



Construction best practice for underground cable installation

Version 1

nationalgrid

This document sets out National Grid's approach to good practice when we carry out work to install, maintain and operate equipment on, over, in or under land and what you as landowner or occupier can expect.

The document also provides information on our duties as the owner of the national electricity transmission network.

We will adopt the best practice as set out in this document wherever it is possible and reasonably practicable to do so. If we cannot do so, we will always explain why. We will also always comply with all relevant legislation. This document does not affect any other rights or powers that you or we may have.

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Section 1

Before works commence

Route selection

The route a project takes will be selected following careful planning and usually considers:

- the directness of possible routes
- how disruptive works may be to the local traffic, businesses and individuals
- ensuring that engineering considerations are met
- complete costs of the works which includes both the facilitation of works and reinstatement
- the locations of any existing underground and overhead equipment
- avoiding sites of archaeological and environmentally important sites
- environmental factors.

Land referencing

National Grid endeavours to identify all individuals and organisations that have an interest in land that may be affected by their proposed works. This is so we can keep you informed about the scheme and to ensure that the details of relevant property interests are included within a Book of Reference or Schedule of Interests. This document is submitted as part of our application and typically includes landowners, tenants, businesses and any individual who may have rights over land and/or property, as well as other interests such as mortgage companies.

In order for us to consult the people affected by our projects, we will send you a pre-populated Land Interest Questionnaire (LIQ) which sets out the information held by HM Land Registry. We will ask you to confirm the details that we hold are correct or ask you to make us aware of any additional interests that you believe are affected by the project. This information will also ensure that we keep you informed of progress of the project and will ensure that you have our contact information if you want to get in touch or have any questions about our proposals.

Consultation with stakeholders

With any of our proposals, we will always look to consult with all land interests to discuss works, obtain feedback and build positive relationships with affected parties. We understand that these schemes affect you and want to make every effort to ensure you are kept informed about what we are looking to do. During consultation, we would be looking to obtain further information on:

- landownership and occupancy (should this differ)
- any development proposals for the land which would include any plans for permanent structures or existing planning consents
- any known services, equipment of structures below ground
- whether the land has any special designations (e.g. Sites of Special Scientific Interest) or requirements such as public rights of way
- potential cropped and/or stocking of land
- land use and possible impact of proposed works.

Instructing an agent and surveyor's fees

National Grid encourage you to appoint an agent/surveyor to act on your behalf where we are seeking rights to carry out works on your property. An agent/surveyor will advise you on the process, your rights and will handle any compensation claims on your behalf.

National Grid will reimburse you for professional fees reasonably incurred in respect of all claims and advice on legal agreements in connection with associated land rights. More information on this can be found within our Payment of Surveyors Fees document.

Non-intrusive surveys

During the planning stages of our project, and in advance of any final routing decision, we undertake surveys over land so that we can understand any potential constraints to be considered in the project routing decision.

Walkover surveys, including ecological and archaeological surveys, will be undertaken in early project development. We will endeavour to agree access on a voluntary basis wherever possible, and landowners/occupiers will always be afforded as much notice as reasonably practicable before access is taken. An advance payment of compensation will be made to you to compensate any losses incurred as a result of surveys. Any further losses will be dealt with on a proven loss basis.

If we are unable to agree voluntary access, but we need to undertake particular surveys to inform design, a statutory notice may be relied upon.

Intrusive surveys

National Grid may drill boreholes or excavate trial pits in advance of the main construction work where they are necessary to establish ground, archaeological and/or geological condition. After consultation between the owner/occupier and National Grid, works will be carried out so as to cause the least practicable disturbance to the owner/occupier and in accordance with the National Grid Land Rights Strategy. Reasonable and provable compensation will be paid for any damage or disturbance caused.



Photographic record of condition

We will prepare a photographic record of condition where access is required for intrusive survey works. The record of condition will include any accesses and compounds that are proposed to be used by the scheme.

The record of condition may consist of written notes, photographs or video recordings. A copy of any record of condition will be shared with landowners/their agents before work on site begins. This will ensure an accurate record of the prior condition of land to ensure that land is reinstated appropriately.

Trees and hedgerows

It is always our last resort to lop or fell any mature trees, however if it is unavoidable, we will consult with landowners. If there is a tree preservation order on the tree or the location is within a conservation area, the appropriate authority will also be consulted and any lopping or felling will be done to abide with their conditions.

