

## APPENDIX 3.3: OUTLINE SITE RESTORATION PLAN

<b>APPENDIX 3.3: OUTLINE SITE RESTORATION PLAN</b>	<b>1</b>
<b>1. OUTLINE SITE RESTORATION PLAN</b>	<b>1</b>
1.1 Introduction	1
1.2 General Principles of Site Restoration	1
1.3 Monitoring during Construction and Reinstatement	4
1.4 Schedule of Site Restoration Requirements	4
1.5 Associated Best Practice Guidance	5

# 1. OUTLINE SITE RESTORATION PLAN

## 1.1 Introduction

### *Purpose of the Draft Site Restoration Plan*

1.1.1 This Site Restoration Plan provides an outline of standards and procedures which would be employed during the pre-construction, construction and reinstatement of the Proposed Development in order to facilitate the restoration of landform, habitats and vegetation which would be disturbed as a result of the works. The aim of the outline Site Restoration Plan is to ensure the adoption of techniques which, as far as practicable, achieve the following purposes:

- The restoration of landform to reflect the adjacent areas, accommodate new permanent features and minimise the visual appearance of these features where possible;
- The restoration, and where possible, enhancement of pre-construction habitat types with the target of positively contribute to the UN and Scottish Government Biodiversity strategies by achieving an overall Net Gain; and
- Across all disturbed areas, the restoration of vegetation types reflective of existing conditions and avoidance of unstable bare ground where erosion could occur.

1.1.2 It is intended that the general principles outlined in this document would provide a basis for more detailed plans to be developed during the post-consent, and pre-construction phase of the Proposed Development including site specific restoration plans, and a final Habitat Management Plan (HMP).

### *Associated Documents*

1.1.3 The draft Site Restoration Plan should be read in conjunction with the following associated parts of the EIA Report:

- Appendix 3.4: SSEN Transmission General Environmental Management Plans (GEMPs);
- Appendix 3.5: SSEN Transmission Species Protection Plans (SPPs);
- Appendix 8.1: Outline Habitat Management Plan;
- Appendix 8.2: National Vegetation Classification & Habitats Survey Report;
- Appendix 8.3: Melgarve Cluster Protected Species Report;
- Appendix 10.1: Peat Landslide Hazard Risk Assessment; and
- Appendix 10.2: Peat Management Plan (PMP).

## 1.2 General Principles of Site Restoration

1.2.1 The restoration of landscape areas and habitats would be considered through four phases as follows:

- Pre-construction phase;
- Construction phase;
- Post-construction reinstatement phase; and
- Post-reinstatement monitoring.

1.2.2 The above phases would be applied in a flexible manner across the project depending on the planned construction programme. Reinstatement would occur as soon as possible after excavation in order to minimise the time for which soil, peat or turves are required to be stored and the period of exposed excavations. However, this would be subject to careful planning to avoid the necessity to track back over areas of previously restored ground or further disturbance of recovering areas.

1.2.3 The general principles for each phase identified above are summarised below. It is intended that these general principles would be further developed during the pre-construction phase and would form the basis of site-specific method statements and reinstatement plans.

#### Pre-construction Phase

- 1.2.4 Prior to construction commencing, planning would occur for each area to be disturbed, giving consideration to the following aspects:
- Identification of any areas to be protected, including important ecological features, water environment features, cultural heritage features or significant landscape features;
  - Identification of any notable features which should be restored; and
  - Provision of sufficient and suitable space for the separate storage of turves / topsoil, peat and or subsoils.

#### Construction Phase

- 1.2.5 The key consideration during construction to enable the greatest chance of successful restoration is the careful excavation, separation and storage of the different layers of soils and/or peat and sub-grade material. The protection of these materials during the period of construction is essential to ensure that sufficient materials are retained for reinstatement and that these are in the best condition to enable re-establishment of vegetation. The following general principles would be observed:
- Physical protection of any features identified as important for retention within the vicinity of the works;
  - Separation of topsoil / vegetated 'acrotelmic' peat, from subsoil / lower 'catotelmic' peat, and other sub-grade material, and storage in separate stockpiles;
  - Excavation of whole, intact turves where possible and storage with the vegetated side uppermost;
  - Avoidance of double handling of materials;
  - Stockpiles would be no greater than 2 m in height to prevent compaction;
  - Protection of stockpiles from construction plant or contaminants, and from runoff;
  - Monitoring of stored materials to ensure that they don't dry out and watering where necessary; and
  - Avoidance of work during unsuitable weather conditions including heavy rain / very wet ground conditions, strong winds or periods of frozen ground (further details are provided in **Appendix 10.2: Peat Management Plan**).

