

2015-2023

Western Power Distribution
RIIO-ED1 Business Plan Commitments Report
Year Two - 2016/17

31 October 2017

Glossary

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A

Accident Frequency Rate

Accident frequency rate is derived from the number of annual accidents and the number of staff, and is expressed as 'accidents per 100 members of staff'. The calculation allows a like for like comparison irrespective of the number of staff employed.

Alternative Connections

Standard generation connections allow customers to import or export up to the full rated capacity noted in their connection agreement at all times of normal network operation. The customer is free to use the capacity assigned to that specific generator at any level they choose without further involvement from the network operator. Where there is insufficient capacity, and costly and time consuming reinforcement is required, WPD has developed a range of 'alternative' connections which enable more active management of export capacity to enable additional connections without further reinforcement.

Automation

Remotely controlled devices which allow electricity supplies to be quickly rerouted without the need to send a person to the site.

B

Behavioural Safety

Behavioural safety is an approach to safety which goes beyond setting rules and enforcing compliance: it focusses on changing attitudes so that staff assume responsibility for their own safety and the safety of others by acting on training, following instructions and challenging others when they see safety rules about to be broken.

BEIS

The department for Business, Energy & Industrial Strategy

Black start

The recovery from an event of widespread power loss. We carry out specific programmes of work to make sure that the network is able to cope in these situations.

Broad Measure of Customer Satisfaction (BMCS)

A composite incentive consisting of a customer satisfaction survey, a complaints metric and an assessment of stakeholder engagement. It was introduced for DPCR5 and is designed to drive improvements in the quality of the overall customer experience by capturing and measuring customers' experiences of contact with their DNO across the range of services and activities the DNOs provide.

Building Research Establishment Environmental Assessment Method (BREEAM)

A methodology used by the building industry to assess the environmental aspects of building construction and refurbishment.

Bund

A containment wall constructed around items of plant which contain large volumes of oil. Designed to prevent oil from leaking into the environment.

Business Carbon Footprint (BCF)

BCF is a calculation which represents the impact on the environment of operational activities. BCF is measured and reported using equivalent tonnes of carbon dioxide to express the impact of energy usage in offices, emissions from vehicles and the release of greenhouse gases. BCF is used to encourage DNOs to consider the direct carbon impact of conducting their operations and to be proactive in the reduction of emissions.

C

Capacity

The amount of power that can be distributed through an asset or the network.

Capital expenditure (Capex)

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

Centre for Sustainable Energy (CSE)

An independent national charity that helps people and organisations from the public, private and voluntary sectors meet the twin challenges of rising energy costs and climate change.

CIRT (Crown Internet Routing & Tracking)

An online system specifically designed for ICPs and IDNOs, the system allows the online submission of connection applications and progress tracking of those applications.

Closed Circuit Television (CCTV)

A video based security monitoring system that presents images on television screens in a monitoring centre from cameras installed at remote sites allowing activities to be recorded and intruders to be identified.

Common Network Asset Indices Methodology (CNAIM)

A standard, points based mechanism for DNOs to report risk levels associated with network assets.

Competition in Connections

DNOs are obligated to promote the fact that customers requiring a connection to the network have a choice in terms of who undertakes the work. Ofgem prompted the publication of a Code of Practice for Competition in Connections identifying the responsibilities of DNOs in this area.

Condition Based Risk Management (CBRM)

This is an asset replacement modelling approach that makes use of asset condition information to forecast which assets require replacement and when.

Connections Portal

An online system designed for customers requiring a connection for small projects and service alterations. Within the Portal, customers can make an application, accept an offer, make a payment and request automatic email updates of key stages within the process.

Contestable work

Other organisations can carry out connections work in competition with the DNOPS. Work that can be carried out by a competitor is referred to as contestable.

Cost Benefit Analysis (CBA)

A methodology that compares the costs of carrying out an investment against the benefits (such as risk reduction or service improvement) to evaluate different options and/or demonstrate value for money.

Crisis Packs

A crisis pack can be distributed to customers impacted by power outages, often vulnerable customers who are more likely to suffer a detriment as a result of a prolonged outage. The packs contain a flask, torch with batteries, gloves, a hat, a reusable hand-warmer, a foil blanket and information leaflets. Analogue telephones are also available to those customers who need them.

