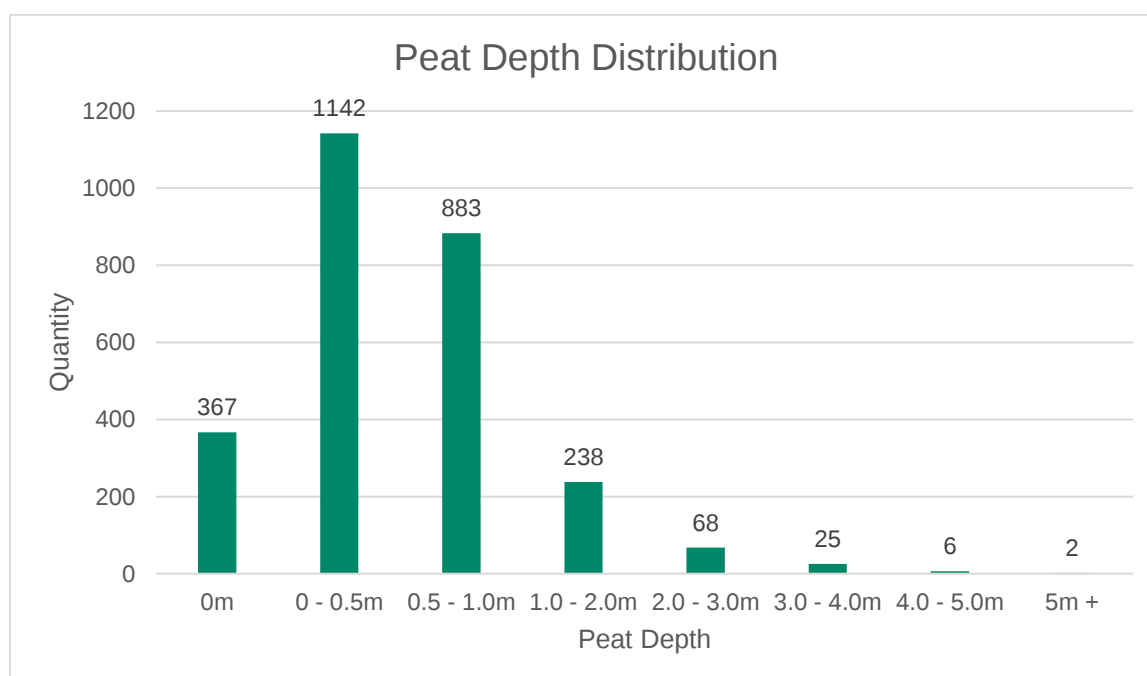
- 100 m x 100 m grid around Saddle Dam 1 and Saddle Dam 2 were inaccessible due to breeding birds during the Phase 1 Survey;
- Targeted probing at 50 m centres with 10 m perpendicular offsets along proposed access track alignments; and
- Targeted probing at 50 m centres with 10 m perpendicular offsets along existing access track alignments.

Peatland Survey Summary

- 2.2.4 In total, 2,731 probes have been taken for the Proposed Development Site, with the results of the surveys shown in **Figure 15.4 Peat Probe Survey Results (Volume 3: Figures)** and summarised in **Table 1. Peatland Survey Summary** and **Insert 1. Peat Depth Distribution**, below.

Table 1. Peatland Survey Summary

Peat Probing Exercise	No. of Probes	Average Depth (m)
Phase 1	1,309	0.52
Phase 2	1,422	0.50
Total	2,731	



Insert 1. Peat Depth Distribution

- 2.2.5 The results of the peat probing were used to create an interpolated peat surface to determine the peat depths across the Proposed Development Site – as detailed in **Figure 15.5 Peat Depth Interpolation Plan (Volume 3: Figures)**. This peat surface was then used to calculate peat excavation volumes and to amend designs to avoid deep peat where necessary, with the process detailed in the following section.

3. Peat Excavation

3.1. Introduction

3.1.1 The approach set out in this oPMP aligns with the following mitigation hierarchy as identified in Integrated Impact Assessment Environmental Report¹ (Scottish Government, 2016):

- Prevent the creation of waste peat by avoiding excavation of peat;
- Minimisation through re-use on site to support construction;
- Minimisation through use on site or off-site for peatland restoration (if applicable);
- Recycling / recovery for agricultural benefit or recycled through blending with other materials to form a soil substitute or used in other relevant works (if applicable); and
- Disposal, only after all other options have been explored and discounted.

