

# Assessing electricity network infrastructure applications



Guidance for local planning authorities in England



UK Government



Great British  
ENERGY

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# Aim of this guidance

**Planning plays a crucial role in delivering a clean, secure and affordable energy system, as well as unlocking the wider benefits of energy projects, such as job creation and economic growth. It enables projects to move from proposal to reality while ensuring that potential negative impacts are minimised or mitigated against and benefits are maximised for communities and the environment.**

However, local planning authority officers are under increasing pressure, with resourcing challenges intensifying the difficulty of assessing the growing number of applications for clean energy projects.

This guide is intended as a practical tool to support local planning authority officers in England in assessing planning applications for electricity network infrastructure. It is also relevant to planning committee members, statutory bodies, consultants, developers and individuals wanting to understand the process, and it touches on the role of local planning authorities in Nationally Significant Infrastructure Project regime for projects determined at this level.

It is not a formal planning policy or statutory guidance and does not replace the National Planning Policy Framework, Planning Practice Guidance, local development plans or National Policy Statements. Instead, it provides an overview of the key considerations specific to network infrastructure developments and sets out the factors that typically arise, to help support consistent, evidence-based decisions that draw on professional judgement and reflect local context.

## How to use this document

- Use alongside the published [National Planning Policy Framework](#)<sup>1</sup> and [Planning Practice Guidance](#)
- Use as a reference during pre-application discussions with developers to identify potential issues and solutions early
- Consult when reviewing planning applications to ensure all relevant factors – policy, technical, environmental, social and economic – are considered.

## Other resources in the series

Similar guidance is available for assessing:

- Onshore wind
- Ground-mounted solar
- Battery energy storage systems.

1. References to the NPPF in this guidance refer to the December 2024 version of the NPPF, available [here](#). A draft updated NPPF was published for consultation in December 2025, and once published, this guidance documented will be updated to reflect any policy changes.

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# 01

## *The UK government's approach to electricity network infrastructure*

# UK government approach to electricity network infrastructure

As the UK energy system transitions from a model based around centralised, large-scale fossil fuel power plants to one based on more distributed renewable and low-carbon generation, new network infrastructure will be required to transport electricity from where it is generated to where it is used.

But it's not just renewable and low-carbon energy projects that require this new infrastructure – emerging developments such as housing and data centres also need to be connected to the network, while the growth in electricity demand from electric vehicles and heat pumps will require further upgrades and expansions. The UK government strongly supports electricity network infrastructure developments as a key element of decarbonising the country's energy sector while simultaneously supporting economic growth, driving down consumer bills and delivering energy security.

While the responsibility for the delivery and regulation of electricity networks involves several bodies (Ofgem, the National Energy System Operator (NESO) and network developers), it is national planning policy and guidance that sets the strategic planning framework and informs local planning decision making.

Historically, project-by-project network planning has led to long lead times and delays for electricity network infrastructure, but recent reforms are enabling strategic investment ahead of need.

The documents below do not generally form part of the material considerations for locally determined planning decisions under the Town and Country Planning Act (TCPA) 1990, although some (such as National Policy Statements) may be considered material on a case-by-case basis. They are included to provide a wider context on the Government's approach to energy policy and electricity network delivery.

## Connections Action Plan

The [Connections Action Plan](#) describes the government-led programme to fix delays in connecting new generation, storage and demand to the electricity network. It focuses on reforming the connections process so that viable projects can connect more quickly and network capacity is used more efficiently, so new energy projects can be built and brought into use.

Under the reformed connections process, a project's connection offer and/or queue position may be linked to the timely achievement of specified milestones, which may include securing planning permission and, where applicable, discharging pre-commencement conditions.

## Clean Power 2030 Action Plan

The [Clean Power 2030 Action Plan](#) (CP30)<sup>2</sup> is the government's commitment to ensure that by 2030, most electricity used in Great Britain comes from clean, low-carbon sources. CP30 sets out specific targets to meet this commitment, such as increasing deployment of solar generation from 21.5 GW at the end of 2025 to 45-47 GW by 2030,<sup>3</sup> and onshore wind generation from 15.3 GW to 27-29 GW.<sup>4</sup>

New electricity generation requires new electricity network infrastructure, and CP30 includes a section on electricity networks and connections. It recognises that significant upgrades and expansion of electricity network infrastructure will be required to meet the CP30 targets, support energy security and deliver economic growth. Constraint costs can arise when electricity network infrastructure is unable to effectively transport renewable generation to areas with the highest demand for electricity. CP30 reconfirms the strong national need for electricity network infrastructure.

## Strategic energy planning

The [Strategic Spatial Energy Plan](#) (SSEP) is Great Britain's first long-term, whole-system blueprint for future energy infrastructure. It will identify the optimal mix, scale and broad geographic distribution (not site-specific locations) of electricity generation, storage and hydrogen infrastructure required to meet future demand and net-zero targets.

The SSEP is being developed by NESO on behalf of the UK, Scottish and Welsh governments. Current indicative timescales are:

- Summer 2026: pathway options submitted to ministers
- Early 2027: public consultation on draft plan
- Autumn 2027 (subject to change): final plan published.

For the first time, the UK is taking a spatial approach to renewable energy targets and infrastructure, whereas in the past, energy system planning has relied on high-level modelling and reactionary investment. The SSEP will align with other strategic planning tools, including the [Centralised Strategic Network Plan \(CSNP\)](#) and [Regional Energy Strategic Plans \(RESPs\)](#).

The CSNP is a GB-wide plan for the electricity transmission network, that will set out what grid infrastructure is needed, and when, to meet future demand. It was introduced to provide a single, long-term network plan to 2050 that builds on the strategic network plans that precede it, supporting the delivery of the SSEP by reducing duplication and delay, and coordinating network investment at a national level. The scope of the CSNP covers new transmission lines, substations, converters, strategic reinforcement corridors and the phasing of projects. Delivery of the CSNP [is planned for the end of 2028](#), dependent on publication of the SSEP.

2. UK Government, 2024. [Clean Power 2030 Action Plan: A new era of clean electricity](#). For section on electricity networks and connections, see pages 62-69.

3. DESNZ, 2025. [Solar photovoltaics deployment](#), this includes both rooftop and ground-mounted solar

4. DESNZ, 2026. Energy Trends: UK renewables - Renewable electricity capacity and generation (ET 6.1 - quarterly) – February 2026 update [Renewable Energy Planning Database \(REPD\)](#): February 2026 (quarter 4)

Alongside the SSEP and CSNP, RESPs are being developed by NESO as part of its strategic energy planning role, commissioned by the UK government. RESPs will take a whole-system approach across all energy vectors, including electricity, gas, hydrogen and heat networks, to help identify the energy infrastructure needed to support local net zero and economic growth ambitions. Together, the SSEP, CSNP and RESPs are intended to provide a coherent strategic planning framework across national, regional and local levels. NESO will work closely with local planning authorities and other local actors to support understanding of how RESPs can inform local planning activities and wider spatial planning frameworks. The suite of RESPs is intended to be published by the end of 2028.

The overarching National Policy Statement (NPS) for Energy (EN-1) confirms that the SSEP should be considered by the Secretary of State when making decisions on Nationally Significant Infrastructure Project (NSIP) applications, once endorsed by all relevant governments. The NPS will also endorse the needs case for strategic parameters of transmission infrastructure recommendations in the CSNP, so the Secretary of State will take the need case for these projects as established when making decisions on NSIPs. For more information on the NPS, see the section: National Policy Statements, [page 29](#). The SSEP, CSNP and RESPs are not currently integrated into the TCPA regime.

## Community benefits from transmission network infrastructure

The UK government's [Community Funds for Transmission Infrastructure guidance](#) sets out how transmission infrastructure developers should establish and operate community funds so that those living near new onshore electricity transmission projects benefit from hosting that infrastructure. The UK government also announced in 2025 that it would create a bill discounts scheme for those living close to new, and certain upgraded, transmission network infrastructure. It is important to note, however, that community benefits are not a material consideration in planning.

The guidance provides information about eligible infrastructure, recommended levels of funding, delivery costs, principles of good practice, how to identify eligible communities, and how to organise governance and community engagement. Crucially, there is a section on understanding community preferences to ensure that funds are fit for purpose.

# Role of Ofgem

In addition to statutory consultees and planning policy considerations, Local Planning Authorities (LPAs) should be aware of the separate regulatory role of Ofgem in relation to electricity network infrastructure. Ofgem, as the energy regulator for Great Britain, sets price controls to make sure energy network companies treat customers and consumers fairly, invest in improving their service and support the move to low-carbon energy.

There is a significant amount of uncertainty in future energy needs and an increasing requirement for electricity network infrastructure to meet both current and future demand. To minimise regulatory burden and reduce risk to consumers and customers, Ofgem have changed the approach to project funding requests. Historically, Ofgem reviewed every project from a technical and cost perspective, which was time consuming and could become a blocker to much needed infrastructure being built on time. As an alternative, Ofgem are developing Pre-approval of Solutions by Engineering (PASE). Once published, PASE will apply only to transmission projects, providing pre-approved efficient and future-proof optioneering designs and configurations of new electricity network infrastructure. This reduces the review burden while ensuring the needs of consumers, customers and the environment are considered carefully.

The PASE framework will not specify how a transmission operator should undertake optioneering or project development, and Ofgem does not develop designs itself. Transmission operators will be able to choose to deliver new projects that are or are not PASE-compliant. Where projects are aligned to PASE, this will enable Ofgem to standardise and reduce delays to decision-making when assessing electricity network funding requests. Moving towards standardisation should help in part simplify the reviews of planning bodies through the consistent approaches taken by transmission operators.

