2015-2023

Western Power Distribution
RIIO-ED1 Business Plan Commitments Report
Year Three - 2017/18

31 October 2018

WESTERN POWER DISTRIBUTION
Serving the Midlands, South West and Wales

WPD's Business Plan Commitment Report

In June 2013, WPD published a Business Plan for the eight year period from April 2015 to the end of March 2023. The Business Plan detailed the network investment we intended to deliver, how much it would cost and the benefits that would be provided to customers and stakeholders.

The eight year period aligns with the Ofgem regulatory price control review period, known as RIIO-ED1; the first for electricity distribution to be determined using the Revenue = Incentives, Innovation and Outputs framework. The RIIO model is designed to offer Distribution Network Operators (DNOs) strong incentives to meet the challenges of delivering a low carbon, sustainable energy sector at value for money for existing and future customers.

The WPD Business Plan contains 76 outputs (or commitments) established for the RIIO-ED1 period. This document is the Business Plan Commitments Report as required by Standard Licence Condition (SLC) 50. It describes the progress made towards delivering the commitments made within the WPD Business Plan.

Structure of WPD's Business Plan Commitments reporting

In order to meet the requirements of different stakeholders we have produced reports in different formats. These enable the reader to select the report type that best meets their requirement for either a high level summary or detailed understanding of our actions. The options available are shown below.

- A single page high level performance snapshot (as required by Ofgem Business Plan Reporting Guidance) providing a set of data which will be common across each of the DNOs, allowing a high level performance comparison.

www.westernpower.co.uk/Performance-Snapshot-BP-Commitments-Report-2017-18

- A summary report for interested stakeholders which provides an overview of our performance in key areas.

www.westernpower.co.uk/Summary-Business-Plan-Commitments-Report-2017-18

- This comprehensive report for expert stakeholders which provides detailed information on our progress against the full range of commitments made within the Business Plan, including expenditure.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Electronic Document Navigation

There are two ways to navigate to individual sections of the document, we have included:
- a hyperlinked sections list below; and
- 'buttons' on the right hand side of the page.

Both will navigate to the contents page for the relevant section and from there it will be possible to navigate within each section.

List of sections

Foreword, Performance Snapshot & Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

2015-2023

Western Power Distribution
RIIO-ED1 Business Plan Commitments Report
Year Three – 2017/18

31 October 2018

Foreword
Performance Snapshot
Executive Summary

WESTERN POWER
DISTRIBUTION
Serving the Midlands, South West and Wales

Foreword, Performance Snapshot & Executive Summary Contents

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Foreword

Our business is to keep the lights on - providing a safe and reliable electricity service to 7.9 million customers who rely on us every day. We look after a network of wires, poles, pylons, cables and substations; distributing electricity to homes and business across the Midlands, South Wales and the South West.

The electricity distribution industry is facing a time of significant change. As well as maintaining the existing network infrastructure, we will need to develop more active ways of controlling power flow to manage the variable output from local generation, provide the power for electric vehicles and facilitate the storage of energy. Such change brings a range of challenges but I am confident that WPD will continue to ensure that customers receive exceptional levels of service and network reliability.

We are at the forefront of addressing these challenges and during 2017/18 we began the process of transition to the role of Distribution System Operator (DSO). At the same time we continued to focus on the delivery of our core RIIO-ED1 business plan commitments. I am pleased to say that we remain on target to fully deliver on these commitments and some of the key highlights for the year are detailed below:

- We have reduced staff accident rates to well below the average of the previous price control.
- We continue to provide excellent network performance, beating targets for customer minutes lost in all licence areas and for customer interruptions in three out of four licence areas.
- We have achieved the highest customer satisfaction rates in the industry for the seventh consecutive year.
- We have delivered a range of innovation to make our networks work smarter in a low carbon future.
- We continue to outperform connections targets for time to quote and time to connect.
- We have supported 15,229 fuel poor customers to directly save over £5.4 million a year.

Adapting to change is part of our DNA; we are used to adopting technological innovation to create a more cost effective electricity network. Within this report we provide detail of the steps that we have already taken to adapt to change. You will also find information about our transition to DSO, how we use alternative connections to achieve network flexibility, our learning from Electric Nation – Europe's largest electric vehicle trial, and information on how we plan to tackle emerging issues – such as the increasing risk of cyber-attacks.

The provision of services that meet the needs of customers is important to us and we continue to engage directly with many stakeholders including customers, consumer groups, MPs and government minsters. As this report demonstrates we are committed to ensuring that our network activities are transparent. Our aim is to ensure that WPD's performance track record and our relationship with stakeholders allow us to demonstrate the value for money and excellent service that our customers receive.

My aim is to ensure that the company remains the top-performing Distribution Network Operator in the UK, whilst being at the forefront of establishing Distribution System Operator functionality.

Robert Symons, WPD Chief Executive

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Performance Snapshot for 2017/18

1.1 This performance snapshot is based upon the requirements specified by Ofgem in the Business Plan Commitments Report guidance document, replicating the data submitted in table SI1 of the annual regulatory reporting pack. An explanation of terms can be found in the Glossary.

	West Midlands	East Midlands	South Wales	South West
Number of Customers				
No. of Customers on DNOs network	2,481,944	2,647,059	1,133,101	1,613,218
Network length				
Overhead lines (km)	23,399.5	21,073.0	17,970.2	27,758.7
Underground lines (km)	41,478.9	52,672.4	17,699.6	22,767.6
Other (Subsea cables) (km)	0.4	-	8.9	83.7
Total DNO Network Length (km)	64,878.8	73,745.5	35,678.7	50,610.0
Total expenditure (TOTEX)				
Total Expenditure (£m)*	251.2	255.6	122.8	208.6
RIIO-ED1 allowance (£m)*	253.2	248.1	140.0	210.5
% of Allowed Totex	99%	103%	88%	99%
Quality of service (unweighted)				
Customers Interrupted per 100 customers (including exceptional events)	62.0	46.3	48.0	64.0
Customer Minutes Lost (including exceptional events)	35.1	22.6	25.4	41.2
Customers Interrupted per 100 customers (excluding exceptional events)**	53.8	45.6	44.9	58.2
Customer Minutes Lost (excluding exceptional events)**	26.6	22.1	22.8	34.1
Unrestricted domestic tariff (adjusted for typical consumption)				
Tariff Charge (£)*	74.1	67.2	91.1	100.6
Connections				
Time to Quote (LVSSA) (Days)	4.1	3.5	3.3	4.9
Time to Connect (LVSSA) (Days)	28.1	28.2	28.4	25.7
Customer satisfaction				
Overall Broad Measure of Customer Satisfaction score (out of 10)	8.91	8.90	9.03	8.90
Social obligations - Individual Stakeholder Engagement and Consumer Vulnerability score (out of 10)				
8.75				
Incentive on connections engagement (ICE) – penalties incurred under the ICE scheme (£)				
No penalties incurred.				
Safety - qualitative summary				
In 2017/18 the accident rate for WPD as a whole was 0.87 accidents per 100 staff, this is better than our overall target for RIIO-ED1. In 2017/18 there were no improvement notices or prohibition notices issued by the HSE. In 2017 legal proceedings concluded for an incident where a member of staff died after a pole failed that he was working on in January 2013. WPD admitted to failings and the fine and costs have been paid.				
Environmental impact - qualitative summary				
WPD's business carbon footprint has decreased by 13% in comparison to our benchmark year of 2012/13, we have beaten our in-year target for RIIO-ED1.				
Innovation - qualitative summary				
WPD had 26 innovation projects active during 2017/18 including one new project (EFFS - Electricity, Flexibility and Forecasting System) which successfully gained funding via the Network Innovation Competition. We have undertaken a range of actions to start the process of implementing our DSO transition strategy.				

*Values are quoted in 2012/13 prices, as this is the price base used for setting allowances, within licence conditions and within Ofgem financial models. Costs incurred in 2017/18 have been deflated to be comparable to the allowances.
**The values shown are based upon data submitted to Ofgem in table SI1 as part of annual reporting on 31 July 2018. The values in SI1 vary to those stated in other sections of this report. SI1 states the total unweighted impact, whereas in this report we compare performance to targets (which includes application of weighting factors defined by Ofgem). Other differences may arise due to the values used for exceptional event exclusions which are not finalised by Ofgem until after 31 July 2018.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Summary of output performance

1.2 The tables below provide a high-level indication of progress against the 76 commitments included in the WPD RIIO-ED1 Business Plan. Each output is hyperlinked to the related detailed part of the report.

Safety		
1	HSE Intervention	✓
2	ESQCR clearances	✓
3	Inspection and maintenance	✓
4	Accident frequency	✓
5	Powering Improvement	✓
6	Working with trade unions	✓
7	Investigating accidents	✓
8	Substation security	✓
9	Educational sessions	✓
10	Safety Literature	✓

Reliability		
11	Network performance	✓
12	Speed of restoration	✓
13	12 hour outages	✓
14	Guaranteed standards	✓
15	Worst served customers	✓
16	Flood defences	✓
17	Tree clearance (resilience)	✓
18	Black start resilience	✓

Environment		
19	LCT response time	✓
20	Identifying LCT hotspots	✓
21	Uprating assets – LCT hotspot areas	✓
22	Developing smart solutions	✓
23	Using smart solutions	✓
24	Oversizing transformers for losses	✓
25	Uprating cables for losses	✓
26	Lowering vehicle emissions	✓
27	Energy efficiency – buildings	✓
28	Reducing waste to landfill	✓
29	Reducing BCF	✓
30	Reducing oil leaks from cables	✓
31	Reducing SF$_6$ leaks	✓
32	Installing bunds	✓
33	Undergrounding lines in AONBs	✓

Connections		
34	Time to connect (all market segments)	✓
35	Customer service	✓
36	Customer surveys – distributed generation	✓
37	Online project tracking	✓
38	Online information	✓
39	Connection surgeries	✓
40	Improving processes	✓
41	Guaranteed standards	✓
42	Raising awareness of competition	✓
43	Extending scope of contestable work	✓

Customer satisfaction		
44	BMCS	✓
45	CSE certification	✓
46	Telephone response times	✓
47	Abandoned calls	✓
48	Call taker availability	✓
49	Providing restoration times	✓
50	Customer call backs – faults	✓
51	Customer call backs – non faults	✓
52	On demand services	✓
53	Self service options	✓
54	Customer panel	✓
55	Stakeholder workshops	✓
56	Stakeholder report	✓
57	One day complaint resolution	✓
58	Ombudsman complaints	✓
59	Power for life	✓

Social obligations		
60	Understanding of vulnerable customers	✓
61	Training staff to recognise vulnerability	✓
62	Contacting PSR customers	✓
63	Improving PSR data	✓
64	Working with suppliers on PSR issues	✓
65	Publicising the PSR	✓
66	Providing crisis packs	✓
67	Contacting medically dependent customers during faults	✓
68	Practical support during power cuts	✓
69	Feedback from customers	✓
70	Working with local resilience forums	✓
71	Database of referral agencies	✓
72	Fuel poverty website links	✓
73	Awareness campaigns of fuel poverty assistance	✓
74	Fuel poverty training for staff	✓
75	Identification of vulnerable households	✓
76	Outreach services	✓

Key	
✓	Achieved an annual output
✓	Output on track, some aspects require further progress
-	Output under review
✖	Not met an annual output

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Executive Summary

Who we are and what we do

1.3 WPD is a Distribution Network Operator (DNO) and distributes electricity to 7.9 million customers across the West Midlands, East Midlands, South Wales and the South West. Our role is to:

- operate our network assets effectively to 'keep the lights on' for our customers;
- maintain our assets so that they are in a condition to remain reliable;
- fix our assets if they get damaged or if they are faulty; and to
- upgrade the existing networks or build new ones to provide additional electricity supplies or capacity to our customers.

1.4 We are undergoing a transition to the role of Distribution System Operator (DSO). As part of this we are developing the processes and systems that allow us to adopt lower cost flexible solutions to manage power flows on the network. This will help us to provide the network capacity for growth in locally connected generation, electric vehicle charging and the storage of energy.

1.5 Our costs make up around 17% of a domestic customer's electricity bill.

Our track record

1.6 We keep the business simple and operate an efficient business model, with a flat operational structure. We have planning and delivery teams based locally, allowing local knowledge and fast response.

1.7 Our staff put customers first, treating customers the way they would like to be treated themselves.

1.8 Our track record is second to none:

- we deliver excellent network performance, restoring customers' supplies quickly after power cuts;
- we provide the best customer service in the UK, consistently appearing at the top of Ofgem's customer satisfaction surveys;
- we deliver our work programmes, adjusting them as circumstances change, but never losing sight of getting them completed; and
- we operate local teams made up of our own staff who deliver work in a low cost and efficient way.

Our stakeholders

1.9 Our stakeholders' views are important and we engage directly with stakeholders across our business, using a range of engagement techniques.

1.10 We used stakeholder input to shape our RIIO-ED1 Business Plan and we continue to consult stakeholders to refine the services we provide.

1.11 In January 2018 we held our annual stakeholder workshops to provide an annual update on our performance, to highlight areas of emerging policy and to allow stakeholders to identify areas where they require further information on our approach and progress. The workshops led to the identification of some new stakeholder priorities which have influenced our reporting for 2017/18.

1.12 We promote our business plan commitment reporting via social media to increase awareness and stakeholder input.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Our RIIO-ED1 outputs

1.13 During RIIO-ED1 we have committed to delivering 76 outputs in the following categories.

Category	Commitment overview
Safety	To minimise the safety risks associated with operating the network
Reliability	To maintain a reliable supply of electricity and make the network more resilient to external events
Environment	To reduce WPD's impact on the environment and facilitate the use of low carbon technologies (LCTs)
Connections	To provide an excellent service for customers connecting to the network
Customer Satisfaction	To provide excellent customer service
Social Obligations	To meet the needs of vulnerable customers

Safety

1.14 Safety is at the heart of everything we do. During RIIO-ED1 we have targeted to improve on our DPCR5 accident frequency rate by 10%. We have already achieved this target, but will strive to reduce it further.

1.15 Our accident frequency rate for WPD as a whole during 2017/18 was 0.87 accidents per 100 staff.

1.16 Behavioural safety is a key theme in the delivery of the company Safety Action Plan. Behavioural safety goes beyond setting rules and enforcing compliance; it aims to change attitudes so that staff assume responsibility for their own safety and the safety of others. In 2017/18 we commissioned new behavioural safety sessions which are a natural progression from introductory sessions that staff attended in 2015/16. The sessions have been trialled at our trade union safety conferences and will be rolled out across the business in 2018/19.

1.17 We also focus on ensuring the safety of the public. To date in RIIO-ED1 we have delivered a total of 9,044 educational sessions to 221,204 schoolchildren and delivered safety literature to over 1.5 million customers, targeting those individuals who could be exposed to higher risks as a result of their work or social activities.

1.18 We have worked cooperatively with the Health and Safety Executive to ensure that our practices and policies continue to be compliant with health and safety legislation, but also to seek out and apply best practice in the management of safety.

Reliability

1.19 We continue to invest in the network, maintaining equipment, replacing poor condition assets, providing additional network capacity and undertaking tree clearance to help prevent power cuts. We have also installed remotely controlled equipment that allows us to speed up the restoration of supplies.

1.20 During the eight year RIIO-ED1 period we committed to ensuring that on average customers would have 16% fewer power cuts and have their electricity supplies restored 23% quicker. We have already achieved these targets, with a 27% reduction in the number of power cuts and a 45% reduction in the average duration of power cuts. We will continue to work to ensure that this performance is sustained over RIIO-ED1.

1.21 WPD recognises the inconvenience of long duration power cuts. Originally we proposed to reduce the number of customers off supply for more than 12 hours by 20% over the course of RIIO-ED1 but we have decided to go beyond this original target. As a result, we have reduced the number of customers off supply for more than 12 hours from 10,748 in 2012/13 to only 52 in 2017/18.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

1.22 Ofgem defines worst served customers as those that have had more than 12 higher voltage interruptions over a three year period. During RIIO-ED1, we are carrying out projects to reduce the number of customers who are classified as 'worst served' by 20%. Based on 2014/15 performance this requires a reduction of 6,812 customers over the eight year period. To date during RIIO-ED1 we have undertaken projects impacting 10,453 customers.

1.23 As well as routine tree clearance to maintain safety clearance distances, we have a resilience programme to clear trees that could fall into overhead lines during storms. For RIIO-ED1 we have increased the volume of resilience tree cutting and have completed the proposed work volumes for 2017/18.

1.24 Substations that become flooded can lead to a loss of power to many of our customers for extended periods. We protected the highest risk substations during the previous price control period and have committed to protecting an additional 75 substations against flooding over the course of RIIO-ED1. We have already completed 64% of the eight year work programme.

1.25 Whilst the likelihood of widespread power loss is low, we are working to ensure that, should such an event occur, we can continue to operate the network during a 'Black Start'. This work involves increasing the resilience of battery systems used for controlling equipment and communications. We are on track with our work programmes.

1.26 Cyber security is becoming increasingly important to ensure that services are not disrupted by malicious cyber-attacks. WPD is therefore strengthening its cyber defences to minimise the risks.

Environment

1.27 The WPD RIIO-ED1 Business Plan separated environmental outputs into those that support the increase of low carbon technology and those that reduce WPD's impact on the environment.

1.28 Since proposing our Business Plan in 2013 the energy sector has seen significant change, including the rapid growth of intermittent renewable generation, new technologies connecting to the distribution network and changes in the energy demands of consumers.

1.29 To accommodate these changes in a cost effective manner our network needs to become smarter and more flexible. In 2017 we published our strategy for transition from the passive role of Distribution Network Operator (DNO) to an active role as Distribution System Operator (DSO) – using innovative solutions to defer higher cost network reinforcement.

1.30 During 2017/18 we have started to implement this strategy and taken a range of actions, including issuing a DSO Framework which assesses the technical issues associated with the transition. In addition we have undertaken studies to assess the potential growth in distributed generation and demand and consulted with stakeholders on the potential scale of growth of energy storage. Initially focusing on our South West licence area we have worked with National Grid (as the System Operator for the transmission network) to understand the interaction between transmission and distribution networks and the implications of the changing environment for future planning.

1.31 Our extensive innovation programme is providing solutions to adapt the network to changing customer requirements. During 2017/18 we had 26 active innovation projects. These projects support our aim to provide flexible network solutions that are effective, economic and quicker than the current way of doing things.

1.32 The innovation programme has led to the introduction of alternative connections, which are being utilised to accommodate more generation onto the network and provide lower cost options for connection customers. During 2017/18 we have developed our suite of alternative connection options to extend their applicability to demand connections and storage.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

1.33 The impact of WPD's activities on the environment is monitored by measuring our business carbon footprint. We have committed to reducing our carbon footprint by 5% over the course of RIIO-ED1. After establishing this target in 2012/13, our business carbon footprint increased during the remainder of the previous price control (DPCR5). Since the start of RIIO-ED1 we have worked to improve performance and have now achieved a 13% reduction in our business carbon footprint in comparison to 2012/13.

1.34 We are also focused on reducing 'technical network losses' (the losses associated with power flowing through the network). Losses reduction activities include the proactive replacement of assets with poor losses performance and discontinuing the use of smaller assets which result in higher losses. We engage with stakeholders to gain feedback on our proposals and consequently we review our Losses Strategy on an annual basis to ensure that we take into account changes in technology, government approach and the views of industry experts and our stakeholders.

1.35 Power lines can impact on views and the landscape, especially where they pass through iconic areas. We have committed to improving visual amenity in National Parks and Areas of Outstanding Natural Beauty (AONBs) by replacing 55km of overhead lines with underground cables over the course of RIIO-ED1. To date we have completed schemes totalling 16.7km across the licence areas. Steering groups established with representatives from AONBs and National Parks are responsible for identifying and prioritising work and the delivery and timing of projects is therefore dependent on the actions of the steering group.

Connections

1.36 As of 1 April 2015 Ofgem introduced a new incentive to drive DNOs to provide a faster connection service for single connections (LVSSA) and small scale connection projects (LVSSB). This incentive considers the time to provide a quote and once the quote is accepted the time taken to deliver the connection(s). WPD has beaten the targets in all four categories in all licence areas.

1.37 WPD engages extensively with connection stakeholders to ensure that the services we deliver meet their needs. Our connection engagement activities are explained within our submission for Ofgem's Incentive for Connections Engagement (ICE).

1.38 As a result of our engagement with over 16,000 connection stakeholders during 2017/18, we have delivered 170 actions on our ICE workplan. This has included improving the information available to customers and increasing the options available to independent connections providers.

1.39 We try hard to meet the needs of connection customers and as a result we score highly in customer satisfaction surveys. In 2017/18 customers rated the four WPD licence areas within the top four places in the section of Ofgem's Broad Measure of Customer Satisfaction (BMCS) that focusses on Connections.

1.40 The Guaranteed Standards of Performance (GSOPs) for connections set out the minimum service standards that DNOs must meet under the statutory framework. We have set ourselves the challenging target of achieving zero failures under these standards. In 2017/18 we had only one failure.

1.41 Third party connection providers continue to expand their capabilities and we work with them to develop processes that facilitate competition within the connections market. We have continued with trial processes for contestable work covering self-determined points of connection, self-approved designs and HV connections completed by the ICP. We have seen an increased take up of these processes during 2017/18.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Customer satisfaction

1.42 During 2017/18 we continue to be recognised for our excellent levels of customer service. WPD's four licence areas achieved the top four scores for overall customer satisfaction derived from combining the three elements of Ofgem's Broad Measure of Customer Satisfaction (supply interruptions, connections and general enquiries).

1.43 We engaged with a range of stakeholders through a variety of events including Customer Panels (chaired by our CEO) and six annual stakeholder workshops. Engagement assisted us to understand and refine our service delivery in line with customer need.

1.44 Our telephone response times are fast, on average calls were answered in 1.84 seconds during 2017/18, beating our ambitious RIIO-ED1 target of two seconds.

1.45 We provide an estimated time of restoration for all calls related to power cuts. Call centre staff regularly refresh the estimates with updates from field staff. This information is also published on the WPD website.

1.46 When customers call us in relation to a fault we call them back to update them on the progress of the fault and to check if they need any assistance. In 2017/18, we were able to call back 99.72% of customers who had been in contact about a fault and proactively texted over 623,000 customers during HV power cuts. We provide a range of options for customers to access information on our website.

1.47 We try to get things right, but sometimes things go wrong. When we get complaints we try to resolve them quickly. Our approach has led to us resolving 85% of complaints within one day, beating our RIIO-ED1 target of 70%.

Social obligations

1.48 We recognise that we have to provide enhanced services for customers in vulnerable situations, especially those who would be impacted as a result of being without power.

1.49 The details of customers in vulnerable situations are held on our Priority Services Register (PSR), which has historically been populated by data from suppliers. Over time this data becomes out of date and we have a team of people contacting vulnerable customers to improve this data and update the records. During 2017/18, we proactively contacted 955,664 PSR customers and successfully updated 34% of records as a result.

1.50 We have continued to work with a range of expert partners during 2017/18 in order to improve our understanding of the needs of vulnerable customers. This helps to shape the services that we provide. We have set up 29 new PSR referral networks during 2017/18, taking the total to 63.

1.51 To help customers during power cuts we undertake a range of activities. During 2017/18, we distributed 1,914 crisis packs (against our target of issuing 10,000 packs during RIIO-ED1), made 170,254 calls to PSR customers during power cuts and provided British Red Cross support during 21 prolonged power cuts.

1.52 We consider the factors that can impact vulnerability, including cold homes and energy affordability. WPD now work with 85 fuel poverty partners and during 2017/18 we supported over 15,000 customers to save £5.4 million.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Expenditure

1.53 Our RIIO-ED1 business plan specified expenditure of £9.2bn over the eight year period, of which £7.1bn was related to costs under our control, referred to as Totex.