Customers Interruptions (CIs)

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.

Customer Minutes Lost (CMLs)

The average duration of interruptions to supply per year, where an interruption of supply to customer(s) lasts for three minutes or longer.

Customer Service Excellence Standard

This is a Government scheme which recognises organisations that provide effective and excellent customer service. Similar assessments were previously awarded through the Charter Mark.

Cut-out

A piece of equipment installed at the service position to terminate incoming cables. It is positioned before the meter and contains a fuse.

D

DECC

The former Government Department of Energy and Climate Change.

Demand Response/Demand Side Response

A technique that can be employed to reduce load on the network when maximum demand is reaching or exceeding the capacity of the network. It relies upon commercial agreements being in place with customers who can reduce their load and have agreed to do so under the instruction of the DNO.

Distributed Generation (DG)

Generation connected to the distribution network. It includes wind turbines, domestic solar panels, large scale photo-voltaic farms, hydro-electric power and biomass generators. Sometimes referred to as embedded generation.

Distribution Network Operators (DNOs)

A DNO is a holder of an electricity distribution licence. There are 14 DNOs which are owned by six different ownership groups.

Distribution Price Control Review 5 (DPCR5)

The price control period which preceded RIIO-ED1. DPCR5 ran from 1 April 2010 until 31 March 2015. It was the fifth price control using RPI-X regulation and was replaced with the RIIO framework from 1 April 2015.

Distribution System Operator (DSO)

It is anticipated that changes to the energy sector will require Distribution Network Operators to evolve from a traditional, passive role of network management to a Distribution System Operator with full operational responsibility for forecasting energy production and consumption along with balancing demand and generation on the distribution network. Whilst supply and demand have traditionally been balanced at a national level by National Grid System Operator, it is anticipated that the growth of local distributed generation and other new technology will require more interaction at a local level and how this supports the national system operation.

Distribution Use of System (DUoS) charges

These are the charges levied to electricity suppliers for DNO costs that can be recovered from customers. The amount is determined through price control reviews.

E

Electricity, Safety, Quality and Continuity Regulations 2002 (ESQCR)

The ESQCR specify safety standards, which are aimed at protecting the general public and customers from danger. In addition, the regulations specify power quality and supply continuity requirements. The regulations were amended in 2006 to include a requirement for resilience tree clearance.

Embedded generation

Generation that is directly connected to the distribution network. Sometimes referred to as distributed generation.

Energy Networks Association (ENA)

The industry body for UK transmission and distribution network operators for gas and electricity in the UK and Ireland.

Energy Storage

The term energy storage encompasses a varied range of technologies which allow the capture of energy for subsequent release. Technology ranges from small scale domestic batteries to large scale

industrial systems. Energy storage has the potential to play an important role in the future of energy networks allowing supply and demand to be balanced at times when generation exceeds network capacity or generation is insufficient to meet customer demand.

Engagement

The process by which an organisation involves people who may be affected by the decisions it makes, or can influence the way in which actions are delivered.

ENMAC™

ENMAC is the trade name for GE Network Solutions control room software used for managing real-time operation of the distribution network.

ESQCR

Electricity, Safety, Quality and Continuity Regulations 2002. The ESQCR specify safety standards, which aim to protect the general public and customers from danger.

Extra High Voltage (EHV)

Voltages over 20kV up to, but not including, 132kV.

Exceptional events

Events beyond the control of the DNO that impact on network performance, this could include instances of severe weather or significant one off events. Exceptional events can be exempted from calculations of network performance when strict criteria are met and verified by Ofgem.

F

Feeder Cable

A cable circuit emanating from a substation and supplying other substations or customers. HV feeder cables emanate from a circuit breaker at a primary substation and supply HV substations. LV feeder cables emanate from a fuseway in a distribution substation to LV supplies for domestic or commercial customers.

Fluvial flooding

Flooding related to river or coastal sites.