# 02

## *Overview of electricity network infrastructure*

### **In this section**

Electricity network infrastructure refers to the physical assets needed to transform, transmit, distribute and manage electricity from the point of generation to end users. Physical assets include support structures (pylons and poles), overhead lines, underground cables, interconnectors, transformers, converter stations and substations.

NPS EN-1 and EN-5 identify electricity networks as critical infrastructure, with the security and reliability of the UK's energy supply highly dependent on electricity networks to enable new generation, storage and interconnection. LPAs play a key role in ensuring delivery is balanced with environmental, landscape and amenity considerations.

Electricity networks are broadly divided into transmission and distribution. The infrastructure in different parts of the country is primarily owned by private companies known as network operators. There are three transmission network operators (TNOs) and six licensed distribution network operators (DNOs) in GB. Between them, the DNOs cover 14 licensed regions, operating extra high voltage (EHV), high voltage (HV) and low voltage (LV) assets and delivering electricity to domestic customers, small-to-medium-sized businesses, large commercial and industrial companies, and energy generators.

The three TNOs – National Grid Electricity Transmission (NGET), Scottish Power Transmission (SPT) and Scottish and Southern Electricity Networks Transmission (SSEN-T) – operate extra high voltage assets and deliver to large-scale electricity consumers. Ofgem is driving further competition in the delivery of electricity network infrastructure with the appointment of Competitively Appointed Transmission Owners, where projects are competitively allocated.

The main components of the electricity network infrastructure are set out below. To note, not all of these components are consented under the TCPA. However, they are referenced here to provide background, as elements commonly feature in planning submissions (including supporting information and cumulative impact assessments).

## **Transmission network infrastructure**

The transmission network operates at high voltage (275 kV and 400 kV in England). These networks are primarily used to transport electricity long distances and can accommodate large energy generation projects, such as offshore wind farms and nuclear power plants. They can also connect large-scale demand customers directly to the transmission network via dedicated grid substations. Features of this network include:

### **1. Overhead transmission power lines**

[Typically consented under the Planning Act 2008 via a Development Consent Order (DCO), or under section 37 of the Electricity Act 1989]

- Steel lattice towers (pylons) or monopoles (often called T-pylons) carrying extra high voltage conductors (often called overhead lines). Transmission pylons in England are a minimum of 118ft (36m) tall and the tallest are 623ft (190m).
- Associated conductors, insulators and earth wires

- Overhead powerlines (also referred to as conductors) carry electricity at very high voltages (up to 400 kV) to reduce energy losses, often crossing large distances and multiple local authority areas. Their significant height allows the surrounding air to insulate them, preventing hazards to the public, as well as allowing them to cross features such as roads, rivers and valleys.
- Insulators are used to connect powerlines to pylons without the pylon conducting electricity, to prevent hazards and power losses; usually made from porcelain or toughened glass
- Earth wires are used to protect the other conductors in the case that lightning strikes a transmission pylon; may also be used for telecommunications (this is the wire which runs between the tops of pylons)
- Line spacers maintain fixed distances between conductors running parallel or in a 'bundle' and reduce vibrations along the conductors
- Often cross large distances and multiple local authority areas.

## 2. Underground transmission cables (and aboveground elements)

[Typically consented via Class B, Part 15 of Schedule 2 of the Town and Country Planning (General Permitted Development) (England) Order 2015 (GPDO) or under the Planning Act 2008 via Development Consent Order (DCO)]

- Extra high voltage cables installed in trenches or using trenchless techniques (such as horizontal directional drilling) with underground jointing boxes where the sections of cable are joined
- Cable sealing end compounds where underground cables connect to overhead lines
- Often cross large distances and multiple local authority areas.

## 3. Transmission substations

- Large sites containing transformers, switchgear and control equipment within buildings and outside
- Enclosed by electrified fencing with security and lighting
- May include new-build, extensions or reconfiguration of existing substations.

## 4. Subsea Cables and Converter Stations

[Marine elements typically require a marine licence; some schemes are consented via a DCO under the Planning Act 2008 or TCPA if converter stations are standalone]

- High voltage alternating current (HVAC) or direct current (HVDC) cables may be used to transmit electricity from offshore wind farms to the coast. Transition joint bays are required to connect these cables to the onshore electricity network close to where they reach land.
- HVDC cables are typically used to transmit electricity over longer distances. Once HVDC cables reach the coast, on-land converter stations are needed to convert the current to AC, which is most often used in the onshore electricity network.

# Distribution network infrastructure

Distribution networks deliver electricity from the transmission system and from distribution-connected generation to homes and businesses. They are operated by regional DNOs, or independent distribution network operators (IDNOs).

## 1. Bulk supply point (BSP)

- Typically a supply taken from the transmission network
- Supplied at 400 kV or 275 kV and stepped down to 132 kV for the distribution network
- Often located at transmission substation sites.

## 2. Primary substations

- Typically take a supply at 132 kV, but sometimes 66/33 kV
- Normally step down to 11 kV, but sometimes 66/33 kV
- Often located within towns and cities or on the edges of urban areas or industrial estates.

## 3. Secondary substations

- Smaller substations stepping 11 kV down to low voltage (400 V/230 V)
- May be housed in purpose-built buildings, ground-mounted kiosks or integrated units within new developments and industrial estates.

## 4. Overhead distribution lines

[Typically consented under section 37 of the Electricity Act 1989]

- 132 kV (EHV) lines typically carried on steel lattice towers or occasionally wooden poles, usually called 'trident' poles
- 66/33 kV (EHV) lines typically carried on single wooden poles or H poles, occasionally smaller pylons
- 11 kV (HV) lines typically carried on single wooden poles or small steel poles, occasionally H poles
- Low voltage (LV) lines typically carried on single wooden poles
- Common in rural areas
- May include pole-mounted transformers on poles near end consumers.

## 5. Underground distribution cables

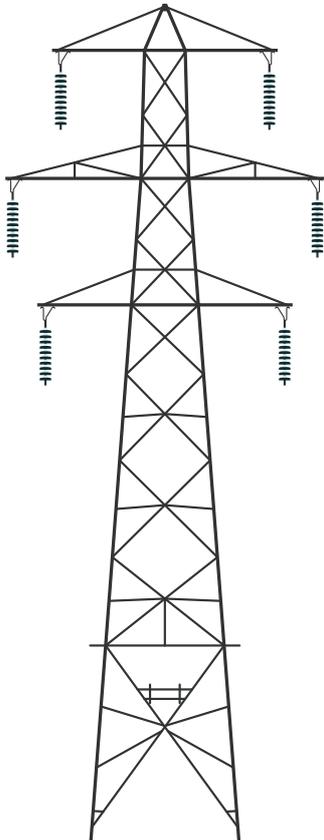
- Buried cables beneath highways or private land
- Includes joint bays, link boxes and service connections

To see example photos of different types of network infrastructure, we recommend reviewing [this resource on UK power infrastructure](#).

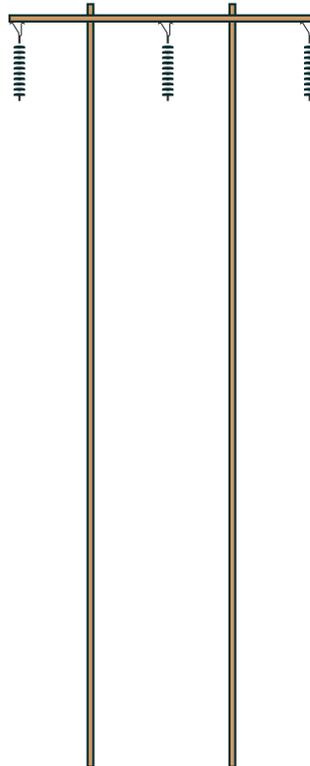
The diagrams below show examples of what typical electricity network infrastructure may look like. Please note that the design of infrastructure will vary and these diagrams are purely illustrative.

# What do key components of distribution network infrastructure look like?

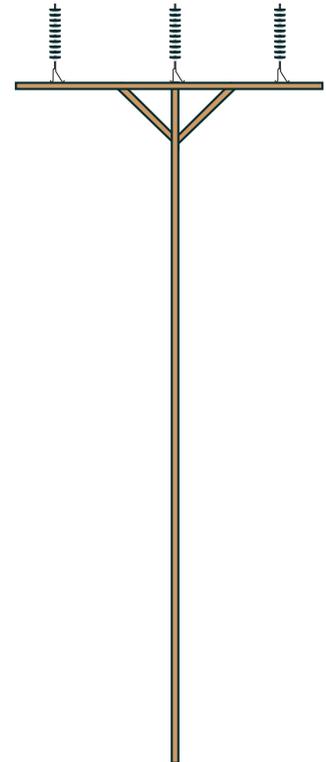
Smaller pylons and poles carry lower voltage conductors at a lower height than transmission pylons. Poles are often steel lattice or wooden, carrying power lines at the following voltages: 132 kV, 66 kV, 33 kV, 22 kV, 11 kV, 400 V or 230 V.