1.54 In 2017/18, WPD expenditure was 2% lower than Totex allowances for costs within the price control. This follows the first two years of RIIO-ED1 where expenditure was ahead of plan and higher than allowances.

1.55 Spend on load related capex (expenditure incurred in providing additional capacity on the network) was higher than forecast as a result of increased spend on network reinforcement required for new connections. The forecast (made in 2012/13) assumed a lower level of higher voltage demand and generation connections than have actually arisen.

1.56 Spend on non-load related capex (of which two thirds is on the replacement and refurbishment of poor condition assets), was 7% lower than forecast, partly as a result of a decrease in the number of poles found in poor condition and lower volumes of overhead line replacement.

1.57 Spend on network operating costs (including inspections, repair and maintenance, faults and tree cutting) was higher than forecast. Variations are related to increased spend on fault management (driving our excellent performance on 12 hour failures) and the costs of tree clearance contractors, which have been higher than forecast.

1.58 Non-operational capex includes the purchase of new IT systems, property, vehicles, and small tools and equipment. Expenditure was higher than forecast, following the first two years of RIIO-ED1 where allowances were underspent. New properties have been build and developed across all four licence areas, projects which were not anticipated at the time of setting the business plan. Changes to planned IT refreshes have also driven timing variances in IT expenditure.

1.59 Spend on closely associated indirect costs (related to the costs of staff and systems that enable the work on the network to be carried out – such as network design and planning) was 12% higher than forecast. Higher costs were mainly related to expenditure on core labour. There were also increases in expenditure on operational training, which reflects the recruitment of additional engineering trainees.

1.60 Business support (including Human Resources, Finance and Regulation) costs have been 16% lower than forecast.

1.61 We review the projected expenditure outturn each year and we forecast that we will end up with costs that are within our overall allowance for the eight-year RIIO-ED1 period as a whole.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Performance summary of all 76 outputs

Safety

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Meeting health and safety law	
1	No improvement notices, prohibition notices and prosecutions from the Health and Safety Executive.*	No improvement notices or HSE prohibition notices were issued during 2017/18. In June 2017 legal proceedings ended in relation to the death of a member of staff as a result of an accident at work in January 2013. We admitted our failings, and paid a fine and costs.
2	Complete work programmes to meet the Electricity, Safety, Quality and Continuity Regulations (ESQCR) 2002. ESQCR requires that overhead lines are a safe distance from either structures or the ground.	We have completed the programme for clearance distances to structures for all regions. We have completed 100% of the work scheduled for 2017/18 relating to the required ground clearance distances.
3	Complete inspection and maintenance programmes every year.	We completed the majority of work scheduled for completion during the year. A small number of tasks could not be carried out due to access issues and we put in place appropriate plans to manage these safely until the work was completed.

Reducing accidents	
4	Reduce our overall rate for the frequency of accidents by 10%.*	Our accident rate in 2017/18 is better than the 10% improvement target set for the whole of RIIO-ED1.
5	Continue to play an active part in the ENA's 'Powering Improvement' initiative, which aims to lead to improved safety performance.	Events designed around the ENA 'Powering Improvement' themes took place in 2017/18, including 'Asset Management' and 'Human and Organisational factors'.
6	Work with our trade unions to improve safety performance, including the use of more 'Behavioural Safety' initiatives.	We carried out further work to reinforce the principles of behavioural safety, including arranging further training for staff. We carried out trial training sessions with trade union representatives during the year.
7	Investigate all accidents involving members of the public, contractors or our own staff to make sure that learning points are quickly understood and communicated.**	We investigated all 100 incidents that happened during the year (58 staff accidents, 35 contractor accidents and seven significant incidents involving the public).

Substation security	
8	Improve security measures at 50 substation sites to reduce the number of repeat break-ins.*	To date in RIIO-ED1 the number of repeat break-ins has been lower than expected. We have upgraded security measures at 13 sites that have had repeat break-ins.

Educating the public	
9	Organise and run over 1,000 educational sessions to provide safety information to over 400,000 schoolchildren.*	So far in RIIO-ED1, we have delivered a total of 9,044 educational sessions to 221,204 schoolchildren.
10	Continue to publish literature on maintaining safety around electrical apparatus and send more than 500,000 copies of this literature to targeted landowners, businesses or leisure operators.*	To date in RIIO-ED1, we have issued over 1.6 million safety leaflets, or made these available through social media, to targeted groups.

* Targets are for the full eight year RIIO-ED1 period, not for a discrete year
** Target to be achieved each year of RIIO-ED1

Reliability

	Network performance	
11	Improve network performance by the end of RIIO-ED1 so that, on average, customers will have 16% fewer power cuts and have their electricity supplies restored 23% quicker. *	Customer interruptions have reduced by 27% and customer minutes lost have reduced by 45% from the underlying performance benchmark calculated for 2011/12.
12	Make sure that at least 85% of customers have their power restored within an hour of a high voltage fault happening.**	88.49% of customers had their power restored within one hour of a high voltage fault.

	Guaranteed Standards of Performance (GSOPs)	
13	Reduce by 20% the number of customers experiencing a power cut which lasts for 12 hours or more.*	The number of customers without electricity for more than 12 hours (where the GSOP applied) was 52, an improvement of over 99% on our 2012/13 benchmark performance. Customers received a set payment where we failed to achieve the GSOP.
14	Achieve no failures on all other GSOPs.**	We had no failures against most GSOP categories. However, we failed to notify eight customers of planned interruptions to their electricity supply and failed to meet the standard for restoring supply following a main fuse failure for one customer.

	Worst served customers	
15	Reduce by 20% the number of customers classified as worst served.*	To date, projects to reduce the number of worst served customers have been put in place for 10,453 customers. Our target for the whole of RIIO-ED1 was 6,812 customers.

	Making our network more resilient	
16	Apply flood defences to 75 substations, reducing the risk of both damage to equipment and power cuts due to flooding.*	To date we have installed flood defences at 48 substations. We are on track to achieve our RIIO-ED1 targets.
17	Speed up the programme of tree clearance (specifically related to storm resilience) by 40%, with the aim of clearing 700km of overhead lines per year (delivering the programme five years earlier than suggested by Government guidelines).*	We beat the tougher targets we set ourselves, clearing trees from 777km of overhead lines in 2017/18.
18	Improve substation battery life to last for 72 hours if there is a major, network-wide power loss.*	All programmes are ahead of plan.

Protection batteries – 50% of eight-year programme complete.

SCADA batteries – 50% of eight-year programme complete.

Telecommunications sites – 90% of eight-year programme complete. |

* Targets are for the full eight year RIIO-ED1 period, not for a discrete year
** Target to be achieved each year of RIIO-ED1

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Environment

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

	Make it possible for more people to use low carbon technologies (LCTs)	
19	Improve by 20% the time taken to provide a response to customers who want to use LCTs.*	We have introduced new processes to allow us to report on LCT response times and will compare response times to this benchmark performance in the future.
20	Identify LCT hotspots using information from smart meters, expert organisations and local authorities, and use this information when making decisions.	Information on the location of LCT hotspots has been added to our systems.
21	Selectively replace assets using larger assets in areas where more LCTs may be connected to our network.	We carried out 27 asset replacement projects, using larger assets, as a result of using information about LCT hotspots.
22	Reduce costs for future customers by developing smart solutions to provide alternative and innovative techniques for managing our network.	We had 26 innovation projects in progress during the year.
23	Provide additional network capacity by using traditional or 'smart' methods.	We issued 174 alternative connection quotations and connected five sites. We launched our strategy for changing to the role of Distribution System Operator.

	Reduce technical network losses	
24	Install oversized transformers when replacing assets in areas where demand for power may become higher than equipment can cope with.	We installed 25 oversized transformers.
25	Use larger cables when installing new network in LCT hotspots.	We installed 500 metres of larger cable in LCT hotspots.

	Reduce the carbon footprint of the business	
26	Make sure all replacement vehicles have lower CO_2 emissions than those they are replacing.	We have procurement processes in place to make sure that replacement vehicles have lower emissions. We are trialling the use of alternative fuels in work vehicles.
27	Make sure all new or substantially refurbished buildings meet, as a minimum, the 'excellent' standard under the Building Research Establishment Environmental Assessment Method (BREEAM).**	One new depot achieved the 'excellent' standard under BREEAM. One refurbished depot achieved the 'very good' standard, the maximum rating for a refurbished building.
28	Reduce the amount of waste sent to landfill by 20% over the first two years of RIIO-ED1 and 5% per year after this.	We have seen a reduction in the amount of waste that we produce as a business. However, we are slightly above our target for the year for reducing the amount of waste sent to landfill.
29	Reduce our carbon footprint by 5%.*	Our business carbon footprint has reduced by 13% compared with 2012/13. We have beaten our in-year target.

	Reduce the environmental risk of leaks from equipment	
30	Reduce by 75% the amount of oil lost through leaks from oil-filled cables.*	To date, the amount of oil lost from oil-filled cables has reduced by 47.6% from our benchmark performance.
31	Reduce by 17% the amount of SF6 gas that is lost from switchgear.*	The amount of SF6 gas lost as a percentage of the total amount of SF6 used on our network has reduced from 0.47% in 2015/16 to 0.26% in 2017/18 for the whole of our area. However, we missed our in-year targets in the South West and South Wales.
32	Install effective oil containment 'bunds' around plant containing high volumes of oil.*	We have completed work on 113 new and refurbished bunds so far in RIIO-ED1, going further than our forecast of 104 bunds.

	Improve the appearance in National Parks and Areas of Outstanding Natural Beauty (AONBs)	
33	Replace 55km of overhead lines in National Parks and AONBs with underground cables.*	To date during RIIO-ED1, we have replaced 16.7 km of overhead lines with underground cables.

* Targets are for the full eight year RIIO-ED1 period, not for a discrete year
** Target to be achieved each year of RIIO-ED1

Connections

Provide a faster and more efficient connections service

34	Improve the overall time taken to deliver a connection by 20%.*	We achieved Ofgem's targets for 'time to quote' and 'time to connect' for both LVSSA (single domestic connections) and LVSSB customers (two to four domestic connections and single small commercial connection projects).
35	Provide excellent customer service so that customers continue to rank us as the top-performing DNO group in customer satisfaction surveys.**	We are the top-performing DNO for the Connections Customer Survey in Ofgem's Broad Measure of Customer Satisfaction, scoring an average of 8.78 out of 10 across our four licence areas.
36	Carry out surveys with distributed generation customers to find out if they are satisfied with our service and identify where we could improve.	We achieved a score of 8.83 out of 10 for distributed generation customer satisfaction surveys. We have specified a range of improvements within our work plan for the Incentive on Connections Engagement (ICE).

Improve communication with customers

37	Develop and improve the way we process online connection applications and make it easier for customers to track the progress of their application online.	We have made amendments to our online connections information in line with stakeholder requirements. These have been published in our ICE work plan.
38	Make sure that the information we provide in documents and online is effective.	We achieved a satisfaction score of 8.88 out of 10 from customers using our online application service.

Enhance engagement with major customers

39	Host 'surgeries' every three months to help connection customers to understand our processes.	50 customers attended nine surgeries across our four licence areas.
40	Work with major customers to identify where our processes can be improved and quickly put in place any changes.	We engaged with over 16,000 stakeholders through events and over 2,000 through customer satisfaction surveys. The actions in our ICE work plan are based on suggestions we received from these events and surveys.

Guaranteed Standards of Performance

41	Aim to achieve no failures of the connection GSOPs.**	There was only one failure against the connection Guaranteed Standards of Performance during 2017/18. This was related to the time it took to provide a quote for a high voltage demand connection.

Further developing a competitive market

42	Improve customer awareness of other connection providers and regularly check that customers understand the options available to them.	We provide clear information for customers explaining that they can use other connection providers. We carry out a yearly survey to measure customer awareness. The 2017/18 survey showed that 81% of customers who had a new connection were aware of other providers.
43	Work with other connection providers to extend the type of work they can carry out, including high voltage and reinforcement work.	In 2017/18, we introduced a new group to focus on the specific needs of other connection providers. Sessions take place three times a year and we use feedback from stakeholders to improve our processes.

* Targets are for the full eight year RIIO-ED1 period, not for a discrete year
** Target to be achieved each year of RIIO-ED1

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Customer Satisfaction

Customer service

44	Continue to be the top-performing DNO group across all elements of the Broad Measure of Customer Satisfaction.**	We achieved the top four scores for overall customer satisfaction across all of the DNOs. This overall rating combines results of the three surveys for supply interruptions, connections and general enquiries.
45	Maintain certification to show that we meet the Customer Service Excellence standard.**	We were awarded 'Compliance Plus' status for 43 of the 57 standards. We were the highest-scoring organisation out of all those accredited.

Telephone response

46	Respond to phone calls quickly, answering them within two seconds.**	Our average response time for customer calls was 1.84 seconds.
47	Limit the number of calls that are abandoned before we can answer them to less than 1%.**	Only 0.13% of calls were abandoned.
48	Always provide customers with the option to talk to a member of staff when they call our contact centre.	Our systems allow us to make sure that customers are always provided with the option to talk to a member of staff.

Communication with customers

49	Provide a restoration time for every power cut.**	All power cuts have an estimated restoration time which is updated as further information is provided by field teams.
50	Call back all customers who have been in contact about a fault.**	We called back 99.7% of customers who contacted us about a fault.
51	Contact customers within two days of receiving an enquiry which was not about a fault.**	We contacted 99.6% of customers who contacted us with an enquiry which was not about a fault within two days.
52	Provide 'on-demand' messaging through text and social media for customers who want to be kept informed in other ways, rather than a phone call.	We provided on-demand messaging through text and social media. We sent 623,348 text messages during high voltage power cuts.
53	Develop 'self-service' options for customers to find information online.	We hosted 28,720 webchat conversations, our app for reporting power cuts was downloaded 4,515 times and we had over one million hits on our online map showing power cuts.

Involving stakeholders

54	Continue to host a customer panel where our CEO will meet with our expert stakeholders four times a year.	Four customer panel meetings were scheduled during the year. One panel meeting was cancelled due to heavy snow.
55	Continue to host at least six stakeholder workshops each year.	We hosted six general sessions, attended by over 250 stakeholders across our licence areas.
56	Continue to produce a stakeholder report every year providing an update on the actions we have taken as a result of stakeholder involvement.	This yearly Business Plan Commitments summary report and the separate detailed report replace the stakeholder report.

Complaints

57	Resolve at least 70% of complaints within one day.**	We resolved 85% of complaints within one day.
58	Continue to have a target of no complaints where the Ombudsman has to get involved.**	There were no complaints referred to the Ombudsman.

Guaranteed Standards of Performance awareness

59	Continue to send the 'Power for Life' publication to all 7.9 million customers and make sure it promotes the GSOPs.**	We issued 'Power for Life' to all 7.9 million customers in September 2017. It included information on the GSOPs.

* Targets are for the full eight year RIIO-ED1 period, not for a discrete year
** Target to be achieved each year of RIIO-ED1

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Social Obligations

	Improving understanding of vulnerability	
60	Work with expert partners to improve our understanding of the needs of customers in vulnerable situations	We worked with a wide range of expert partners and were accredited with the British Standards Institute (Standard BS18477), which specifies requirements for responding to customers in vulnerable situations
61	Train staff to recognise the signs of vulnerability.	We provided specialist training to the Priority Services Register (PSR) teams and contact centre staff. We provided field staff with refresher training on referring customers in vulnerable situations to the PSR.

	Improving the data held on the Priority Services Register	
62	Contact vulnerable customers at least once every two years to check the details we hold on the Priority Services Register.	We contacted 955,664 PSR customers during 2017/18.
63	Improve the quality of Priority Services Register data by working with other agencies and sharing information.	We developed new methods for referring people to the Priority Services Register, with a focus on direct sign-ups. We hosted best-practice sessions with our 63 referral partners.
64	Co-ordinate meetings with suppliers to agree criteria for vulnerability.	27 new 'common needs codes' are now in use across the industry.

	Improving the services provided for customers in vulnerable situations	
65	Raise awareness of the Priority Services Register.	We worked with a range of organisations, including water utilities and gas distribution networks, to raise awareness of the PSR.
66	Make 10,000 crisis packs available.*	To date we have issued 5,494 crisis packs over the RIIO-ED1 period.
67	Contact all customers who depend on a power supply for medical reasons every three hours during power cuts.**	During power cuts we prioritise contacting customers who depend on a power supply for medical reasons. We made 170,254 calls to PSR customers (including those who depend on a power supply for medical reasons) during power cuts.
68	Continue to provide practical support through the British Red Cross and other organisations as appropriate.	We provided British Red Cross support during 21 prolonged power cuts and once during a planned interruption.
69	Ask for feedback from customers in vulnerable situations about our service.	We achieved customer satisfaction ratings of 9.20 out of 10 from customers on the PSR who had received a routine call to check their personal details.
70	Develop ways of sharing information with local resilience forums.	We worked with 19 forums across our four licence areas. This included providing guidance to support businesses to plan for power cuts.

	Reducing fuel poverty by supporting customers to access help	
71	Build a database of regional agencies we can refer customers to for help.	There are fuel poverty projects in all our areas, working with a network of support agencies. During 2017/18 we introduced a new project with Air Liquide, who provide medical equipment in our areas.
72	Work with partners to develop links to and from our website.	Details on our fuel poverty projects and links to partner organisations are available on our website.
73	Develop joint information and awareness campaigns, and co-ordinate with partners to provide customers with help.	We have four 'Power Up' fuel poverty schemes to support customers who are facing fuel poverty. We supported 8,021 customers to save over £2.1 million a year.
74	Provide fuel poverty training to our staff who have contact with members of the public.	We provide field staff and staff in our contact centre with customised training on fuel poverty and customers in vulnerable situations

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

75	Use data analysis to help identify areas with a high concentration of vulnerable households.	In 2017/18, we refreshed the data analysis that we use to identify areas with a high concentration of vulnerable households. We also carried out further analysis on the types of organisations that currently work with vulnerable customers.
76	Develop local outreach services.	'Affordable Warmth' and other outreach services helped 7,208 customers to save over £3.3 million a year.

* Targets are for the full eight year RIIO-ED1 period, not for a discrete year
** Target to be achieved each year of RIIO-ED1

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

2015-2023

Western Power Distribution
RIIO-ED1 Business Plan Commitments Report Year Three – 2017/18

31 October 2018

Introduction

WESTERN POWER DISTRIBUTION
Serving the Midlands, South West and Wales

Introduction
Contents

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

2 Introduction

Who we are and what we do

2.1 WPD is a Distribution Network Operator (DNO) and distributes electricity to 7.9 million customers across the Midlands, South Wales and the South West. Our role is to:

- operate our network assets to 'keep the lights on';
- maintain our assets so that they are in a condition to remain reliable;
- fix our assets if they get damaged or if they are faulty; and
- upgrade the existing networks or build new ones to provide additional electricity supplies or capacity to existing and new customers.

| Keep the lights on by operating our network assets effectively | Maintain equipment so that the network is in a condition to remain reliable | Fix the network if equipment gets damaged or is faulty | Connect customers by upgrading existing networks or building new ones |
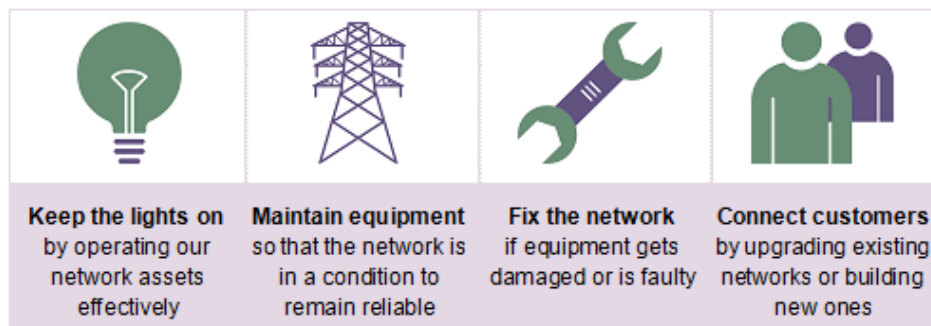
2.2 All of these tasks are carried out with the highest regard for the safety of members of the public, contractors and our own staff.

2.3 Our distribution network consists of transformers (which convert electricity from one voltage to another), underground cables and overhead lines (which carry electricity across long distances), switches (to turn on, off or to alter the routing of electricity) and service connections (which take the electricity into customers' premises or provide the connection of generation).

2.4 This network sits between what was traditionally known as the National Grid transmission network and customers. More recently the drive towards a low carbon economy has led to increasing levels of generation directly connected to the distribution network and rapid adaptation of new forms of electricity demand such as electric vehicles and battery storage. These changes mean that we will need to change the way that we operate our network. We will have a greater need to forecast energy production and use, and actively manage energy flows across the network. This will require a transition from the relatively passive role of DNO to a more active role as a Distribution System Operator (DSO) with greater responsibility for balancing sources of energy and demand.
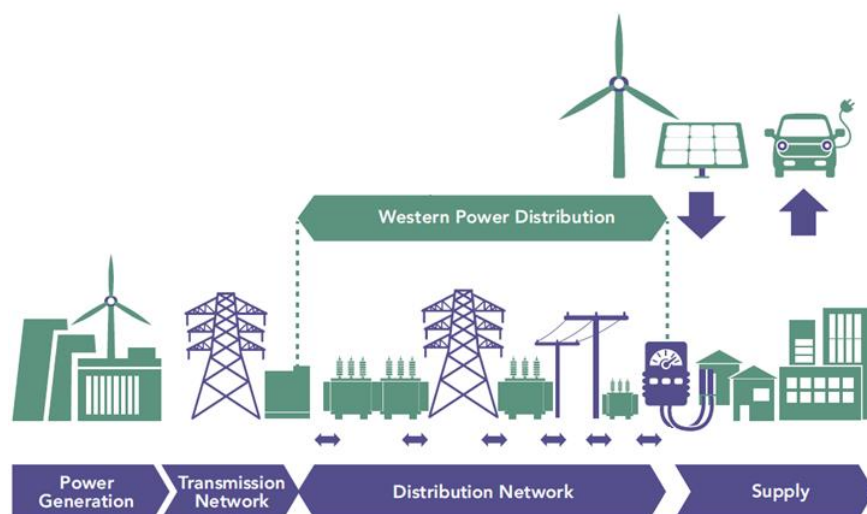
2.5 The WPD network comprises:

						Network Assets

Asset Type	Units	West Midlands	East Midlands	South Wales	South West	WPD Total
Overhead Lines	km	23,000	21,000	18,000	28,000	90,000
Underground Cable	km	41,000	53,000	18,000	23,000	135,000
Transformers	each	51,000	44,000	41,000	53,000	188,000*
Switchgear	each	85,000	99,000	36,000	79,000	299,000
Poles	each	365,000	283,000	286,000	439,000	1,374,000*
Towers (Pylons)	each	4,000	5,000	2,000	4,000	15,000
Customer Numbers	each	2,482,000	2,647,000	1,133,000	1,613,000	7,875,000
Licenced Area	km²	13,300	16,000	11,800	14,400	55,500

*WPD total does not reconcile due to rounding.

2.6 Our network is the largest in the UK, covering every kind of geography and demography from densely populated residential areas to widely dispersed rural communities.

