

# EDF Energy Networks consultation

## Planning for the future of our networks

### Glossary

#### A

##### [ABC](#)

Aerial Bundled Conductor, usually low voltage overhead lines, where the conductors are individually insulated for improved resilience. This type of overhead line cable comprises three or more individually protected conductors that are twisted around each other to form a braid. The cable is more resilient to damage than open-wire overhead lines.

##### [Areas of Outstanding Natural Beauty \(AONB\)](#)

Designated by the Countryside Agency, an AONB is an area of countryside with significant landscape value. The purpose of the designation is to conserve and enhance the natural beauty of the landscape.

##### [Auto-reclose](#)

Many faults on overhead line networks are short-lived and termed 'transient' and cause no permanent damage. An auto-reclose device is used to minimise the impact on customers from these transient faults. Under the right conditions they can automatically reconnect the power within three minutes to see if the fault is transient or permanent. If the fault is transient the power stays on.

#### B

##### [Backfeed](#)

Term used to indicate that the power is being supplied from an alternative source.

##### [Balanced Load](#)

A situation where the load on each electrical phase is equal.

#### C

##### [Cable termination](#)

Fittings applied to the end of an underground cable to connect it to an overhead line, switchgear or a transformer.

##### [Capital Expenditure \(CAPEX\)](#)

Expenditure on investment in long-lived distribution assets, such as underground cables, overhead electricity lines and substations.

##### [CI - See Customer Interruptions below](#)

##### [Circuit breaker](#)

A device used to switch a section of network, either under normal operating conditions or fault conditions. Circuit breakers are used in conjunction with protection to automatically disconnect faulty sections of network.

##### [Combined Heat and Power \(CHP\)](#)

The simultaneous generation of usable heat and power, usually electricity, in a single process, thereby discarding less wasted heat.

##### [Conductor](#)

An electrical conductor arranged to be electrically connected to a system.

##### [Covered conductor](#)

A plastic coated overhead line cable. The protective coating makes the line more resistant to mechanical damage caused by birds, trees and bad weather.

##### [Current transformer](#)

A device put around a power cable which converts the large current flowing in the power cable into a small current that can be used in protection and measurement equipment.

#### [Customer interruptions \(CIs\)](#)

A performance measure usually expressed as the number of customer interruptions per 100 customers. Transient, or short interruptions of less than 3 minutes, are excluded from this measure. The figures are usually published annually to allow the performance of different DNOs to be compared.

#### [Customer minutes lost \(CMLs\)](#)

A performance measure usually expressed as the average customer minutes lost per connected customer in a year. That is the sum of all the customer minutes lost per customer for each customer interruption in a year divided by the total number of connected customers. The figures are usually published annually to allow the performance of different DNOs to be compared.

### **D**

#### [Demand side management \(DSM\)](#)

Demand Side Management (also known as Load Management) is any mechanism that allows a customer's demand to be intelligently controlled in response to events on the power system. Such events would include lack of network capacity or insufficient generation.

#### [Department of Business Enterprise and Regulatory Reform \(BERR\)](#)

#### [Distributed Energy \(DE\)](#)

Distributed energy is an approach to electricity generation that offers environmental benefits by siting generators closer to where the energy is used.

#### [Distributed Generation](#)

Distributed generation is electricity generation which is connected to the distribution network rather than the high voltage transmission network. It is typically smaller generation such as renewable generation, including small hydro, wind and solar power and small Combined Heat and Power.

#### [Distribution Network Operators \(DNOs\)](#)

A DNO is a company that is licensed to own and operate the electricity distribution network within a specific area of England and Wales. That is, the companies that operate the distribution networks from 230 Volts to 132,000 Volts. There are 14 DNOs in the UK which are owned by seven different groups.

#### [Distribution Price Control Review \(DPCR\)](#)

As DNOs are natural monopolies, Ofgem protects customers' interests by regulating the companies through five-year price control periods, which include curbs on expenditure as well as incentives to be efficient and innovative. The review process, on which we are consulting with you here (DPCR5), will determine the amount of money we can invest in our networks between 2010 and 2015.

#### [Distribution Substation](#)

A distribution substation is the name for a site containing distribution assets. A typical substation will comprise some high voltage switchgear, a transformer to reduce the voltage from high voltage to low voltage and some low voltage switchgear. They can be installed outdoors protected by fencing, or inside brick buildings, in underground chambers beneath footpaths, or pole-mounted on wooden poles.

#### [Distribution System](#)

The EDF Energy System operating at 33kV (33,000V) and below.

#### [Distribution Transformer](#)

A device to convert a high voltage to a low voltage.

### **E**

#### [Electricity, Safety, Quality and Continuity Regulations 2002 \(ESQCR\)](#)

The ESQCR specify safety standards to protect the general public and consumer from danger. In addition, the regulations specify power quality and supply continuity requirements to ensure efficient and economic electricity supply service to consumers.