**Steel lattice pylon with two circuits, both three phase**



**Three phase wooden H pole**



**Three phase wooden pole**

## Typical support types and height by voltage tier

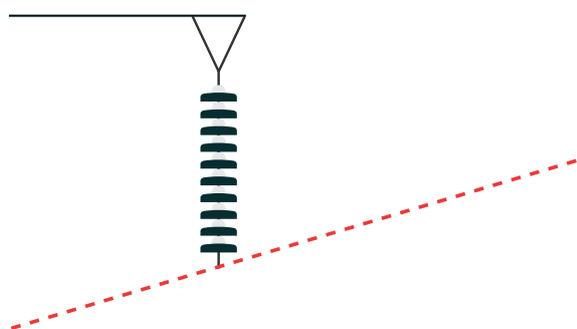
kV	Typical height	Detail
132 kV	25m +	Steel lattice tower/pylon
	14-20m	Wooden or steel pole
66 kV	14-16m	Wooden or steel pole
33 kV	9-15m	Typically wooden pole
11 kV	9-15m	Typically wooden pole
LV	7-9m	Typically wooden pole

**Insulators:** used to connect powerlines to pylons without the pylon conducting electricity to prevent hazards and power losses. Traditionally made from porcelain or toughened glass. Newer installations or replacements may use composite polymer insulators.

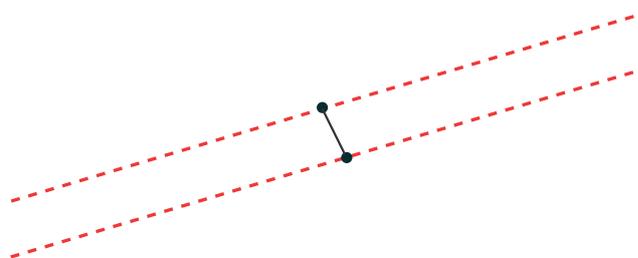
**Line spacers:** maintain fixed distances between conductors running parallel or in a 'bundle' and reduce vibrations along the conductors.

**Conductors:** overhead powerlines carry electricity at very high voltages (up to 132 kV on the electricity distribution network and up to 400 kV on the electricity transmission network) to reduce energy losses, often crossing large distances and multiple local authority areas. Their significant height allows the surrounding air to insulate them, preventing hazards to the public, as well as allowing them to cross features such as roads, rivers and valleys.

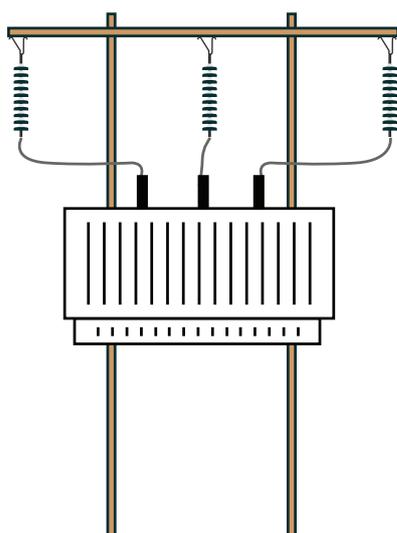
**Earth wire:** runs between the tops of pylons and protects the circuits in the event of a fault, such as an insulator failing on the pylon. May also be used for telecommunications where fibre optic cables are contained in the wire.



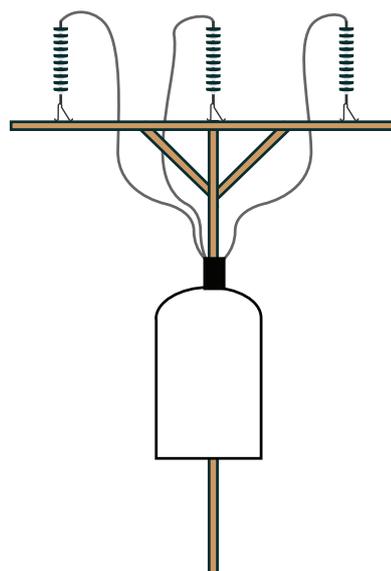
Insulator



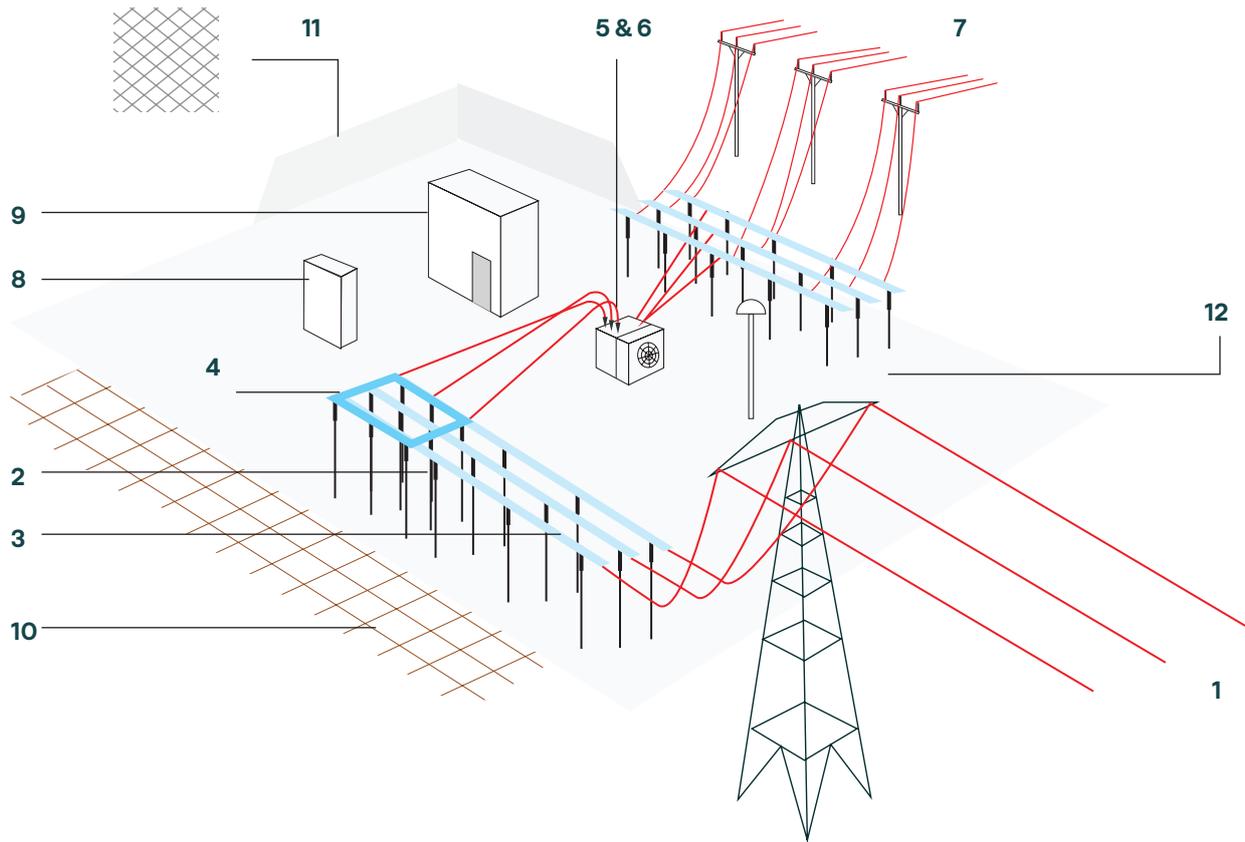
Line spacer



Two examples of pole-mounted transformers



# What does a typical substation look like?



## 1. Power lines in

### 2. Disconnectors, HV and LV conductors and insulator chains

Disconnectors (also known as isolators) provide a visible break in an electrical circuit to ensure equipment is safely isolated for maintenance or inspection. Conductors carry electricity through the substation at high and low voltages, while insulators prevent unintended electrical discharge to earth. Disconnectors are mechanical devices typically made from metal conductors mounted on ceramic, glass, or composite insulators and are operated only when the circuit is not carrying load.

### 3. Structural support for overhead power lines

Steel gantries, portals, or poles support overhead conductors as they enter, exit, or pass through the substation. These structures are usually galvanised steel and designed to withstand wind and electrical loads.

### 4. Circuit breaker

Vital components that protect the system by detecting and isolating electrical faults. They interrupt current flow when a short circuit is detected to insure integrity of power supply and protect people and equipment from damage.

## 5. Transformers

Transformers change the electricity voltage between different voltage levels to allow safe and efficient power transfers. They are typically steel-cored units containing copper or aluminium windings and insulating oil.

### 6. Cooling equipment (including radiators and fans)

This removes heat generated by transformers to maintain safe operating temperatures. This typically consists of steel radiators and electrically powered fans attached to the transformer body.

## 7. Power lines out

### 8. Switchgear and circuit protection equipment

Switchgear controls include disconnectors, earth switches, lightning arrestors and busbars. These isolate and protect electrical circuits, allowing faults to be safely disconnected and maintenance to be carried out. Equipment is typically housed in metal enclosures and may use air, gas, or vacuum insulation.

## 9. Control buildings

These contain protection systems, monitoring equipment, communications and operational controls for the substation. They are usually constructed from brick, concrete, or steel-framed panels with internal electrical and electronic equipment.

### 10. Gravel and earthing grids

Gravel surfacing and buried earthing grids reduce electrical shock risk and safely dissipate fault currents into the ground. Earthing grids are usually made from buried copper conductors, with crushed stone laid above.

### 11. Security fencing, walls and gates

Security measures restrict unauthorised access and protect public safety around high-voltage equipment. These are commonly metal palisade fencing, mesh fencing or solid walls with lockable steel gates. BSP and primary substations with 132 kV compounds have electrified fencing.