2.7 We provide power to large cities such as Birmingham, Bristol, Cardiff and Nottingham, farming communities in counties across the Midlands, South Wales and South West and remote areas such as the Isles of Scilly.
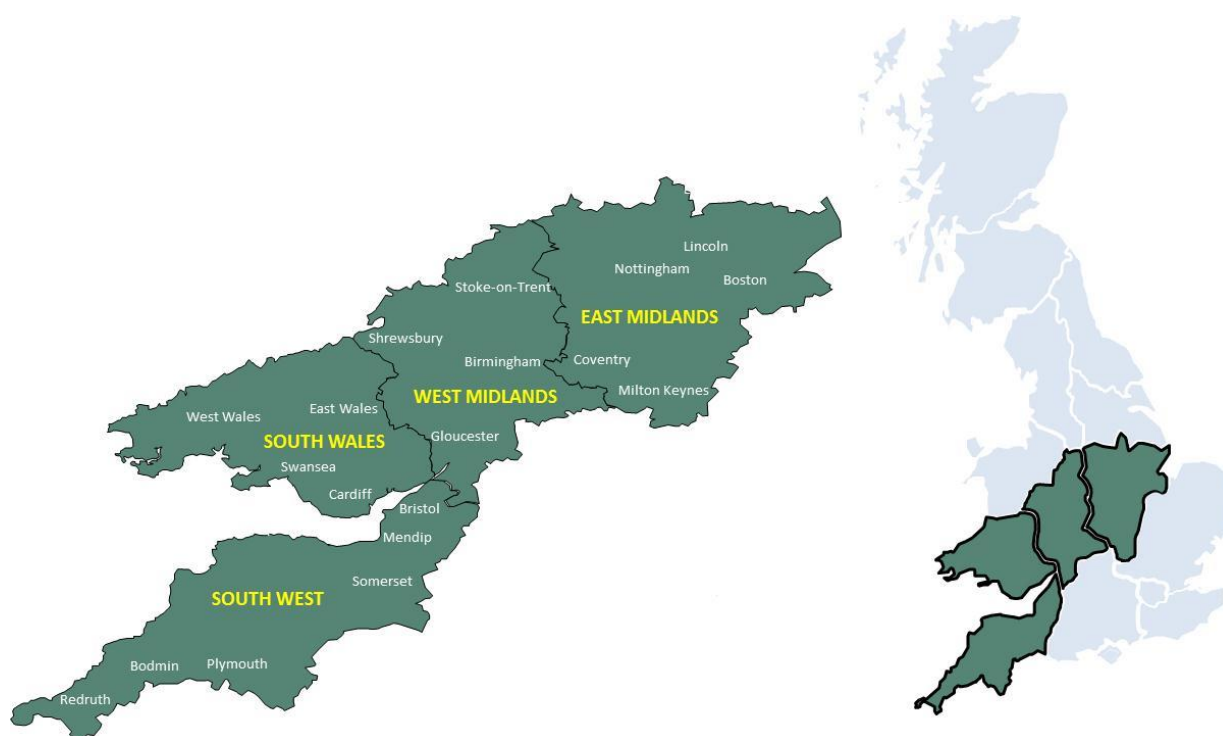
2.8 Our teams are based in local offices where they take responsibility for local issues, deliver local work programmes and respond quickly to local power cuts.

2.9 At WPD we try to get whatever we are delivering right first time. To encourage this we stress that all employees should:

- take personal responsibility;
- follow the problem through until the end;
- work with others to find a solution;
- keep the customer informed; and
- follow our Golden Rule – treat customers the way you would like to be treated.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

2.10 We continue to look for and make use of innovative techniques and encourage creativity so that we carry out all of our work in an effective and efficient manner. This helps to ensure value for money for our customers and stakeholders and a fair return for our shareholders.

2.11 Although we are facilitating competition in some of the services we provide (such as new connections) we are a natural monopoly within the geographic area we serve. We are, therefore, regulated by the Office of Gas and Electricity Markets (Ofgem).

2.12 Ofgem issues licences to DNOs that set out the obligations and responsibilities of the companies and also determines the revenues they are allowed to earn each year. WPD has four licences covering the four geographic areas of the West Midlands, East Midlands, South Wales and the South West.

2.13 Periodically, Ofgem scrutinises the Business Plans of DNOs through a price control regime. This determines how much DNOs are allowed to charge in total per year for network investment, operating costs and allowed returns.

2.14 This charge, known as the Distribution Use of System charge (DUoS), is payable by the electricity suppliers who, in turn, incorporate it into electricity charges to customers.

2.15 Our costs account for around 17% of the make-up of an average domestic customer's electricity bill.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

WPD's RIIO-ED1 Business Plan

2.16 The WPD RIIO-ED1 Business Plan was developed during 2012/13, looking forward ten years to March 2023. It sought to balance the needs of current customers (network performance, customer service and social obligations) with the needs of future customers (long term reliability and environmental issues), leading to an investment programme based upon efficient costs and refined through thorough stakeholder engagement.

2.17 Ofgem assessed all the licensees' business plans during the autumn of 2013, carrying out extensive benchmarking analysis. As part of the assessment process Ofgem had the facility to award fast track status to Business Plans that were well-justified.

2.18 WPD is very proud of being the only DNO to be awarded fast track status. The business plan was fast-tracked by Ofgem in February 2014, being accepted in full. The plan can be found on our website:

www.westernpower.co.uk/our-riioed1-business-plan

2.19 The Business Plan specifies the investment proposals, the expenditure and how this will benefit customers and stakeholders.

Forecast expenditure

2.20 In the RIIO-ED1 Business Plan, WPD proposed an overall 8-year expenditure of £9.2bn of which £7.1bn was covered by Totex. The remaining £2.1bn covers costs that are outside the control of WPD and 'passed through' to the charges we make to electricity suppliers.

2.21 Progress against this forecast is shown in the expenditure section of this report.

Outputs (commitments)

2.22 The business plan specified outputs in six main categories.

- Safety
- Reliability
- Environment
- Connections
- Customer Satisfaction
- Social Obligations

2.23 For some outputs there are specific regulatory targets. For others, the business plan stated a voluntary improvement target or described the service that was to be provided.

2.24 The performance against these targets and the progress made in developing enhanced or new services is described within this document.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Developing our approach to reporting

Ofgem guidance

2.25 The requirement for the Business Plan Commitment Reporting is defined within Standard Licence Condition 50. The guidance requires an annual report to be published each year on or before the 31 October which provides information on performance against business plan commitments.

2.26 The guidance does not specify the format, structure or contents of the report, but instead requires DNOs to shape the report to the requirements of stakeholders.

Stakeholder engagement

2.27 As part of our Stakeholder Engagement Strategy we hold an annual round of general stakeholder workshops which provides the opportunity to introduce key topics to a range of stakeholders and gain feedback on our approach.

2.28 As a result of the feedback gained from our 2015/16 workshops we adopted a three tier approach to Business Plan commitments reporting, producing:

- a one page performance summary;
- a summary report of around 20 pages providing an overview of performance in key areas for interested stakeholders; and
- a comprehensive report for expert stakeholders providing detailed performance information.

2.29 Following our 2017 workshops we listened to stakeholders and enhanced the existing expenditure information that we provided, simplified the technical explanations included within our detailed reporting and submitted our summary report to the Plain English Campaign in order to achieve the 'Crystal Mark' for use of plain English. We will continue to submit the summary report to the Plain English Campaign in future years.

2.30 We used our 2018 workshops to update stakeholders on our ongoing performance and to identify areas that have evolved since putting together the business plan in 2012/13. In response to this update stakeholders asked us to include additional reporting within this document for the following areas:

- Our transition to the role of Distribution System Operator;
- Alternative Connection offers;
- Electric vehicles; and
- Cyber security.

2.31 We have therefore included a section on each of these areas in this report, providing an introduction to the subject matter, and an explanation of our activities and future plans.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Useful links

- WPD's 2017/18 submissions for the Incentive on Connections Engagement.

https://www.westernpower.co.uk/Connections/ICE.aspx

- Competition in Connections Code of Practice.

www.westernpower.co.uk/docs/connections/competition-in-connections/CiCCoP_final_April2017.aspx

- WPD's Competition in Connections webpage.

www.westernpower.co.uk/Connections/Useful-Information/Competition-in-Connections/Information-for-Customers.aspx

- WPD's 2017/18 submissions for the Stakeholder Engagement and Customer Vulnerability Incentive.

www.westernpower.co.uk/About-us/Stakeholder-information/Stakeholder-Reports.aspx

- WPD's Environment Report.

www.westernpower.co.uk/About-us/Our-Business/Environment.aspx

- WPD's 2018 Losses Strategy.

www.westernpower.co.uk/docs/Innovation-and-Low-Carbon/Losses-strategy/Losses-Strategy-2018-Final-Version-27-02-18.aspx

- WPD's 2018 Innovation Strategy.

www.westernpower.co.uk/docs/Innovation/Innovation-Strategy/WPD-Innovation-Strategy-2018.aspx

- WPD's RIIO-ED1 Business Plan.

www.westernpower.co.uk/our-riioed1-business-plan

- Link to WPD's webpage for Guaranteed Standards of Performance.

www.westernpower.co.uk/About-us/Our-Business/customer-service/Guaranteed-Standards.aspx

- Link to our video guides for Community Energy Schemes.

www.westernpower.co.uk/Connections/Generation/Community-Energy/Community-Energy-Video-Library.aspx

- Link to our Regional Strategic Investment Options reports

www.westernpower.co.uk/About-us/Our-Business/Our-network/Strategic-network-investment.aspx

- Link to information on our DSO strategy

www.westernpower.co.uk/our-network/strategic-network-investment/dso-strategy

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

2015-2023

Western Power Distribution
RIIO-ED1 Business Plan Commitments Report
Year Three – 2017/18

31 October 2018

Safety

WESTERN POWER
DISTRIBUTION

Serving the Midlands, South West and Wales

Safety
Contents

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

3 Safety

3.1 Safety is fundamental to everything we do.

3.2 WPD has committed to a range of outputs to improve overall safety performance. These aim to minimise the safety risks to staff, contractors and members of the public.

3.3 The safety outputs are in four themes.

- Compliance with health and safety law.
- Reducing accidents.
- Substation security and theft of equipment.
- Educating the public.

Regulatory framework:

3.4 There are no Ofgem incentives for safety because the primary requirement from Ofgem is compliance with the requirements set out in legislation and enforced by the Health and Safety Executive (HSE).

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Overview of safety outputs

	Meeting health and safety law	
1	No improvement notices, prohibition notices and prosecutions from the Health and Safety Executive.*	No improvement notices or HSE prohibition notices were issued during 2017/18. In June 2017 legal proceedings ended in relation to the death of a member of staff as a result of an accident at work in January 2013. We admitted our failings, and paid a fine and costs.
2	Complete work programmes to meet the Electricity, Safety, Quality and Continuity Regulations (ESQCR) 2002. ESQCR requires that overhead lines are a safe distance from either structures or the ground.	We have completed the programme for clearance distances to structures for all regions. We have completed 100% of the work scheduled for 2017/18 relating to the required ground clearance distances.
3	Complete inspection and maintenance programmes every year.	We completed the majority of work scheduled for completion during the year. A small number of tasks could not be carried out due to access issues and we put in place appropriate plans to manage these safely until the work was completed.

	Reducing accidents	
4	Reduce our overall rate for the frequency of accidents by 10%.*	Our accident rate in 2017/18 is better than the 10% improvement target set for the whole of RIIO-ED1.
5	Continue to play an active part in the ENA's 'Powering Improvement' initiative, which aims to lead to improved safety performance.	Events designed around the ENA 'Powering Improvement' themes took place in 2017/18, including 'Asset Management' and 'Human and Organisational factors'.
6	Work with our trade unions to improve safety performance, including the use of more 'Behavioural Safety' initiatives.	We carried out further work to reinforce the principles of behavioural safety, including arranging further training for staff. We carried out trial training sessions with trade union representatives during the year.
7	Investigate all accidents involving members of the public, contractors or our own staff to make sure that learning points are quickly understood and communicated.**	We investigated all 100 incidents that happened during the year (58 staff accidents, 35 contractor accidents and seven significant incidents involving the public).

	Substation security	
8	Improve security measures at 50 substation sites to reduce the number of repeat break-ins.*	To date in RIIO-ED1 the number of repeat break-ins has been lower than expected. We have upgraded security measures at 13 sites that have had repeat break-ins.

	Educating the public	
9	Organise and run over 1,000 educational sessions to provide safety information to over 400,000 schoolchildren.*	So far in RIIO-ED1, we have delivered a total of 9,044 educational sessions to 221,204 schoolchildren.
10	Continue to publish literature on maintaining safety around electrical apparatus and send more than 500,000 copies of this literature to targeted landowners, businesses or leisure operators.*	To date in RIIO-ED1, we have issued over 1.6 million safety leaflets, or made these available through social media, to targeted groups.

* Targets are for the full eight year RIIO-ED1 period, not for a discrete year
** Target to be achieved each year of RIIO-ED1

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Meeting health and safety law

Output (1) No improvement notices, prohibition notices and prosecutions from the Health and Safety Executive.	✓

3.5   WPD works cooperatively with the HSE to ensure that practices and policies continue to be compliant with legislation and to identify and apply best practice.

3.6   The HSE can impose the following sanctions where compliance is breached.

- Where there is a significant breach of law the HSE has the power to issue a formal Improvement Notice.
- If the HSE believes that there is a serious risk of harm it has the option to stop activities immediately using a Prohibition Notice.
- Where HSE inspectors observe a 'material breach' of health and safety legislation during an inspection, they may levy a 'fee for intervention' to cover the cost of inspection visits. Whilst these fees are not fines the HSE do expect that remedial actions will be carried out.

3.7   During 2017/18 there have been no improvement notices or prohibition notices issued by the HSE.

3.8   One notice of contravention (an observation) was identified by the HSE during 2017/18. This observation was made in May 2017 in relation to the fatality of a member of staff that occurred in January 2017. This links to a prohibition notice issued by the HSE during 2016/17, we have appealed this notice and will provide details on the outcome once the appeals process has concluded. We are fully committed to supporting these ongoing investigations.

3.9   In June 2017 legal proceedings concluded for an incident where a member of staff died in January 2013, when the pole that he was working on failed. WPD admitted to failings and the fine and costs have been paid.

3.10 In 2017/18 the HSE carried out assurance visits with all DNOs specifically focussed on the role of Senior Authorised Person (SAP) and our responsibilities in relation to the Electricity, Safety, Quality and Continuity Regulations (ESQCR) 2002. These meetings were positive and there were no immediate issues identified; further feedback for all DNOs will be provided in 2018/19.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Output (2) Complete work programmes to meet the Electricity, Safety, Quality and Continuity Regulations (ESQCR) 2002. ESQCR requires that overhead lines are a safe distance from either structures or the ground. ✔

3.11 The Electricity Safety, Quality and Continuity Regulations 2002 (ESQCR) specify requirements for clearance to objects and ground as detailed below.

- Regulation 17 deals with the height of overhead lines and specifies the clearances to ground for roads and other situations. This allows safe operation of activities under the lines.
- Regulation 18 requires that overhead lines are positioned away from buildings and structures to reduce the risk of inadvertent contact. This was a new obligation introduced in 2002 that required DNOs to identify locations where overhead lines were close to structures and remove the hazard by modifying, diverting or undergrounding the lines.

3.12 A range of risks were identified as a result of regulation 18 and a work programme initiated, with most work undertaken within DPCR5 to address these risks. The work programmes for West Midlands, East Midlands and South Wales were completed prior to the commencement of RIIO-ED1. Agreement was reached with the HSE to extend the timeframe for the South West licence area to 31 March 2018, this target was achieved in December 2017.

3.13 For Regulation 17 (clearance to ground), WPD has established a risk based assessment process that measures the existing clearance height and assesses locational risk. The results determine the timescales for rectification of low clearance defects and therefore provide ongoing deadlines for the forward workplan (between 3 and 10 years). The assessment policy required all road crossings to be inspected by December 2016 and this target was achieved in August 2016, leading to a programme of defect rectification. The required timeframes for resolving defects can extend up to ten years and as a result there will be some activity that continues into RIIO-ED2.

3.14 The achievement of resolving defects within the required timeframes is monitored through key performance indicators. At the close of 2017/18 there were no regulation 17 defects that had not been rectified within the timeframes indicated by the risk assessment process.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Output (3) Complete inspection and maintenance programmes every year.	✔

3.15 One method of ensuring that the network remains safe is through regular and thorough inspection, defect rectification and maintenance.

3.16 Cycles of inspection and maintenance are built into our asset management systems so that maintenance and inspection 'tasks' are generated for assets in line with the frequency specified in policy. Local teams use the tasks to manage inspection and maintenance work and the completion of tasks is monitored through weekly key performance indicators sent to managers. WPD targets the completion of all inspection and maintenance tasks within the required period, so that no arrears exist.

3.17 The programme for inspection and maintenance work is managed over a calendar year and all tasks are expected to be completed within the year. Occasionally arrears may arise due to access issues. Where maintenance arrears arise, each instance is managed either through enhanced inspections or application of operational limitations. All arrears and associated mitigation plans are reviewed by the Operations Director.

3.18 Condition assessments are carried out during inspection and maintenance work. The results are recorded as either condition statuses or as defects. WPD policy requires defects to be fixed with the clear instruction throughout policy documents of 'DON'T IGNORE DEFECTS – FIX THEM'. Risk assessment approaches have been developed that lead to deadlines for defect rectification and the clearance of defects within the deadlines is monitored in key performance indicators.

3.19 In 2016/17 we developed a new 'dashboard' system for monitoring progress in carrying out operational tasks. This provides a high level view of progress and an automatic process for extracting reports which allow managers to easily drill down into the underlying data. The dashboard for inspection and maintenance tasks went live in April 2017 and provides improved visibility of outstanding tasks with data automatically updated on a daily basis, complementing existing weekly KPIs.

3.20 All field teams are issued with iPads for recording of information in the field. We continue to introduce new bespoke applications and develop existing ones to allow better checking of existing records and automatic updates of information from site. In 2017/18 this included a process to allow for the automatic upload of inspection data from secondary distribution substation sites.

3.21 Updates such as these allow us to streamline our processes to ensure that they are quick and easy for staff to undertake and that our mechanisms for capturing information about the current status of the network are efficient and effective. We have a range of updates planned for 2018/19, such as introducing the facility for field based staff to download risks assessments created by office based planners whilst on site – making it easier to achieve a continuous process of risk assessment from planning to delivery.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Reducing accidents

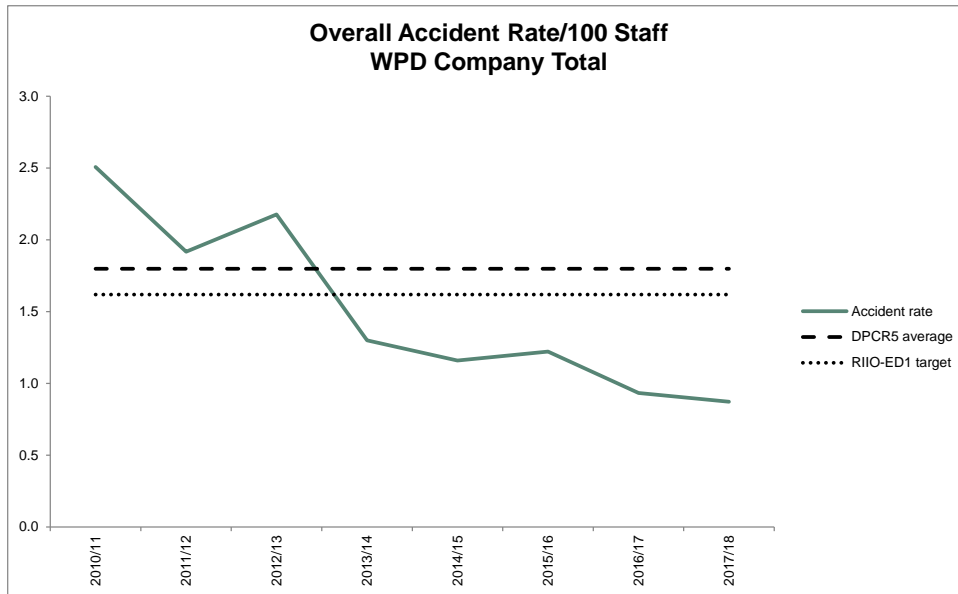> Output (4) Reduce our overall accident frequency rate by 10%. ✓

3.22 Safety is a high priority for WPD and during RIIO-ED1 WPD has committed to reducing the overall accident rate involving our own staff by 10%, in comparison to the average accident rate for the previous regulatory period DPRC5.

3.23 A number of methods are used to minimise the risk of accidents. This includes the provision of clear processes and procedures, effective training, encouraging staff to take personal responsibility for safety, a range of audit processes, investigating incidents and sharing the learning from investigations.

3.24 Each year, a safety action plan is produced informed by both reactive and proactive factors such as accident reports, near misses, industry incidents and any legal, regulatory or industry wide initiatives.

3.25 In 2017/18 a range of initiatives were used to promote safety and employee wellbeing as follows.

- The introduction of a new apprentice safety conference – an event specifically designed for apprentices covering a range of safety topics including an introduction to the theme of behavioural safety and learning from past incidents.
- A review of jointing and overhead line tools, including any associated policy and equipment updates. Further reviews to cover all technical tools will be initiated in 2018/19.
- An independent Safety Climate Assessment carried out by an external consultant was used to survey a random selection of employees to identify areas where safety performance is strong and any areas where improvements could be made.
- Actions to reduce vehicle accidents – including the trial of dashboard cameras for operational fleet vehicles and a review of the driver training options available to staff.
- The introduction of a new design of dielectric work boots as a result of jointing staff highlighting concerns about the practicalities of existing dielectric wellies.
- A poster campaign designed to remind staff of the most common cause of accident – slips, trips and falls.

3.26 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'. This allows performance to be compared across differently sized teams and organisations. The accident rate includes both accidents which have resulted in staff sickness absence and those where the individual has been able to continue to work despite the accident.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

3.27 In 2017/18 the accident rate for WPD as a whole was 0.87 accidents per 100 staff. This was an improvement on the 2016/17 accident rate of 0.93 and better than the RIIO-ED1 target. The improving trend in safety performance is shown in the following chart.

Overall Accident Rate/100 Staff
WPD Company Total

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Output (5) Continue to play an active part in the ENA's 'Powering Improvement' initiative, which aims to lead to improved safety performance.	✓

3.28 WPD continues to actively participate in the industry strategy 'Powering Improvement'. Powering Improvement is a cross-sector strategy to bring about continuous improvement in safety and occupational health in the energy generation and networks sectors. The Powering Improvement initiative started in 2010 and each year has a specific theme as shown below.

- 2010 Leadership
- 2011 Occupational health/wellbeing
- 2012 Asset management/maintenance
- 2013 Behavioural safety/personal responsibility
- 2014 Beyond 2015 – next steps
- 2015 Working with contractors
- 2016 Managing occupational ill health risks
- 2017 Asset management
- 2018 Human and organisational factors
- 2019 Review of progress and developing the next phase of 'Powering Improvement'

3.29 Powering Improvement is supported by member companies of the Energy Networks Association (ENA) (the industry body for UK transmission and distribution network operators for gas and electricity), member companies of the Association of Electricity Producers (the trade association for the UK generators), trade unions and the HSE.

3.30 The Powering Improvement theme for 2017 was 'Asset Management'. The theme was championed by WPD's Operations Director and focussed on the need to manage the risks associated with assets whilst promoting industry wide sharing of lessons learned in relation to the operation and use of the plant and equipment in our industry. An industry wide seminar was held in October 2017 – bringing together union representatives, relevant contractors and company Health, Safety, Environment and Asset Management representatives.

