

Soils and drainage

May 2025

Construction overview

Underground electricity cables are installed in trenches approximately 2.5 m wide and are protected from accidental damage by a protective plastic tile and marker tape.

We understand the importance of soils and drainage and will prioritise them from the start of the project. We will consult, investigate, assess, design and install appropriate land drainage and soil management, in collaboration with the landowner.

Cables are normally buried with a minimum of 0.9 m of material cover above the protective tile but could be buried deeper depending on the outcome of soil agricultural land classification (ALC), land drainage, engineering and ground investigation surveys.

Multiple cable trenches will be required along with a working corridor haul road for construction vehicles. All topsoil and sub-soil excavated will be stored and managed in accordance with a soil management plan (SMP), the proposed contents of which are outlined below.

When reinstating the land, the trenches will be backfilled, the haul road removed, and the working area levelled, drained and loosened. Subsoil will generally be loosened with an agricultural cultivator to an appropriate depth where the topsoil has been removed and where stockpiles have been located. We will aim to reinstate topsoil during favourable weather conditions on appropriately contoured and prepared ground. The topsoil of agricultural land will be left in a loose, friable and workable condition and, wherever possible, to its original depths and levels over the whole working area.



Example installation of pre-construction drainage system along High Voltage Direct Current project

Management of soils

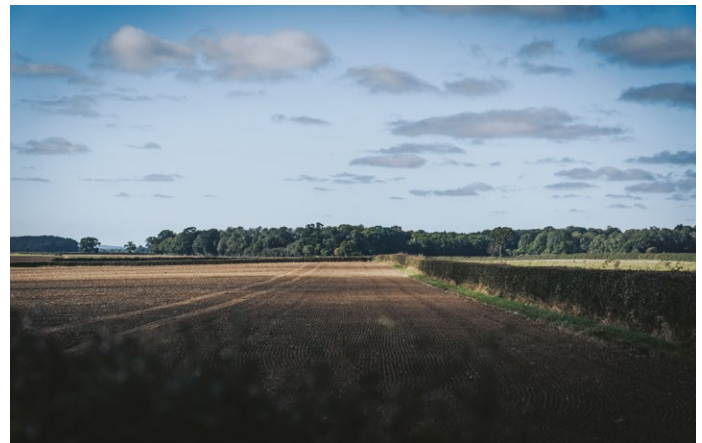
Ahead of construction, soil and agricultural land quality assessments will be carried out along the route through soil sampling and analysis to comprehensively assess the topsoil and subsoil. A soil resources survey will establish a baseline record of the condition of the affected land and will include:

- information collected from meetings with landowners, occupiers and agents
- a detailed soil survey in each field using handheld tools carried out by independent soil scientists and in accordance with published guidelines
- topsoil in each field will be sampled and tested at an accredited laboratory for pH, key plant nutrients, organic matter and particle size distribution and the results shared with each landowner and occupier
- agricultural land classification (ALC) grades will be mapped across each affected land parcel and land required temporarily for construction will be returned to its baseline ALC, therefore ensuring no loss or degradation of agricultural land.

This information will be developed into an outline SMP for the projects which will be submitted with the application for consent required to deliver the projects and will be updated and agreed with the

local planning authority (LPA) in advance of construction commencing. The SMP will be developed in accordance with published guidelines, in particular the Defra construction code of practice for the sustainable use of soils on construction sites¹ (which requires a SMP to be developed and implemented) and the Institute of Quarrying's good practice guide for handling soils in mineral workings² (which is guidance recommended for all construction projects by Natural England).

This approach is in accordance with National Policy EN-5 the National Policy Statement for electricity networks infrastructure³.



Management of land drainage

We are committed to ensuring that landowners and occupiers will be provided with land drainage which is equivalent to its pre-construction access condition. This commitment will form an important part of any land rights agreement that National Grid will need to have in place with each and every affected landowner and occupier.

National Grid will instruct suitably qualified, independent consultants to provide advice on agricultural land drainage affected by the project; this advice will run throughout the project development period and will support both the consenting and land rights processes. Regular meetings with landowners and occupiers will enable information sharing on drainage, help overcome any concerns regarding construction practices and enable collaborative working.

All information gathered from landowner and occupier meetings, and from detailed site surveys, will be used to develop a conceptual land drainage design for the proposed project. The designs will include consideration of pre and post-construction land drainage for each landowner and occupier. The designs will be shared and discussed with landowners and occupiers, prior to being installed.

Following construction and installation works, National Grid's drainage contractor will be responsible for the maintenance of the pre and post-construction land drainage systems; this will be for a prescribed defect period, usually five years. In the longer term, National Grid will assume responsibility for any repairs, or demonstrated losses from any defects, within the easement strip, which is the land subject to National Grid land rights. Landowners and occupiers will adopt and take full responsibility for the drainage outside the easement strip after the defect period.

¹ Construction Code of Practice for the Sustainable Use of Soils on Construction Sites gov.uk/government/publications/code-of-practice-for-the-sustainable-use-of-soils-on-construction-sites

² Good Practice Guide for Handling Soils in Mineral Workings quarrying.org/soils-guidance

³ National Policy Statement for electricity networks infrastructure (EN-5) gov.uk/government/publications/national-policy-statement-for-electricity-networks-infrastructure-en-5