### 12. Lighting and CCTV

These provide site security, safety and operational visibility, particularly during night-time or maintenance activities. Equipment is typically mounted on steel columns or buildings and powered from the substation's auxiliary supply.

# Supporting and ancillary infrastructure

Infrastructure necessary for construction, operation and maintenance includes:

- Access tracks and hardstanding
- Temporary construction compounds, including working areas for erecting pylons and stringing conductors
- Cable sealing end structures
- Drainage, earthworks and landscaping.

## Grid connection and reinforcement infrastructure

To accommodate new development or generation, network operators may require:

- New grid connection points
- Reinforcement of existing lines or substations
- Upgrading (increasing electricity capacity) of overhead lines or replacement of conductors
- New cable routes between substations.

## Key factors influencing where electricity network infrastructure is built

In addition to government policy and the strategic planning process, factors that influence where electricity network infrastructure is built include:

- Location of electricity demand and generation
- Grid capacity and constraints, in conjunction with need for reinforcements
- Technical, safety and engineering requirements
- Cost and efficiency of solutions – for example, network optioneering assessments
- Deliverability and timing to meet decarbonisation timescales
- Environmental and landscape constraints.

The environment in which infrastructure is situated may impact the types of infrastructure to be built. NESO's Electricity Transmission Design Principles (ETDP), expected in the coming months, will aim to provide clarity on the appropriate types of transmission assets in different environments, how impacts on landscapes, the environment and communities can be mitigated, and where flexibility in routing and technology design exists. They are intended to improve mitigation outcomes, support alignment between planning and regulatory processes, and give communities greater transparency on design choices and their rationale.

## Site justification

Applications should explain the constraints of the electricity network, the rationale for the selected location or alignment and the extent to which reasonable alternatives have been considered. Emphasis should be placed on whether the proposal represents a reasonable balance between technical need and impact minimisation. LPAs should be satisfied that the chosen site or route is justified by operational, technical or safety requirements.

## Environmental assessments

In some cases, network infrastructure developments may be located to avoid designated or protected sites, but this is not always feasible. If the proposal is considered likely, individually or in combination with other plans or projects, to have a significant effect on a site protected under the Conservation of Habitats and Species Regulations 2017 (as amended) or 'habitats regulations', an appropriate assessment of the implications for the site, in view of the site's conservation objectives, must be undertaken. These sites include Special Areas of Conservation (SACs) (including proposed SACs), Special Protection Areas (SPAs) (including potential SPAs) and Ramsar sites (wetlands of international importance). Further information can be found in [PPG on appropriate assessments](#) and the UK government's guidance on [habitats regulations](#) and [protected sites and areas](#).

For planning applications under the TCPA regime, the Environmental Impact Assessment (EIA) process is governed by the Town and Country Planning (Environmental Impact Assessment) Regulations 2017. Proposals that constitute EIA Development, defined in the 2017 Regulations as Schedule 1 development; or Schedule 2 development likely to have significant effects on the environment by virtue of factors such as its nature, size or location, will not be granted planning permission unless an EIA has been carried out in respect of that development. Electricity network developers may request a screening opinion from LPAs to determine whether an EIA is required for a proposal, and if it is deemed required, may also request a scoping opinion to determine which impacts should be included in the assessment. PPG on Environmental Impact Assessment provides further information. [PPG on Environmental Impact Assessment](#) provides further information.

The overwhelming majority of network infrastructure projects under the TCPA regime are unlikely to constitute EIA development. Where an EIA is not required, environmental information may still be required to support the application. Most environmental issues, including protected sites and species, can be dealt with through environmental assessment in a preliminary report prepared by a qualified ecologist. This can then be supplemented by specialist surveys and mitigation strategies if necessary.

# 03

## *Planning routes for electricity network infrastructure*

### In this section

This section sets out the different consenting routes for electricity network infrastructure applications.<sup>5</sup> Which route applies depends on the type, scale and characteristics of the proposal. LPAs should first establish which consenting regime applies.

## Permitted Development Rights

The Town and Country Planning (General Permitted Development) (England) Order 2015 (as amended) grants permitted development (PD) rights to undertake certain electricity network developments to statutory undertakers or parties who hold a licence under the Electricity Act 1989. These rights are set out in Schedule 2, Part 15, Class B (electricity undertakings) of the GPDO.

An LPA can make an Article 4 direction to remove a PD right in their area, although this should be limited to situations where it is necessary to protect local amenity or the well-being of the area. PD rights are withdrawn where an EIA is required. Development benefiting from PD rights, which is likely to have a significant effect on a site protected under the Conservations of Habitats and Species Regulations 2017, must not be begun until the LPA confirms that the development will not adversely affect the integrity of the relevant protected site(s) and approves the development in writing. For more information, see the PPG [When is permission required?](#)

### Typical examples

Subject to the limitations and conditions set out in the GPDO, PD rights may include:

- Small scale electricity infrastructure, including transforming or switching stations and extensions to existing substations, where located on operational land and within relevant size and height limits
- Substation housing chambers reasonably necessary in connection with an electric line, provided that chambers installed at or above ground level, or beneath highways used by vehicular traffic, do not exceed 29 cubic metres
- The installation or replacement of underground electric lines, including associated trenching, joint bays and chambers, where surface works are reinstated and overhead line consent under section 37 of the Electricity Act 1989 is not required
- The installation or replacement of feeder or service pillars and associated equipment, including pole mounted transformers
- The installation or replacement of electronic communications lines and supports connecting electric lines to electrical plant or buildings, subject to location, height and length restrictions
- Ground investigation works, including the sinking of boreholes and temporary plant or machinery, with land restoration on completion
- The extension or alteration of buildings on operational land, provided that development does not exceed the height, cubic content or floorspace limits set out in the GPDO
- The erection on operational land of buildings solely for the protection of plant or machinery, subject to a maximum height of 15m and prior approval of the LPA in relation to design and external appearance.

5. In 2025 [the government consulted](#) on proposed changes to [land rights and consents process for electricity network infrastructure consents](#). Future reforms arising from this consultation may result in changes to some of the policies in this section.



### Role of LPAs

- Determine whether PD rights applies to the proposal; this may include issuing an EIA screening opinion, if requested
- Determine applications for prior approval
- Consult Natural England where an HRA has been submitted
- Enforce breaches where works exceed PD scope.

## Town and Country Planning Act applications

### Typical examples

Examples of development typically consented under the TCPA include:

- Primary substations and extensions, grid supply points and large compounds
- Underground cables that have permanent above ground infrastructure (e.g. permanent cabinet, kiosk, vent, marker or compound)- note PD rights may apply to the buried cable itself if installed by a statutory undertaker
- Poles, towers, feeders and pillars above 15 metres
- Ancillary infrastructure such as:
  - Permanent access tracks, compounds and fencing
  - Large areas of hardstanding
  - Significant earthworks
  - Drainage infrastructure altering landform
  - Associated cabling and electrical infrastructure.



### Role of LPAs

- LPAs act as the decision-maker for planning applications, and may assess siting and alignment, cumulative landscape impact, and alternatives, such as undergrounding. They may also provide pre-application advice and could recommend applicants to engage in pre-application discussions with relevant arms-length bodies, including Natural England, where the HRA is concluding an adverse effect.
- LPAs are not responsible for electrical safety standards, network design, or technical compliance with electricity regulations
- Applications for planning permission for above-ground structures may be full, outline or, following on from a grant of outline permission, reserved matters
- LPAs assess proposals against the development plan, National Planning Policy Framework (NPPF) and other material considerations (see the section: Material considerations). Marine elements of electricity network infrastructure (i.e. Mean High Water Springs to 200 nautical miles from the coastline) are subject to marine licensing by the Marine Management Organisation, but marine and terrestrial planning regimes may overlap in intertidal areas.
- LPAs will consider applications for non-material amendments under s.96A of the TCPA and applications to amend or vary conditions under s.73 of the TCPA once planning permission is granted.

# Nationally Significant Infrastructure Projects

Large-scale electricity infrastructure classified as a NSIPs must be consented through a Development Consent Order (DCO) according to the Planning Act 2008.

## Typical examples

NSIPs include:

- Overhead electricity lines at 132 kV or above and over 2km in length. Proposals to amend the threshold have been consulted on but are not yet in force.<sup>6</sup>
- Infrastructure (including overhead and underground lines and ancillary infrastructure such as substations) where it is part of an NSIP electricity generation project, e.g. grid supply points for NSIP electricity generation sites, or large onshore substations and cabling routes associated with offshore wind farms
- Any electricity network infrastructure for which the Secretary of State gives a direction under section 35 of the Planning Act 2008 that it should be treated as an NSIP
- Electricity interconnectors between countries. However, these can be considered under other national and sometimes local planning regimes, depending on their scale and which elements of the project are being consented.

### Role of LPAs

- 
- As statutory consultees, host (and neighbouring) LPAs are involved in all stages of the process
  - Local authorities are expected to prepare a [Local Impact Report](#), outlining how the proposed development would affect their area. This report is considered during the examination and informs the Secretary of State's decision.
  - If a DCO is granted, the LPA is likely to be responsible for discharging most requirements attached to the DCO (e.g. detailed environmental, mitigation or monitoring measures) and monitoring compliance during construction and operation.

This guidance covers the TCPA regime only. For further information on the NSIP system, please see [MHCLG guidance](#).

6. The [Electricity network infrastructure: consents, land access and rights](#) consultation has proposed to extend this threshold from 2km to 10km.