#### [Energy Networks Association \(ENA\)](#)

#### [Environment Agency \(EA\)](#)

## EPN

The DNO licence area covering Essex, Suffolk, Norfolk, and parts of London, Cambridgeshire, Bedfordshire, Buckingham and Hertfordshire.

## European Union Emissions Trading Scheme (EU ETS)

A cap and trade scheme in which EU Member State Governments are required to set emissions limits for all installations in their country covered by the scheme. It is an administrative approach used to reduce the cost of pollution control by providing economic incentives for achieving reductions in the emissions of greenhouse gases.

## Extra high voltage (EHV)

Operating at more than 22 kV but less than 132 kV, usually referring to 33 kV.

## F

### Fault

The generic term used to indicate an electrical failure that causes a power cut.

### Feeder

The generic term for a cable or overhead line, or a mixture of both, that supplies power to customers. For example, a high voltage feeder can supply power to up to 5,000 customers in an urban area or 500 customers in a rural area.

### Fitter

A craftsman employed to carry out work on plant and equipment.

## G

### Grid Substation

A substation at which the highest voltage is 132kV.

### Grid Supply Point

A point of supply from the National Grid Transmission System to Network Operators.

### Guaranteed Standards of Performance (GSOPs)

Guaranteed Standards set service levels to be met in each individual case and are established by a Statutory Instrument. If the licence holder fails to provide the level of service required, it must make a payment to the customer affected subject to certain exemptions.

## H

### High impact low probability (HILP)

A HILP event is an unlikely event that would have a high impact on our customers. Electricity distribution networks are designed and built to a common national standard to ensure supply continuity for most customers during planned outages and faults that are considered to be credible events. There is a small risk that a more extreme event occurs that has a very high impact on the ability of the distribution system to provide supply continuity. Such an event could result in extended periods of supply interruption for a significant number of customers and is referred to as HILP.

### High voltage (HV)

Operating at greater than 1kV but less than 22 kV. This usually refers to 11kV or 6.6 kV.

## I

### Independent distribution network operators (IDNOs)

### Innovation Funding Incentive (IFI)

The IFI is intended to encourage DNOs to invest in appropriate research and development activities that are designed to enhance the technical development of distribution networks, up to and including 132kV, and to deliver value (i.e. financial, supply quality, environmental, safety) to consumers.

### Inspections and maintenance (I&M)

### Insulation

A material around conductors that reduces or prevents the transmission of electricity. For example, air, wood, plastic, polymeric, rubber and ceramics can be good electrical insulators.

## [Insulator](#)

Any insulated material that is used to support a conductor. For example, overhead line insulating supports are often made from red or grey porcelain, red polymeric insulating material, or green glass.

## [International Organization for Standardization \(ISO\)](#)

ISO is the world's largest developer and publisher of International Standards.

## [Interruptions Incentive Scheme \(IIS\)](#)

On 1 April 2005 Ofgem introduced a revised Interruptions Incentive Scheme which provides financial incentives to DNOs with respect to the average quality of service they provide in terms of the number of interruptions to supply and the duration of interruptions to supply. DNOs may be rewarded or penalised by up to three per cent of revenue, depending on performance relative to their interruptions targets in each year of the scheme.

## **J**

### [Jointer](#)

A craftsman employed to carry out work on underground cables and cable terminations.

## **K**

### [Kilovolt \(kV\)-1,000 volts](#)

### [Kilovolt-ampere / Kilovolt-ampere hour \(kVA<sub>r</sub> / kVA<sub>rh</sub>\)](#)

A measure of electric power.

### [Kilowatt \(kW\)](#)

A measure of electric power.

### [kiloWatt hour revenue driver \(kWh\)](#)

A revenue allowance based on units distributed (kWh).

## **L**

### [Linesmen](#)

A craftsman employed to carry out work on overhead lines.

### [Link Box](#)

Means of connecting low voltage feeders together using solid links or fuses located in the ground. Link boxes are usually found in the public footway.

### [Load](#)

The active, reactive or apparent power, as the context requires, generated, transmitted or distributed.

### [Load Factor](#)

The ratio of the actual output of a power generating unit to the possible maximum output of that unit.

### [Load-related expenditure \(LRE\)](#)

The installation of new assets to accommodate changes in the level or pattern of electricity or gas supply and demand.

### [Low Voltage or LV](#)

Commonly used to indicate the 230 Volt supply to domestic premises or the 230V/400V supply to commercial or industrial premises.

### [LPN](#)

The DNO licence area covering the centre of London and some of the London Boroughs.

## **M**

### [Megavolt Ampere \(MVA\)](#)

A measure of electric power.

