Glossary

Network Development Plan

May 2024

Electricity Distribution

nationalgrid

Glossary

Contents

Forecasting

Acronym/ Initialisation	Term	Definition
CT	Consumer Transformation	Mid-level ambition DFES scenario that forecasts the volumes and regional distribution of low carbon technology uptake in NGED's licence areas. This uses stakeholder-informed bottom up analysis to align with national industry developed future energy scenarios.
ESA	Electricity Supply Area	Each ESA represents a block of demand and generation as visible from the distribution network, being one of: - The geographic area supplied by a primary substation. - A customer directly supplied at 132 kV, 66 kV, 33 kV or 25 kV.
–	Forecast	A prediction of future events that, in the balance of probabilities, NGED believes will occur.
FES	Future Energy Scenarios	A set of scenarios developed by National Grid to represent credible future paths for the energy development of the United Kingdom.
FS	Falling Short	The least ambitious DFES scenario that forecasts the volumes and regional distribution of low carbon technology uptake NGED's licence areas. This uses stakeholder-informed bottom up analysis to align with national industry developed future energy scenarios.
–	Reinforcement	Work carried out on the network: • to enable new load growth (both demand and generation) which is not attributable to specific customers; or • Connections Reinforcement on the Primary Network which involves the installation of assets at a voltage level above that of the Minimum Scheme.
LW (or LTW)	Leading the Way	The most ambitious DFES scenario that forecasts the volumes and regional distribution of low carbon technology uptake in NGED's licence areas. This uses stakeholder-informed bottom up analysis to align with national industry developed future energy scenarios.
LI	Load Index	Tier 2 Network Output Measure related to network utilisation. The Load Index (LI) is a framework for collating information on the utilisation of the Distribution Assets supplying each Demand Group and for tracking changes in their utilisation over time. The LI will be used to inform an assessment of the efficacy of the DNOs' general reinforcement decisions over the price control period.
–	Projection	The time-series of future changes to a parameter in a given Scenario or Forecast.
–	Scenario	A hypothesis of future events that would or could occur given certain political, economic, social, technological and environmental conditions.
ST	System Transformation	Mid-level ambition DFES scenario that forecasts the volumes and regional distribution of low carbon technology uptake in NGED's licence areas. This uses stakeholder-informed bottom up analysis to align with national industry developed future energy scenarios.
NGED BV or BV	NGED Best View	An amalgamation of the other four DFES scenarios which then provides the most likely growth pathway that NGED expect to materialise.

Flexibility

Acronym/ Initialisation	Term	Definition
CBA	Cost Benefit Analysis	A process used by NGED to measure the benefits of a business decision compared to the costs associated with taking that action. Used to determine the optimal reinforcement solution, which is then tested against market provided flexibility by the DSO as part of the DNOA process.
CEM	Common Evaluation Methodology	A methodology developed under the Open Networks project to compare options and identify low regret pathways. The CEM tool is used in the DNOA process to assess flexibility against conventional reinforcement.
–	Curtailment	Any action taken by NGED to restrict the flow of electricity at the Connection Point.
–	Curtailable Connection	A connection whereby the Required Capacity can be reduced by the licensee.
DSR	Demand Side Response	Ofgem led tariffs and schemes, which incentivise customers to change their electricity usage habits.
–	Flexibility	Reducing loads on the network by using customers' ability to change their usage patterns by either switching on generators or reducing consumption.
–	Flexible Connections	Connection arrangements whereby a customer's export or import of electricity is managed (often through real-time control) based upon contracted and agreed principles of available capacity. Flexible Connections typically allow quicker and cheaper connection to the Distribution System but are made on the basis that there is no limit on the extent to which a user's access can be interrupted.
–	Flexibility Payments to service providers	Flexible service contracts to manage network capacity constraints. Expenditure should include payments made for the availability of flexibility services and payments made for service utilisation. The volumes relate to total MVA of flexible services contracted during the reporting year.