3.2. Measures to Minimise Peat Excavation

Summary

3.2.1 NPF4 has been considered throughout the design process of the Proposed Development. The infrastructure has been specifically designed throughout the iterative Environmental Impact Assessment (EIA) process to reduce the impact on peat by minimising the volume of peat excavated.

3.2.2 From the scoping stage to the final design, several changes in the proposed layout have been made to avoid deeper peat deposits, with these detailed below:

- Existing access tracks have been utilised as far as practical;
- Access tracks, Permanent / Temporary Compounds and permanent infrastructure have been located to avoid areas of peat > 1.0 m in depth;
- Where realignment was not possible, floating access tracks have been identified in all areas of deep peat (> 1.0 m depth). Please refer to **Figure 15.5 Peat Depth Interpolation Plan (Volume 3: Figures)** for locations of floating access tracks within the Proposed Development Site and **Figure 2.32 Floating Access Track Details (Volume 3: Figures)** for the floating access track typical detail;
- Peat located within the Headpond, in an area that does not contain permanent infrastructure, will not be excavated - details of the flooding of peat is in **Section 3.2.3 Peat Flooding; and**
- Peat designated as “near natural bog” avoided as far as practical. Where avoidance was not possible, measures have been identified to limit disturbance. Near Natural category (Peatland Action ([Peatland ACTION | NatureScot](#)²)) comprises extents of wet sphagnum-rich blanket bog, that is often located on deeper peat. Assessment of near natural bog is captured in **Chapter 7 Terrestrial Ecology (Volume 2: Main Report)**.

Floating and Use of Existing Access Tracks

3.2.3 A total of 25.27 km of access tracks are required to support the construction and operation of the Proposed Development. Of this 25.27 km, 9.45 km (37%) are existing tracks, and whilst they may require upgrading in some places, they will not require extensive excavation of peatlands. This leaves 15.82 km of new excavated, floating, and transition tracks required where peat excavation may be necessary.

3.2.4 Floating access tracks, where tracks are constructed directly on the top surface of soft ground, are specified for approximately 0.58 km (3.67 %) of the 15.82 km total, in areas of deep peat (> 1.0 m) to minimise peat excavation - in line with current SEPA guidance. The floating tracks will be designed and

¹ [Scotland's Fourth National Planning Framework: Draft - Integrated Impact Assessment Environmental Report](#)

² [Peatland ACTION - Technical Compendium - Restoration - 7 Stabilisation and Revegetation | NatureScot](#)

constructed with best practice guidance set out in Floating Roads on Peat (Forestry Civil Engineering & NatureScot, 2010).

Peat Flooding

- 3.2.5 As noted in **Section 3.2 Measures to Minimise Peat Excavation**, the peat within the Headpond that is not located in an area containing permanent infrastructure, will be left in-situ and flooded. This approach was discussed with SEPA following pre-application consultation and consider it to be 'locked in place' (refer to **Table 15.3 of Chapter 15: Geology and Soils (Volume 2: Main Report)** for details).
- 3.2.6 However, considering the fluctuating water level within the Headpond over the operational lifetime of the project, and in order to assess a worst-case scenario, it has been assumed that there may be a gradual degradation of the peatland left in-situ within the Headpond.
- 3.2.7 The associated carbon impacts due to the degradation of the peatland are covered in **Chapter 17: Climate (Volume 2: Main Report)**.

3.3. Peat Excavation Volumes

- 3.3.1 **Table 2. Peat Excavation Volumes** details the construction activities that will generate the peat excavation, and the approximate associated (maximum) volumes based on the assumed worst-case scenario.

Table 2. Peat Excavation Volumes

Infrastructure Type	Surface Area (m ²)	Average Peat Depth (m)	Estimated Acrotelm Volume (m ³)	Estimated Catotelm Volume (m ³)	Total Peat Volume (m ³)*
Access Tracks (Excavated)	124,677	0.45	53,963	240	54,203
Access Tracks (Floating Transitions)	1,199	0.73	527	328	855
Compounds**	41,865	0.41	20,734	-	20,734
Above Ground GIS Switchyard	14,986	0.27	6,102	-	6,102
Main Dam	114,883	0.52	48,548	7,552	56,100
Saddle Dam 1	21,052	0.98	9,469	11,153	20,622
Saddle Dam 2	15,278	1.03	7,052	9,090	16,142
Spillway	83	0.90	37	37	74
Upper Control Works	71,069	0.79	30,942	23,379	54,321
Headpond Borrow Pit Search Area	143,369	0.66	63,357	29,567	92,924
Secondary Bund	1,422	0.41	590	-	590
Temp. Workers Accommodation	215,917	0.37	81,831	-	81,831
Total (m³)			323,152	81,346	404,498

* Total Peat Volume (m³) is calculated digitally (ArcGIS or similar) using the actual interpolated depth at each point as opposed to Average Peat Depth (m) x Surface Area (m²). i.e. Total Peat Volume (m³) ≠ Average Peat Depth (m) x Surface Area (m²).