3.31 Actions taken within WPD to support Powering Improvement included the following:

- The preparation of case studies of past incidents on our network - to contribute to industry wide learning. This will result in the publication of collated case studies by the ENA in 2018.
- Corporate memory sessions held at trade union, contractor and apprentice safety forums – these sessions used examples of previous significant incidents to highlight the impact of asset management on safety.
- Specific case studies were shared with relevant teams – for example projects teams responsible for the construction of high voltage assets used team meetings to discuss an incident (put forward by a Transmission Company), which resulted in the fatality of an overhead linesman working on a high voltage steel tower transmission line.
- The adoption of a common risk assessment process for underground low voltage link boxes.

3.32 To support the 2018 theme 'Human and Organisational factors' we have initiated an independent Safety Climate Assessment to be conducted by an external consultant. Initial survey questions have been sent to a random selection of employees within the West Midlands licence area. The surveys are designed to identify areas where safety performance is strong and any areas where improvements could be made. The surveys are anonymous, but follow up sessions will be arranged where individuals indicate that they are willing to participate. Once surveys are complete across all four licence areas an action plan will be developed to target any improvement areas.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Output (6) Work with our trade unions to improve safety performance, including the use of more 'Behavioural Safety' initiatives.	✓

3.33 WPD works with trade union representatives to improve the health and safety of staff and to build on behavioural safety principles. The company facilitates quarterly safety forums with trade unions, with four meetings per annum in each of the four WPD licence areas and four meetings per annum at a company level.

3.34 Company level meetings are timed to occur after local forums are complete so that issues can be escalated and learning from any local discussions can be implemented company wide.

3.35 Standard topics for discussion at local forums include:

- a review of policy changes and any safety bulletins that have been issued;
- a summary of performance; and
- the discussion of specific accidents and operational incidents in order to share learning.

3.36 Additional topics covered in local forums for 2017/18 included the following:

- potential changes to the risk assessment app used by operational staff,
- ways to address concerns about the use of social media whilst at work; and
- lone working procedures.

3.37 In addition, an annual safety conference is held in each licence area, attended by all trade union appointed safety representatives. The conferences provide an opportunity for additional representatives to discuss safety performance beyond those who attend the regular forum meetings.

3.38 In 2017/18, the four safety conferences took place between January and May 2018. A standard agenda was agreed for the company as a whole and additional agenda items were added locally dependent on the requirements of each licence area. Sessions included:

- A discussion around staff accidents led by the company's Safety and Training Manager, 'More than a Number' was designed to emphasise the personal impact of some of the incidents that contributed to the safety statistics published for the year.
- A refresher on legal requirements and roles and responsibilities in maintaining a safe working environment, facilitated by the ENA's lead for Powering Improvement.
- A behavioural safety session looking at some of the behaviours and attitudes that can lead to accidents.
- A presentation from Trade Union representatives championing the importance of staff working with management teams to improve safety performance.
- A discussion of 'near miss' incidents submitted by staff across the business.

3.39 Trade union representatives are informed of all accidents and have the remit to independently investigate accidents if they wish to do so. Trade union representatives have access to the same training provided for supervisors carrying out Site Safety Visits, enabling them to independently audit operational sites.

3.40 In 2017/18 we invited Trade Union representatives to attend training to enable them to participate with a formal Panel of Enquiry. Panels are held to investigate the circumstances and causes of serious accidents, major operational incidents and significant plant failures. In 2017 we amended our policy to include the opportunity for Trade Union representatives to participate with such enquiries. To date six Trade Union representatives have taken the opportunity to attend the training in advance of participating with any future panels.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Behavioural safety

3.41 Behavioural safety is a key theme in the delivery of the company Safety Action Plan. Behavioural safety 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.

3.42 In 2015, WPD launched a behavioural safety initiative 'Switched on to Safety' with every member of staff invited to attend a training session designed to enable them to understand the concept of behavioural safety, assess their own safety behaviour and to challenge the unsafe behaviours of others. Sessions were facilitated by an external provider and combined live theatre with interactive discussion.

3.43 Business managers attended an extended session to encourage them to lead safety effectively and were provided with a range of tools to use with their teams to identify areas for improvement and to develop team centred safety action plans. These local team plans are gathered and reviewed by the central Safety Team so that best practice can be shared across the business.

3.44 In December 2017 all first and second year apprentices attended the 'Switched on to Safety' training sessions as part of the new Apprentice safety conference.

3.45 During 2017/18 new behavioural safety training has been commissioned through an external provider. The sessions are a natural progression from the training individuals have previously attended. Led by a Clinical Psychologist the 'Five Traps' workshop will explore five common scenarios that lead to accidents. Individuals will be challenged to consider their own behaviours and reasons why they might not speak up in a situation where safety could be compromised. The sessions were initially introduced at our trade union safety conferences and will be rolled out across the business during 2018/19.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

> Output (7) Investigate all accidents involving members of the public, contractors or our own staff to make sure that learning points are quickly understood and communicated. ✓

3.46 Whilst every effort is made to prevent incidents or accidents, they may still occur. When they do occur, WPD has committed to ensure that they are quickly investigated so that the causes can be understood and that appropriate action is taken without delay. This relates to any accident or incident – whether it involves staff, contractors or members of the public.

3.47 During 2017/18 there were 58 staff accidents, 35 contractor accidents and seven significant incidents involving the public. All 100 were investigated.

3.48 The information gathered from investigations is used to promote improvements in safety performance. Learning from such events, together with general information on good practice and new company initiatives is proactively shared with staff through a range of mechanisms.

- Safety articles are regularly featured within the company's staff magazine (Powerlines).
- When an incident occurs the local Team Manager produces an investigation report identifying learning points, a summary of these reports is emailed on a monthly basis to line managers for cascade and discussion in team brief meetings.
- Where incidents are particularly serious a Safety Bulletin is issued and cascaded. Within 2017/18 five Safety Bulletins were issued – each bulletin provides an explanation of the issue, relevant learning points and the actions required by individuals for the future.

3.49 Staff are encouraged to reflect on opportunities to improve safety performance and have the facility to submit details of 'near misses' (incidents that could have resulted in an accident) either manually or using the company iPads. A 'Safety Flash' system allows individuals to submit information anonymously should they wish to do so.

3.50 In 2017/18, 48 near misses were reported and 41 suggestions were submitted. All reports were collated centrally by the Safety Team and then submitted to local management teams to review and action as appropriate; no actions were outstanding for the regulatory year. 'Near miss' incidents were discussed as part of trade union, contractor and apprentice safety conferences in order to ensure that learning is shared.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Substation security

Output (8) Improve security measures at 50 substation sites to reduce the number of repeat break-ins.	✓

3.51 Historical increases in the value of metals have in the past led to high levels of theft from the network. Such theft can lead to electricity supplies being interrupted and sites being left in a hazardous state, exposing WPD employees and members of the public to increased risks.

3.52 At the time of developing the RIIO-ED1 Business Plan metal prices were high, leading to theft from the network. WPD committed to enhancing substation security measures at locations where thieves regularly attempt to break in.

3.53 In the first two years of RIIO-ED1 metal prices fell and we saw reductions in levels of theft. As a result the cost benefit of security related interventions varied, together with the level of priority placed on metal theft by external agencies such as police forces. In the last 12 months metal prices have increased but to date we have seen only marginal increases in instances of theft.

Monitoring break-ins to substations

3.54 WPD has committed to enhancing substation security measures at locations where thieves regularly attempt to break in. Analysis of repeat break-ins commenced in 2015/16; in 2017/18 there were five occasions where a specific substation was targeted more than once during the year and was therefore a candidate for potential security enhancements.

3.55 Of the five substations where a repeat break-in occurred, enhanced substation security works have been undertaken at two sites during 2017/18. Measures taken included the upgrading or replacement of site fences.

3.56 Since the start of RIIO-ED1 we have undertaken permanent upgrading works at 13 sites that were the subject of repeat break-ins.

Increasing substation security in the West Midlands and East Midlands

3.57 Following the acquisition of the Midlands licence areas in 2011, WPD committed to upgrading security measures at all sites in the West Midlands and East Midlands to bring them up to the level of protection provided in the South West and South Wales. Enhancements would ensure that all grid and primary sites would be provided with an intruder system as a minimum, with higher risk sites also being fitted with CCTV and/or electric fences.

3.58 Substations are categorised according to risk – including an assessment of the strategic importance of the substation to the network and whether there is a history of intrusion/theft.

3.59 In order to determine the works required at each site, local site surveys have been conducted. These surveys have identified that works have already been completed at some sites, consequently we have revised the number of sites requiring enhancements.

3.60 The targets and progress are detailed below; West Midlands have completed 59% of their ED1 programme to date, East Midlands have completed 68%.

Substation security enhancements – Midlands		
	West Midlands	**East Midlands**
Initial forecast of sites requiring upgraded security during RIIO-ED1	372	553
Sites requiring upgraded security – post site survey and risk assessment	182	330
Security enhancements completed during RIIO-ED1	108	223

3.61 The target number of sites requiring the installation of security enhancements may vary over the course of RIIO-ED1 as old sites are decommissioned and new requirements are identified.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Educating the public

Output (9) Organise and run over 1,000 educational sessions to provide safety information to over 400,000 schoolchildren.	✓

3.62 Children and other members of the public may not always be aware of the potential dangers from the electricity distribution network. This lack of awareness can lead to them becoming exposed to more risk during certain play, leisure or work activities.

3.63 During RIIO-ED1 WPD committed to providing over 1,000 educational sessions to 400,000 schoolchildren about the potential dangers of electricity.

3.64 Since the start of RIIO-ED1 we have delivered a total of 9,044 sessions to 221,204 schoolchildren across our four licence areas making excellent progress towards our RIIO-ED1 target.
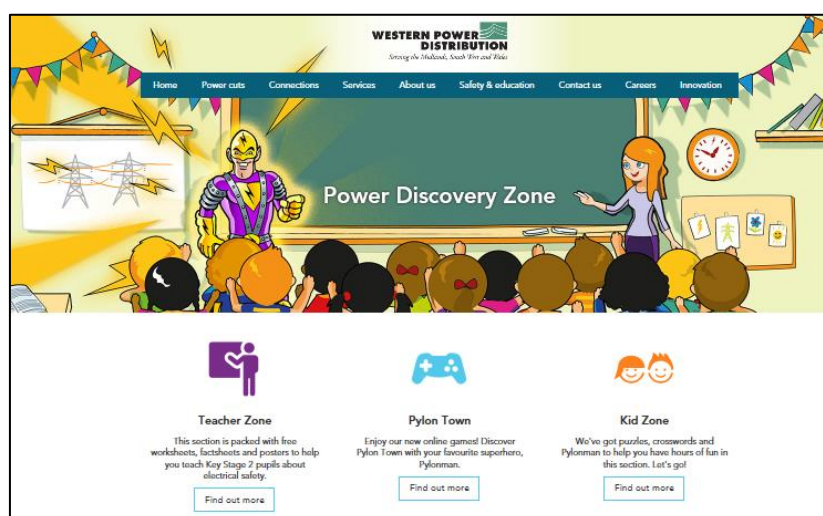
3.65 The breakdown of sessions delivered during 2017/18 is as follows:

Education sessions delivered 2017/18		
	Number of sessions	**Number of children**
West Midlands	538	18,978
East Midlands	597	20,374
South Wales	1,322	20,281
South West	839	21,985
WPD Total	**3,296**	**81,618**

3.66 Sessions are delivered in a variety of ways, including the following.

- Individual school safety talks aligned to the national curriculum.
- Crucial Crew and Life Skills sessions, co-facilitated with emergency services (and other agencies) and delivered in schools to teach young people about safety, including electrical safety.
- Permanent education safety centres at Milton Keynes, Bristol, Gloucester, Leicester and Birmingham where daily sessions are held throughout the school term to teach children about safety, including electrical safety.

3.67 In addition to the provision of formal sessions, WPD makes resources available to schools via the Power Discovery Zone – an interactive, curriculum-linked website for schools that relates to electricity and safety. The website has been given a new look in 2017/18 and updated to feature information on new topics such as renewable energy.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

3.68 During 2017/18 we have also updated our educational display boards to include information on renewable energy sources, drone flying and electric vehicles. We have also reproduced all educational materials to be available in the Welsh language if requested.

3.69 We are currently trialling a new tool to promote electrical safety to schoolchildren. In January 2017 we started developing a short virtual-reality film experience that places viewers in a scenario where two teenagers choose to enter a substation site to retrieve a lost drone. The viewer is immersed in events as though they were a third member of the group, facing questions and comments from the characters. The film demonstrates the very real dangers involved in our sites, and challenges children to understand the potentially life-threatening consequences of their actions.

3.70 Over the summer we have been gathering feedback from children and parents attending events such as the Royal Welsh and Bath and West shows. The film is hard-hitting but parents have supported our view that it is extremely important to make clear the dangers associated with our equipment.

3.71 The current film is aimed at children over 11. In the future we intend to develop another, for 7 to 10 year-olds using animation. We will use the films to support our existing school-education programmes, making young people aware of electrical safety by using a multi-media approach.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

> **Output (10) Continue to publish literature on maintaining safety around electrical apparatus and send more than 500,000 copies of this literature to targeted landowners, businesses or leisure operators.** ✔

3.72 WPD recognises that those engaged in work or recreational activities near network assets may be unaware of the potential hazards around them. WPD produces a range of information leaflets describing the dangers of overhead lines, electricity substations and underground cables and distributes these to individuals or groups potentially at risk due to their work or leisure activities. WPD holds a database of customer groups likely to fall into this category so that literature can be distributed to individuals who have the potential to be exposed to electrical safety risks.

3.73 During RIIO-ED1, WPD committed to distributing 500,000 copies of safety literature to specific landowners, business or leisure activity providers whose activities could be higher risk if undertaken near our equipment.

3.74 Safety literature continues to be distributed in traditional paper based formats, but in addition social media is used to promote safety information and direct individuals to electronic copies of our literature on the WPD website. This process can be monitored so that the number of individuals who click on online safety literature as a result of a social media post can be logged.

3.75 Safety literature entitled 'Think Safe, Stay Safe' highlights the dangers of electricity and provides examples of the type of activities that could be a risk to health.

3.76 In 2017/18 a total of 733,113 Think Safe, Stay Safe 'leaflets' were issued or made visible to customers. Our cumulative total for the RIIO-ED1 period is 1,619,424 leaflets issued.

3.77 During 2017/18 information was distributed in a variety of ways as detailed below.

- Facebook campaigns promoting electrical safety which appeared in the newsfeed of 334,634 Facebook users. Posts were actively promoted to those in the agricultural industry and participants in leisure activities such as angling, sailing and camping. We also introduced new campaigns promoting safety for people using drones.
- 192,648 individuals were targeted through promotional articles placed in a variety of publications such as the Royal Cornwall Agricultural magazine, Modern Farmer magazine and West Country Farmer magazine.
- 194,507 landowners with WPD equipment on their land were sent literature as part of the wayleaves process associated with these assets.
- 5,349 attendees for the Royal Welsh Show Winter Fair received e-tickets which featured 'Think Safe, Stay Safe' information.

3.78 Using a varied range of media helps to get the public safety message to a diverse range of individuals.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

2015-2023

Western Power Distribution

RIIO-ED1 Business Plan Commitments Report
Year Three – 2017/18

31 October 2018

Reliability

Reliability
Contents

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

4 Network reliability

4.1 Network reliability is a high priority for WPD and we have committed to achieving a range of improvements during RIIO-ED1 so that our customers have fewer and shorter power cuts.

4.2 Network Reliability outputs are in four themes.

- Network performance
- Guaranteed Standards of Performance (GSOPs)
- Worst served customers
- Enhancing network resilience

Regulatory framework:

4.3 Ofgem recognises that network reliability is important to customers and therefore has introduced a number of incentive mechanisms.

- The Interruption Incentive Scheme – which provides targets for reducing the average number of power cuts (Customer Interruptions) and the average duration of those power cuts (Customer Minutes Lost). DNOs can earn financial rewards or suffer financial penalties dependent on performance.
- Guaranteed Standards of Performance, implemented under The Electricity (Standards of Performance) Regulations 2015, require licensees to make direct payments to customers where specified performance standards are not achieved.
- Worst served customers – DNOs can recover costs associated with investment for customers who experience high volumes of power cuts.
- Network asset risk indices are used to track the delivery of asset replacement and refurbishment work. Unjustified under-delivery against targets will be penalised but justified over-delivery can lead to additional funding.
- Funding has been provided for enhancing the resilience of the network. Resilience is the ability of electricity distribution networks to continue to supply electricity to customers during disruptive events, such as severe storms, floods or black start events.

4.4 Some of the outputs committed to by WPD go beyond this framework with the aim of delivering excellent service for current customers and a reliable network in the longer term.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Overview of network performance outputs

Network performance		
11	Improve network performance by the end of RIIO-ED1 so that, on average, customers will have 16% fewer power cuts and have their electricity supplies restored 23% quicker. *	Customer interruptions have reduced by 27% and customer minutes lost have reduced by 45% from the underlying performance benchmark calculated for 2011/12.
12	Make sure that at least 85% of customers have their power restored within an hour of a high voltage fault happening.**	88.49% of customers had their power restored within one hour of a high voltage fault.

Guaranteed Standards of Performance (GSOPs)		
13	Reduce by 20% the number of customers experiencing a power cut which lasts for 12 hours or more.*	The number of customers without electricity for more than 12 hours (where the GSOP applied) was 52, an improvement of over 99% on our 2012/13 benchmark performance. Customers received a set payment where we failed to achieve the GSOP.
14	Achieve no failures on all other GSOPs.**	We had no failures against most GSOP categories. However, we failed to notify eight customers of planned interruptions to their electricity supply and failed to meet the standard for restoring supply following a main fuse failure for one customer.

Worst served customers		
15	Reduce by 20% the number of customers classified as worst served.*	To date, projects to reduce the number of worst served customers have been put in place for 10,453 customers. Our target for the whole of RIIO-ED1 was 6,812 customers.

Making our network more resilient		
16	Apply flood defences to 75 substations, reducing the risk of both damage to equipment and power cuts due to flooding.*	To date we have installed flood defences at 48 substations. We are on track to achieve our RIIO-ED1 targets.
17	Speed up the programme of tree clearance (specifically related to storm resilience) by 40%, with the aim of clearing 700km of overhead lines per year (delivering the programme five years earlier than suggested by Government guidelines).*	We beat the tougher targets we set ourselves, clearing trees from 777km of overhead lines in 2017/18.
18	Improve substation battery life to last for 72 hours if there is a major, network-wide power loss.*	All programmes are ahead of plan. Protection batteries – 50% of eight-year programme complete. SCADA batteries – 50% of eight-year programme complete. Telecommunications sites – 90% of eight-year programme complete.

* Targets are for the full eight year RIIO-ED1 period, not for a discrete year
** Target to be achieved each year of RIIO-ED1

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Network performance

| Output (11) Improve network performance by the end of RIIO-ED1 so that, on average, customers will have 16% fewer power cuts and have their electricity supplies restored 23% quicker. | ✔ |

4.5   WPD committed to improving network performance by the end of RIIO-ED1 so that on average customers would have 16% fewer power cuts (Customer Interruptions) and have their electricity supplies restored 23% quicker when a power cut occurs (Customer Minutes Lost).

4.6   The degree of improvement which we are aiming for was supported by stakeholders and in some cases was more challenging than targets proposed by Ofgem. These more stretching targets were incorporated into the Ofgem incentive mechanism called the Interruptions Incentive Scheme (IIS) – which provides financial rewards or penalties depending on performance against these targets.

4.7   Since establishing the targets we have achieved improvements in network performance. In comparison to 2012/13 performance the number of power cuts has reduced by 27%. The average duration of power cuts has reduced by 45%. This performance already exceeds the targets for the end of RIIO-ED1 and the challenge for the future will be maintaining these improvements for the remainder of RIIO-ED1.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Performance for Customer Interruptions

4.8 Customer Interruptions are expressed as the average number of interruptions per 100 customers. The following tables and charts compare performance against targets.

Unplanned Customer Interruptions targets												
	Baseline reference	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	Percentage improvement
West Midlands	93.7	89.9	88.5	86.7	85.0	83.3	81.7	80.0	78.3	76.7	75.1	20%
East Midlands	58.8	56.0	55.7	51.9	51.1	50.4	50.1	49.9	49.6	49.4	49.1	16%
South Wales	55.5	52.6	52.5	50.1	49.9	49.6	49.4	49.1	48.9	48.6	48.4	13%
South West	57.4	57.1	56.8	55.7	55.4	55.1	54.8	54.6	54.3	54.0	53.7	6%
WPD Total	69.1	66.5	65.9	63.5	62.6	61.7	61.0	60.3	59.6	58.9	58.2	16%

| Unplanned Customer Interruptions actual (excluding exceptional events)												
	Baseline reference	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	Percentage improvement to-date
West Midlands	93.7	73.6	67.6	63.1	56.1	53.2	-	-	-	-	-	43%
East Midlands	58.8	48.7	45.0	41.7	43.2	46.0	-	-	-	-	-	22%
South Wales	55.5	45.8	52.6	45.0	38.0	44.9	-	-	-	-	-	19%
South West	57.4	49.3	47.9	48.5	48.3	58.2	-	-	-	-	-	-1%
WPD Total	69.1	56.3	53.9	50.4	47.6	50.6	-	-	-	-	-	27%

4.9 For 2017/18 performance for Customer Interruptions is better than the overall RIIO-ED1 improvement target for the West Midlands, East Midlands and South Wales licence areas. For the first time since the start of RIIO-ED1, one license area (South West) missed targets for Customer Interruptions. This was the result of a series of storms; five of these storms had a significant detrimental impact on performance but did not meet exceptional event criteria and were not excluded from the measure.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Performance for Customer Minutes Lost:

4.10 Customer Minutes Lost are expressed as the average length of time in minutes that customers are without power (excluding power cuts that are under three minutes). The following tables and charts compare performance against targets.