Network Assets and Infrastructure

Acronym/ Initialisation	Term	Definition
AAAC	All Aluminium Alloy Conductor	Conductor type used on the network.
ABI	Air Break Isolator	Isolator used on the overhead line network. Also known as Air Break Switch Disconnectors (ABSD's).
ACSR	Aluminium-Conductor Steel-Reinforced	Conductor type used on the network.
BSP	Bulk Supply Point	A substation comprising of one or more Grid Transformers and associated switchgear.
–	Cable	A conductor used to distribute electrical power, typically buried directly in the ground, installed in ducts or troughs or strung up in the air between poles or pylons. This excludes under eaves or mural wiring.
CB	Circuit Breaker	Device capable of making, carrying and breaking currents under normal circuit operation and also making, carrying for a specified time and breaking, fault current. Also includes auto-reclosers. It does not include any circuit breakers that form part of an RMU.
–	Consac	A type of cable with paper insulation and aluminium sheathing, used for distribution of electricity at low voltage.
CT	Current Transformer	A type of transformer that is used to measure an alternating current.
–	Distribution Asset	Any of the electric lines, cables, plant and equipment included within the licensee's distribution system.
–	Disconnector	A type of switching device with visible contacts, used to ensure that an electrical circuit is completely de-energised for service or maintenance.
DG	Distributed Generation	Generation connected to a distribution network. Sometimes referred to as Embedded Generation.
EPR	Ethylene Propylene Rubber	Cable type used on the network.
EHV	Extra High Voltage	Voltages over 22 kV and up to, but not including, 132 kV.
–	Fuse	A fuse is a safety device in an electric circuit. It contains a piece of wire which melts when there is a fault, so that the flow of electricity stops.
Fuses (PM)	Pole Mounted Fuses	Low voltage fuses which are pole mounted.
Fuses (GM) (TM)	Ground/Transformer Mounted Fuses	Low voltage fuses which are ground mounted or transformer mounted, including fuse ways in LV pillars.
GIS	Gas-Insulated Switchgear	Switchgear with gas used as the insulating and current-breaking medium.
GSP	Grid Supply Point	A substation comprising of one or more Super Grid Transformers and associated switchgear.
GT	Grid Transformer	The transformers used at a Bulk Supply Point. Typically used to step down from 132 kV to 11 kV or 132 kV to 33 kV.
HDC	Hard Drawn Copper	Overhead line type used on the network.
HV	High Voltage	A nominal voltage of more than 1,000 V, but no more than 22,000 V.
HSL	–	Cable type used on the network.
H-Type	–	Cable type used on the network.
–	Isolator	A switch or control that completely stops the flow of electricity to a particular place.
–	Insulated Conductor	An overhead conductor covered with insulating material which will prevent danger in the event of accidental contact with other objects and is deemed safe to touch.

Acronym/ Initialisation	Term	Definition
–	Loose Couple	Interconnection at a lower voltage level which could cause circulating current at a higher voltage. Typically found at lower voltage busbars of Primary substations or BSPs.
–	Offshore Wind	A category of DG. Electricity generation using a wind turbine situated offshore.
–	Onshore Wind	A category of DG. Electricity generation using a wind turbine situated onshore.
–	On-load Tap Changer	A piece of equipment that regulates the voltage ratio of an electrical transformer without interrupting the load current.
OH (or OHL)	Overhead Lines	An overhead line is a cable for the transmission of electricity, via wooden utility poles or metal pylons. A cable that typically transmits electricity a few metres above the ground.
PV	Photovoltaic	A category of DG. Electricity generation using photovoltaics (solar panels or cells).
–	Primary Distribution	The sections of an electrical distribution network which provide the interface between transmission and Primary or Secondary Distribution. In NGED's network, the 33 kV circuits and Primary Substations are considered Primary Distribution.
–	Primary Substation	A substation comprising of one or more primary transformers and associated switchgear.
–	Primary Transformer	A transformer that steps voltage down from 66 or 33 kV to 11 or 6.6 kV.
–	Renewable Generation	Technologies and definitions listed in Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources. This Directive lists energy from renewable sources to include: wind, solar, aerothermal, geothermal, hydrothermal and ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases.
RMU	Ring Main Unit	Packaged switchgear that is either pre-welded together or shares the same tank. The unit is therefore non-extensible and is replaced as a single unit.
RVC	Rapid Voltage Change	A power quality issue related to voltage disturbance.
–	Subtransmission	The sections of an electrical distribution network which provide the interface between transmission and Primary or Secondary Distribution. In NGED's network the GSPs, 132 kV circuits and BSPs are considered Subtransmission.
SF6	Sulphur Hexafluoride	The chemical symbol for Sulphur hexafluoride, a gas that is used as both an insulating and arc extinction medium in electrical plant. The reporting requirement is in respect of fugitive BCF emissions attributed to SF6 lost from electrical plant.
SGT	Super Grid Transformer	Transformers used at a Grid Supply Point. Typically used to step down from 400 kV to 132 kV.
–	Switchgear	A device capable of making, carrying and breaking currents under normal circuit operation but not normally capable of breaking fault current.
UG	Underground Cable	Cable that is specially designed to be placed/buried directly beneath the surface of the earth. A cable that typically runs below the ground.
XLPE	Cross-Linked Polyethylene	Cable type used on the network.