** Excludes Above Ground GIS Switchyard and Temp. Workers Accommodation.

- 3.3.2 The values in **Table 2. Peat Excavation Volumes** are outputs from the peat excavation assessment undertaken using an ArcGIS model and are based on the results of the peat probing surveys and can be seen in **Figure 15.2.1 Peat Excavation (Annex A Figures)**.

4. Peat Re-use

- 4.1.1 This section sets out the measures planned to support the re-use of peat and the expected peat re-use volumes. Where possible, peat will be re-used adjacent to where it has been excavated to avoid excessive handling. Details of the re-used volumes and supporting details are shown in **Table 3. Peat Re-use Volumes**, which has been determined in accordance with best practice guidance.
- 4.1.2 Note, peatland restoration is not covered within this section, please refer to **Chapter 7 Terrestrial Ecology (Volume 2: Main Report)**, for information concerning ecology and habitats.

Table 3. Peat Re-use Volumes

Location	Length (m) *	Width of Peat (m)	Depth of Peat (m)	Cross-Sectional Area of Peat (m ²)	Plan Area of Peat (m ²)	Volume of Acrotelmic Peat Re-used (m ³)	Volume of Catotelmic Peat Re-used (m ³)	Reason for Re-use
Access Track Verges (Excavated)	23,395	1.95	0.80	1.56	-	36,496	-	Length includes both sides of each track. Required to create a bund to prevent natural run-off mixing with track run off. Required throughout the site on both sides of the track and tying the access track into landscape.
Access Track Verges (Floating)	1,161	1.95	0.80	1.56	-	1,811	-	Length includes both sides of each track. Required to create a bund to prevent natural run-off mixing with track run off. Required throughout the site on both sides of the track and tying the access track into landscape.
Access Track Verges (Floating Transitions)	240	1.95	0.80	1.56	-	374	-	Length includes both sides of each track. Required to create a gradual change (6 deg) in stiffness of road construction from floating road to excavated road.
Access Track Reinstatement (Excavated - 10m to 5m width)	16,959	5.0	1.0	5.0	84,795	84,795	-	Reinstatement of construction access track from 10m to 5m in width. Access track to be stripped and peat reinstated to a depth of 1.0m. Reinstated peat to be tied into existing verges.
Access Track Reinstatement (Floating - 10m to 5m width)	1,161	5.0	1.0	5.0	5,805	5,805	-	Reinstatement of construction access track from 10m to 5m in width. Access track to be stripped and peat reinstated to a depth of 1.0m. Reinstated peat to be tied into existing verges.
Access Track Reinstatement (Floating Transition - 10m to 5m width)	240	5.0	1.0	5.0	1,200	1,200	-	Reinstatement of construction access track from 10m to 5m in width. Access track to be stripped and peat reinstated to a depth of 1.0m. Reinstated peat to be tied into existing verges.
Access Track Reinstatement (Excavated - Full Reinstatement)	-	-	1.0	-	12,900	12,900	-	Reinstatement of construction access track from 10m to 5m in width. Access track to be stripped and peat reinstated to a depth of 1.0m. Reinstated peat to be tied into existing verges.
Temp. Compound Reinstatement	-	-	1.0	-	34,500	34,500	-	Reinstatement of temporary compounds to a depth of 1.0m. Reinstated peat to be tied into existing ground level.
Permanent Compound Verges	1,922	1.95	1.0	1.95	-	3,748	-	Required around exposed edge of compound and tying the compound into landscape.
Temp. Workers Accommodation Reinstatement (Full Reinstatement)	-	-	0.66	-	215,917	142,505	-	Reinstatement of Temp. Workers Accommodation (large cut) in conjunction with landscape plans. Total reinstatement of peat ~ 1.0m.