Unplanned Customer Minutes Lost targets												
	Baseline reference	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	Percentage improvement
West Midlands	66.7	52.5	51.9	51.1	50.3	49.5	48.7	47.9	47.1	46.4	45.6	32%
East Midlands	45.2	38.2	38.0	37.8	37.6	37.3	36.5	35.7	34.9	34.2	33.5	26%
South Wales	28.7	27.6	27.6	27.5	27.5	27.4	27.4	27.3	27.3	27.2	27.1	6%
South West	35.1	36.1	35.9	35.8	35.6	35.4	35.2	35.0	34.8	34.6	34.4	2%
WPD Total	47.7	40.8	40.5	40.2	39.8	39.4	38.8	38.2	37.7	37.2	36.6	23%

Unplanned Customer Minutes Lost actual (excluding exceptional events)												
	Baseline reference	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	Percentage improvement
West Midlands	66.7	35.3	30.7	28.4	27.1	26.6	-	-	-	-	-	60%
East Midlands	45.2	24.4	21.5	19.9	20.4	22.7	-	-	-	-	-	50%
South Wales	28.7	25.1	24.2	20.7	19.5	22.7	-	-	-	-	-	21%
South West	35.1	32.9	31.1	29.0	30.1	34.1	-	-	-	-	-	3%
WPD Total	47.7	29.7	26.7	24.5	24.4	26.2	-	-	-	-	-	45%
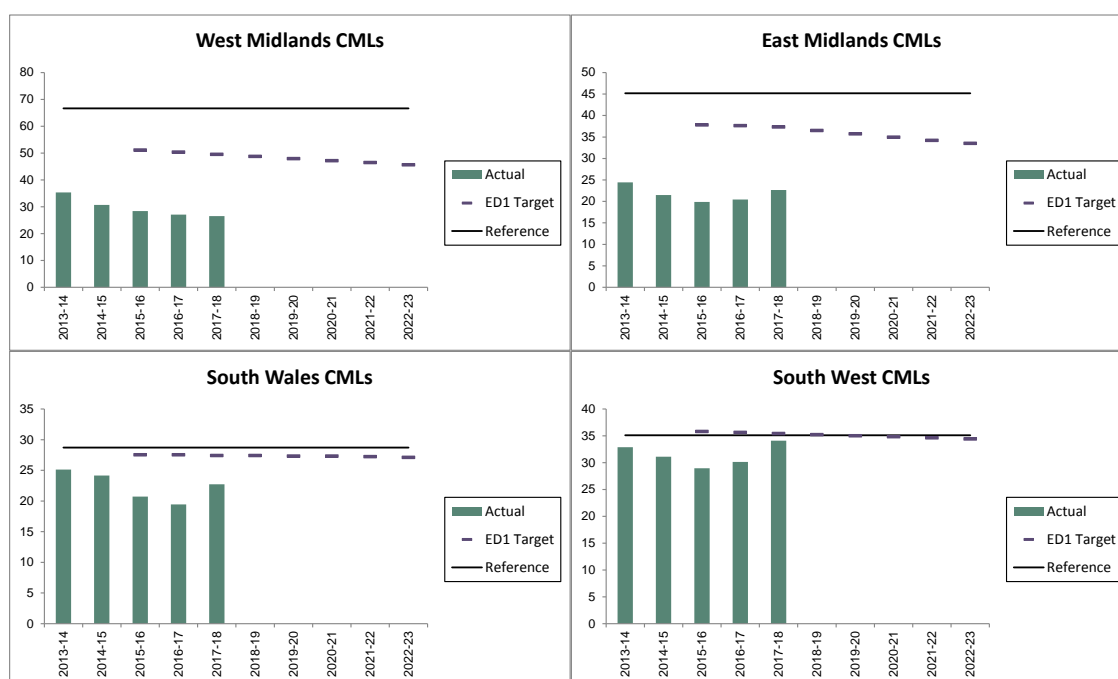
4.11 For 2017/18 performance for Customer Minutes Lost is better than the overall RIIO-ED1 improvement target and beats the in-year regulatory target in every licence area.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Our approach to improving network performance

4.12 WPD aims to improve network performance by:

- reducing the number of faults that occur;
- reducing the number of customers affected by a fault; and
- reducing the time it takes to restore supplies when a fault occurs.

4.13 The following sections detail a range of supporting activities that we monitor to ensure that we continue to achieve improved network performance.

Reducing the number of faults

Completing inspection and maintenance programmes

4.14 WPD regularly inspects and maintains the network to identify poor condition assets, repair defects and replace worn components that could otherwise lead to faults.

4.15 Ensuring the completion of inspection and maintenance work programmes assists in limiting faults by addressing conditions that could lead to asset failure.

4.16 Local teams manage inspection and maintenance work. Company policy dictates the completion of set tasks within specific time periods and the completion of tasks is monitored by managers through weekly key performance indicators, so that no arrears exist.

Removing defective poles

4.17 WPD places a high priority on the replacement of poor condition wooden poles. Overhead lines are regularly inspected and poles found in poor condition are flagged on our asset management system with a target for them to be removed from the network within a year.

4.18 This activity provides safety, reliability and resilience benefits. It removes weak points from overhead line networks; reducing the likelihood of failure, especially during severe weather conditions.

4.19 We use key performance indicators to ensure that defective poles are removed within 12 months of being identified. During 2017/18 each WPD licence area achieved 100 per cent completion against these indicators.

Using technology to locate faults before they occur

4.20 During 2016/17, WPD purchased new fault location equipment that allows the location of faults to be identified before they become an issue. The equipment can monitor transient faults (recurrent, non-permanent faults), collecting data that provides a location of where the problem could be. This allows a proactive approach to be adopted so that a transient issue is removed before it becomes a permanent fault.

4.21 Staff have been provided with training on how to use the equipment and during 2017/18 we have installed equipment in those areas with higher levels of transient faults. The benefit of installing the devices is measured by considering the number of customer interruptions that have been avoided as a result of installation.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Replacing assets

4.22 The condition of network assets degrades over time and as a result WPD has an ongoing programme of asset replacement and refurbishment. The work is primarily carried out to maintain the reliability and safety of the network.

4.23 We assess the impact of asset replacement and refurbishment by using network asset indices based upon risk. The risk assessment considers the likelihood of an asset failing (asset health) and the consequences of the failure (criticality). Assets in good condition have a lower risk than assets in poor condition, so the act of replacing a poor condition asset with a new asset reduces risk levels.

4.24 For RIIO-ED1, Ofgem placed an obligation upon all DNOs to work together to produce a common methodology for the way in which asset health, criticality and risk are assessed. This is referred to as the Common Network Asset Indices Methodology (CNAIM). This work was completed in 2016 and the targets for risk reduction during RIIO-ED1 were restated using CNAIM in December 2016.

4.25 Targets have been established by considering the risk reduction that will be delivered by specific RIIO-ED1 asset replacement and refurbishment programmes. The targets are derived from the difference between two forecast positions:

- risk at the end of 2022/23 without any intervention; and
- risk at the end of 2022/23 with planned asset replacement and refurbishment interventions.

4.26 The targets are specified as overall RIIO-ED1 targets. The table below shows both risk points delivered during 2017/18 and our performance towards the overall targets for RIIO-ED1. All four licence areas are delivering ahead of plan at the end of the third year of the price control.

Network asset indices performance					
	West Midlands	**East Midlands**	**South Wales**	**South West**	**WPD Total**
RIIO-ED1 total target	-17,228,200	-12,530,218	-9,816,502	-16,310,684	-55,885,603
Risk points reduction delivered to date during RIIO-ED1	-8,874,432	-7,214,833	-5,133,237	-7,733,488	-28,955,989
2017-18 delivered risk points reduction*	-3,106,372	-1,862,039	-1,743,108	-2,626,459	-9,337,978
Percentage of RIIO-ED1 target delivered to date	52%	58%	52%	47%	52%

* The delivered risk point values are based upon the values that would be seen in 2022/23 to enable direct comparison to the targets

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Reinforcing the network to provide enough network capacity

4.27 The amount of power that the network can carry (referred to as the capacity of the network) is limited by the rating/capability of equipment and the way in which these assets are configured. As more connections are made to the network, or customers use more electricity, spare capacity is used up and intervention is required to prevent assets overloading and failing.
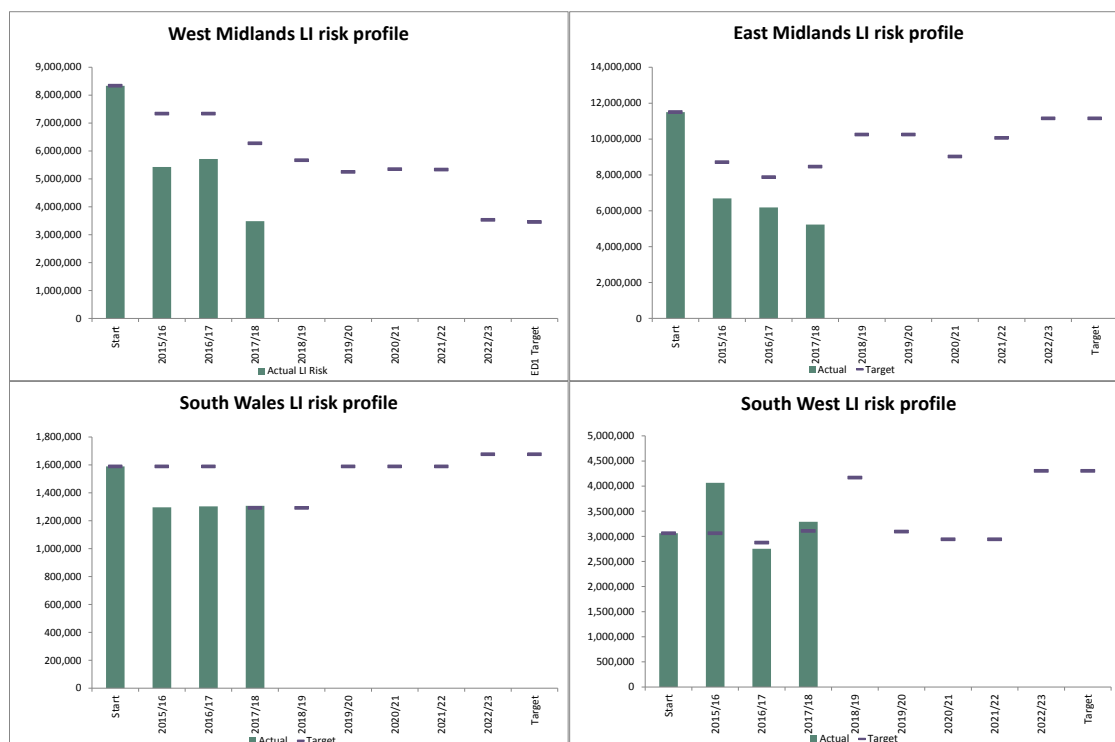
4.28 This intervention can be through:

- reinforcing the network to provide more capacity - either by adding more assets or replacing existing assets with higher rated equipment which can carry greater load, or
- managing the load to reduce the maximum demand on the network.

4.29 The network is regularly assessed to determine whether intervention work is required to reflect changing circumstances. For 33kV, 66kV and 132kV substations Ofgem has specified the use of a Load Index (LI) which compares maximum demand to capacity. The result is converted to an LI rank, with LI1 representing a substation with significant spare capacity and LI5 representing a fully utilised substation.

4.30 The LI ranking is converted to risk points by using a weighting factor for each LI rank. As demand increases more capacity is used up leading to a higher LI band and higher LI risk points. When interventions take place more capacity is provided which lowers the LI band and LI risk points.

4.31 In developing the RIIO-ED1 Business Plan we forecasted how load would grow and specified when we expected to carry out interventions. This resulted in a forecast risk profile over the RIIO-ED1 period.

4.32 Progress against the forecast risk profile is shown below. For 2017/18 LI risk is lower than forecast in West Midlands and East Midlands and broadly in line for South Wales and South West.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

P2/6 compliance

4.33 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.

4.34 In order to prevent situations where the standard cannot be met, network reinforcement work is carried out in advance of networks becoming 'non-compliant'. However, there may be situations where demand increases occur more rapidly than forecast or where there are delays to reinforcement work.

4.35 Where networks become overloaded to the extent that the requirements of P2/6 cannot be met, the requirement for temporary relief from the licence obligation is identified. These temporary exemptions are referred to as derogations.

4.36 Where the amount of demand that could be interrupted is greater than 60MW, derogations must be submitted to Ofgem and an action plan developed to achieve compliance. At lower demands, Ofgem has introduced a self-derogation process (which does not require application to Ofgem, but still requires the development and implementation of an action plan).

4.37 At the close of 2017/18 there are no Ofgem derogations to standard P2/6 and three self-derogations. Each of these self-derogations has an action plan and a target completion date in place.

P2/6 derogations					
	West Midlands	East Midlands	South Wales	South West	WPD Total
Ofgem derogations	0	0	0	0	0
Self-derogations	0	2	1	0	3

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Completing routine tree clearance programmes

4.38 Trees can cause interruptions by falling into overhead lines or by branches coming into contact with equipment.

4.39 Routine tree cutting is carried out on a cyclical basis to provide clearance from equipment as detailed within Industry Standard ENA TS 43-8. This prevents tree related faults and keeps the public safe.

4.40 This routine clearance is supplemented by a separate resilience clearance programme which focusses on the potential damage that can be caused by trees in strong winds.

4.41 For routine clearance, spans of overhead lines are inspected and will either be declared clear of tree proximity or cutting will be undertaken to achieve the required clearance distances. The volume of clearance will vary across licence areas depending on the size of the network, the nature of the network i.e. whether it is largely urban or rural, and tree population density.

4.42 During 2017/18 the following volumes of spans were cut.

| Routine tree cutting (number of spans cut) in 2017/18					
	West Midlands	East Midlands	South Wales	South West	WPD Total
LV (spans)	22,333	21,858	6,434	23,151	73,776
HV (spans)	24,014	15,385	11,720	16,850	67,969
EHV (spans)	685	994	708	865	3,252
132kV (spans)	92	296	1,063	377	1,828

4.43 Effective tree clearance assists in the reduction of tree related faults and within RIIO-ED1 WPD targeted an overall 20% reduction in both high voltage (HV) and low voltage (LV) tree related faults. A 20% improvement in LV tree related faults was targeted in each licence area. At HV a 37% improvement in tree related faults was targeted in West Midlands which would lead to an overall WPD improvement of 20%.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

HV tree related faults

4.44 Performance in 2017/18 shows a 36% improvement in the number of HV tree related faults for WPD as a whole compared to our baseline performance; the performance for each licence area against target can be seen below.

HV tree related fault targets					
	West Midlands	**East Midlands**	**South Wales**	**South West**	**WPD Total**
Underlying performance (4 year average from 2009/10 to 2012/13)	266	55	94	78	493
Target - end RIIO-ED1	168	55	94	78	395
Percentage improvement - target	37%	0%	0%	0%	20%

HV tree related fault actual					
	West Midlands	**East Midlands**	**South Wales**	**South West**	**WPD Total**
Underlying performance (4 year average from 2009/10 to 2012/13)	266	55	94	78	493
2017/18 performance	126	20	106	62	314
Percentage improvement - actual	53%	64%	-13%	21%	36%
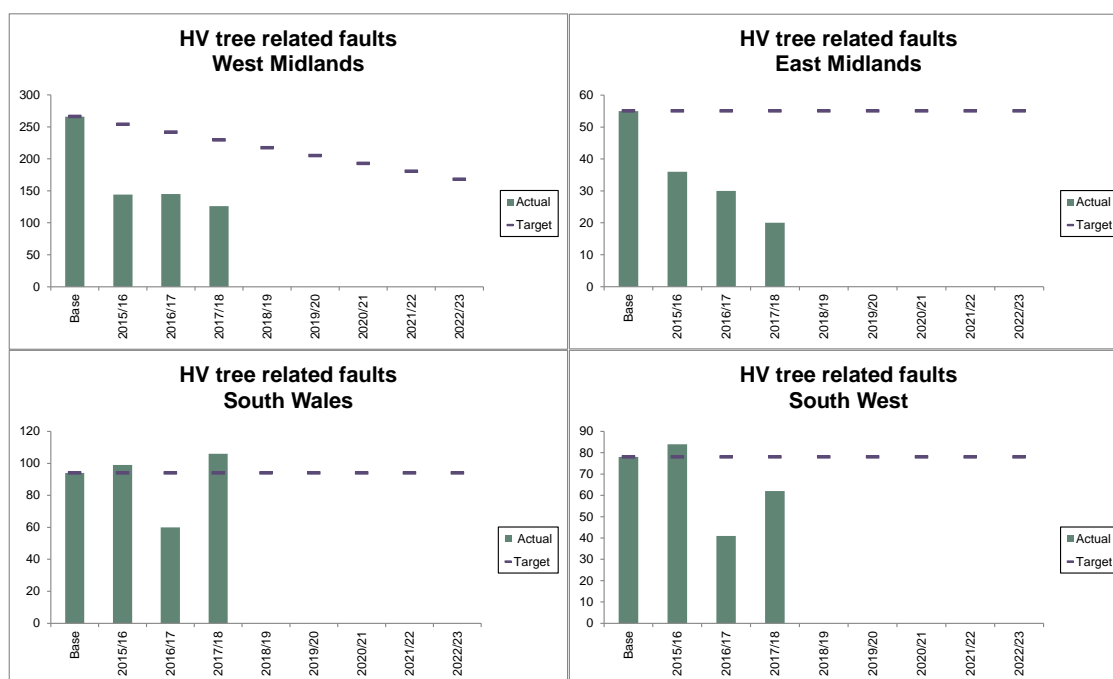
4.45 Performance in the West Midlands and East Midlands licence areas shows a continued improvement during RIIO-ED1; however we have seen increases in the number of faults in South Wales and South West during 2017/18.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

LV tree related faults

4.46 Performance during 2017/18 shows a 38% improvement in the number of LV faults for WPD as a whole; the performance for each licence area against target can be seen below.

LV tree related fault targets					
	West Midlands	East Midlands	South Wales	South West	WPD Total
Underlying performance (4 year average from 2009/10 to 2012/13)	272	229	147	369	1,017
Target - end RIIO-ED1	218	184	118	297	817
Percentage improvement target	20%	20%	20%	20%	20%

LV tree related fault actual					
	West Midlands	East Midlands	South Wales	South West	WPD Total
Underlying performance (4 year average from 2009/10 to 2012/13)	272	229	147	369	1,017
2017/18 performance	220	115	88	209	632
Percentage improvement - actual	19%	50%	40%	43%	38%
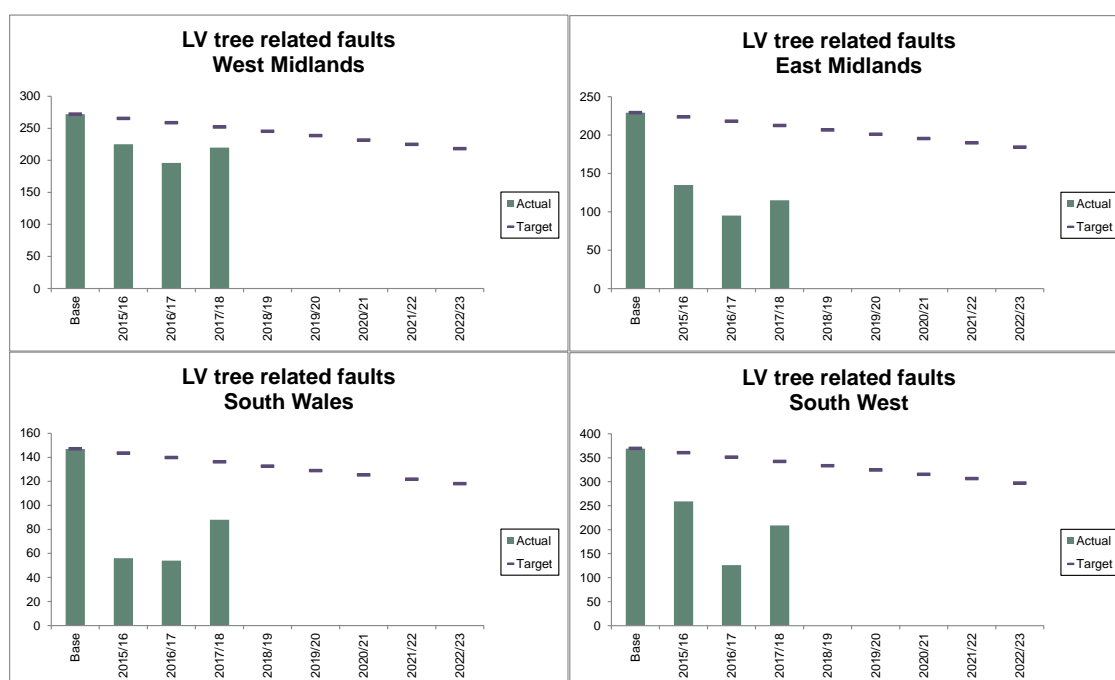
4.47 All licence areas are already beating the target to reduce LV tree related faults by 20% by the end of RIIO-ED1; however we have seen increases in the number of faults in each licence area during 2017/18, compared to the previous year

Reducing the number of customers affected by power cuts

4.48 As well as taking preventative steps to limit the number of faults, WPD is installing technology that aims to reduce the number of customers affected when a fault occurs.

Network automation

4.49 Reductions in the number of customers affected by HV faults are achieved by increasing the amount of network automation which can be utilised on the network when a fault occurs.

4.50 The installation of additional remotely control devices allows electricity supplies to be quickly rerouted or 'switched' without the need to send a person to site. These switching operations can be initiated by staff in our control centre or automatically by computer algorithms.

4.51 Additional equipment which protects the network, such as circuit breakers and intelligent fuses, enable circuits to be subdivided into smaller zones reducing the number of customers that are affected by a fault.

4.52 The development of automatic switching algorithms allows switching actions to take place without the intervention of a Control Engineer. The algorithms use information from fault passage sensors to indicate which section of the network contains the fault and then communicate with remotely controlled devices to restore supplies to the maximum number of customers possible.

4.53 The application of this technology results in an improvement in the average number of customers affected by faults. The table below shows performance in 2017/18.

Average number of customers interrupted per unplanned HV incident				
	West Midlands	East Midlands	South Wales	South West
Benchmark performance (five year average 2008/09 to 2012/13)	617	531	304	253
Target performance – end of RIIO-ED1	480	487	295	228
2017/18 performance	359	357	227	233

4.54 In year targets have been achieved in all licence areas and the West Midlands, East Midlands and South Wales licence areas have achieved our overall target for the end of RIIO-ED1.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary
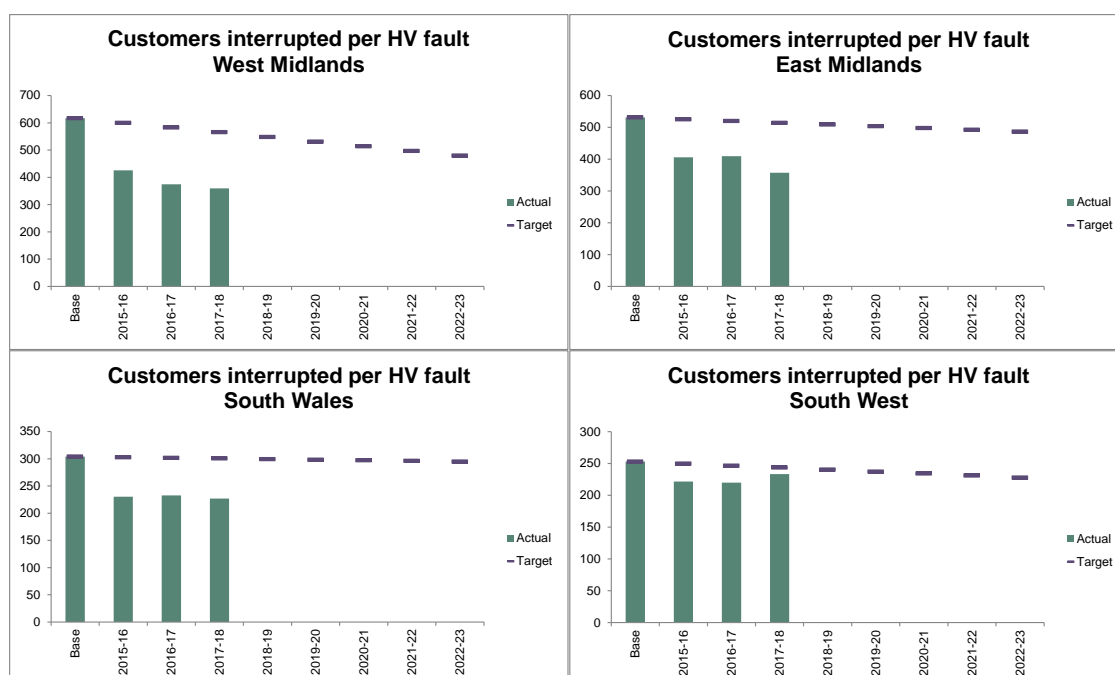
Reducing the time it takes to restore supplies

4.55 WPD has a clear focus on restoring supplies quickly.

Managerial focus

4.56 WPD promotes a culture which prioritises getting customers back on supply.

4.57 Clear management focus on speedy restoration of electricity supplies in the event of a fault has led to significant improvements in performance over a number of years.