# Electricity Act 1989 – Section 37(1) Consents

Certain overhead electricity lines require consent under section 37 of the Electricity Act 1989, unless they are exempt under the Overhead Lines (Exemption) (England and Wales) Regulations 2009. Section 37 typically applies to overhead lines below 132 kV, with further details provided in [Overhead lines: applying for consent](#). However, whether consent is required depends on the characteristics of the line and the applicable exemptions, rather than voltage alone.

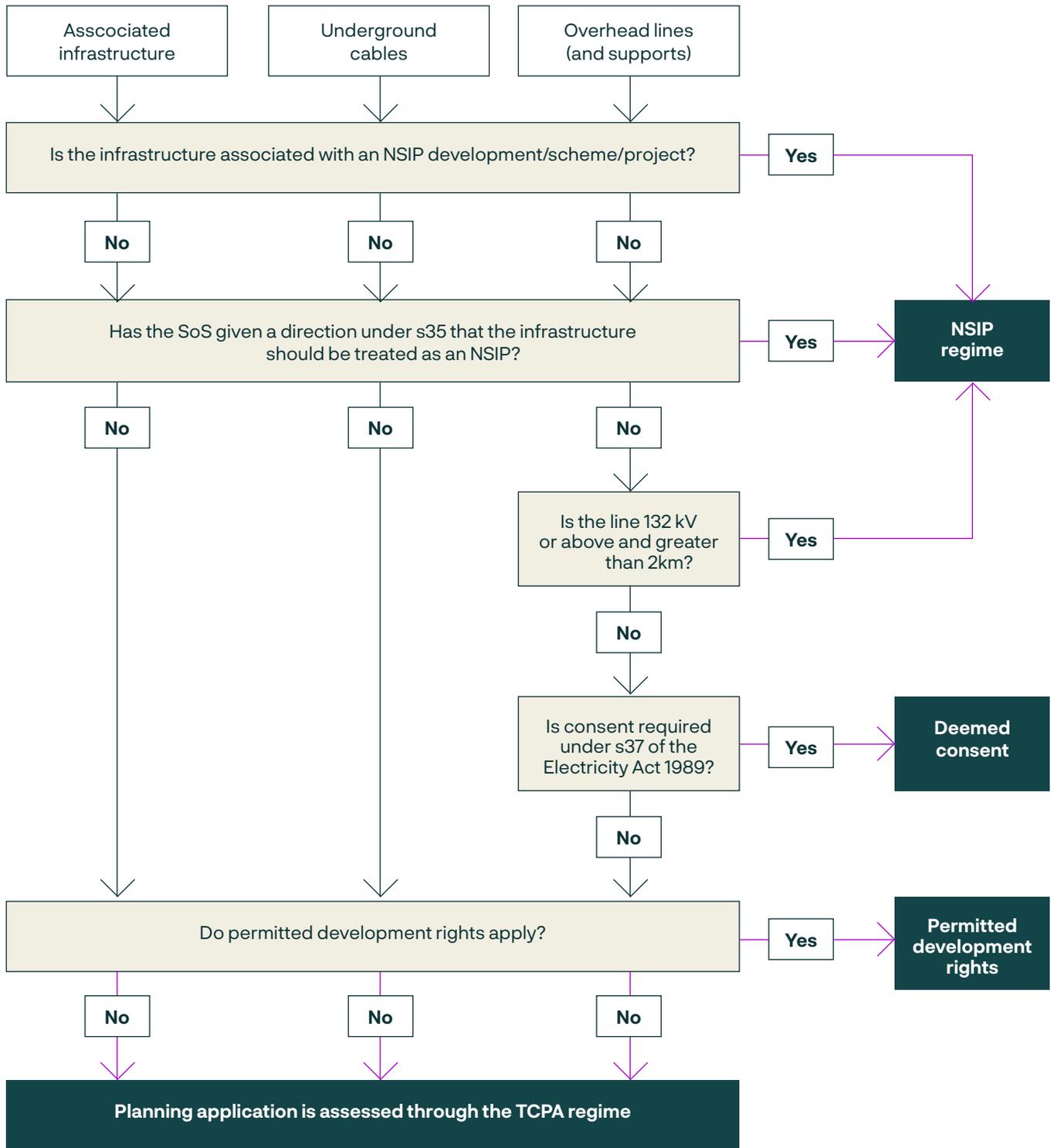
Under the Electricity Act 1989, the Secretary of State is the decision maker and can grant deemed planning permission under section 90(2) of the TCPA, subject to such conditions (if any) as may be specified. Local Authorities are statutory consultees under this process and may be asked to consult on matters including landscape and visual impact, amenity and ecology and heritage.

Where a project is considered an NSIP and consented by DCO, section 37 no longer applies and the line is consented through the DCO regime instead.



## Role of the LPAs

- LPAs are statutory consultees
- Provide representations on local impacts such as landscape, amenity and heritage
- Planning permission from the LPA may still be required for ancillary development (e.g. substations, access tracks).



# Hybrid and associated consents

Electricity network infrastructure projects often require multiple consents. For example, alongside applying for planning permission for a substation through the TCPA regime, a developer may also need to apply for a section 37 consent and deemed planning permission for associated overhead lines.



## Role of LPAs

- Coordinate internally across planning, highways, environmental and landscape teams
- Advise applicants on local validation requirements and constraints
- Recommend pre-application discussions between applicants and arms-length bodies.

## Permits and licences

Environmental permits issued by the Environment Agency regulate pollution control and flood risk impacts and are separate from planning permission. LPAs should not duplicate environmental controls through planning conditions where a permitting regime applies.

Applicants may also need to apply for protected species licences from Natural England or Defra, or marine licences from the Marine Management Organisation.

### Useful links

- [Environmental permitting Core guidance](#)  
for the Environmental Permitting (England and Wales) Regulations 2016
- [Flood risk activities: environmental permits](#)  
Relevant for overhead lines, underground cables, pylons, access tracks and substations near rivers
- [Get permission for marine work](#)  
Guidance on marine licensing.

## Compulsory purchase powers

Compulsory purchase powers allow statutory bodies to acquire land or rights without owner consent where required for infrastructure. Compulsory purchase powers are exercised under separate statutory procedures and do not form part of the TCPA planning decision. However, planning permission or section 37 consent may be required before compulsory acquisition powers can be confirmed.

### Useful links

- [Guidance on the compulsory purchase process](#)
- [Compulsory purchase and compensation: guide 1 – procedure](#)

## Wayleaves and easements

Permission is needed to install electric lines and associated equipment on, over, or under private land and to have access to that land for the purposes of inspecting, maintaining, repairing or removing the line or equipment. Wayleaves and easements pertain to private land rights, not planning consents. They do not grant planning permission and are not determined by an LPA in the exercise of its planning functions. A wayleave is a terminable licence with the landowner and/or the occupier of the land. An easement is usually permanent and confers a right over the land itself.

### Useful links

- [Guidance for applicants and landowner and/or occupiers](#)  
Granting a necessary (compulsory) electricity wayleave



### Planner tip

While not planning consents, LPAs should be aware of parallel regimes, including environmental permitting, compulsory purchase powers, and wayleaves and easements.

# 04

## *Planning policy and legislative framework*

### **In this section**

This section sets out the relevant policy context for assessing electricity network infrastructure applications. It also covers the role of statutory consultees and material considerations. Planning decisions for energy infrastructure proposals should be made on a case-by-case basis, with due regard for their individual merits and material considerations.

[Section 70\(2\)](#) of the TCPA and [section 38\(6\) of the Planning and Compulsory Purchase Act 2004](#) require local planning authorities to determine applications for planning permission in accordance with the development plan for the area unless material considerations indicate otherwise. The policies within the NPPF set out planning policies for England and how they should be applied. They are a material consideration in planning decisions and provide a framework for the consistent creation of Local Plans. [A draft updated NPPF](#) was published for consultation in December 2025 and, once published, this guidance will be updated to reflect any policy changes. PPG complements the NPPF and provides guidance on its application. The weight to be given to each is a matter for the decision maker.<sup>7</sup>

The procedures for planning applications are set out in secondary legislation. The Town and Country Planning (Development Management Procedure) (England) Order 2015 sets the procedure for determining planning applications. Pre-application requirements, including for consultation, are set out in sections 61W to 61Y of the TCPA and Articles 3 and 4 of the TCPA Development Management Procedure Order.

[Biodiversity Net Gain \(BNG\)](#) is required under Schedule 7A of the TCPA and every grant of planning permission through the TCPA, subject to some exemptions, is deemed to have been granted subject to the condition that the biodiversity gain objective must be met. This is a pre-commencement condition and, once planning permission has been granted, a Biodiversity Gain Plan must be submitted and approved by the LPA before commencement of the development.

7. As set out by Sir Keith Lindblom (Senior President of Tribunals) in *Mead Realisation Ltd v Secretary of State for Housing Communities and Local Government* [2025] EWCA Civ 32 at [33]-[38])

# The National Planning Policy Framework

The NPPF sets overarching objectives for national planning and development plans, which provide the context for considering electricity network infrastructure in plan making and decision taking.

The NPPF contains a presumption in favour of sustainable development.

Paragraph 11 states:

“Plans and decisions should apply a presumption in favour of sustainable development.” It then includes further specific detail about what this means for plan-making and decision-taking.