Location	Length (m) *	Width of Peat (m)	Depth of Peat (m)	Cross-Sectional Area of Peat (m²)	Plan Area of Peat (m²)	Volume of Acrotelmic Peat Re-used (m³)	Volume of Catotelmic Peat Re-used (m³)	Reason for Re-use
Workers Accommodation Reinstatement (Full Reinstatement)	-	-	0.38	-	215,917	-	82,048	Reinstatement of Temp. Workers Accommodation (large cut) in conjunction with landscape plans. Total reinstatement of peat ~ 1.0m.
Total						324,135	82,048	

- 4.1.3 For the purpose of this oPMP, the locations of peat re-use are largely based on the guidance referenced throughout this appendix. However, it is acknowledged that post consent a ground investigation (GI) will be undertaken. At this stage, and in line with the completion of detailed design, the final PMP will be prepared before construction. At this stage, the areas for peat re-use will be reviewed and updated to ensure that the most appropriate approach is used.

5. Peat Balance

- 5.1.1 **Table 4. Peat Balance** shows the peat balance for the Proposed Development.

Table 4. Peat Balance

	Volume of Acrotelmic Peat (m ³)	Volume of Catotelmic Peat (m ³)	Total (m ³)
Excavated	323,152	81,346	404,498
Re-used	324,135	82,048	406,183
Waste / Balance	- 983	- 702	-1,685

- 5.1.2 As can be seen from the above summary, it is anticipated that the 404,498 m³ of excavated peat can be re-used within the Proposed Development Site, with 0 m³ wastage.
- 5.1.3 Where a negative surplus is shown i.e., excavated volume is less than the used volume, the re-use volume depth will be reduced accordingly, in line with the volume of available material.

6. Peat Handling Method Statement

- 6.1.1 It will be necessary for the final PMP to detail precise methods and timings involved in handling, storing, and re-using excavated peat materials. The final method statement will follow the principles detailed below, in accordance with best practice:
- The surface layer of peat and vegetation (Acrotelm) will be stripped separately from the Catotelmic peat.
 - Acrotelmic material will be stored separately from Catotelmic material.
 - Careful handling is essential to retain any existing structure and integrity of the excavated materials and thereby maximise the potential for excavated material to be re-used.
 - Less humified Catotelmic peat (consolidated peat), which maintains its structure upon excavation, will be kept separate from highly humified amorphous peat.
 - Acrotelmic material will be replaced as intact as possible once construction is complete.
- 6.1.2 To minimise handling and transportation of peat, Acrotelmic and Catotelmic peat will be replaced, as far as is reasonably practicable, in the location from which it was removed. Acrotelmic material must always be placed on the surface.
- 6.1.3 During peat handling, efforts will be made to prevent unnecessary trafficking over peat. Appropriate scale plant (including low pressure equipment) will be used, double handling will be avoided where possible, and a monitoring programme will be implemented to ensure mixing of peat and mineral soil is avoided.
- 6.1.4 As part of their role, a suitably qualified Ecological Clerk of Works (ECoW) will inspect the handling of the peat regularly throughout the construction works.

7. Temporary Peat Storage

- 7.1.1 It will be necessary for the final PMP to detail precise methods and timings involved in temporary storage, should this be required, the preference being that peat is placed at its end use location directly from it being excavated. The final method statement will follow the principles detailed below, in accordance with best practice:
- Temporary storage of peat will be minimised. Excavated organic soils would be stored at no greater than 3 m in height, directly adjacent to or near tracks, on ground appropriate for storage of materials i.e., relatively dry, and flat ground, a minimum of 50 m away from any watercourses. Wherever possible, reinstatement will be carried out as track construction progresses.
 - Suitable storage areas will be sited in areas avoiding watercourses, stability risk, groundwater dependent terrestrial ecosystems or other sensitive areas.
 - Reinstatement will, in all instances, be undertaken at the earliest opportunity to minimise storage of turves and other materials.
 - Timing the construction work, as much as possible, to avoid periods when peat materials are likely to be wetter.
 - Where sustained snowfall and freezing conditions occur, peat excavation may be temporarily halted based on inspections / professionally judgement by the ECoW and suitably qualified geotechnical engineers.
 - Transport of peat on site from excavation to temporary storage and re-use site will be minimised as far as possible.
- 7.1.2 Consistent inspection of peat conditions during construction and re-use will be undertaken by the ECoW, and in line with the Construction Environmental Management Plan (CEMP), as follows;
- Temporary stockpiles will be inspected weekly. If non-compliance is noted, corrective actions must be taken; and
 - Restored peat conditions will be inspected during and immediately after re-use to ensure that best practice is followed.
- 7.1.3 Where near natural bog is identified in close proximity to construction heavy locations, additional mitigation will be implemented to reduce the potential for impacts on the habitat. Measures include but are not limited to floating access tracks and fencing off the habitats.