Fuel poverty

Fuel poverty describes circumstances where customers struggle to afford electricity and to effectively heat their properties. Whilst WPD is not directly responsible for dealing with fuel poverty we refer customers to a network of expert partners for further advice and assistance.

G

Guaranteed Standards of Performance (GSOPs)

Guaranteed Standards of Performance set minimum service levels to be met across a range of activities covering supply interruptions, appointments and connections. The Guaranteed Standards are specified in statutory legislation. Where a licence holder fails to provide the level of service required, it must make a payment to the customer affected subject to certain exemptions.

H

Health and Safety Executive (HSE)

A Government organisation that has the responsibility of enforcing health and safety legislation.

Health Index (HI)

Framework for collating information on the health (or condition) of distribution assets and for tracking changes in their condition over time.

Heat Pump

Systems which capture heat energy which is stored in the ground, bodies of water or air. They can be used for space heating, water heating, heat recovery and cooling in a range of buildings. A supply of electricity is required to power the heat pump system.

High Voltage (HV)

Voltages over 1kV and up to, but not including, 22kV.

I

Improvement Notice

Where there is a significant breach of Health and Safety legislation the Health and Safety Executive has the power to issue a formal Improvement Notice.

Incentive on Connections Engagement (ICE)

An incentive mechanism which drives DNOs to improve communication and interaction with major customers. Penalties can be imposed where DNOs fail to demonstrate sufficient engagement with major customers.

Independent Distribution Network Operator (IDNO)

A company that can construct new electricity networks, embedded within and connected to the DNOs network, retaining ownership of and being responsible for the operation of the new network.

Independent Connections Provider (ICP)

A company that can construct electricity network on behalf of a customer, with the network being adopted by either an IDNO or the DNO.

Innovation projects

Projects that seek to find new and better ways of working. Projects can focus on network performance and efficiency, low carbon networks, smart grids and meters, reducing impact on the environment and developing customer service.

Inspections and Maintenance (I&M)

Activities carried out on a routine basis for the visual checking of the external condition of assets and the invasive examination of plant and equipment.

Interruption Incentive Scheme (IIS)

The Interruption Incentive Scheme is a mechanism that provides annual rewards or penalties based on each DNO's performance against their targets for the number of customers interrupted per 100 customers (CI) and the number of customer minutes lost per customer (CML).

ISO 14001

This is an international standard for environmental management systems.

L

Link box

A device installed on the low voltage network that brings together two or more cables and facilitates the insertion and removal of links to allow power to be redirected.

Load

The amount of power flowing through an asset or a network. This may also be referred to as demand. Maximum demand is compared to capacity to determine if the network needs to be reinforced.

Load Index (LI)

Framework, introduced as part of the DPCR5 Price Control, demonstrating the utilisation of individual substations or groups of interconnected substations. It is used as a secondary deliverable capturing the impact of load related investment.

Low Carbon Networks Fund (LCNF)

A funding mechanism introduced under DPCR5 to encourage DNOs to prepare for the move to a low carbon economy. A fund was made available for DNOs and partners to innovate and trial new technologies, commercial arrangements and ways of operating networks. The LCNF structure was replaced by the Network Innovation Competition and Network Innovation Allowance during RIIO-ED1, however some LCNF projects will continue during RIIO-ED1.

Low Carbon Technology (LCT)

This is the collective term for devices that reduce the amount of carbon being used for heating, transport and generation. It includes electric vehicles, heat pumps and solar generation.

Low Voltage (LV)

This refers to voltages up to, but not including, 1kV.

LVSSA

Connections customers are categorised by Ofgem according to a range of factors. LVSSA customers are those seeking single domestic connections requiring no mains work at low voltage.

LVSSB

Connections customers are categorised by Ofgem according to a range of factors. LVSSB customers are those seeking two to four domestic connections or one-off commercial connections at low voltage requiring no reinforcement work.

M

Medically dependent customers

Customers who rely on electricity as a result of a health condition.

MPAN

Meter Point Administration Number – the unique identifier used for each individual point of connection to the distribution system.

N

National Grid

The 400kV and 275kV network used to transport electricity around the country from sources of large scale generation such as power stations and off-shore wind farms to substations that feed into DNO electricity networks.