However, paragraph 12 of the NPPF states:

“The presumption in favour of sustainable development does not change the statutory status of the development plan as the starting point for decision-making. Where a planning application conflicts with an up-to-date development plan (including any neighbourhood plans that form part of the development plan), permission should not usually be granted. Local planning authorities may take decisions that depart from an up-to-date development plan, but only if material considerations in a particular case indicate that the plan should not be followed.”

As set out below, paragraph 168 of the NPPF gives significant weight to the benefits associated with renewable and low-carbon energy developments and their associated infrastructure, which can include electricity network infrastructure:

## Paragraph 168

When determining planning applications for all forms of renewable and low-carbon energy developments and their associated infrastructure, LPAs should:

- a) Not require applicants to demonstrate the overall need for renewable or low-carbon energy, and give significant weight to the benefits associated with renewable and low-carbon energy generation and the proposal’s contribution to a net zero future
- b) Recognise that small-scale and community-led projects provide a valuable contribution to cutting greenhouse gas emissions
- c) In the case of applications for the repowering and life-extension of existing renewable sites, give significant weight to the benefits of utilising an established site.

The other reference to electricity network infrastructure in the NPPF is in Annex 3: Flood risk vulnerability classification, where electricity infrastructure that must be located in flood risk areas for operational reasons and must remain operational during floods is classified as essential infrastructure. For more information on this topic, see the section: Flood risk and drainage, [page 39](#).

The government recently [consulted on a revised NPPF](#) that includes clearer, ‘rules based’ policies for decision making and plan making, designed to make planning policy easier to use and underpin the delivery of faster and simpler local plans. The consultation includes policies on renewable and low-carbon energy and electricity network infrastructure. Once the revised NPPF is published, this guidance document will be updated to reflect any policy changes.

# Planning practice guidance

PPG is the government's national guidance for planning practice. It complements the NPPF and provides practical guidance to explain, clarify and elucidate the policies in the NPPF to which it relates.

The PPG for [Renewable and low-carbon energy](#)<sup>8</sup> provides guidance on assessing developments, including onshore wind, ground-mounted solar and battery energy storage systems, which electricity network developments may be associated with. PPG on wider topics (including [the natural environment](#)) should be considered alongside the renewable and low-carbon energy PPG; while not specific to electricity network infrastructure developments, they are useful for assessing relevant factors and are referenced where applicable in the section: Key decision-making factors, [page 32](#).



## Role of LPAs

- Where relevant, refer to PPG when advising applicants or making decisions
- Use PPG advice to structure proportionate requests for additional information, assess impacts and justify decisions.

## National Policy Statements

The NPS set out the UK government's policy for the NSIP regime. They define the need for specific types of infrastructure, establish the principles and provide detailed guidance on how applications should be examined and decided by the relevant Secretary of State. There is a [suite of energy NPSs](#), each covering different aspects of nationally significant energy infrastructure and collectively setting out the government's policy framework for the energy sector. NPS may be a material consideration in TCPA decision-making; however, TCPA applications do not have to be determined in line with the NPS.

Within this suite, LPAs may consult [EN-1 \(the overarching NPS for energy\)](#)<sup>9</sup> and [EN-5 \(the NPS for Electricity Network Infrastructure\)](#)<sup>10</sup> for national policy context and expectations when considering locally determined planning applications. The NPS may be a material consideration for assessing TCPA applications and LPAs may give weight to relevant NPS policies where they are pertinent to the proposal and planning balance, as recognised in paragraph 5 of the NPPF.

Whether NPS policies are material and to what extent will be judged on a case-by-case basis by decision makers.

8. The Renewable and Local Carbon Energy PPG has not been updated since 2015 and is likely to contain outdated technical information or references to planning policy that are no longer applied. The government has committed to update the PPG to ensure LPAs have access to the most up to date information. Updates will be made to this document to reflect changes once the new PPG is published.

9. DESNZ, 2026. [Overarching National Policy Statement for energy \(EN-1\), 2025](#)

10. DESNZ, 2026. [National Policy Statement for electricity networks infrastructure \(EN-5\), 2025](#)



### Role of LPAs

- Consider the principles and assessments outlined in the NPS. This is particularly important for LPAs to consider when involved in the NSIP process, including through submitting Local Impact Reports and other representations.
- NPS may be a material planning consideration in TCPA decision-making. While they primarily apply to NSIPs under the Planning Act 2008, LPAs may give weight to relevant NPS policies where they are pertinent to the proposal and planning balance.
- Be aware of policy on mitigation expectations for electricity network infrastructure.

## Role of statutory consultees

Statutory consultees are bodies with legal responsibilities to advise on specific matters, including Natural England, Historic England, Environment Agency and National Highways, among others.

Which statutory bodies are relevant will vary based on site characteristics, and their role is to provide specialist advice where their statutory remit applies (e.g. Sites of Special Scientific Interest (SSSI), archaeological sites, heritage assets, protected species, areas of flood or pollution risk).

### Standing advice

Local planning officers should use standing advice or guidance tools to consider the development. Matters that may be raised by statutory consultees include:

- [Protected species and development](#): advice for local planning authorities (Natural England)
- [Ancient woodland, ancient trees and veteran trees](#): advice for making planning decisions (Natural England and Forestry Commission)
- [Air pollution and development](#): advice for local authorities (Natural England)
- [Heritage impacts planning advice](#) (Historic England)
- [DfT Circular 01/2022](#): the strategic road network and the delivery of sustainable development (National Highways)
- [Active Travel England Standing Advice Note](#): active travel and sustainable development (Active Travel England)
- [SSSI Impact Risk Zones tool](#): help LPAs determine whether a proposal may impact an SSSI, in which case they should consult Natural England
- [National flood risk standing advice for local planning authorities](#) (Environment Agency).

LPAs should identify which statutory bodies need to be consulted early and throughout the application process.

LPAs should ensure that the advice provided by statutory consultees is carefully considered and addressed in the assessment of the application. Where a statutory consultee raises concerns or recommends conditions, these should be clearly reflected in the officer's report, with reasons given for departing from their advice. Statutory consultee comments are an important consideration and should be treated with due regard owing to their expertise and statutory responsibilities.

# Material considerations

When determining planning applications for electricity network infrastructure under the TCPA, LPAs must have regard to the development plan, national policy and other material considerations. While the principle of electricity infrastructure is strongly supported in national policy, individual proposals must still be assessed on their local impacts and the effectiveness of proposed mitigation.

It is for the decision maker to determine what constitutes a material consideration, and the weight to give it, on a case-by-case basis.

Policies in the NPPF are considered material considerations. Other matters may also be considered material, such as emerging plans and matters raised in statutory consultee comments, and the weight attached to them is a matter for the decision maker based on the circumstances of the case.

## Not material considerations

Only matters which are related to land use planning are generally considered to be material considerations. Examples of matters not usually considered material include:

- Community benefit funds or voluntary financial offers (community benefits such as annual payments, shared ownership offers or local energy discounts are voluntary commercial arrangements between the developer and the community)
- Impact on property value or private views
- Personal motives or identity of the applicant
- Moral, political, or ideological objections unrelated to land use
- Private legal matters such as ownership disputes, covenants or rights of access
- Issues controlled by other regulatory regimes – for example, grid regulation (See NPPF 201: “Planning decisions should assume that these regimes will operate effectively”).

# 05

## *Key decision-making factors*

### **In this section**

This section highlights some planning considerations that may be relevant when determining electricity infrastructure applications. It explains what planners need to know, where relevant policy can be found and what information LPAs should expect to be provided as part of an application.

Each application is judged on its own individual merit and the weight given to these considerations is a matter for the local planning authority as the decision taker in the first instance.

## **Landscape and visual impacts**

### **Potential impacts of electricity network infrastructure**

Overhead lines and supports can cause landscape and visual impacts as they cross landscapes.

Similarly, substations and other associated infrastructure can be visible within landscapes, although these developments may be easier to screen with vegetation and topography.

Although underground cables have limited visual impacts once installed, any associated above-ground infrastructure may be visible and require assessment.

For more information on the typical sizes of different types of electricity network infrastructure, see [this resource on UK power infrastructure](#).

### **When an assessment may be required**

LPAs can ask for a Landscape and Visual Impact Assessment (LVIA) to be submitted with applications as an appraisal of the development proposal, where it is identified that the development could have potential impacts on landscape/townscape character and/or visual amenity. This could be triggered when it is identified that a proposed development would be visible from designated or protected landscapes, such as National Parks, the Broads and National Landscapes (also known as Areas of Outstanding Natural Beauty), or from open or undeveloped land where development would be more prominent.

### **Process for assessing the factor and what to expect in an application**

Where an assessment is required, it should be proportionate to the development it is assessing. It could range from a full assessment supported by viewpoints, wirelines or photomontages, to a short, focused appraisal of the impacts on a certain characteristic or view. The Landscape Institute have published [guidance on LVIA's](#). This typically includes: a) baseline landscape description and sensitivity, b) zones of theoretical visibility (ZTVs), c) photomontages or visualisations from agreed key viewpoints, d) assessment of impacts on local landscape character (using local LCA where available), including cumulative effects and e) mitigation design measures. In many cases, the LPA will agree the scope and methodology for the LVIA with the developer during pre application engagement.

## Standards and key considerations for decision making

Paragraph 187 of the NPPF provides that decisions should contribute to and enhance the natural and local environment.