Any works to hedgerows will also be discussed with landowners and occupiers, with any formal approvals to be requested from the local authorities. There will also be ecological surveys to ensure wildlife is not harmed or affected by the removal of hedgerows. Following completion of the works, these hedgerows will be replaced wherever possible.

Biosecurity, soil pests and diseases

National Grid, in conjunction with the landowner/occupier, will take such reasonable biosecurity precautions as may be necessary to avoid the spreading of pests and diseases having regard to the recommendations and guidance as prescribed by the appropriate agricultural government department. National Grid will also seek to agree reasonable precautions against the spreading of pests and diseases with any landowner or occupier prior to entry onto any land or property.

Straying livestock

National Grid aims to consult with landowners/occupiers and ensure that all reasonable precautions are taken to prevent the straying of livestock onto working areas. National Grid will compensate the owner of livestock for all injury, death or loss arising where straying is due to any act or omission on our part, following the production of a report from a veterinary expert.

Protection and reinstatement of services

National Grid will aim to ensure that provisions are made to maintain existing services during the works. Where this is not possible and existing services are affected by our works, we will take all reasonable steps to reinstate the services to their previous condition once the works are completed.

Protection of water supplies

Locating existing water supplies is important to us; you may have knowledge of supply locations which we would be grateful if you could share with us. Having this information allows us to reduce the effects of our scheme and carry out reinstatement works.

If we interrupt or accidentally damage any water supplies or other services in the land, we will repair the damage and/or provide an adequate alternative as soon as reasonably practicable.

If there appears to be any possibility of disturbance of private water supplies such as wells or springs, we will arrange, and meet the cost of sample analysis to determine quality. The data, i.e. the levels in wells and flows from springs, will be recorded and agreed before the works commence.

Fishing and sporting rights

National Grid will take all reasonably practicable steps to protect fishing and sporting rights and will pay reasonable compensation for any loss or damage to such rights arising out of the construction of the works.

Poaching and dogs

National Grid will instruct their employees that they must not carry out poaching or bring dogs on to the working areas except as may be necessary for security or other reasonable purposes.

Continuation of normal farming activities

National Grid encourages the continuation of normal farming activities prior to commencement of the project's construction works. There is a possibility that works may not progress as originally envisaged and so continuation of normal practices is advisable to ensure you do not suffer any unnecessary losses.

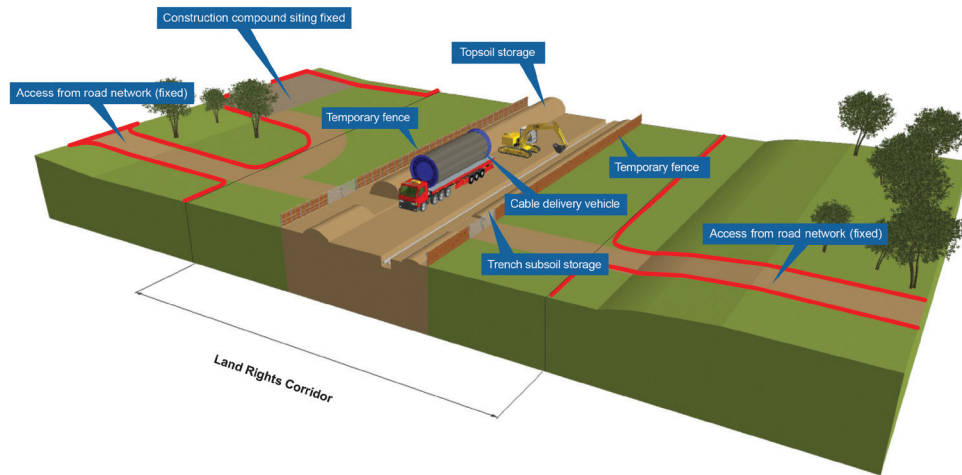
Contact upon commencement of works

With any National Grid project, a programme is always discussed with landowners and occupiers to ensure that they are kept informed with progress on site. National Grid aim to provide at least 10 working days' notice to the landowners and occupiers along the route before entry is taken. Where it is reasonably possible to do so, National Grid will afford landowners and occupiers time to remove standing crops before access is taken in order to mitigate losses.



Section 2

During works



NOT TO SCALE

Methods of construction

Construction of linear cable projects can be undertaken in a number of different ways. Open trenching where the land will need to be excavated for the cable to be installed or possible ducting for the cable to be pulled through. The excavations will be backfilled with a protective tile above. Horizontal Directional Drilling (HDD) or similar technology may be utilised to provide ducting for the cable to be pulled through in instances where open trenching is not appropriate.