Network Innovation Allowance (NIA)

An allowance agreed as part of the price control to fund smaller scale innovation projects. The purpose of the allowance is to encourage DNOs to innovate to address issues associated with the development of their networks. The NIA (and NIC) replaced the Low Carbon Networks Fund at the commencement of RIIO-ED1.

Network Innovation Competition (NIC)

An annual funding competition for larger and more complex innovation projects. The NIC (and NIA) replaced the Low Carbon Networks Fund at the commencement of RIIO-ED1.

O

Office of Gas and Electricity Markets (Ofgem)

Ofgem is responsible for regulating the gas and electricity markets and network monopolies in the UK to ensure customers' needs are protected.

P

P2/6

DNOs have a licence obligation to manage networks to meet the requirements of Electricity Networks Association Engineering Recommendation for Security of Supply P2/6. This specifies the expected capability of the network to meet demands under defined outage conditions.

Perfluorocarbon Tracer (PFT)

A chemical that is injected into fluid filled cables, used to speed up the location of leaks.

Pluvial flooding

Flooding related to excessive rainwater (flash flooding).

Price Control

WPD is a regional monopoly – our customers are such because of where they live and work. WPD is therefore regulated by Ofgem to make sure that we provide a high level of service for the money we are allowed to charge. The revenues that can be earned are set for a specific period of time referred to as a price control. The current price control period RIIO-ED1 runs from 1 April 2015 to 31 March 2023.

Priority Service Register (PSR)

A database that records details about vulnerable customers so that additional support can be provided.

Prohibition Notice

Where the Health and Safety Executive believes that an activity carries serious risk of harm it has the option to stop activities immediately using a Prohibition Notice.

Protection batteries

Most circuit breakers on the network rely upon batteries to provide the power to monitor the network and initiate tripping and reclosing actions. These batteries are separate to SCADA batteries that provide the power for communication systems between sites and central control centres.

Q

Quality of Service (unweighted)

The Interruption Incentive Scheme measures Quality of Service using two metrics: Customer Interruptions and Customer Minutes Lost. The comparison of actual performance against targets converts different types of interruption using weighting factors (for example unplanned interruptions are weighted at 50%). Quality of Service (unweighted) relates to the raw pre-weighted measures.

R

Real Price Effects (RPE)

Increase in prices of materials, direct staff or contract labour, over and above increases in the Retail Price Index.

Reinforcement

The provision of more network capacity by installing more assets or installing higher rated assets

Remote Terminal Unit (RTU)

Communications devices that transmit data about the status of the network back to the control centre.

Resilience

The ability of the network to withstand extreme events such as storms and flooding, and having the ability to recover quickly from widespread power black outs.

Resilience Tree Cutting

This is the full removal or extensive cutting of trees that are found to be within the falling distance of overhead power lines. This ensures that they cannot cause damage to the power lines in the event of severe weather.

Revenue = incentives + innovation + outputs (RIIO)

The current regulatory framework, introduced for electricity distribution in 2015/16, replaced the previous RPI-X regime. It places more emphasis on incentives to drive the innovation needed to deliver a sustainable energy network at value for money to existing and future consumers.

RIIO Electricity Distribution 1 (RIIO-ED1)

The price control period that runs from 1 April 2015 to 31 March 2023. It is the first electricity distribution price control that uses the RIIO framework for setting allowances.

RIIO Electricity Distribution 2 (RIIO-ED2)

The electricity distribution price control period that will run from 1 April 2023 and is assumed to end on 31 March 2031.

Routine Tree Cutting

Tree cutting is undertaken on a cyclical basis to provide sufficient clearance from equipment. Tree cutting prevents faults and keeps the public safe. Clearance is carried out to a standard industry specified distance from equipment.

RPI-X

The form of price control previously applied to network monopolies. Each company was given a revenue allowance in the first year of each control period. The price control then specified that in each subsequent year the allowance would reduce by 'X' per cent in real terms.

S

SCADA batteries

Batteries which provide the power for system communication between sites and central control centres.