Network Management

Acronym/ Initialisation	Term	Definition
ANM	Active Network Management	The Energy Networks Association Active Network Management Good Practice Guide summarises ANM as: *Using flexible network customers autonomously and in real-time to increase the utilisation of network assets without breaching operational limits, thereby reducing the need for reinforcement, speeding up connections and reducing costs.*
CIs	Customer Interruptions	The proportion of total customers whose supplies have been interrupted in a year. This is the number of customers whose supplies have been interrupted per 100 customers per year over all incidents, where an interruption of supply lasts for three minutes or longer, excluding re-interruptions to the supply of customers previously interrupted during the same incident.
–	Constraint	Any limit on the ability of the licensee's Distribution System, or any part of it, to transmit the power supplied onto the licensee's Distribution System to the location where the demand for that power is situated.
CMLs	Customer Minutes Lost	A measure of the duration of interruptions to supply per year.
–	Demand	The consumption of electrical energy.
DT	Definite Time	Operating time characteristic of a protection relay.
DOC	Directional Overcurrent	A type of protection used on the network that operates when subject to power flow above a certain magnitude and in a specified direction.
FCO	First Circuit Outage	P2/8 defines a First Circuit Outage as: *…a fault or an arranged Circuit outage…* Also referred to as "N-1" in some contexts (All FCOs are N-1 but not all N-1s are FCOs).
–	Generation	The production of electrical energy.
GWh	Gigawatt hours	Gigawatt hours (1,000,000,000 watt hours). Gigawatt hours is a measure of electrical energy.
–	Group Load	The demand and generation of each GSP, BSP and Primary substation group.
–	Interruption	The loss of supply of electricity to one or more customers due to an incident. This excludes voltage quality and frequency abnormalities, such as dips, spikes or harmonics.
LIFO	Last In First Out	ANM logic where most recently connected ANM customers are the first to have their output altered.
MVA	Mega volt amperes	Volt-ampere is a unit of electric power equal to the product of one volt and one ampere, equivalent to one watt at unity power factor (pf) is a unit used for measuring apparent power.
MWh	Megawatt hours	Megawatt hours (1,000,000 Watt hours). Megawatt hours is a measure of electrical energy.
OBS	Operational Behaviour Scheme	Python code used to represent actions taken on the distribution network (such as intertrips or actions taken by Control Engineers) as part of analysis conducted for the NDP.
SCO	Second Circuit Outage	P2/8 defines a Second Circuit Outage as: *…a fault following an arranged Circuit outage…* Also referred to as "N-1-1" or "N-2" in some contexts (all SCOs are N-2 but not all N-2s are SCOs).
SQC	Sequential Control	Method of managing the network without the need for manual intervention from a Control Engineer.
TANM	Transmission Active Network Management	The process of a Transmission operator using flexible network customers autonomously and in real-time to increase the utilisation of network assets without breaching operational limits.