Soil management

To prevent any unnecessary damage to soils, all construction traffic will be restricted to designated access roads. Topsoil stripping will also be restricted to the width of access roads and construction areas of the project to minimise disturbance to soil and its structure.

Topsoil and subsoil will be stored separately to prevent mixing and will be reinstated in reverse order of excavation. The height of topsoil storage bunds will be restricted to minimise risks of compaction within the soil heap.

National Grid will endeavour to undertake works to both topsoil and subsoil in suitable weather conditions, for example, when not waterlogged.



Haul roads

For linear projects, a haul road is usually installed along the working width to ensure access for all machines and to protect the soils from heavy plant and machinery, usually installed following topsoil stripping and the laying of a geotextile membrane to protect the soils and prevent as much as possible the stone contaminating the soils.

Additional land areas

Sometimes, projects may require land outside of the Construction Working Width for the purpose of the following activities and facilities:

- storing portable cabins
- welfare facilities including portable toilets
- secure works compounds
- storage of plan and/or materials
- temporary access road
- road, rail and river crossings
- areas of difficult terrain
- additional surface cables in case of emergency only.

This land will only ever be used by the project in connection to their construction works. Should any additional land be required, landowners/occupiers will be consulted with. The location and extent of these areas will be agreed with the landowners/occupiers and may be documented by way of a separate lease or licence agreement which National Grid will draft and provide to you and or your agent.

Construction working width

In addition to the Easement Strip in which the cables will be situated, National Grid will require a Construction Working Width during the construction phase of projects. This will be for access associated with the cable installation works including access to third party's land affected by the cable works and storage of soil.

Fencing the working width

National Grid usually fence out their Construction Working Width to protect both members of the public and livestock. This also helps to avoid trespass. Unless otherwise agreed with the landowner/occupier, the method of fencing the Construction Working Width will be livestock -proof to ensure exclusion of any stock kept on the adjoining land. Where no livestock is kept, post and rope fences or wire may be used. National Grid will exercise reasonable care and undertake practical measures to avoid entry by trespassers.

Crossing points may be included within this fencing to facilitate the continuation of agricultural operations. The crossing points will be installed at appropriate locations to enable reasonable access across the Construction Working Width. All temporary fencing will be maintained throughout construction works until the land has been reinstated, unless otherwise agreed with the landowner/occupier.

Depths of cable

The cable will be laid to avoid interference with normal agricultural operations wherever possible. The cable will be laid with a suitable depth of cover from the original surface to the top of the protective tile, except where necessary for engineering reasons, and with the agreement of the landowner.

Land drains

National Grid will instruct a drainage consultant to provide pre and post construction drainage plans. The plans will show the preferred drainage design based upon the indicative cable route. Final designs will be based upon the as-built cable.

In many cases, the laying of new land drains will be required to keep the affected and adjoining land of the landowner in good order.

Where it is reasonable and proportionate to do so, the Construction Working Width will be restored to a condition no worse than recorded at the pre-construction drainage assessment. The pre-construction drainage assessment will be undertaken immediately prior to the commencement of construction. If land drainage cannot be provided to reinstate the land to the same standard as the pre-construction drainage assessment, the landowner will be compensated.

When repairing damage to field drainage systems, and/or carrying out any additional drainage work determined as necessary, the approach will be agreed with the landowner. If agreement cannot be reached, the matter will be referred to an independent expert acceptable to both parties. Where possible, plans of any existing drainage scheme should be shared with National Grid.

Where drains are located during excavations, it would be expected that photos of any repairs or connections are taken along with a record of the location for future reference. If possible, the landowner or occupier would be afforded the opportunity to inspect the works.

Header drains (cut-off drains) will be installed before construction begins, where required, to secure the integrity of the drainage system to facilitate the installation for the cables.

The position of all land drains cut by or disturbed during excavation work will immediately, following their location, be prominently marked by pegs at both sides of the trench or recorded on the Global Positioning System (GPS) device/surveying system.

In cases where land is let on any agricultural tenancy, agreements regarding repairs and reinstatement will involve the occupier (or in the absence of a formal tenancy agreement, the landowner).

After the cable has been installed, National Grid will carry out the drainage works as agreed between National Grid and the landowner or occupier as appropriate. The timing of these works is to be discussed and agreed between National Grid and the occupier. National Grid will ensure that suitably qualified drainage sub-contractors are employed.

Post construction maintenance is the responsibility of the landowner following expiry of the contractor liability period. Assuming that the landowner has maintained any drainage installed as per best practice, then National Grid will be responsible for any repairs or losses resulting from defects for the duration of the easement.