#### Reinstatement Phase

- 1.2.6 The general principles for reinstatement involve the replacement of the excavated soils in the correct order in which they were excavated, ideally with the re-placement of fully intact turves on the surface. The following measures would be observed during this phase of the works:
- Reinstatement would occur as soon as possible after excavation works, to minimise the period of soil / peat storage;
  - As far as possible, creation of slopes at gradients suitable for the placement of soils / peat and where necessary, suitable slope stabilisation measures to assist revegetation and prevent erosion;
  - Replacement of soils / peat in the correct horizons, as close as possible to the area of excavation;
  - Avoidance of compaction of soil or peat;
  - Replacement of peat, limited to areas disturbed during the works;
  - Adoption of a phased approach to avoid tracking back or disturbing areas previously reinstated; and
  - A preference for natural regeneration of vegetation wherever possible (areas would be seeded only after prior agreement between SSEN and relevant stakeholders).

#### Post-reinstatement Monitoring Phase

- 1.2.7 To ensure success of vegetation restoration and to monitor the effectiveness of habitat reinstatement or enhancement measures, monitoring would occur over an agreed timeframe, particularly focussed within

sensitive or protected areas. A programme for monitoring visits would be agreed between the Applicant, Project Ecologist and NatureScot.

#### *Restoration of Key Features of the Development*

- 1.2.8 The following provides a summary of how the techniques outlined above would be applied to the main features of the Proposed Development:

##### Permanent Access Tracks

- 1.2.9 Permanent access tracks during construction are expected to have a working corridor of approximately 3.5 m, except in limited areas of deeper peat where they may require to be different techniques and may be widened to a maximum of 6 m, see **Appendix 3.4 - SSEN Transmission - General Environmental Management Plans (GEMPS)**. Access tracks to be permanently retained are generally anticipated to be partially reinstated on commissioning of the OHL to reduce their width to approximately 2.5 m (the exception being two short sections of track serving cable sealing end compounds that will need to be 3.5 m in width during the operational period). Narrowing of access tracks would involve the replacement of excavated peat / soil along the edge of the access track to reduce the running width. Track drainage features would remain in place, or would be modified if necessary. Where possible, intact, vegetated turves would be used to form the verge of the track, bedded down to ensure that the exposed edges were not vulnerable to wind erosion. Cuttings and embankments would, where possible, be created at a gradient suitable for the replacement of soils / peat to allow revegetation. However, where this would not be possible, appropriate bio-engineering techniques would be used to assist the re-establishment of vegetation, with the exception of solid rock cuttings. These may include products such as jute matting.

##### Floating tracks

- 1.2.10 Where the existing ground does not provide appropriate bearing capacities and / or where peat is located, the new accesses would likely be floated on top of the soft ground, circumnavigating the requirement for deep excavations and disturbance to the peat. Floating track construction would be used where existing ground conditions were suitable, as agreed with the project geotechnical advisor, in preference to cut and fill track construction. This involves the construction of the track on top of the intact vegetated ground, using a supportive geogrid. Where materials were available, turves or soils may be used to help repair, and vegetate and integrate the verges of floating tracks with the adjacent landscape. However, this would be limited to situations where there was not a risk of wind erosion or drying of turves. No peat would be spread over adjacent vegetated landscape areas.

##### Tracks to be Upgraded

- 1.2.11 Upgrading works would be dependent on the requirements of the individual tracks involved. Where this would involve widening the running width of the track, and as far as possible turves and soils would be removed, separated and stored to be used for restoration of the new track verges. However, depending on the construction methods used for the original tracks, there may be some instances where these materials are scarce. In these cases, the potential to bring in materials from other nearby locations would be explored, with advice sought from the relevant technical specialists, although this may not always be possible.
- 1.2.12 Where, additional cuttings or embankments were required, where possible, these would be created at a gradient suitable for the replacement of soils / peat to allow revegetation, or other techniques used as appropriate, as described for new, permanent access tracks in paragraph 1.2.9, above.

##### Temporary Access Tracks and Working Areas (including Cable Construction Corridors)

- 1.2.13 Temporary access tracks will be 3.5 m wide. The reinstatement of temporary tracks and working areas would be undertaken in accordance with the phases and general principles outlined above. The separation and storage of soils during construction would be key to ensuring the re-establishment of vegetation and habitats following reinstatement.