8. Construction Phases

- 8.1.1 The assessment above considers the Proposed Development as a whole. However, as set out in **Section 2.16 of Chapter 2 Project and Site Description (Volume 2: Main Report)**, the project is split into two phases: 1) pre- construction and enabling and 2) construction. Accordingly, peat will be excavated, stored and re-used separately in both phases.
- 8.1.2 The Pre-Construction and Enabling phase focus on the construction of the primary tunnel and the associated above ground infrastructure required to support the Proposed Development's construction. The impacts on peat are exclusively on the above ground works i.e. the construction of access tracks and compounds.
- 8.1.3 The relative peat excavation for the pre-construction and enabling phase is show in **Table 5. Pre-Construction Phase Peat Excavation**.

Table 5. Pre-Construction Phase Peat Excavation

Infrastructure Type	Surface Area (m ²)	Average Peat Depth (m)	Estimated Acrotelm Volume (m ³)	Estimated Catotelm Volume (m ³)	Total Peat Volume (m ³)	Percentage of Total Infrastructure Type Excavation (%)
Access Tracks (Excavated)	12,964	0.48	4,954	331	5,285	10
Compounds	25,308	0.31	10,269	-	10,269	50
Workers Accommodation	215,917	0.37	81,831	-	81,831	100
Total (m³)			97,055	330	97,385	24

- 8.1.4 As shown in **Table 5. Pre-Construction Phase Peat Excavation**, the Pre-Construction and Enabling works consists of 24% of the total peat excavation for the Proposed Development. All re-use, handling and storage measures are consistent for both phases of the Proposed Development's construction. As such, there is no significant differences between the pre-construction and construction phases of the project when considering peat management.

9. Conclusion

- 9.1.1 It is estimated that all **404,498 m³** of excavated peat will be re-used within the Proposed Development.
- 9.1.2 Policy 5 of NPF4 looks to prevent developments on peatland, carbon rich soils and priority habitats. As detailed in this oPMP, the Proposed Development will require development on and excavation of these soils. However, Policy 5 does confirm that developments will be supported if they are for the "*...the generation of energy from renewable sources that optimises the contribution of the area to greenhouse gas emissions reductions target*", which the Proposed Development aligns with.
- 9.1.3 The oPMP will be developed into a final PMP following a detailed ground investigation, including use of peat cores, as well as the detailed design of infrastructure, post-planning consent.

