Scottish & Southern Electricity Networks

TRANSMISSION

Scottish Hydro Electric Transmission plc

Beauly-Denny Overhead Line Diversion

Environmental Appraisal

Technical Appendices

Appendix A – General Environmental Management Plan (GEMP) - Soil Management

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1 Introduction

1.1 Soil is a precious resource and can provide the following functions:

- Supports a diverse ecological system and provide the growing medium for habitats, crops and timber;
- Provides a carbon sink and plays an important role in carbon sequestration;
- Absorbs rainfall, delaying its movement into watercourses; and
- Filters or transforms chemicals that pass through it, preventing them from ending up in water or air.

1.2 Any damage to soil quality affects the long-term functioning of the soils and has an impact not only on ecological diversity, performance and visual amenity, but can have impacts off-site such as on flooding, aquifer recharge and water quality.

1.3 It is therefore essential that impacts to the resource are reduced to the minimum necessary for the works and that all work is undertaken in accordance with best practice. The methods of stripping, storage, reuse and disposal of soil can have significant impacts on both the soil resource and other environmental receptors.

2 General Compliance Requirements

2.1 General Principles of Soil Management Process

2.1.1 All stripping should follow this process, except in agricultural fields whereby the method should be informed by landowner requirements, or where archaeological concerns exist and smooth buckets maybe preferable:

- Turves stripped to 300mm using large toothed bucket;
- Turves to be stored vegetation side up and watered if drying out;
- Any remaining topsoil and all subsoil layers to be removed and stored separately;
- Label stored soils with source of origin and material type if to be left for periods more than a month;
- If soil storage bunds to be left for duration of 6 months or more, consider placing top soil layer on subsoil bunds;
- Subsoil, topsoil and turves are to be replaced in same order as removed;
- Turves to be reinstated vegetation side up, and spread in a mosaic pattern if there is a shortfall;
- The toothed bucket should not be used to smooth over the excavation as it results in greater initial damage and slower recovery of the vegetation in the long run.

2.2 Stripping

2.2.1 Plan soil stripping carefully in advance.

2.2.2 Check whether the project archaeologist should be on site during the soil stripping.

2.2.3 Check all necessary pre-construction surveys have been completed prior to stripping (e.g. preconstruction protected species surveys in line with Species Protection Plans).

2.2.4 Follow all identified mitigation requirements for the location and method of stripping.

2.2.5 Where possible, strip soil during drier periods. Do not strip soil during periods of very heavy rainfall.

2.2.6 Soil stripping should only be undertaken in manageable sections, to minimise open excavations, maximise chance of effective reinstatement and allow the installation of suitable silt mitigation (where necessary) for the area being stripped.

2.3 Storage

2.3.1 Topsoil should be stripped and stored within the pre-identified and agreed areas to ensure safe storage and swift and successful reinstatement.

2.3.2 If soil storage is being carried out on sensitive habitats, consideration should be given to storage on top of a geotextile mat with duration of storage minimised.

2.3.3 Topsoil must not be mixed with subsoil or other layers with a requirement for separate storage areas for each.

2.3.4 Record and 'signpost' where all removed soils are stored including the different subsoil layers (this is important as individual subsoil layers should be reinstated in the order in which they were removed).

2.3.5 If the storage is likely to be for an extended period (for example >6 months) it may be appropriate to store topsoil layered on top of subsoil bunds. Underlying turves (and topsoil) at the storage location should be removed in advance with turves stored on surface of the bund.

2.3.6 Soil storage areas should be located away from watercourses (minimum 10m) and protected from run-off from adjacent areas.

2.3.7 Storage bunds should be designed so the material is stable and unlikely to slip, slide or slump. Consider the risk of any adjoining topography, (e.g. avoiding storing soils near steep slopes or banks, or in areas at high risk of flooding).

2.3.8 Best practice should be applied in order to minimise the amount of compaction or other disturbance of the general structure of the superficial deposits.

2.3.9 Other site works should not impact on stored soil (e.g. Construction traffic must not track over stored soils).

2.3.10 Careful planning of storage areas and required works must be undertaken to avoid multiple handling of stored material and moving of stockpiles.

2.3.11 The surface of material storage bunds (not turfed as detailed above) can be smoothed with bucket to aid surface water run off to reduce potential for erosion. If significant soil erosion is occurring from storage piles during periods of heavy rain, consideration should be given to covering the stockpiles with terram or other suitable material.

2.3.12 Seeding of soil storage bunds should not be undertaken in areas of sensitive habitats and should only be undertaken with agreement of landowner, but may help stabilise bunds if required to be in place for extended period. Consider an enhanced seed mix (with native wildflower for example) to give a temporary biodiversity benefit.

2.3.13 Noxious weed growth or Non-native invasive species on soil storage bunds must be treated/ controlled or otherwise removed. Seeding bunds may help hinder noxious weed establishment.

2.3.14 In periods of dry weather check the need for dampening down to reduce dust and potential nuisance.

2.3.15 If any stored soil is contaminated it should be managed in accordance with the Contaminated Land GEMP.

2.3.16 After removal of stored material, storage areas should be reinstated to the pre-existing condition.

2.4 Reinstatement

2.4.1 Reduce risk of soil storage being constrained by nesting birds through implementation of nesting bird deterrents/ programming reinstatement works outwith nesting bird season. Ensure soil stores are surveyed for nesting birds/ protected species in line with Species Protection Plans (SPPs).

2.4.2 Stripped soil should be reinstated as close to where it was removed as possible. This will help to maintain a local seed base and the local geological/ hydrological characteristics.

2.4.3 Unless otherwise agreed, turves should be reinstated following the works and orientated vegetation side up.

2.4.4 Where turves are not available, areas would be left to revegetate naturally unless circumstances dictate otherwise, e.g. where vegetation is unlikely to establish within a reasonable timescale, or where a Habitat Management Plan/ BNG commitment specifies. Any seeding or replanting must be agreed in advance, including details of seed mixes and management regimes. Other techniques maybe more appropriate depending on the habitat to be reinstated.

2.4.5 The reinstatement of the construction area is to be undertaken to a high standard, using the existing soil and vegetation material wherever possible, in accordance with best practice.

3 Revision History

No	Overview of Amendments	Previous Document	Revision	Authorisation
01	New Document Created	N/A	1.00	Richard Baldwin
02	Reviewed and Updated	TG-NET-ENV-511 (Rev 1.00)	2.00	Richard Baldwin
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