Although the NPPF does not contain detailed sector-specific landscape criteria, it states that:

- Planning policies and decisions should protect and enhance valued landscapes and recognise the intrinsic character and beauty of the countryside
- Great weight should be given to conserving and enhancing landscape and scenic beauty in National Parks, the Broads and National Landscapes (collectively referred to as Protected Landscapes)
- LPAs should plan positively to enhance the beneficial use of Green Belts by retaining and enhancing their landscapes and visual amenity.

Section 245 (Protected Landscapes) of the Levelling-up and Regeneration Act 2023 (LURA) amends the duty of relevant authorities, including public bodies, to seek to further the statutory purposes of protected landscapes, referred to as the Protected Landscapes duty.<sup>11</sup> Early engagement with relevant authorities in these areas, together with referring to [government guidance](#), will support LPAs in considering how the duty can be met when assessing planning applications for electricity network infrastructure.

LPAs should refer to [Guidelines for Landscape and Visual Impact Assessment](#) to inform assessment methodology.

## Case studies

### Landscape impacts

An application to construct a new substation, underground cables and associated infrastructure was granted at appeal in 2023.<sup>12</sup> The substation's proposed location was in a building close to the A179, connecting to an existing Hart Moor Substation to the south of the proposed site. Reasons for the initial rejection by the LPA included the impact on rural landscapes and the high landscape value, with reference to footpaths mentioned in the Hartlepool Local Plan Policies Map.



In this case, the inspector deemed the site to be of 'medium sensitivity' Landscape Visual Sensitivity after a site visit. This was primarily based on the presence of highways and other powerlines, along with associated electricity network infrastructure, in the area. Proposed mitigation included infilling gaps in existing hedgerows and allowing hedgerows to mature to above 3m in height and was secured via a planning condition.

### Visual amenity

In 2026, planning permission was granted for the construction of a substation, an electricity feeder pole and associated infrastructure required to facilitate the installation of 16 electric vehicle charging bays.<sup>13</sup> The development was proposed in a shopping and leisure centre, and planning conditions were used to mitigate impacts on visual amenity by requiring the colour and texture of the development to align with those of existing buildings. Other conditions included the submission of additional documents, such as site plans and elevation plans.

11. Changes to the Protected Landscapes Duty have recently been announced by the Government in its response to the Fingleton review. For further details see [Building our nuclear nation: Government response to the Nuclear Regulatory Review 2025](#)

12. Planning reference number: H/2021/0311, Appeal ref: APP/H0724/W/22/3299848

13. Planning reference number: PLN/2026/0010

# Noise

## Potential impacts of electricity network infrastructure

Noise associated with electricity network infrastructure should be considered contextually, taking into account existing background noise levels at the proposed site and impacts on humans and other species when close to the site. Transformers located on poles or in substations often emit continuous humming noises, which may increase in volume at higher voltages. Other substation equipment, including cooling equipment, may also emit low-level noise. Overhead lines, poles and pylons may be sources of wind-related noise, which can be difficult to mitigate and is not typically assessed.

## When an assessment may be required

[The British Standard BS: 4142](#) sets out how to assess the noise of an industrial nature affecting residential areas. It emphasises that noise levels should be set at parity with typical background noise to ensure a “low impact”.

Where appropriate, electricity network developers should assess the background noise of the site and provide the expected noise levels associated with the equipment to be used. Noise assessments are typically only conducted for substation developments, which may generate continuous operational noise. Other elements of electricity network infrastructure typically produce limited or intermittent noise and are therefore unlikely to require formal assessment.

## Process for assessing the factor and what to expect in an application

Where appropriate, applications should be supported by noise assessments prepared to recognised standards, demonstrating that impacts will be acceptable and setting out any necessary mitigation, such as acoustic enclosures, barriers, buffers or operational controls. Primary substations and BSPs commonly include noise enclosures around transformers to mitigate noise, especially if located close to noise-sensitive receptors, such as residential properties.

LPAs should assess both construction-phase and operational noise (e.g. from transformers at new substations), taking into account the proximity of noise-sensitive receptors and the character of the surrounding area. [PPG on noise](#) provides guidance on managing noise impacts associated with new developments through planning.

The British Standard BS: 4142 suggests that in instances where the existing sound environment is considered either particularly low or particularly high, absolute levels may be more relevant than estimates of expected noise levels. In these cases, a maximum operational sound level can be set as a condition of the planning permission.

## Standards and key considerations for decision making

The NPPF policies on noise are primarily set out in paragraph 198, with noise pollution also addressed in paragraph 187(e). The [Noise Policy Statement for England \(NPSE\)](#) sets out the government's policy for England on environmental noise (e.g. from transport and industrial activities), neighbourhood noise (e.g. commercial, construction and community activities) and neighbour noise (e.g. domestic and individual activities that may disturb local residents). These documents use the following categories for noise level: No Observed Effect Level, Lowest Observed Adverse Effect Level and Significant Observed Adverse Effect Level. Neither the NPPF nor the NPSE specify levels for these categories.

# Transport, access and construction impacts

## Potential impacts of electricity network infrastructure

Construction impacts are likely to require consideration for electricity network infrastructure, even where operational impacts are forecast to be limited. Large equipment, such as substation transformers, may require abnormal load and HGV movements to and from development sites.

## When an assessment may be required

Applications should include proportionate information to ensure the transport impacts of a proposed development can be understood. This may include a Transport Statement, Transport Assessment or construction traffic management plan.

## Process for assessing the factor and what to expect in an application

LPAs, in consultation with Local Highway Authorities, should consider whether construction traffic can be safely accommodated on the local highway network and, where relevant, the strategic road network, whether access arrangements are suitable, and whether public rights of way may be affected. Planning conditions should be used where necessary to manage impacts.

## Standards and key considerations for decision making

Chapter nine of the NPPF sets out policies on transport and [PPG on Travel Plans, Transport Assessments and Statements](#) provides advice for LPAs on determining whether developments require Transport Statements, or more detailed Transport Assessments, to assess impacts, or whether impacts are unlikely to be significant and do not require formal assessment. These may be required to be supported by a Travel Plan.

Paragraph 116 of the NPPF provides that development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network, following mitigation, would be severe, taking into account all reasonable future scenarios.

## Case study



In 2023, an application was granted for the construction of two cable sealing end compounds to facilitate the connection between two new underground cables and an existing overhead line in Wiltshire.<sup>14</sup> The proposed development was granted planning permission subject to conditions, including adherence to approved documents including site and location plans submitted with the original application. Other conditions included a restriction on construction working hours, along with the provision of additional documents, such as a Construction Method and Site Management Statements.

## Biodiversity impacts

### Potential impacts of electricity network infrastructure

Electricity network infrastructure developments may affect species or habitats, especially during the construction stage.

### When an assessment may be required

Electricity network developers should identify and assess any potential ecological impacts associated with the proposed site, especially during construction. This may include undertaking desk research to identify relevant protected sites or species in the area and carrying out ecological surveys, especially on protected species that may be affected by habitat loss or disturbance at the site and, in some circumstances, neighbouring sites.

### Process for assessing the factor and what to expect in an application

Applications should include appropriate environmental information, proportionate to the scale and nature of the development. This information should demonstrate that environmental impacts have been properly assessed and that suitable mitigation measures are incorporated into the design and construction of the scheme.

Areas to assess (where relevant to the site) include the impacts on habitats and all species protected under the Wildlife and Countryside Act 1981 or the Conservation of Habitats and Species Regulations 2017 (as amended). Proposals that may have a significant effect on the conservation objectives of a Special Protection Area or Special Area of Conservation must undergo appropriate assessment, unless they are screened out (for more information, see PPG on [appropriate assessment](#)).

14. [Planning reference number: PL/2023/01643](#)

## Standards and key considerations for decision making

Chapter 15 of the NPPF sets out policies for conserving and enhancing the natural environment, and paragraphs 193-195 address Habitats and Biodiversity considerations relevant to determining planning applications. PPG on the [natural environment](#) provides further advice for LPAs on implementing these policies.

Impacts on trees and woodland are also important to consider. Paragraph 193c of the NPPF is clear that development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland and ancient or veteran trees, should only be permitted if there are wholly exceptional reasons and a suitable compensation strategy exists. LPAs should ensure appropriate mitigation is secured where impacts on woodland habitat connectivity and/or protection are likely and follow standing advice from Natural England and the [Forestry Commission on ancient woodland, ancient trees and veteran trees](#). This advice includes recommended buffer zones between ancient woodlands and ancient or veteran trees and development.

## Biodiversity Net Gain

Under the statutory framework for biodiversity net gain (BNG), subject to some exceptions, every grant of planning permission under the TCPA is deemed to have been granted subject to the condition that the biodiversity gain objective must be met. This objective is for development to deliver at least a 10% increase in biodiversity value relative to the pre-development biodiversity value of the onsite habitat.

The biodiversity gain condition is a pre-commencement condition: once planning permission has been granted, a Biodiversity Gain Plan must be submitted and approved by the LPA before commencement of the development. Planners should refer to [PPG on BNG](#).

The government has announced that, as part of [the BNG reforms](#), smaller developments on sites below 0.2 hectares will be exempted from BNG requirements. Until changes are officially implemented later in 2026, BNG continues to apply in its current form and developers should continue to follow existing guidance and legislation when delivering BNG.

# Flooding and drainage

## Potential impacts of electricity network infrastructure

Electricity infrastructure, particularly substations, can be vulnerable to flooding. Foundations for substations, pylons and support poles and other associated hardstanding may increase impermeable surfaces.