4.58 This focus is applied to all faults, irrespective of whether the fault affects a single customer or thousands of customers.

Output (12) Make sure that at least 85% of customers have their power restored within an hour of a high voltage fault happening.	✔

4.59 An internal initiative called 'Target 60' measures the percentage of customers who are restored within one hour of when a high voltage (HV) fault occurs. During RIIO-ED1 WPD committed to achieving a Target 60 performance that exceeds 85%. The following table shows that all licence areas exceeded this target in 2017/18.

Target 60 - restoration within one hour of an HV fault (% of customers)					
	West Midlands	East Midlands	South Wales	South West	WPD Total
Performance 2017/18	90.67%	88.90%	87.24%	85.61%	88.49%

4.60 We have continued to outperform against the target as shown below.

WPD T60 performance
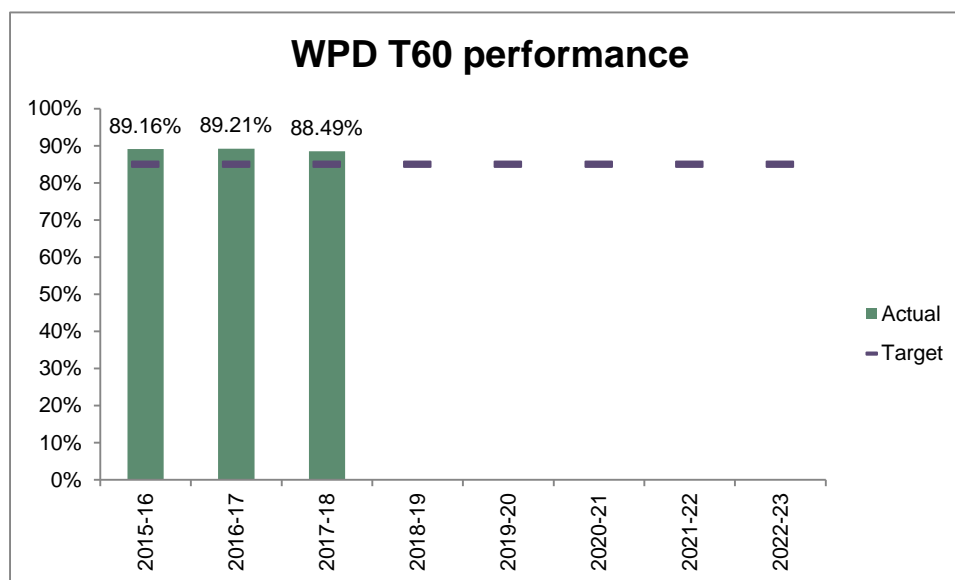
4.61 Where Target 60 is not achieved for an individual incident, the local Team Manager investigates why and produces a report by the following morning to identify the factors that contributed to failure. This report is escalated to senior managers so that learning points can be considered. In this way we continuously identify opportunities to improve performance.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Guaranteed Standards of Performance (GSOPs)

4.62 Statutory regulations set guaranteed standards of performance that DNOs must meet in relation to network reliability. Customers are entitled to payments where DNOs fail to meet the standards.
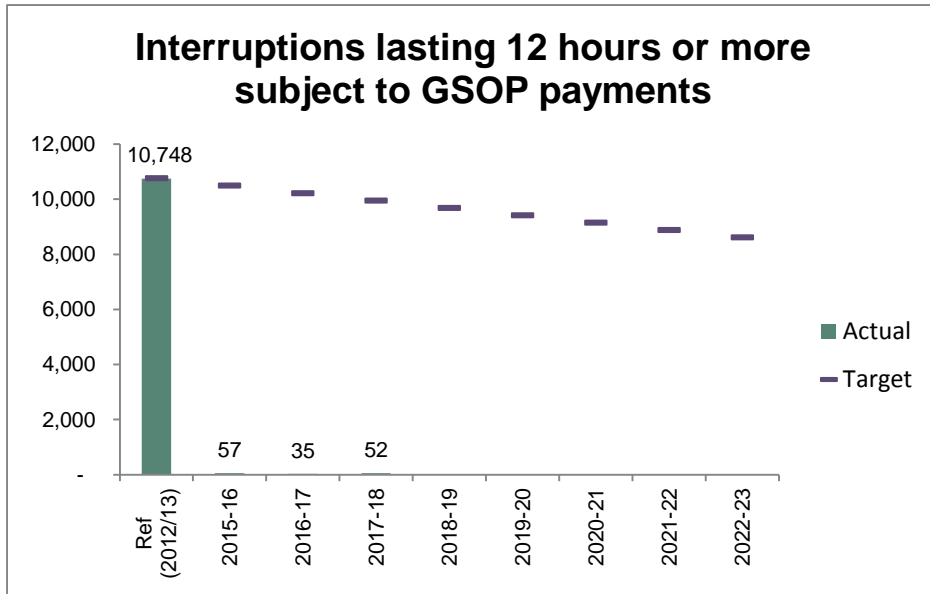
Output (13) Reduce by 20% the number of customers experiencing a power cut which lasts for 12 hours or more.	✓

4.63 GSOP EGS2 requires DNOs to restore customer supplies within 12 hours of an outage in normal weather. This is an enhancement to the previous requirement of 18 hours, a change which was introduced from the start of RIIO-ED1.

4.64 WPD pre-empted the introduction or this more challenging target by putting internal key performance indicators in place before the change in regulatory requirements.

4.65 As part of the RIIO-ED1 Business Plan, WPD committed to reduce by 20% on average the number of customers experiencing interruptions lasting 12 hours or more.

4.66 Targets were based on performance in 2012/13. Subsequently we have placed a greater focus on this and actual performance has surpassed these targets. The number of customers experiencing interruptions lasting 12 hours or more has been significantly reduced.

4.67 The targets and actual performance for 2017/18 are shown in the table below. The process for calculating the length of an outage allows exemptions in certain circumstances – for example where there is no access to the customer property or where the customer themselves requests a delay in the works required to restore supplies. Where an exemption is agreed and the clock is stopped the DNO is not required to make a GSOP payment to the customer if the 12 hour standard is not met. In the table below we have shown performance both with, and without, exemptions for 2017/18.

Customers affected by interruptions lasting 12 hours or more					
	West Midlands	**East Midlands**	**South Wales**	**South West**	**WPD Total**
Reference performance in 2012/13 (after exemptions applied).	5,080	3,367	272	2,029	10,748
Target performance - end of RIIO-ED1 (after exemptions applied)	4,064	2,694	218	1,623	8,599
2017/18 performance (total after exemptions – GSOP payments made)	17	0	0	35	52
2017/18 performance (total before exemptions)	655	636	90	605	1,986

4.68 Our performance during RIIO-ED1 can be seen below and shows those circumstances where the customer has been eligible for and received a GSOP payment for an interruption lasting 12 hours or more.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Interruptions lasting 12 hours or more subject to GSOP payments

4.69 While targets proposed a 20% improvement, we have virtually eliminated failures against the standard. To achieve this improvement we took a number of actions including:

- expanding our fleet of mobile generators to further enhance WPD's capability to provide temporary supplies;
- shortening the timescale triggers for escalation to senior managers if there is a potential that restoration will not be achieved within 12 hours; and
- amending contracts for excavation so that a digging team is on site within one hour (reduced from two hours).

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Output (14) Achieve no failures on all other GSOPs.	✓

4.70 In addition to the restoration of supplies in normal weather, The Electricity (Standards of Performance) Regulations 2015 also specify a range of other requirements. Detailed information on these guaranteed standards can be found on our website.

www.westernpower.co.uk/About-us/Our-Business/customer-service/Guaranteed-Standards.aspx

4.71 WPD has set itself a tough target to have zero failures against all the other guaranteed standards.

4.72 During 2017/18 there were only nine occasions where we didn't meet these standards. We failed to notify eight customers of planned interruptions to their electricity supply and did not meet the standard for restoring supply following a main fuse failure for one customer. We aim to learn from each failure in order to achieve our RIIO-ED1 target of zero failures and this is reflected in the fact that the number of failures has reduced from 2016/17.

Guaranteed Standards of Performance failures in 2017/18 (excluding restoration of supply within 12 hours)					
	West Midlands	East Midlands	South Wales	South West	WPD Total
Main fuse failure	-	1	-	-	1
Multiple interruptions	-	-	-	-	-
Major incident	-	-	-	-	-
Rota disconnection	-	-	-	-	-
Planned interruptions	3	1	1	3	8
Voltage enquiries	-	-	-	-	-
Missed appointments	-	-	-	-	-
Missed payments	-	-	-	-	-
Storm supply restoration	-	-	-	-	-

4.73 As promised in the RIIO-ED1 Business Plan, WPD has voluntarily doubled the value of payments for failures against guaranteed standards to provide additional recompense where service has failed to meet minimum expectations.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

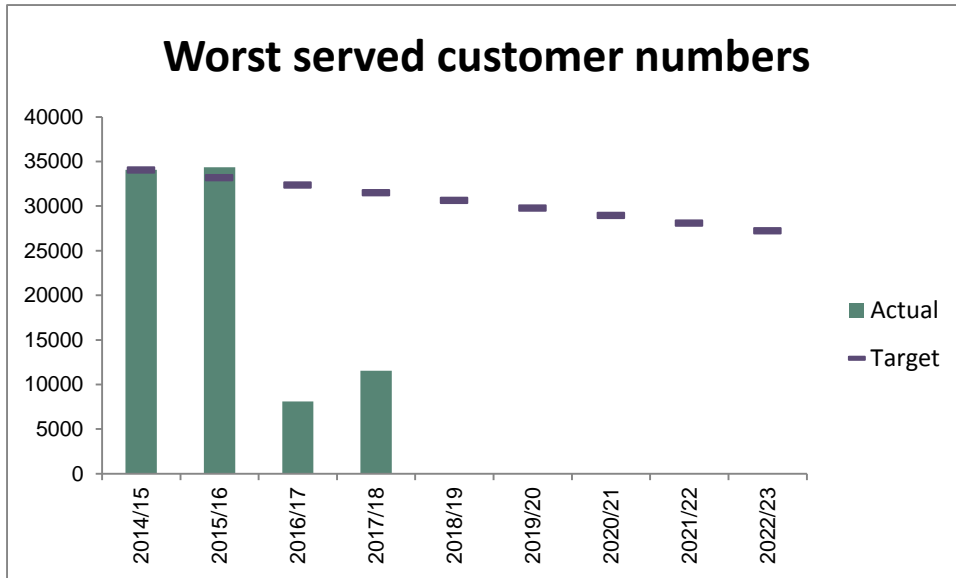## *Making improvements for worst served customers*

Output (15) Reduce by 20% the number of customers classified as worst served.	✔

4.74 Within RIIO-ED1, Ofgem has defined worst served customers as those that experience 12 or more higher voltage interruptions over a three year period (with a minimum of three interruptions experienced in each year of the period).

4.75 Improvements for worst served customers aim to reduce the number of interruptions for customers who experience an unusually poor level of service. Often these customers are connected to remote parts of the network that are predominantly served by overhead lines.

4.76 DNOs have access to funding to improve the reliability of the network for these customers. Recovery of expenditure is dependent on defined improvements in service following the works.

4.77 WPD engaged with stakeholders to determine the level of improvement required, resulting in a decision to target a 20% improvement with a maximum spend per customer of £800.

4.78 In 2012/13 WPD estimated that 20,000 customers would be classified as being worst served and committed to a 20% reduction, reducing the total number of worst served customers to 16,000. Forecast expenditure was based upon carrying out work to improve performance for 4,000 customers.

4.79 The targets have been revised using actual worst served customer numbers from 2014/15 as a reference. This leads to the following volumes.

Worst served customer numbers – updated targets					
	West Midlands	**East Midlands**	**South Wales**	**South West**	**WPD Total**
Reference performance in 2014/15	10,723	19	9,701	13,615	34,058
Target performance - end of RIIO-ED1	8,578	15	7,761	10,892	27,246
20% reduction	2,145	4	1,940	2,723	6,812

4.80 The number of worst served customers varies each year as different parts of the network are affected by faults. There will therefore be some volatility in the actual numbers of worst served customers from year to year.

4.81 In addition it may take a number of years to identify improvement opportunities, plan the schemes and deliver work. This means that there is a delay between when customers are identified as worst served and when benefits are delivered. In some cases, projects may be addressing historic worst served customers who are no longer classified as worst served when the project is complete.

4.82 The number of worst served customers has increased slightly during 2017/18 but is significantly lower than the targets set for the end of RIIO-ED1. Performance is illustrated below.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Worst served customer numbers

4.83 Since the number of worst served customers can fluctuate, the following table shows both the number of worst served customers but also the number of customers targeted by the projects carried out during RIIO-ED1.

Worst served customer numbers					
	West Midlands	**East Midlands**	**South Wales**	**South West**	**WPD Total**
Customers classified as worst served in 2017/18	8,818	0	444	2,271	11,533
Customers targeted for worst served customer work in ED1 to date	4,455	899	2,069	3,030	10,453

4.84 The type of work carried out to make improvements varies depending on fault history and the opportunities available to reduce the number of future faults, but includes solutions such as:

- the installation of additional automated switching so that fewer customers are affected when faults occur;
- the installation of bird flight diverters where birds fly into overhead lines and cause faults; or
- changing equipment which is prone to damage in exposed areas with high winds.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Making our network more resilient

4.85 Resilience refers to the ability of the network to continue to supply electricity during severe weather and to have the capacity to recover from widespread system shutdowns. In line with Ofgem requirements network resilience is monitored in three areas.

- Flooding
- Resilience tree cutting
- Black start

4.86 At the request of stakeholders we have included new information on the actions that we take in relation to the security of our network control and information technology systems (also referred to as cyber security). The control and information systems that we use play a vital role in the operation of our network and the disruption of these systems could cause power failures. Systems could be a target for malicious cyber-attacks and our resilience to such actions is therefore important in our efforts to maintain network performance and security of supply.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Output (16) Apply flood defences to 75 substations, reducing the risk of both damage to equipment and power cuts due to flooding.	✔

4.87 Climate change predictions suggest that widespread flooding will become a more regular occurrence. Although flooding can often be limited to relatively small areas of ground, substations often supply customers across much wider areas. Inconvenience can therefore be caused for customers who may not be directly affected by flood water themselves.

4.88 Flood risk is assessed based on the probability that flooding will affect electricity supplies and the number of customers likely to be impacted. Flooding is categorised as either fluvial or pluvial.

- Fluvial flooding – floods related to river or coastal sites.
- Pluvial flooding – floods related to excessive rainwater (flash flooding).

4.89 Data provided by the Environment Agency has been used to identify substation sites that are at risk of fluvial flooding and during RIIO ED1 WPD committed to installing flood defences at 27 sites. Work undertaken for fluvial sites during RIIO-ED1 is shown below.

Fluvial flood defences installed (sites)					
	West Midlands	East Midlands	South Wales	South West	WPD Total
Total number of sites to be protected during RIIO ED1 – risk of fluvial flooding	0	14	12	1	27
Flood defences installed during RIIO-ED1	0	13	4	5	22

4.90 At the time of developing the RIIO-ED1 Business Plan there was no data available on pluvial flooding so it was estimated that 48 sites would require flood defences. Subsequently, Environment Agency data has been used to identify an initial list of substations at potential risk and local teams have undertaken site surveys to assess risk levels, supplemented by independent, detailed, hydrological surveys undertaken as necessary. Work undertaken for pluvial sites during RIIO-ED1 is as follows.

Pluvial flood defences installed (sites)					
	West Midlands	East Midlands	South Wales	South West	WPD Total
Total number of sites to be protected during RIIO ED1 – risk of pluvial flooding	13	16	8	11	48
Flood defences installed during RIIO-ED1	6	3	9	8	26

4.91 Our progress towards applying flood defences to 75 substations during RIIO-ED1 is illustrated below.

Flood defence work (pluvial and fluvial)

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary
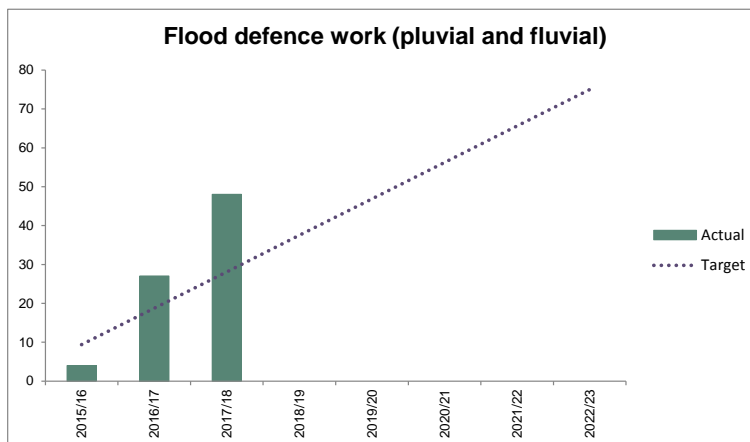
Output (17) Speed up the programme of tree clearance (specifically related to storm resilience) by 40%, with the aim of clearing 700km of overhead lines per year (delivering the programme five years earlier than suggested by Government guidelines).	✓

4.92 The resilience of overhead lines to storms is determined by how well they can withstand severe weather.

4.93 Overhead line fault rates are influenced by the following:

- The condition of overhead lines.
- The design strength of overhead lines.
- Routine tree clearance.
- Resilience tree clearance.
- Weather conditions.

4.94 During RIIO-ED1, WPD has proposed to enhance the amount of resilience tree work carried out to improve overhead line resilience.

Resilience tree clearance

4.95 Severe storms can cause network faults and lead to interruptions in supply for large numbers of customers. In particular strong winds can lead to overhead lines being damaged by trees.

4.96 Following storms in October 2002, legislation was changed to require DNOs to clear trees from strategic overhead lines to a resilient standard to prevent damage should a tree be blown over. The resilience standard requires a greater distance between trees and overhead lines compared to clearance distances required for routine tree clearance. The government's assessment aimed to make 20% of the network resilient within 25 years.

4.97 In preparation of the RIIO-ED1 Business Plan, stakeholder engagement showed strong support for additional clearance work and WPD has therefore committed to increasing the amount of resilience tree clearance by 40% to complete the programme five years earlier than originally planned. Progress in 2017/18 is as follows.

Tree clearance – resilience cutting					
	West Midlands	East Midlands	South Wales	South West	WPD Total
Target for 2017/18 (km)	181	162	149	211	703
Achieved 2017/18 (km)	222	196	149	210	777
Percentage of annual programme	123%	121%	100%	100%	111%

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Output (18) Improve substation battery life to last for 72 hours if there is a major, network-wide power loss.

✓

4.98 Although they are extremely rare, a number of blackouts across the world (prior to the start of RIIO-ED1 in the USA, Europe and across India) highlighted that very widespread supply interruptions can occur. Events can be triggered by a coincidence of circumstances, which due to network running arrangements cause disconnection of customers to cascade as each alternative network reacts to the situation. Recovery from the blackout - a 'Black Start' - can take a number of days as generation stations return online and network loads are balanced with the output of generation.

4.99 The electricity industry has developed a standard which requires major substations to have the resilience to enable safe re-energisation following either a full or partial shutdown of the electricity network lasting up to 72 hours. The main consideration is the length of time that battery systems will last – this includes protection, SCADA and telecommunication system batteries.

4.100 During RIIO-ED1 WPD has committed to making all substation battery systems at major substations and associated communications infrastructure resilient to the 72 hour standard; this will be achieved by:

- managing the capacity of protection batteries - by installing schemes which can automatically disconnect loads. This limits the drain on protection batteries which are used for tripping of switchgear and protection, whilst the substation is de-energised;
- increasing the capacity of SCADA telecommunications batteries by replacing existing batteries with higher capacity alternatives or placing additional batteries alongside the existing batteries to increase capacity; and
- enhancing the power supply capability at communication sites by either installing additional battery capacity or on-site generation.

Protection batteries

4.101 To make protection batteries resilient to 72 hours we install load disconnection schemes – which in the event of a prolonged loss of power to the substation would disconnect the battery load to prevent battery drainage. So far during RIIO-ED1 we have delivered 50% of the required programme to make protection batteries resilient and we are ahead of the delivery profile specified in the RIIO-ED1 Business Plan.
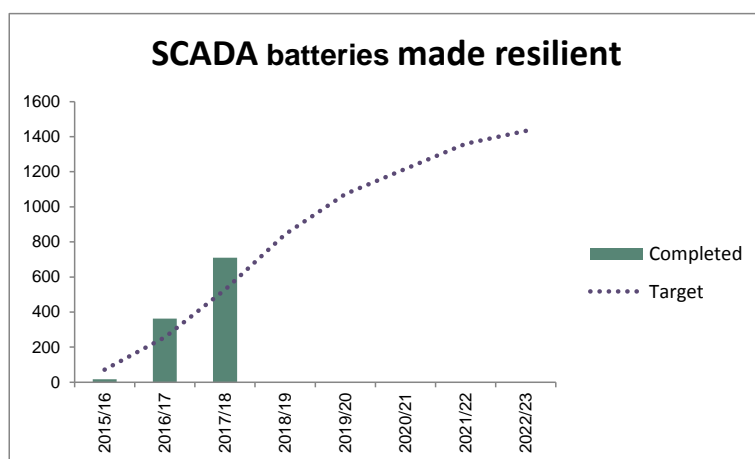
Protection batteries made resilient

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary
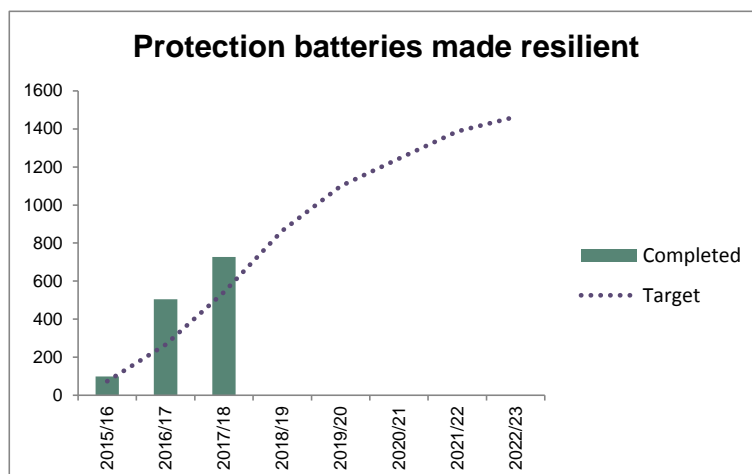
4.102 Performance in each licence area is shown below.

Resilience of protection batteries					
	West Midlands	**East Midlands**	**South Wales**	**South West**	**WPD Total**
RIIO-ED1 target (includes both EHV and 132kV protection batteries)	240	621	236	366	1,463
Protection batteries made resilient during RIIO-ED1	137	296	147	147	727

SCADA batteries

4.103 SCADA battery arrangements have been reviewed on a site by site basis to determine the most efficient method to achieve resilience; this could be by replacing batteries or enhancing capacity depending on other work requirements at the sites.

4.104 During the first three years of RIIO-ED1 we have completed 50% of our overall programme and have declared 710 batteries resilient to the 72 hour standard. We are on target to achieve our commitment for RIIO-ED1.

4.105 Performance in each licence area is detailed below.

Resilience of SCADA batteries					
	West Midlands	**East Midlands**	**South Wales**	**South West**	**WPD Total**
RIIO-ED1 target (includes both EHV and 132kV protection batteries)	254	586	190	403	1,433
SCADA batteries made resilient during RIIO-ED1	124	222	91	273	710

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Telecommunication sites

4.106 Alongside substation battery resilience the resilience of key telecommunications systems is required for successful recovery from a Black Start event. During RIIO-ED1 WPD targeted the upgrading of systems at 109 telecommunications sites in West Midlands and East Midlands.