### [Megawatt-hour \(MWh\)](#)

A measure of energy production or consumption equal to one million watts produced or consumed in one hour.

## **N**

### [National Grid Electricity Transmission \(NGET\)](#)

NGET owns and maintains the high-voltage electricity transmission system in England and Wales.

### [Network](#)

Usually means a combination of cables, overhead lines, switchgear and transformers operating at a particular primary voltage. For example, an 11kV network means a network operating at 11kV.

### [Network automation](#)

The use of automatic switchgear and protection to detect the occurrence of a fault, disconnect the faulted section of the network and restore supply to healthy portions of the network. Network automation usually achieves this without human intervention, allowing supplies to be restored within a few seconds.

### [Non-load-related expenditure \(NLRE\)](#)

The replacement or refurbishment of assets which are either at the end of their useful life due to their age or condition, or need to be replaced on safety or environmental grounds.

## **O**

### [OH or OHL](#)

Overhead line or cable.

### [Operating Margin](#)

A term usually used to mean the level of generation available above that needed to meet the forecast demand. It is required to cover plant losses, plant shortfalls and demand forecast error. That is, the sum of the contingency reserve and operating reserve.

## **P**

### [Point of Connection](#)

An electrical point of connection between the National Grid Transmission System and the DNO or the electrical point of connection between a DNO and the customer.

### [Pole transformer \(PT\)](#)

A distribution transformer that is installed on a pole.

### [Primary substation](#)

A substation at which voltage the highest voltage on the site is 33kV.

### [Protection](#)

Equipment used to detect the occurrence of a fault and operate switchgear to disconnect the faulted section of network.

### [Publicly Available Specification 55 \(PAS 55\) certification](#)

PAS 55 is the British Standards Institution's Publicly Available Specification for the optimised management of physical assets and infrastructure. Certification is a formal recognition that an organisation's asset management system is in line with PAS 55.

## **Q**

### [Quality of supply \(now known as Quality of Service\)](#)

The term used to describe and measure disturbances which interrupt a continuous supply of electricity. These measures include the availability and security of supply and restoration rates.

## **R**

### [Refurbishment/replacement](#)

A planned replacement or renewal of existing plant, equipment and cables as these assets reach the end of their useful lives.

### [Reinforcement](#)

Work carried out on the distribution network to increase its capacity in order to meet load growth.

### [Reliability](#)

A measure of the number of faults or incidents causing a supply interruption, often expressed as the total number of faults per 100km of each circuit.

### [Registered Power Zone \(RPZ\)](#)

RPZ is a mechanism to encourage DNOs to develop and demonstrate new and more cost effective technologies for connecting and operating generation on their distribution systems. Where a DG connection meets the requirements and is registered as a RPZ the DNO receives an additional incentive over and above the main DG incentive.

## **S**

### [Security](#)

A measure used to indicate how frequently a supply interruption occurs. Security is often expressed as the annual number of supply interruptions for every 100 connected customers.

### [SPN](#)

The DNO licence area covering Kent, Surrey, East Sussex, parts of West Sussex and some of the London Boroughs.

### [Service Level Agreement \(SLA\)](#)

A service level agreement is a document which defines the relationship between two parties: the provider and the recipient. For example, the arrangement in place with local authorities to improve the service level for unmetered services.

### [Substation](#)

The generic term for premises containing electrical plant and equipment such as transformers or switches.

### [Sulphur Hexafluoride \(SF<sub>6</sub>\)](#)

SF<sub>6</sub> is an insulator used in some circuit breakers, switchgear and other electrical equipment. It is one of the most potent greenhouse gases.

### [Supply quality](#)

The term used to measure disturbances in an otherwise continuous supply of electricity. These disturbances may include excessively low or high voltage, short breaks in supply, often known as 'dips', 'flicker' or 'brown-outs'.

### [Switchgear](#)

Automatic or manual mechanical devices for controlling the flow of electrical energy into a circuit or item of equipment.

### [Switching](#)

The operation of circuit breakers, isolators, disconnectors, fuses or other methods of making or breaking an electrical circuit and/or the application and removal of Circuit Main Earths.

### [System](#)

An electrical system in which conductors and apparatus are electrically connected to a common source of supply.

## **T**

### [Transformer](#)

A device that transforms an input voltage to a higher or lower output voltage. A transformer transforms the voltage up or down. For example, from 11,000V to 400V. Transformers can be mounted at ground level, underground in chambers or above ground on poles.

## **U**

### [UG](#)

Abbreviation for underground. An underground cable is a cable buried underground, most are laid at least 450mm below the original ground surface.

### [Use of System \(UoS charges\)](#)

Charges paid by generators and demand customers, usually via suppliers, for the use of the distribution network. Sometimes referred to as Duos – Distribution Use of System.