- 1.2.14 Soil would be stored within the working area for each element of the work during construction. Subsoils and topsoil removed to enable the construction of the foundations, or excavation of trenches would be temporarily stockpiled in separate bunds within the working area or corridor, with stripped turves stored on top of the bunds.
- 1.2.15 Reinstatement would involve replacement of subsoil, then topsoil with turves replaced vegetation side up. Where there are insufficient turves the ground would be allowed to vegetate naturally, although some seeding may be required to stabilise sites and prevent erosion, or where landowner requirements dictate otherwise.
- 1.2.16 Once construction works were complete, excavated subgrade material would be used to reform any notable landscape features such as ridges or hummocks cut through by the works, and otherwise to reflect the adjacent landform. Where permanent, above ground features of the Proposed Development would be present, the landform would be placed to smoothly integrate these features into the adjacent landscape, and reduce the visual appearance where possible.
- 1.2.17 The area would then be reinstated with the appropriate layers of soils / peat and turves. Where a shortage of turves exist, these would be placed in a chequerboard pattern, set flush to adjacent ground to prevent wind erosion and drying out.
- 1.2.18 If necessary, rocks would be replaced across the area to be reinstated to reflect adjacent patterns in the landscape. Rocks would be placed in sequence with soils / peat or turves.
- 1.2.19 Where permanent, above ground features would be retained within the area to be reinstated, additional rocks or turves would be placed to help reduce their visibility, if materials were available.

#### Reinstatement of Construction Compounds

- 1.2.20 At the end of construction all materials, buildings, and temporary compounds would be removed. Where required the land would be regraded with subsoil put down first, then topsoil with turves replaced vegetation side up. Where there are insufficient turves the ground would be allowed to vegetate naturally, although some seeding may be required to stabilise sites and prevent erosion.

### **1.3 Monitoring during Construction and Reinstatement**

- 1.3.1 Monitoring by an Environmental Clerk of Works (ECoW) would occur throughout the site restoration phases to assist in the application of the site restoration plan and method statements. Further advice and monitoring would be sought from other technical specialists as required.

### **1.4 Schedule of Site Restoration Requirements**

- 1.4.1 **Table 1.1** provides a high-level description of reinstatement requirements anticipated to be required for the Proposed Development.

**Table 1.1: Schedule of Site Restoration Requirements**

Restoration Required	Key Issues to be Addressed in Method Statements
<ul style="list-style-type: none"> <li>• Full restoration of underground cable construction corridor;</li> <li>• Full restoration of temporary access tracks;</li> <li>• Integration and narrowing of permanent access tracks;</li> <li>• Upgrading of existing access tracks (treatment of verges, cuttings and embankments);</li> <li>• Permanent access track to sealing end compounds (treatment of verges, cuttings and embankments);</li> <li>• Full restoration of temporary working areas;</li> <li>• Restoration of landform and vegetation around towers;</li> <li>• Restoration of landform and vegetation around sealing end compounds; and</li> <li>• Landform integration of jointing bays and junction boxes.</li> </ul>	<ul style="list-style-type: none"> <li>• Monitoring by ECoW;</li> <li>• Presence of blanket bog and potential areas of deeper peat;</li> <li>• Access track watercourse crossings;</li> <li>• Accommodation of suitable landform to minimise visual appearance of sealing end compound.</li> <li>• Consideration of stability of soil / peat storage and potential for erosion;</li> <li>• Restoration of minor water courses crossed by the construction corridor;</li> <li>• Restoration of landform and rocks to reflect existing landscape character;</li> <li>• Accommodation of landform or other detailing to minimise visual appearance of junction boxes.</li> <li>• Accommodation of suitable landform to minimise visual appearance of sealing end compound.</li> </ul>

## 1.5 Associated Best Practice Guidance

1.5.1 The following list identifies (but is not limited to) guidance documents which would be referenced in the preparation of site specific method statements for site restoration, as appropriate:

- *Good practice during Wind Farm construction*, 4<sup>th</sup> Edition (Scottish Natural Heritage (SNH) (now NatureScot), 2019);
- *Constructed Tracks in the Scottish Uplands* (SNH, 2015);
- *Floating Roads on Peat* (SNH, Forestry Commission, Scotland (now Scottish Forestry));
- *Conserving Bogs (The Management Handbook)* (2019) Tim Thom, Astrid Hanlon, Richard Lindsay, Joanna Richards, Rob Stoneman & Stuart Brooks.
- *Engineering in the Water Environment – Good Practice Guide: River Crossings*. Second Edition. SEPA, November 2010.
- *Engineering in the Water Environment – Good Practice Guide: Temporary Construction Methods*. First Edition. SEPA and Scottish Government, March 2009.
- *Developments on Peatland: Guidance on the Assessment of Peat Volumes, Reuse of Excavated Peat and the Minimisation of Waste*. Version .1, Scottish Renewables and SEPA, January 2012.

## ANNEX A: PHOTOGRAPHIC EXAMPLES OF REINSTATEMENT TECHNIQUES



**Photo 1:**  
Reinstatement of temporary track using turves.



**Photo 2:**  
Example of reinstatement around tower foundations.



**Photo 3:**  
Example of chequerboard technique where turves are limited.



**Photo 4:**  
Formation of an access track verge using whole turves.





**Photo 5:**  
Reinstatement of temporary access track to tower and narrowing and reinstatement around permanent access track.



**Photo 6:**  
Example of ongoing narrowing works to access track using stored turves.