## When an assessment may be required

Paragraphs 170 to 182 of the NPPF set out national planning policy for flood risk. For proposals in a Flood Zone, a Flood Risk Assessment (FRA) and Sustainable Drainage Strategy should be included within the proposal, in line with the NPPF and PPG. Paragraph 181 of the NPPF sets out when a site-specific FRA is required, and paragraph 020 of the PPG on [flood risk and coastal change](#) sets out what a site-specific FRA is.

## Process for assessing the factor and what to expect in applications

The NPPF sets out tests to protect people and property from flooding, which all local planning authorities are expected to follow. This includes the sequential and exceptions tests, which are designed to ensure that if there are lower-risk sites available, or a proposed development cannot be made safe throughout its lifetime without increasing flood risk elsewhere, it should not be permitted. Measures to avoid, control, manage and mitigate flood risk should also not increase flood risk elsewhere. The tests are set out in full in the NPPF, with paragraphs 023-037 of the PPG providing supporting information on how these should be undertaken and applied.

Essential utility infrastructure, including infrastructure for electricity supply (generation, storage and distribution systems), is classified as essential infrastructure in the NPPF Annex 3: Flood risk vulnerability classification, and so regard should also be had to the requirements set out in table 2 of the PPG and its accompanying notes. Where relevant, proposals should be accompanied by a site-specific FRA demonstrating how flood risk will be managed over the development's lifetime. This should also include evidence for the LPA to apply the sequential test if necessary and should demonstrate that the development will pass the exception test if applicable. Paragraphs 020-022 of the PPG provide further advice on the preparation of site-specific FRAs.

Sustainable drainage solutions are required for all development proposals that could affect drainage on or around the site, and so may be required next to substations with impermeable foundations. These should be proportionate to the nature and scale of the proposal. Trees and woodland contribute significantly to water interception, infiltration, storage and evapotranspiration, making them valuable components of a wider sustainable drainage strategy where applicable to sites.

## Standards and key considerations

LPA should refer to paragraphs 170-182 of the NPPF for policies relating to flood risk and flood risk assessments. PPG on flood risk and coastal change provides advice on accounting for and addressing the risks associated with flooding and coastal change in the planning process.

LPA should ensure that all relevant tests set out in the NPPF and PPG are met and be satisfied that appropriate mitigation and resilience measures are incorporated into the design, without increasing flood risk elsewhere.

# Electric and magnetic fields

## Potential impacts of electricity network infrastructure

Electric and magnetic fields (EMFs) are generated by electric voltage and current, respectively, which are present in all electrical equipment, including electricity network infrastructure. At high levels, EMFs may have negative impacts on human health.

## Standards and key considerations

Paragraphs 2.9.45-2.9.59 of EN-5 provide guidance on the levels of EMFs generated by different types of electricity network infrastructure and refer to public exposure limits on EMFs detailed by the [International Commission on Non-Ionizing Radiation Protection \(ICNIRP\)](#).

Underground cables produce no external electrical fields, and although their magnetic fields are stronger at ground level than for overhead lines due to the shorter separation distance, they too are designed to comply with exposure limits. Similarly, substations produce very low levels of magnetic fields, which decrease quickly with distance from the site, and typically no external electrical fields. There are no limits on EMF grounds on how close electricity network infrastructure may be built to residential buildings. For more information, see the [Energy Network Association's 2025 fact sheet](#).

## What to expect in applications

Electricity network developers may refer to [best practice guidance published by the Energy Network Association](#) on managing EMFs for distribution network infrastructure and demonstrate that developments will comply with the public exposure limits for EMFs.

# Heritage

## Potential impacts of electricity network infrastructure

Heritage assets range from sites and buildings of local historic value to those of the highest significance, such as World Heritage Sites. An electricity network infrastructure development may affect heritage assets in a number of ways, most obviously by affecting the setting of a heritage asset, especially for assets which derive their significance from their relationship with the surrounding area and/or landscape. These impacts may be closely linked to the landscape and visual impacts of a development.

## Standards and key considerations

Chapter 16 of the NPPF sets out policies for conserving and enhancing the historic environment. For all heritage assets which may be affected by development proposals, the significance of the asset and the contribution of its setting should be identified, and the level of harm arising from the proposal should be clearly assessed. Planners should have regard to the [PPG on the historic environment](#) when considering proposals which may affect heritage assets.

## What to expect in applications

Where relevant, LPAs should request a heritage impact assessment that addresses both direct and indirect impacts, including setting and intervisibility, supported, where necessary, by photomontages where heritage assets could be affected.

# Archaeology

## Potential impacts of electricity network infrastructure

Underground works associated with network developments, such as pylon or pole bases, substation foundations and underground cables, may impact buried archaeological assets.

## Standards and key considerations

Archaeological impacts of proposals are also addressed under Chapter 16 of the NPPF and the [PPG on historic environment](#). Paragraph 207 of the NPPF states that “Where a site on which development is proposed includes, or has the potential to include, heritage assets with archaeological interest, local planning authorities should require developers to submit an appropriate desk-based assessment and, where necessary, a field evaluation.” Chapter 16 of the NPPF requires the historic environment (including archaeology) to be conserved in a manner appropriate to its significance.

Professional standards include Chartered Institute for Archaeologists standards and Historic Environment Records (HERs). Advice may be sought from a County Archaeologist or Historic Environment Officer.

## What to expect in applications

LPA's may rely on desk-based archaeological assessments using HER data to identify archaeological potential and risk. Applicants should provide a statement of archaeological significance and risk. This type of assessment is likely to be required for sites in greenfield land, for cables, access tracks, trenches or otherwise large earthworks. Refusal for archaeological reasons is rare if the site has been evaluated, impact minimised and investigation commissioned, unless remains are of very high significance and harm cannot be mitigated. Instead, where potential is moderate to high, a field evaluation may be required as a pre-commencement condition, phasing requirements, or changes to layout or construction methods.

# 06

## *Typical planning conditions for network infrastructure*

## In this section

Below, we set out a range of topics that are commonly addressed through planning conditions for network infrastructure. These reflect standard approaches used by LPAs in England to ensure that construction, operation and eventual decommissioning are properly managed.

Planning conditions must meet the tests set out in paragraph 57 of the NPPF, namely that they are:

- Necessary
- Relevant to planning
- Relevant to the development to be permitted
- Enforceable
- Precise
- Reasonable in all other respects.

LPAs should also consider the PPG '[use of planning conditions](#)', which provides guidance on how conditions attached to a planning permission should be used and discharged effectively.

The table of typical planning conditions below is provided by way of example and may not be relevant for all applications. Conditions should always be tailored to the specific site, the proposed technology, local environmental sensitivities and the nature of any potential impacts.

Table 2: **Typical planning conditions for electricity network infrastructure developments**

<b>Topic</b>	<b>Typical content of planning conditions</b>
<b>Commencement of development</b>	Typically, a condition will state that development should commence within three years of planning consent. See <a href="#">PPG on planning conditions relating to time limits</a> and where a different period (longer or shorter) might be imposed. If no condition is provided, development is subject to the conditions in <a href="#">section 92 of the TCPA</a> .
<b>Approved plans and drawings</b>	The implementation of approved plans and documents submitted as part of the application can be secured via a planning condition to ensure implementation. This should be proportionate and only include appropriate plans and documents. Examples may include a location plan, planning layout or access details.
<b>Approval of substation design and access details</b>	A condition may require submission and approval of final detailed specifications of electrical equipment, which will not usually be known until after planning consent is granted. A maximum parameter envelope may be established for planning and assessment purposes that confirms the overall footprint of this equipment within the development, a maximum height and indicative elevations and appearance/external finishes, before final details are agreed.

<b>Operational lighting plans for substations</b>	A planning condition may require the submission and approval of a plan for how operational lighting will be implemented and used at substations. This condition may be required prior to the installation of lighting, rather than being set as a pre-commencement condition.
<b>Landscape &amp; visual mitigation</b>	Secures agreed visual mitigation (e.g. planting, track treatment).
<b>Noise limits for new substations</b>	A planning condition may set out noise limits based on the noise assessment submitted during planning and stipulate where mitigation measures are needed to resolve adverse impacts. A post-construction/operational noise assessment may be required as a condition.
<b>Soil management plan</b>	A condition may require the submission of further details for the sustainable management of soil during and after construction.
<b>Construction Environmental Management Plan (CEMP)</b>	A condition may require electricity network developers to submit and gain approval for further management plans, setting out detailed mitigation for construction impacts, including noise, dust, runoff, pollution risk and ecological protection.
<b>Construction Traffic Management Plans (CTMPs)</b>	Manages HGV routing, road safety and temporary traffic measures. It may consider abnormal loads.
<b>Ecology &amp; biodiversity</b>	Implements species protection, habitat creation/restoration and ecological mitigation. A condition may require a protected species mitigation license.
<b>Construction noise management</b>	Controls construction hours and high-noise activities to protect local amenity.
<b>Heritage &amp; archaeology</b>	Requires investigation and protection measures for archaeological remains; manages effects on the setting.
<b>Flood risk and drainage</b>	Secures flood resilience measures, finished floor or platform levels, sustainable drainage systems and protection of watercourses. May also address floodplain compensation and betterment to the local flood regime.
<b>Public access management</b>	Manages temporary closures and diversions, ensuring their reinstatement.
<b>Decommissioning</b>	Ensures decommissioned or temporary infrastructure is removed when no longer required, preventing long-term visual or land-use impacts.



# *Assessing electricity network infrastructure applications*

Guidance for local planning  
authorities in England

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