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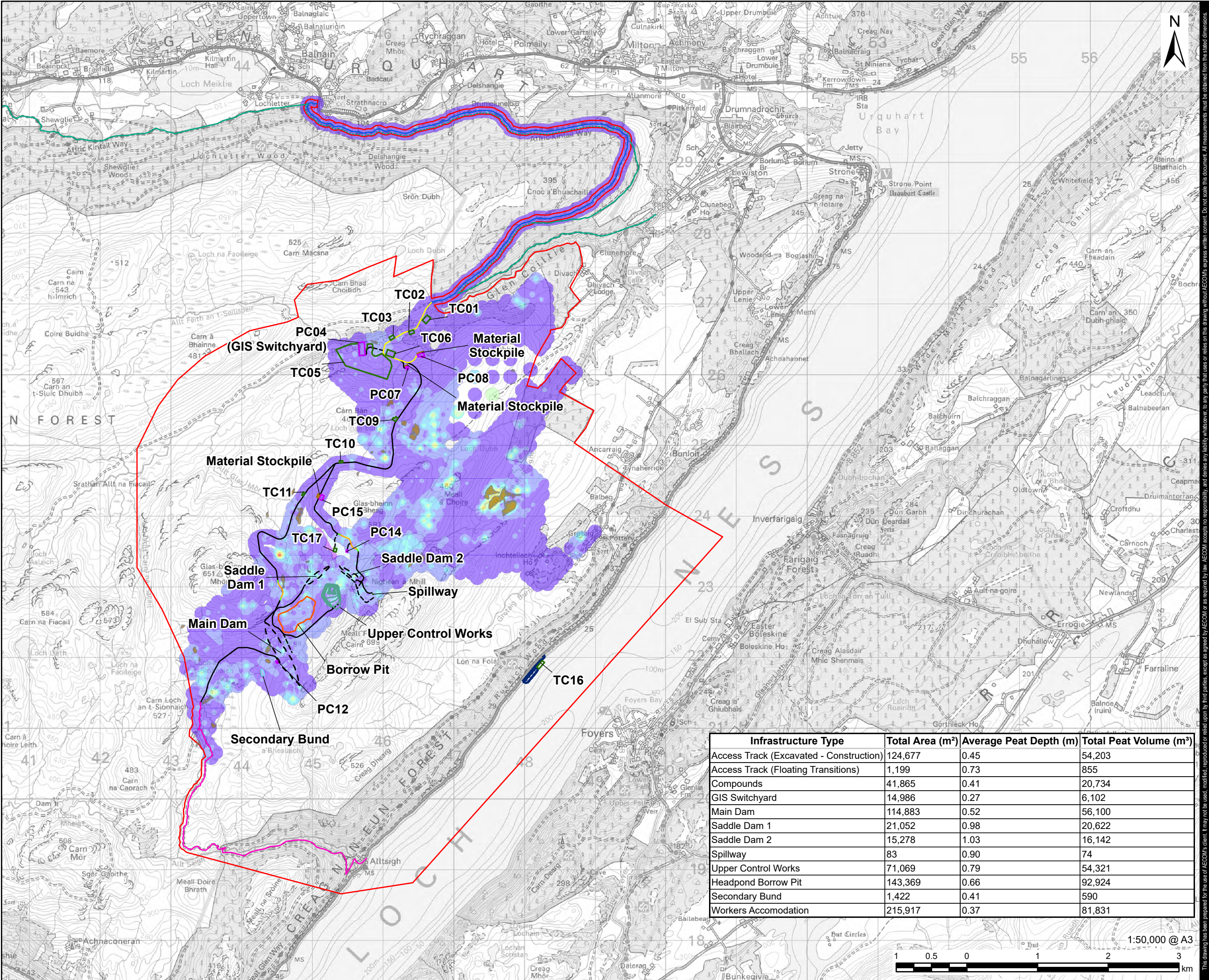
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Annex 1 Figures



PROJECT
Glen Earrach Pumped Storage Hydro

CLIENT
Glen Earrach Energy Ltd.

CONSULTANT

AECOM Limited
1 Tanfield, Inverleith Row
Edinburgh
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- LEGEND**
- Red Line Boundary
 - Peatland Action Near Natural Bog
 - Permanent Compounds
 - Temporary Construction Compounds
 - Material Stockpile
 - Upper Control Works
 - Lower Control Works
 - Core Path Existing Route
 - Core Path Route Re-Alignment
- Access Tracks**
- Construction Phase - Permanent
 - Construction Phase - Permanent (Floating)
 - Construction Phase - Permanent (Floating Transition)
 - Construction Phase - Temporary (Construction)
 - Pre-Construction Phase - Existing
 - Pre-Construction Phase - Permanent
 - Operation Phase - Existing

- Headpond**
- Dam
 - Spillway
 - Borrow Pit
- Peat Depth Interpolation (m)**
- 0.00 - 0.50
 - 0.51 - 1.00
 - 1.01 - 1.50
 - 1.51 - 2.00
 - 2.01 - 3.00
 - 3.01 - 4.00
 - 4.01 - 5.00
 - 5.01 - 6.00
 - 6.01 +

NOTES

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Please refer to Appendix 15.2 Outline Peat Management Plan for details on protection of near natural bog and measures to limit impacts.

ISSUE PURPOSE
FINAL

PROJECT NUMBER
60719875

FIGURE TITLE
Peat Excavation

FIGURE NUMBER
Figure 15.2.1

Infrastructure Type	Total Area (m²)	Average Peat Depth (m)	Total Peat Volume (m³)
Access Track (Excavated - Construction)	124,677	0.45	54,203
Access Track (Floating Transitions)	1,199	0.73	855
Compounds	41,865	0.41	20,734
GIS Switchyard	14,986	0.27	6,102
Main Dam	114,883	0.52	56,100
Saddle Dam 1	21,052	0.98	20,622
Saddle Dam 2	15,278	1.03	16,142
Spillway	83	0.90	74
Upper Control Works	71,069	0.79	54,321
Headpond Borrow Pit	143,369	0.66	92,924
Secondary Bund	1,422	0.41	590
Workers Accomodation	215,917	0.37	81,831