Self-approved designs

The proposals for new network connections that have been designed by ICPs without the need for approval of designs by WPD. Processes and procedure for authorised ICPs to carry out self-approval have been developed in line with the requirement to facilitate competition in connections.

Self-determined point of connection

The proposed point at which a new connection or extension to the network, to be developed by an ICP, connects to the existing network, which has been determined without the need for approval by WPD.

Smart Grid

A generic term for a range of measures that are used to operate electricity networks allowing more generation or demand (load) to be connected to a given electricity circuit without the need for traditional reinforcement (or upgrade) of that equipment.

Smart Grid Forum (SGF)

The Smart Grid Forum was established by Ofgem and DECC in early 2011 bringing together key opinion formers, experts and stakeholders involved in the development of smart grids, with the aim of providing strategic input to help shape Ofgem's and DECC's thinking and leadership in smart grid policy and deployment.

Smart Meters

Smart meters record the energy consumed within a property and are capable of being read remotely. The government has mandated that by 2020 every home in Great Britain will be offered a smart electricity and gas meter. Smart meters have the capability to allow WPD much greater visibility of the operational state of the low voltage network.

Stakeholder Engagement and Consumer Vulnerability Strategy (SECV)

An incentive mechanism designed to encourage network companies to engage proactively with stakeholders and to deliver a consumer focused, socially responsible and sustainable energy service. Rewards are available to network companies who can demonstrate high quality activities against set criteria.

Substation

A part of the distribution network that transforms voltage and allows the re-routing of power by switching the configuration. It contains transformers, switchgear and equipment that protects the network components by interrupting supplies when there is a fault. Substations vary in size from bulk supply points that supply tens of thousands of customers to pole mounted substations that may supply a single property.

Sulphur Hexafluoride (SF₆)

A gas widely used as an insulating medium in transmission and distribution equipment. It has excellent insulating properties but is a potent greenhouse gas. It continues to be used because there are no alternatives available.

Supervisory Control and Data Acquisition (SCADA)

This is the term used for the system that monitors and controls distributed assets. It comprises the remote terminal units, communication infrastructure and human interface within central control rooms.

Switches

Devices installed on the network that can be turned on or off and are used to alter the routing of electricity. Some can be operated remotely by central Control Engineers; others require manual operation on site by authorised staff.

T

Time to Connect Incentive

An incentive scheme which focusses on two elements – the time taken to provide a quotation for a connection and once the offer is accepted the time taken to complete the necessary connection works. Rewards are available to DNOs who outperform common targets set by Ofgem. Time to Connect and Time to Quote targets are expressed in days.

Third Party Connection Providers

Independent organisations that carry out elements of connections work that are contestable. Work which is non-contestable will always be undertaken by the DNO.

Totex

The licensee's total expenditure (with limited exceptions) on regulated business activities. It includes both capital and operating expenditure items that the licensee has control over.

Transformer

Converts electricity from one voltage to another.

Transmission charges

Charges made to users of the electricity transmission system. Charges cover the cost of installing and maintaining the transmission system.

Transmission system

The transmission system is the 400kV and 275kV network used to transport electricity around the country from sources of large scale generation such as power stations and off-shore wind farms to substations that feed into DNO electricity networks. The WPD network is connected to the National Grid Transmission system at a number of grid supply points.

U

Upgrading Assets

Using larger capacity network equipment rather than replacing like for like.

Unrestricted Domestic Tariff

The estimated annual cost of electricity distribution to the typical domestic customer, calculated under the Common Distribution Charging Methodology and assuming specific consumption of 3,100kWh. The tariff charge will vary for each licence area depending on customer numbers and the nature of the network.

V

Vulnerable Customers

Vulnerable customers include those customers who are medically dependent upon electricity, have special communication requirements, have other special needs with a dependence upon electricity

(e.g. stair lift), are elderly, have a transient vulnerability to a power cut (e.g. such as those who have recently left hospital) or need assistance with energy affordability.

W

Western Power Distribution (WPD)

The electricity distribution network operator that holds four distribution licences for West Midlands, East Midlands, South Wales and South West.

Worst Served Customers

Customers who experience 12 or more higher voltage interruptions over a three year period, with a minimum of three in any one year.