4.107 During the course of 2015/16 additional work was also identified at sites in South Wales and the South West.

4.108 Progress against the RIIO-ED1 target has been positive with 90% of the original programme already complete – 98 out of 109 sites in the East Midlands and West Midlands. An additional 82 sites have been completed in South Wales and the South West.

Resilient telecommunications sites
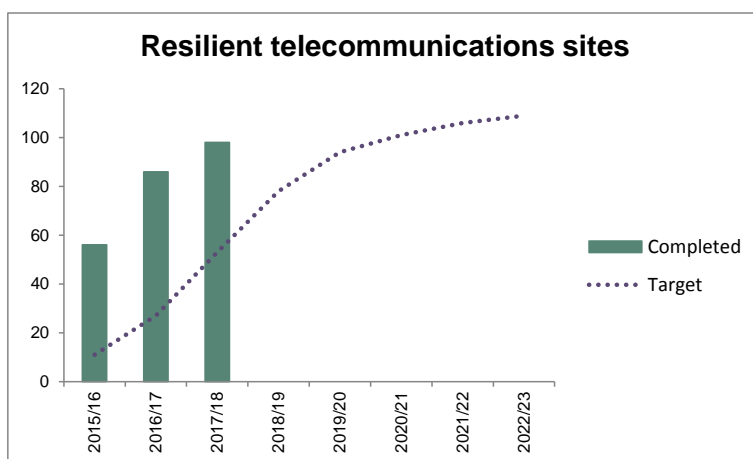
Sites completed for South Wales and the South West have not been included in the above chart as they were not part of the original targets in our RIIO-ED1 business plan.

4.109 Performance in each licence area is detailed below.

Resilience of telecommunication sites					
	West Midlands	**East Midlands**	**South Wales**	**South West**	**WPD Total**
Sites identified as part of the RIIO ED1 business plan	43	66	0	0	109
Sites made resilient during RIIO-ED1	45	53	50	32	180

Non-operational sites

4.110 In advance of RIIO-ED1, resilience work was undertaken to upgrade generator capacity at 18 non-operational sites (e.g. offices that would be used to co-ordinate resources during a black start). No further requirements have been identified for non-operational sites.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Cyber security – maintaining the resilience of our network and information systems

4.111 The magnitude, frequency and impact of digital 'cyber' attacks on computer networks and information systems is increasing. The UK's National Cyber Security Centre (NCSC) was founded in 2016 and its annual report identified that there had been 590 'significant' attacks during its first year of operation.

4.112 The term cyber security describes the technology, processes and controls that can be put in place to protect systems against such attacks.

4.113 We take the protection of our assets and systems very seriously. This means that we design and protect our systems to defend against attacks and have robust policies and procedures in place to ensure that we do not put these systems at risk when carrying out our operations.

4.114 Cyber security risks are changing as the industry increasingly adopts digital technology and becomes more reliant on IT and telecommunications for data acquisition and monitoring and control of the network.

4.115 The government recognises the need to ensure the security of network and information systems across the UK and in May 2018 introduced the Network and Information Systems (NIS) Regulations. The NIS regulations are designed to achieve a high, common level of network and information systems security across the UK. The legislation requires WPD to demonstrate active cyber security risk management, report incidents that disrupt energy supply and take action to rectify those incidents.

4.116 WPD already works closely with government departments (including the NCSC) and other energy companies to share information that ensures the company is aware of and can react to the latest issues for threats.

4.117 Since the introduction of the NIS regulations we have:

- Undertaken a review of our policies and procedures to meet the requirements of new legislation, specifically the General Data Protection Regulation (GDPR) and the NIS Regulations.
- Participated with industry groups which are developing strategies, standards and guidance around cyber security in the energy sector. These groups are working to understand the cyber security requirements of new strategies for delivering energy,
- Worked with our network operations and innovation teams to enable the development and secure deployment of new technologies to increase our operational effectiveness with our transition to the role of DSO.
- Continued to review our critical systems against established and emerging cyber security risks, taking action when and where needed to protect the integrity and security of our assets and data.
- Invested in our network and information systems to ensure continuity of our essential service, building resilience into our systems and accounting for cyber related attacks in our emergency response and business continuity plans.
- Extended and strengthened our cyber security capability - we have introduced new roles, engaged specialist internal and external support and implemented training and awareness programmes.

4.118 An example of the cyber security work that we are undertaking relates to our transition to DSO. We anticipate that customers will increasingly contribute to our ability to manage energy flows across the network, by controlling the amount of energy that they either take from the network or the amount that they supply to the network. To allow the safe interaction of our network information systems with those of third parties we are developing secure systems architecture and protocols that allow for interconnection and inter-operability.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

2015-2023

Western Power Distribution
RIIO-ED1 Business Plan Commitments Report
Year Three – 2017/18

31 October 2018

Environment

Environment
Contents

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

5 Environment

5.1 Business plan commitments for the environment cover facilitation of a move to a low carbon economy and a reduction of the impact of WPD's activities on the environment.

5.2 Environment outputs are in five themes.

- Facilitating increased volumes of low carbon technologies (LCTs).
- Reducing technical network losses.
- Reducing the carbon footprint of the business.
- Reducing the environmental risk of leaks from equipment.
- Improving visual amenity in National Parks and Areas of Outstanding Natural Beauty (AONBs).

5.3 Changes to the way that electricity is generated and consumed requires electricity networks to adapt for the challenges of a low carbon future. As a result the scope of our activities in this area has expanded and we are reporting on additional areas of work that have become integral to our business and the delivery of our RIIO ED1 business plan. These are detailed in a new section called 'Developments in the Energy System'.

Regulatory framework

5.4 Environmental impacts caused by DNO activities are not financially incentivised; instead they are reliant on a reputational system of league tables to demonstrate the effectiveness of the management of environmental issues.

5.5 Ofgem has placed a licence obligation on DNOs to reduce losses where it is cost effective to do so. In addition, Ofgem has introduced a discretionary reward incentive mechanism that encourages DNOs to develop and adopt innovative ways of reducing losses.

5.6 During RIIO-ED1 Ofgem requires DNOs to produce and publish an annual Environment Report which details the activities carried out in relation to environmental matters and facilitating the low carbon transition. The WPD Environment Report compliments the content of this section and can be found on our website.

www.westernpower.co.uk/About-us/Our-Business/Environment.aspx

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Overview of environmental outputs

Make it possible for more people to use low carbon technologies (LCTs)

19	Improve by 20% the time taken to provide a response to customers who want to use LCTs.*	We have introduced new processes to allow us to report on LCT response times and will compare response times to this benchmark performance in the future.
20	Identify LCT hotspots using information from smart meters, expert organisations and local authorities, and use this information when making decisions.	Information on the location of LCT hotspots has been added to our systems.
21	Selectively replace assets using larger assets in areas where more LCTs may be connected to our network.	We carried out 27 asset replacement projects, using larger assets, as a result of using information about LCT hotspots.
22	Reduce costs for future customers by developing smart solutions to provide alternative and innovative techniques for managing our network.	We had 26 innovation projects in progress during the year.
23	Provide additional network capacity by using traditional or 'smart' methods.	We issued 174 alternative connection quotations and connected five sites. We launched our strategy for changing to the role of Distribution System Operator.

Reduce technical network losses

24	Install oversized transformers when replacing assets in areas where demand for power may become higher than equipment can cope with.	We installed 25 oversized transformers.
25	Use larger cables when installing new network in LCT hotspots.	We installed 500 metres of larger cable in LCT hotspots.

Reduce the carbon footprint of the business

26	Make sure all replacement vehicles have lower CO2 emissions than those they are replacing.	We have procurement processes in place to make sure that replacement vehicles have lower emissions. We are trialling the use of alternative fuels in work vehicles.
27	Make sure all new or substantially refurbished buildings meet, as a minimum, the 'excellent' standard under the Building Research Establishment Environmental Assessment Method (BREEAM).**	One new depot achieved the 'excellent' standard under BREEAM. One refurbished depot achieved the 'very good' standard, the maximum rating for a refurbished building.
28	Reduce the amount of waste sent to landfill by 20% over the first two years of RIIO-ED1 and 5% per year after this.	We have seen a reduction in the amount of waste that we produce as a business. However, we are slightly above our target for the year for reducing the amount of waste sent to landfill.
29	Reduce our carbon footprint by 5%.*	Our business carbon footprint has reduced by 13% compared with 2012/13. We have beaten our in-year target.

Reduce the environmental risk of leaks from equipment

30	Reduce by 75% the amount of oil lost through leaks from oil-filled cables.*	To date, the amount of oil lost from oil-filled cables has reduced by 47.6% from our benchmark performance.
31	Reduce by 17% the amount of SF6 gas that is lost from switchgear.*	The amount of SF6 gas lost as a percentage of the total amount of SF6 used on our network has reduced from 0.47% in 2015/16 to 0.26% in 2017/18 for the whole of our area. However, we missed our in-year targets in the South West and South Wales.
32	Install effective oil containment 'bunds' around plant containing high volumes of oil.*	We have completed work on 113 new and refurbished bunds so far in RIIO-ED1, going further than our forecast of 104 bunds.

Improve the appearance in National Parks and Areas of Outstanding Natural Beauty (AONBs)

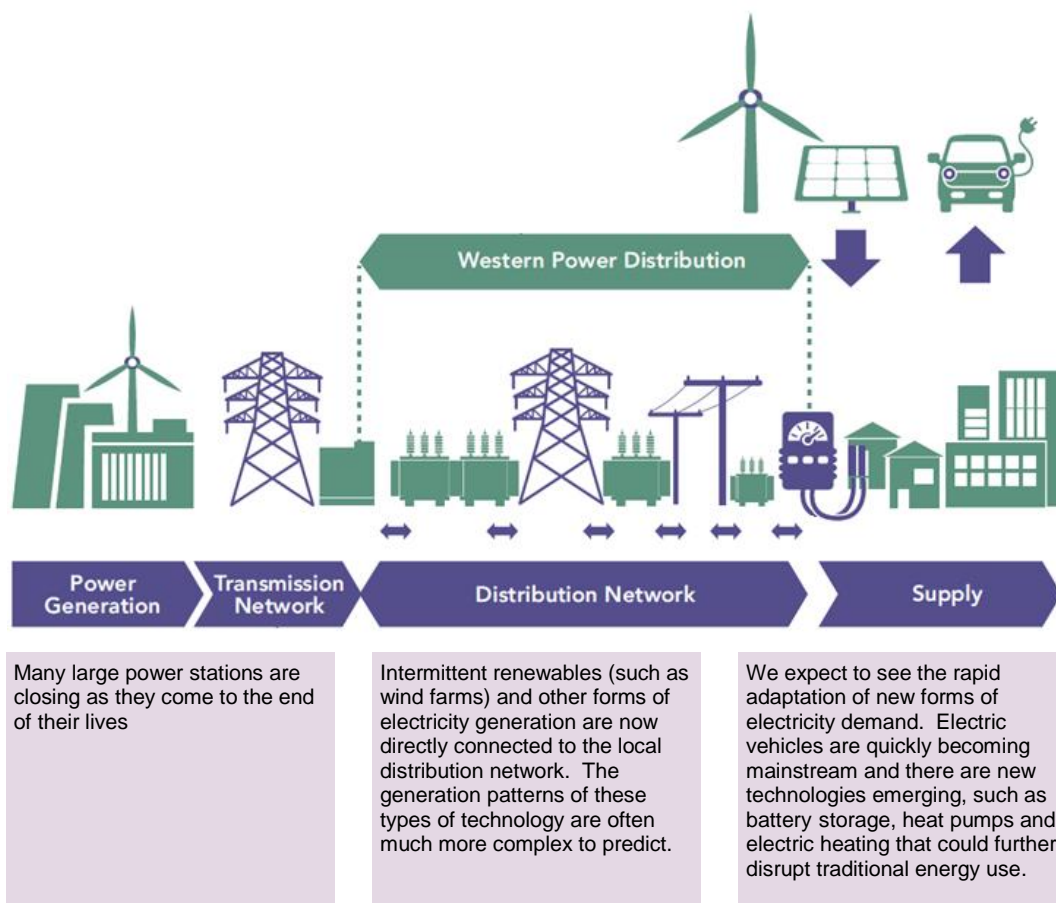|		
33	Replace 55km of overhead lines in National Parks and AONBs with underground cables.*	To date during RIIO-ED1, we have replaced 16.7 km of overhead lines with underground cables.

* Targets are for the full eight year RIIO-ED1 period, not for a discrete year
** Target to be achieved each year of RIIO-ED1

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Developments in the energy system

5.7 The way in which electricity is generated has changed significantly over the last few years with more generators being connected to the distribution network. In addition the way electricity is consumed is changing with continued growth of electric vehicles and the use of heat pumps for domestic heating. There are also emerging technologies such as large scale battery storage which can store the excess energy being produced and release it back to the network at times of high demand. As a result DNOs have the challenge of managing different power flows across the distribution network. This requires the evolution of systems and processes for forecasting and managing the network.

5.8 The changes are summarised in the diagram below.

Power Generation / Transmission Network	Distribution Network	Supply
Many large power stations are closing as they come to the end of their lives	Intermittent renewables (such as wind farms) and other forms of electricity generation are now directly connected to the local distribution network. The generation patterns of these types of technology are often much more complex to predict.	We expect to see the rapid adaptation of new forms of electricity demand. Electric vehicles are quickly becoming mainstream and there are new technologies emerging, such as battery storage, heat pumps and electric heating that could further disrupt traditional energy use.

5.9 To meet the future energy needs of our customers, WPD will need to transition from the relatively passive role of Distribution Network Operator (DNO) to that of Distribution System Operator (DSO). As a DSO we will operate the network more flexibly, balancing sources of supply and demand in real time and avoiding, where possible, the need for costly reinforcement of the network by locally managing generation output, load and power flows. We will also facilitate better, whole system, outcomes by ensuring customers can provide services up to the transmission system operator, which may avoid the need for transmission reinforcement.

5.10 In June 2017 we published our strategy for transition to the role of DSO and at the same time launched a consultation to gather stakeholder views on our plans. The consultation process included:

- specific consultation questions within the strategy document;
- a launch event for over 120 informed stakeholders; and
- a series of round table sessions with a broad range of stakeholders including businesses, customer groups, MPs, universities and industry bodies.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

5.11 We received feedback on the strategy from a wide range of stakeholders, which gave us an excellent insight into the needs and priorities of our customers and partners. We published a summary of responses in November 2017 and in December 2017 issued an updated strategy reflecting the expectations of our customers and stakeholders. The strategy and a range of further information can be found at the link below.

www.westernpower.co.uk/our-network/strategic-network-investment/dso-strategy

The DSO transition programme

5.12 We will roll out our DSO strategy across our entire network area, prioritising those areas which will have the greatest impact, incrementally upgrading the rest of the network as customer need dictates.

5.13 Our strategy for transition will focus on enhancing and developing competences in three core business areas:

Assets	Customers	Network operations
Investment in technology to ensure the network operates at high performance levels. Roll out of Active Network Management by 2021. Active Network Management zones are areas of the network equipped with control systems which allow us to automatically manage the power flows of generation and demand connected to the network. Telecommunications readiness and strategic investment in fibre networks, where appropriate, to deliver more visibility and control of assets.	Development of Demand Side Response (DSR) options – allowing customers to be rewarded for shifting the timing of their consumption to help manage constraints on the network. Creating visibility of congestion or capacity on the network – allowing the development of new tariffs and a Local Energy Market. Extending alternative connections to demand and storage connections (i.e. using active management of the network to allow connection in areas with limited capacity).	Investing in technology to provide greater visibility and monitoring of the network. Using data analysis to forecast requirements. Upgrading business areas to facilitate flexibility services such as DSR. Continue developing regional energy scenarios – establishing future network needs and informing our investment on the network.

5.14 This transition will build on our existing innovation programme that develops and tests new solutions before deploying them as business as usual. We have developed significant competence in a number of key areas which will assist with our transition to a DSO. Further details of our innovation programme can be found in our Innovation Strategy. The priorities for DSO transition are also reflected within our connections activities as detailed within our workplan for the Incentive on Connections Engagement (ICE).

www.westernpower.co.uk/Connections/ICE.aspx

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Our actions during 2017/18 towards DSO transition

5.15 In September 2017 we were the first DNO to publish a Distribution System Operability Framework (DSOF); an assessment of the technical issues facing DNOs as they become DSOs. Raising awareness of these network design and network operation issues enables us to seek new solutions and share learning with other DNOs, Independent Distribution Network Operators (IDNOs) and National Grid as the GB System Operator.

5.16 Under the DSOF we will increasingly work with customers to develop solutions and access the resources and services they can provide which are beneficial to the electricity network as a whole. The DSOF can be found at the link below.

www.westernpower.co.uk/About-us/Our-Business/Our-network/Strategic-network-investment/DSOF.aspx

5.17 In January 2018 we held round-table engagement sessions with a range of stakeholders in order to provide an overview of the DSOF and our innovation programme. These events were used to stimulate discussion, gain feedback and prompt stakeholders to participate with our call for third party involvement. We invited stakeholders to put forward potential solutions within the three themes of Assets, Network Operations and Customers. This call for evidence allowed third parties to propose collaborative projects to work with WPD; the process has resulted in nine projects being taken forward.

Regional Strategic Investment Options reports

5.18 Understanding the impact of distributed generation and emerging technology growth on the network will be an ongoing requirement for both RIIO-ED1 and our transition to DSO. We have therefore worked with environmental consultants Regen to assess the potential growth in distributed generation and demand for the purpose of informing strategic network planning and investment. This work has considered future energy scenarios, which are aligned to those used by the national electricity system operator, to forecast volumes of demand, low carbon technologies and the energy resources that may be available on the network in the future.

5.19 Reports for all licence areas have been published, with East and West Midlands studies completed during 2017/18. As well as using these studies to inform strategic network investment, we have also shared them with a number of Local Authorities and Local Enterprise Partnerships to help inform their regional energy strategies.

5.20 The evolution of energy storage capability poses both technical and operational challenges. In May 2017 WPD issued a consultation document to develop a greater understanding of the potential scale of growth of energy storage, the types of assets that are likely to be deployed and the typical operating behaviour of these assets. We consulted with 27 stakeholders – including storage manufacturers, control system companies, developers and consultants. We used feedback to update our network modelling assumptions and have used this to predict the behaviour of distribution connected energy storage within our most recent Strategic Investment Options reports.

5.21 Regional Strategic Investment Options reports and our consultation on storage can be found on our website at the links below.

www.westernpower.co.uk/About-us/Our-Business/Our-network/Strategic-network-investment.aspx

www.westernpower.co.uk/docs/About-us/Our-business/Our-network/Strategic-network-investment/WPD-Storage-Consultation-Paper-Results-(11082017-F.aspx

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Regional Development Programmes

5.22 Increases in renewable generation, and wider changes in the energy sector, place greater and more complex demands on the electricity distribution network. To understand the impact of such changes on the electricity network as a whole we are working with National Grid (the System Operator for the transmission network) to develop Regional Development Programmes. These strategic studies will take a whole system approach to ensuring that future capacity requirements across both transmission and distribution networks can be managed.

5.23 In March 2018 we completed the first collaborative strategy for the South West licence area, recommending technical and commercial joint actions. Developing the programme increased understanding of the interaction between transmission and distribution networks and will ultimately enable an increased number of connections at lower costs to customers and risk to network reliability.

5.24 An executive summary for the programme developed for the South West licence area is available at the link below. Further findings will be shared via the Energy Networks Association's Open Networks project.

www.westernpower.co.uk/docs/About-us/Our-business/Our-network/Strategic-network-investment/RDP/South-West-Regional-Development-Strategy.aspx

Flexibility

5.25 Electricity networks require generation and consumption to be balanced in real time. When power is mainly produced by large power stations connected to the transmission system, this balancing is carried out by the Transmission System Operator. The flexibility products and programmes traditionally used by the System Operator include actions such as generators increasing or curtailing output. As more generation connects to the distribution networks there is greater potential for smaller connected generation and demand customers to provide flexibility services. As a DSO, WPD will need to utilise these new sources of flexibility to balance its own network, as well as accommodate sources which could be used by the transmission system operator.

5.26 Facilitating new markets for customer provided flexibility is a key objective of WPD's DSO strategy. We aim to use "signposting" activity in order to engage with stakeholders; this will provide the market with information on the performance characteristics of our network ahead of us requesting tenders for flexibility. Signposting will direct flexibility providers to the different distribution system needs that may develop. In April 2018 we issued a consultation to gather feedback on our intended approach to signposting.

An example of flexibility services - Alternative Connections

5.27 We anticipate that flexibility services for DSOs will come from two sources – 'Smart Grid' flexibility and Distribution Energy Resources (DER). Smart grid flexibility relates to the way in which WPD operates the network in order to provide network capacity. DER covers the flexibility products provided by customers with controllable demand or generation.

5.28 One example of smart grid flexibility we already utilise is alternative connections.

5.29 Standard generation connections allow customers to import or export up to the full rated capacity in their connection agreement at all times of normal network operation. The customer is free to use the capacity assigned to their generator at any level they choose. These agreements require the network to have the capacity available, even if it is not being used.

5.30 There are parts of the network where high volumes of connected distributed generation lead to insufficient capacity available to provide further generators with standard generation connection agreements without undertaking costly and time consuming network reinforcement. Alternative

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

connections were developed through our innovation programme and provide a lower cost alternative.

5.31 Alternative connection agreements contain some form of curtailment arrangement on the customer. The types of alternative connections offered are detailed in the following table.

Alternative connection offers			
Active Network Management (ANM) This solution is the most complex and is used mostly with larger new connections. Zones of the network have been enabled to allow control systems to automatically manage the output of generators, constraining output at times when the network capacity is limited.	**Intertrip Connections** Remote control or 'intertrip' technology is used to constrain generator output when certain network conditions are identified.	**Timed/Profiled Connections** Output is permitted during specific time periods when historical data analysis shows that the network would not be adversely affected.	**Export/Import Limited** Requires customers to cap their import from or export to the network; allows customers to connect renewable generation or storage whilst protecting the distribution network.

Developments in alternative connections

5.32 The implementation of Active Network Management requires changes to be made to control systems. The rollout of ANM is therefore prioritising the higher voltage networks where benefits are most likely to be seen.

5.33 WPD originally planned to implement Active Network Management zones for all GSPs by 2023. However following discussions at our annual Stakeholder Workshops in January 2017 our plan has been updated to deploy Active Network Management zones to all GSPs by 2021.

5.34 To date, the majority of alternative connections have been utilised for connection of generation, however the principles of alternative connections can also be used for demand connections and storage. During 2016/17 we issued our first demand alternative connection for a customer based in the East Midlands. The standard connection required upstream reinforcement involving additional costs and increased timescales due to capacity constraints on the network in this area. However due to the flexible nature of the demand the customer chose a cheaper and quicker alternative connection option. During 2017/18, we developed a Demand Constraint Panel for the customer which will ensure that demand does not exceed available supply.

5.35 In June 2017 our policy for the management of Alternative Connections was updated to include battery storage. Energy storage is considered to be a demand when consuming power and a generator when emitting power and could therefore have constraints on both exports from and imports to the network. During 2017/18 we have had the following enquiries in relation to alternative connections for energy storage.