Policies and Documents

Acronym/ Initialisation	Term	Definition
CEP	Clean Energy Package	European legislation for a unified energy strategy for delivering the Paris agreement.
DNOA	Distribution Network Options Assessment	A document published twice a year by NGED that provides transparency in the investment decision making process.
ECCR	Electricity (Connection Charges) Regulations	The Electricity (Connection Charges) Regulations 2002 (SI 2002/93).
EREC	Engineering Recommendation	A document published by the Energy Networks Association.
ER G98	Engineering Recommendation G98	G98 is the "Requirements for the connection of Fully Type Tested Micro-generators (up to and including 16 A per phase) in parallel with Low Voltage Distribution Networks" document.
ER G99	Engineering Recommendation G99	G99 is the "Requirements for the connection of generation equipment in parallel with public distribution networks" document.
ER P2	Engineering Recommendation P2	'Engineering Recommendation P2 – Security of Supply' (ER P2) is a distribution network planning standard. It sets the minimum levels of security of supply that Distribution licensees must achieve on GB distribution networks.
ER P18	Engineering Recommendation P18	ER P18 sets out guidance relating to the complexity of 132 kV networks and was published in 1978.
LTDS	Long Term Development Statement	An annually published document that sets out the use and likely development of the distribution network and the DNO's plans for modifying the distribution system for the following two years.
NDP	Network Development Plans	A plan published every two years as required by SLC 25B to provided stakeholders with transparency on network constraints and needs for flexibility.
NDR	Network Development Report	A component of the NDP that provides readers with valuable additional information on potential development projects.
NHR	Network Headroom Report	Annually published dataset to indicate where it is anticipated that there will be network capacity to accommodate future connections and where flexibility services may be required.
RDP	Regional Development Programme	A joint study between NGET and NGED on possible 132 kV reinforcement options in the South West.
RIIO-ED2	Revenue = Incentives + Innovation + Outputs – Electricity Distribution 2	The electricity distribution price control period that runs from 1 April 2023 to 31 March 2028.
SoW	Statement of Works	The process under which the DNOs request that National Grid assesses the potential impact of the connection of DG upon the National Electricity Transmission System.

Relevant Parties

Acronym/ Initialisation	Term	Definition
DNO	Distribution Network Operator	A company, licenced by Ofgem, which distributes electricity in the United Kingdom who has a defined Distribution Services Area.
DSO	Distribution System Operator	A department within NGED that creates an efficient and more flexible electricity network to meet future energy demands as well as co-ordinating transmission and distribution services at a local level with other network and system operators.
EA	Environment Agency	An Executive Non-departmental Public Body responsible to the Secretary of State for Environment, Food and Rural Affairs and an Assembly Sponsored Public Body responsible to the National Assembly in Wales concerned mainly with rivers, flooding, and pollution.
ENW	Electricity North West	Electricity North West is a DNO that is licenced by Ofgem to distribute electricity in the North West of England.
GB	Great Britain	A geographical, social and economic grouping of countries that contains England, Scotland and Wales.
–	National Grid	An energy company operating in the UK and US.
NGESO	National Grid Electricity System Operator	National Grid Electricity System Operator is the electricity system operator for Great Britain, soon to be named the National Energy System Operator in 2024.
NGED	National Grid Electricity Distribution	National Grid Electricity Distribution is a DNO that is licenced by Ofgem to distribute electricity in the East Midlands, West Midlands, South West, and South Wales.
NGET	National Grid Electricity Transmission	National Grid Electricity Transmission owns the electricity transmission network in England and Wales.
NPg	Northern Powergrid	Northern Powergrid is a DNO that is licenced by Ofgem to distribute electricity in the North East England and Yorkshire regions and the North Lincolnshire area
Ofgem	Office of Gas and Electricity Markets	Ofgem is responsible for regulating the gas and electricity markets in the United Kingdom to ensure customers' needs are protected and promotes market competition.
SPEN	Scottish Power Energy Networks	Scottish Power Energy Networks is a DNO that is licenced by Ofgem to distribute electricity in Central and Southern Scotland, North Wales, Merseyside, Cheshire and North Shropshire.
SSEN	Scottish and Southern Electricity Networks	Scottish and Southern Electricity Networks is a DNO that is licenced by Ofgem to distribute electricity in central southern England and in the north of Scotland.
UK	United Kingdom	A geographical, social and economic grouping of countries that contains England, Scotland, Wales and Northern Ireland.
UKPN	UK Power Networks	UK Power Networks is a DNO that is licenced by Ofgem to distribute electricity in the South East England, the East of England and London.

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