Claims for crop loss, damage and disturbance

Reasonable and proper compensation for crop loss, damage and disturbance arising out of the construction works will be paid by National Grid on a proven loss basis.

Agricultural Liaison Officers (ALOs)

National Grid will usually appoint an ALO to provide a point of contact for landowners and occupiers during construction. The ALO will be available to discuss any practical issues that might arise. They will usually be introduced to landowners and occupiers before construction commences.

Working hours

Core working hours are typically between the hours of 7am - 7pm Monday to Saturday and between 9am - 5pm on Sundays.

The nature of some of the activities means that these times and days may need to be extended occasionally for particular activities. For example, activities that require continuous 24-hour operations such as tunnelling, horizontal directional drilling and testing activities would require night-time working. Some deliveries and abnormal loads may be required outside of normal working hours. We will be sure to keep you informed of working hours specific to your property.

Security

Temporary construction compounds, including offices, are secured to protect the public and prevent unauthorised entry to site. Access to temporary construction compounds will be limited to specific entry points and personnel entries/exits will be recorded and monitored for both security and health and safety purposes.

Workers facilities and welfare

No living accommodation will be permitted on the construction site. Onsite welfare facilities will be provided for all site workers and visitors and these will be kept clean and tidy.

Where portable generators are used to provide electricity for welfare units, industry best practice will be followed to minimise noise and pollution.



Section 3

Post works completion

Reinstatement of roads

Private roads and footpaths will be made good to a condition equivalent to that existing before the commencement of the works.

Access trackways will be removed after construction. The geotextile membranes protecting the soils will also be removed and taken away from site.

Reinstatement of land

Agricultural land will be reinstated to the pre-works condition as far as reasonably possible. National Grid will reinstate effected land to the reasonable satisfaction of the landowner and occupier.

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 depth over the whole working area. Subsoil will generally be loosened with an agricultural cultivator to an appropriate depth where the topsoil has been removed.

Reinstatement of field boundaries

National Grid will reinstate any fences and walls removed during construction and utilise appropriate materials for remediation activities. Hedges and hedgerow trees will be re-planted. Hedges will be replaced by whips protected by suitable fencing. National Grid will undertake ongoing hedgerow maintenance for 5 years post works or will agree a payment with the landowner as an item of claim within the full and final settlement.

Inspection and maintenance

Notice will be given to the landowner /occupier for any subsequent entry required to the land for maintenance or inspection purposes, unless in the case of an emergency. Should any trees or hedgerows be planted in connection with the works, National Grid will commit to manage or pay for their maintenance until reasonably established.

Land management payments

National Grid will pay compensation for all reasonable and proven loss of Basic Payment Scheme (BPS) monies or payment of any other statutory land management support schemes unavoidably incurred where eligible land has been taken out of production during or after construction works. National Grid would expect any impact on BPS or similar scheme to be mitigated, where possible.

National Grid's projects may also impact on land entered into an environmental land management scheme. In these instances, National Grid will expect the landowner /occupier to complete any necessary form, such as a derogation request, to mitigate the potential losses as a result of the construction works. National Grid will reimburse reasonable professional fees in connection with any necessary derogation request or similar completed as a result of construction works.

In accordance with the arrangements set out in this document, where required, National Grid will use reasonable endeavours to provide landowners and/or occupiers with information to assist in making BPS and any other similar applications.

Changes of ownership or occupation

National Grid maintain contact with landowners and occupiers of land crossed by their equipment to ensure accurate records are held to facilitate maintenance activities and protection of assets. Once a project has been completed, National Grid will provide their contact details so that landowners and occupiers can notify them of any changes in landownership or of any other interest changes connected to the land.

Protection of the easement strip

Some activities will be restricted on the easement strip to ensure that the cables are protected. Easement widths can vary dependant on the cable type and project engineering requirements.

Whilst most agricultural operations will still be possible above the cables, landowners and occupiers must ensure that they do not do anything that will likely result in an interference with the cables or to cause damage the cables. There will likely be no restrictions on normal agricultural operations that do not affect the cable. Land drainage works however, are usually restricted over the easement width. If drainage works are planned in the vicinity of the cables, National Grid should be notified as soon as possible.

National Grid will carry out periodic inspections of their easements and will therefore require access to and along the easement strip. As such, the easement strip should be maintained in line with the terms of the deed of easement.

As built plans

Upon completion of the works, National Grid will serve a Completion Notice to the landowner which will include 'as built' plans.



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