Alternative Connections – energy storage 2017/18		
Type	**Quotes issued**	**Quotes accepted**
Active Network Management	7	2
Intertrip	7	2
Time Profiled	-	-
Export/Import Limiting	5	1
Total	**19**	**5**

5.36 Over the course of RIIO-ED1 we have seen an increase in the proportion of alternative connection offers accepted by customers in comparison to conventional quotes. This has increased from 2.5% in 2015/16 to 4.6% in 2017/18.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

An example of changing demand - electric vehicles

5.37 Electric vehicles are quickly becoming mainstream with manufacturers developing new electric models or electric versions of existing models. A typical electric car uses a similar amount of electricity as an average domestic home and a growth in electric vehicles therefore has potential to significantly alter daily load profiles and increase the amount of power used.

5.38 In April 2016 we registered an innovation project under the Network Innovation Allowance (NIA) funding mechanism. Electric Nation (registered as CarConnect) aims to enable DNOs to identify which parts of their networks are likely to be affected by Plug-in Vehicle (PIV) uptake and domestic charging. It is also being used to investigate whether smart chargers can be used to avoid or defer reinforcement on the network.

5.39 The project focuses on:

- modelling potential areas of PIV growth that could affect the network;
- developing monitoring options that can be applied to affected substations; and
- trialling 'smart' chargers that allow remote control of charging by network operators to optimise when charging occurs to avoid the need for reinforcement.

5.40 The project aimed to recruit 700 participants to have a 'smart' electric vehicle charger installed; by the end of March 2018 a total of 608 chargers have been installed.

5.41 Participants are expected to use their PIVs normally, using the smart charger to charge their vehicle at home. Data about car charging habits (when they charge, what rate, how much energy was used and when the car is plugged in) is being collected along with information about the length of journeys that they are undertaking and their battery charge state.

5.42 Part of the trial will involve the simulation of network events that may require the car charging to be paused or the charging rate altered. This will take into account the customer's needs, and when they require their electric vehicle. This may result in the customers' electric vehicle not receiving a 100% charge; but the smart charging system will endeavour to provide a charge level suitable for the customer's typical use.

5.43 Where appropriate customers will be provided with an app that will receive notifications when their charging has been controlled as part of the trial. The app can be used by the participant to provide preference information that will help ensure that their car is charged when they need it. We aim to understand how participants react to the smart charging system and will therefore also undertake qualitative research using customer questionnaires.

5.44 Further information on the Electric Nation project can be found at www.electricnation.org.uk.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Making it possible for more people to use low carbon technologies

Output (19) Improve by 20% the time taken to provide a response to customers who want to use LCTs.	✓

5.45 The government's focus on reducing the emission of greenhouse gases has led to higher volumes of low carbon technology (LCT) for electricity generation, transportation and heating for buildings.

5.46 Consequently WPD is responsible for enabling the installation of distributed generation such as solar panels and providing sufficient capacity in the network to accommodate the increased loads from electric vehicle charging and domestic heat pump heating systems.

5.47 When a customer wishes to install LCTs they are required to provide technical details of the planned installation to their distribution network operator so that the impact on the network and other customers can be assessed.

5.48 As part of our RIIO-ED1 business plan we committed to improving by 20% the time taken to respond to these customer notifications.

5.49 We have been developing appropriate benchmark measures and during 2017/18 we introduced additional enquiry categories to cover small-scale embedded generation (domestic solar panels, small-scale wind and hydro projects), electric vehicle charging and domestic heat pump heating systems. These new categories will enable us to track response time performance.

5.50 Larger installations require a more detailed assessment of their potential impact on the network. These are dealt with as connection enquiries and our response time performance is embedded within the timeframes published for connection 'time-to-quote'.

5.51 The table below shows our benchmark performance for response time for small-scale LCTs. This is based upon the data gathered during 2017/18. It shows the 20% improvement target to be achieved by the end of RIIO-ED1 and the intermediate annual targets.

Targets for time to respond to connect low carbon technologies						
	Benchmark performance	**2018/19**	**2019/20**	**2020/21**	**2021/22**	**2022/23**
Low carbon technology response time (working days)	2.93	2.81	2.69	2.58	2.46	2.34

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Output (20) Identify LCT hotspots using information from smart meters, expert organisations and local authorities, and use this information when making decisions.	✓

5.52 LCT hotspots are parts of the network where there is a clustering of LCTs that can lead to a need to reinforce the network due to their combined impact.

5.53 In 2012/13, WPD obtained information from the Centre for Sustainable Energy which used data on social demographics and housing stock types to determine the likelihood of LCTs being adopted.   This was used to determine which distribution substations were considered likely to be LCT hotspots.
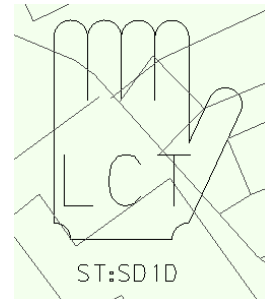
5.54 Potential LCT hotspots are flagged within WPD's asset register database and the mapping system has an 'LCT hand symbol' adjacent to LCT hotspot substations. These flags and symbols make local planning teams aware of the LCT hotspots.

5.55 When work is planned that affects these locations, planners are prompted to consider uprating works (using larger sized transformers or cables rather than replacing like-for-like). This uprating provides additional capacity to accommodate increased network demands.

5.56 The data used to inform our understanding of LCT hotspots will be refreshed (as required) during RIIO-ED1, either by use of renewed data from the Centre for Sustainable Energy or consideration of alternative methods and data sources. Whilst such data is used to inform planning at a local level we will also continue to assess the potential growth in distributed generation and demand in order to inform wider strategic network planning. These studies are an essential element of our DSO transition strategy.

Output (21) Selectively replace assets using larger assets in areas where more LCTs may be connected to our network.	✓

5.57 The WPD RIIO-ED1 Business Plan forecast that 7% of asset replacement activity would occur within LCT hotspot areas. Instead of replacing assets like-for-like, larger capacity assets can be installed to cater for future LCT growth.

5.58 A new WPD policy for the use of LCT hotspot data was introduced in May 2015 and this data has progressively started to influence asset replacement project planning. In 2017/18, 27 asset replacement projects used larger capacity assets.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Output (22) Reduce costs for future customers by developing smart solutions to provide alternative and innovative techniques for managing our network.	✓

5.59 Smarter ways of operating the network and providing capacity are being researched, trialled and tested with the aim of implementing new techniques into business processes.

5.60 WPD's Innovation Strategy provides details of our ongoing programme of innovation. The strategy is reviewed and re-issued on an annual basis and the 2018 Innovation Strategy can be found at the link below.

www.westernpower.co.uk/docs/Innovation/Innovation-Strategy/WPD-Innovation-Strategy-2018.aspx

5.61 In addition to the above strategy we also contribute to a joint electricity innovation strategy for network companies. This strategy is published by the Energy Networks Association and can be found at the link below.

www.energynetworks.org/electricity/futures/network-innovation/electricity-networks-innovation-strategy.html

5.62 The WPD Innovation Strategy aims to develop knowledge and experience in new methods and technologies. Our innovation activity is grouped into three main categories as detailed below.

- Assets – projects in this category aim to improve asset management through novel data analysis, enhanced modelling and testing alternative investment strategies.
- Customers – these projects develop new solutions for customers enabling lower cost and quicker connections , testing of new customer tariffs or working with communities to provide local energy solutions.
- Operations – these projects explore the requirements for active network operations and the application of technology for enhanced network control.

5.63 There are two regulatory sources of funding for innovation projects: the Network Innovation Allowance (NIA) provides funding for smaller projects and the Network Innovation Competition (NIC) is a competitive tendering process where projects are assessed by an expert panel and selected projects win funding. During 2017/18 we introduced a number of new NIA projects and successfully gained funding for one new NIC Project – Electricity Flexibility and Forecasting System (EFFS). In total we had 26 innovation projects active during 2017/18.

5.64 The full range of NIA projects active during 2017/18 are detailed below.

Name	Project aim
Airborne Investigations	To investigate the potential for an autonomous sensing system capable of gathering data to identify faults and deterioration from helicopter overhead line inspections, maximising the data gathering capability of these inspections.
Losses Investigation	Understanding technical losses on the LV & HV distribution network and determining the minimum information required to accurately predict network losses.
Solar Storage	To investigate the technical and commercial feasibility of battery storage embedded within distributed generation installations.
SYNC – Solar Yield Network Constraints	To investigate the potential to encourage large energy users to vary their electrical load to be compatible with peak output from embedded renewable generation. This project will focus on areas where there are current issues with high levels of solar generation coupled with insufficient load.
Common Information Model	To trial aligning the network data we currently hold in a variety of different systems. We hold technical data about assets in our asset database, location details in our mapping systems and real time information about the operation of the network in our Network Management system. The project will test the benefits of holding data in a common format.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Carbon Tracing	This project will test the levels of interest that customers have in how their energy is made up i.e. the mix of solar, wind or fossil fuels. The project will involve the development of an app and website to provide visibility to customers of the generation mix.
Project ENTIRE	To identify and address the key commercial challenges that a DNO/DSO will be presented with when developing mechanisms for demand side response. This might include developing new systems to provide visibility of capacity and establishing contracts with commercial customers.
Electric Vehicle Emissions Testing	To assess the potential disruption that the charging of electric vehicles can have on standard patterns of current. Repeated charge and discharge tests will be undertaken for a range of vehicles and charging levels on monitored electric vehicle charge points.
FREEDOM	To investigate the feasibility of the use of heat pumps alongside gas boilers. Western Power Distribution is working in partnership with Wales and West Utilities to investigate the technical capabilities and whether hybrid heating systems are affordable and attractive to customers as a way of heating homes.
Industrial and Commercial Storage	Battery energy storage will be trialled in multiple configurations to test the potential for improvements in cost efficiency, customer service and reliability of the network.
LV Connect and Manage	To demonstrate and prove that Active Network Management can be used on the low voltage network as a short term measure to allow new connections whilst network reinforcement takes place. Active Network Management requires the deployment of communication and control infrastructure to allow LCTs to be managed remotely.
LV Plus	To trial increasing the distribution network phase voltage to 400V and reducing it back to 226V at each connection point. Potential benefits include increased network capacity – increasing the potential for electric vehicle charging, distributed generation and energy storage.
Superconducting Cables – Feasibility Study	Installing the new transformers or substations required for reinforcement can be challenging in urban environments. Superconducting cables may offer a solution – allowing the installation of transformers or substations at a distance from the location requiring increased capacity. This project will conduct a feasibility study to determine if superconducting cables are an attractive solution for connecting new equipment to the physically remote networks that require additional capacity.
Time Series Data Tool Feasibility	DNOs keep historical data on the loading of assets within a number of databases and from a variety of sources. The data can be interrogated as and when required for planning purposes. This project will investigate the use of data analytics to identify trends and issues which might not be identifiable manually. Automated analytics will be fundamental to algorithms used in managing the network as part of the transition to DSO.
Car Connect	To enable DNOs to identify which parts of their network are likely to be affected by uptake of Plug in Vehicles (PIV) and whether demand control (optimising the timing of charging the PIV) is a cost effective solution to avoiding or deferring reinforcement on vulnerable parts of the network.
Carbon Portal	This project will expand on the Carbon Tracing project detailed above and will explore the potential to facilitate external providers to produce additional apps, encouraging customers to understand the energy mix in their areas.
DEDUCE	To develop a low cost distribution substation monitor based on indirect loading measures such as temperature, noise and vibration.
Visibility Plugs and Sockets	WPD is participating in a much larger EU initiative led by Centrica. The project will develop a platform to enable suppliers, aggregators and communities to inform the network operator of planned changes to assumed electricity profiles.
Primary Networks Power Quality Analysis	To evaluate how harmonics and power quality can be monitored and analysed in a cost effective way across wide areas of the network.
Smart Energy Isles	WPD is part of a consortium awarded EU funding to build and operate a renewable energy micro grid on the Isles of Scilly.
SF$_6$ Alternatives	SF$_6$ gas is used throughout the industry as an insulating medium in switchgear, but is a potent greenhouse gas. This project will evaluate alternative insulating mediums in place of SF$_6$.

5.65 The projects below are collaborative NIA projects.

Name	Project aim
Improved Statistical Ratings for Overhead Lines	To gather conductor and weather data to validate and update assumptions for overhead line ratings. Overhead line ratings determine the amount of power that can be distributed through overhead lines based on how hot conductors can be allowed to get. The project is led by WPD on behalf of other DNOs.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Assessment and Testing of Alternative Cut-outs	This collaborative project is led by UPKN and will aim to identify alternative, more reliable cut-out equipment used by non GB DNOs. The project will investigate whether such options are suitable to replace those currently in use by GB DNOs.

5.66 In 2017/18 we had two active NIC projects:

Name	Project aim
OpenLV	To look at ways of encouraging communities to understand network load patterns and how consumers can impact demand to avoid reinforcement. This exploration of the potential for embedding demand side response within local communities builds on existing projects such as Falcon and SYNC and will complement Project Entire.
Electricity Flexibility and Forecasting System (EFFS)	To explore the additional functionality required as a DSO. To evaluate the potential options and implement systems that will provide the new functionality required to transition to DSO. Actions include evaluating the suitability of flexibility services to resolve constraints and communicating flexibility services to the market.

5.67 Prior to the introduction of NIA and NIC, funding was provided through the DPCR5 Low Carbon Network Fund (LCNF) mechanism. The project below was instigated through LCNF and had ongoing expenditure during 2017/18.

Name	Project aim
Network Equilibrium	Understanding the balancing of voltages and power flows across the distribution system to help the integration of additional distributed generation across the network.

5.68 Further detail on the impact of our Innovation Strategy can be found in our annual Environment report and our Losses Strategy. These documents can be found at the following locations.

www.westernpower.co.uk/About-us/Our-Business/Environment.aspx

www.westernpower.co.uk/docs/Innovation-and-Low-Carbon/Losses-strategy/Losses-Strategy-2018-Final-Version-27-02-18.aspx

Smart meters

5.69 The government has mandated that by the end of 2020 every home in Great Britain will be offered a smart electricity and gas meter. Smart meters are capable of being read remotely and newer models, known as SMETS2 smart meters, will have additional functionality such as the ability to trigger a 'last gasp' message to provide notification of loss of supply.

5.70 Data from SMETS2 meters will be periodically downloaded by a new regulated organisation called the Data and Communications Company (DCC).

5.71 The rollout of smart meters is being carried out by the suppliers. It has been subject to delays and the majority of meters installed to date are SMETS1 smart meters which at present do not have an interface with the DCC.

5.72 In preparation for utilising the data that will be available in the future, WPD has established the infrastructure required to receive data transfers from the DCC and gained Ofgem's approval for a data privacy plan, which identifies how we will collect, maintain, secure and use customer consumption data.

5.73 Smart meters will give WPD much greater visibility of the operational state of the low voltage network and as a result will enhance core business activities, including fault management, network planning and asset management.

5.74 The benefits of smart meter data will not be realised until larger volumes of SMETS2 meters are installed. We will provide further information as the roll out progresses and processes are enhanced to utilise the data.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Output (23) Provide additional network capacity by using traditional or 'smart' methods.	✓

5.75 Demand growth can occur progressively as customers use more electricity or in step changes where new domestic property developments take place or commercial buildings require new/uprated connections.

5.76 Additional network capacity is provided when demands are forecast to exceed equipment ratings (as determined by planning standards). This ensures that equipment is not overloaded as this can lead to premature ageing and failure. Traditional methods of providing additional capacity include installing additional assets or larger assets. At higher voltages, such reinforcement work can be costly and take time to deliver.

5.77 Whilst traditional methods of reinforcement will continue to be used, increasing use is being made of smart interventions that can allow connections to be made more quickly.

5.78 To avoid the need for reinforcement we have developed alternative connections and offer these to customers. Alternative connection agreements contain some form of curtailment on the customer but can enable connections to be made where a standard connection might not be possible due to capacity constraints.

5.79 The uptake of alternative connections is shown below.

Alternative connections – uptake during RIIO-ED1				
	2014/15	2015/16	2016/17	2017/18
Quotations issued	212	232	126	174
Quotations accepted	44	42	5	27
Sites energised**	4	11	17	5

**Sites energised may be from quotations accepted in previous regulatory years.

5.80 Innovation projects have provided additional options to traditional reinforcement as shown below.

Innovation projects which allow us to utilise capacity more effectively
Voltage reduction Learning from the LCNF tier 2 project Low Voltage Network Templates and the NIA Voltage Reduction Analysis project has led to a revision to our policies and the implementation of voltage reduction across our networks. Reducing network voltage in certain circumstances reduces the maximum demand.
Dynamic line ratings Dynamic line ratings for EHV lines are available as an option to provide additional capacity without changing the conductor in overhead lines. Overhead line ratings are a measure of the amount of power that can be distributed through them based on how hot conductors can be allowed to get. Traditionally, standard day and night ratings are applied, but dynamic line ratings allow for a real time assessment based on ambient weather conditions (for example when the wind is blowing across the overhead lines, the cooling effect is increased and therefore the capacity of the overhead line can be increased beyond the standard ratings). Whilst dynamic line ratings are available to customers, uptake has been limited to trial projects as the required conditions for usage have not matched customer connection requirements.
The LV templates project The LV templates project collected data from 800 distribution substations within South Wales allowed revisions to the planning assumptions. A key finding of the project was that domestic PV (solar panels) generate only 80% of their installed capacity. Planning assumptions have been revised to allow 20% more availability for installations without the need for reinforcement.

Reduce technical network losses

5.81 The amount of energy that enters an electricity network is more than the amount that is delivered to customers. The majority of losses result from the heating effect of energy passing through cables and wires, leading to around 5% of the electricity entering the network being lost as a result of 'technical network losses'.

5.82 The environmental impact of this is that more electrical energy has to be produced to counteract the effect of the losses. In line with Ofgem's licence obligations all DNOs are required to keep losses as low as reasonably practicable.

5.83 Our approach to reducing technical network losses is based on a combination of approaches including using larger lower loss assets and revisions to network planning principles to ensure that methods for reducing losses are engineered into the design of the network.

5.84 We use innovation projects to build our understanding of how and when losses occur and to ensure that we are at the forefront of technological advancements that have the potential to improve our losses performance.

5.85 Further detail on these innovation projects can be found in the Losses Strategy which is updated annually and published on the company's website. The strategy can be found at the following link:

www.westernpower.co.uk/docs/Innovation-and-Low-Carbon/Losses-strategy/Losses-Strategy-2018-Final-Version-27-02-18.aspx

Ofgem's Losses Discretionary Reward

5.86 In RIIO-ED1, Ofgem has introduced a discretionary reward for DNOs that undertake additional work to reduce losses. The mechanism operates in three tranches.

- Tranche 1 – Forward looking plans.
- Tranche 2 – Actions undertaken by DNOs.
- Tranche 3 – Backward review of losses management activities.

5.87 In July 2016 WPD was awarded a total of £160,000 as part of tranche 1 (12% of the maximum reward available). During 2017/18 we provided our submission for the second tranche of the Losses Discretionary Reward, new developments include considering the impact of electric vehicle charging on losses and encouraging collaboration between DNOs. Ofgem confirmed in September 2018 that they would not make an award to any of the DNOs for tranche 2.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Output (24) Install oversized transformers when replacing assets in areas where demand for power may become higher than equipment can cope with.	✔

5.88 During RIIO-ED1 WPD has committed to installing oversize transformers for areas of predicted load growth. The volumes were forecast based upon work done with the Centre for Sustainable Energy in identifying potential LCT hotspots and these locations being coincident with work on the network.

5.89 Oversizing transformers in anticipation of future load growth provides a losses benefit until the additional capacity of the transformers is used up.

5.90 The volumes of oversized transformers installed during 2017/18 are shown in the table below.

Installing oversized transformers		
	Forecast (per annum)	Actual 2017/18
Distribution transformers	109	25

5.91 Whilst the numbers are lower than forecasted they have increased from 2015/16 when the process for uprating assets was introduced.

Discontinuation of small sized transformers

5.92 Investigations with manufacturers have identified that smaller size transformers produced higher losses when compared to larger sized transformers carrying the same load. Consequently WPD has discontinued the use of small size ground mounted and pole mounted transformers to obtain loss reduction benefit.

5.93 As well as providing a losses benefit, using larger sized transformers provides additional network capacity to allow for future demand growth.

5.94 The following table shows the volume of smaller size transformers that would have been used during RIIO-ED1 to date had they not been discontinued. .

Volume of small size transformers no longer used	
Transformers	WPD total (units)
Discontinuation of 315kVA ground mounted transformers	807
Discontinuation of 16kVA single phase pole mounted transformers	1,513
Discontinuation of 25kVA three phase pole mounted transformers	27

Replacement of pre-1958 transformers

5.95 Transformers that pre-date 1958 were built to a range of designs and specifications that preceded the BEBS-T1 standard which introduced a maximum level for losses.

5.96 WPD has introduced a requirement to replace pre-1958 transformers and this requirement is incorporated into decision making when planning works on the network.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

<table>
<tr><td>Output (25) Use larger cables when installing new network in LCT hotspots.</td><td>✓</td></tr>
</table>

5.97 In addition to installing oversize transformers, installing larger sized cables where demand is forecast to be higher also provides a losses benefit until the additional capacity is used up.

5.98 The forecast volumes and actual volumes are shown in the table below.

Installing oversized cables		
	Forecast (per annum)	Actual 2017/18
LV cables	75km	<1km

5.99 The amount of oversized cable being installed in LCT hotspots remains low.

Discontinuation of small sized cables

5.100 Losses are reduced in larger size cables (assuming the same amount of electrical energy flows through the larger cable). This means that adopting larger assets as a standard will progressively reduce losses as those larger assets are installed.

5.101 The following table shows the length of smaller sized cable that would have been used during RIIO-ED1 had it not been discontinued. By using a larger size cable with lower losses there has been an overall loss reduction benefit.

Length of small size cable no longer used	
Cable type	WPD total (km)
Discontinuation of 95mm^2 11kV cable	582
Discontinuation of 95mm^2 LV cable	945
Discontinuation of 16mm^2 service cable	1,127

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Reduce the carbon footprint of the business

Output (29) Reduce our carbon footprint by 5%.	✔

5.102 Business Carbon Footprint (BCF) represents the impact on the environment from operational activities and is measured and reported using equivalent tonnes of carbon dioxide (tCO_2e). It takes account of the energy usage from offices, substation electricity, emissions from vehicles, fuel combustion and release of greenhouse gases (fugitive emissions).

5.103 As illustrated in the chart below, the main contributors to WPD's BCF are operational transport, buildings energy usage and fugitive emissions. Consequently WPD has initiatives in all these areas to reduce their contribution to the overall measure.

Business Carbon Footprint - WPD

- Buildings energy usage
- Operational transport
- Business transport
- Fugitive emissions
- Fuel combustion
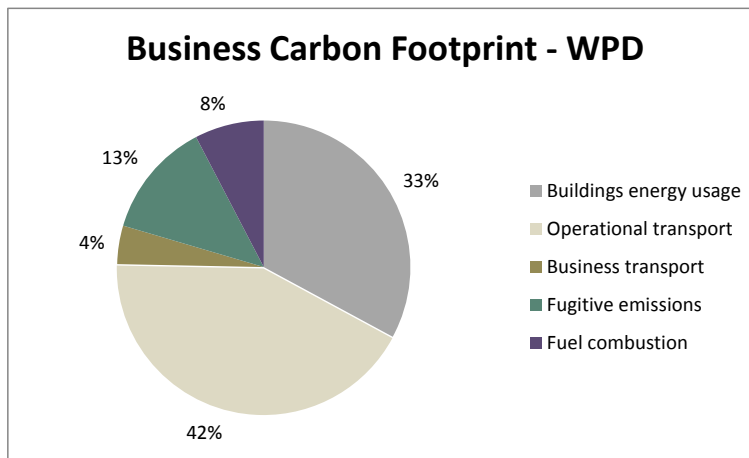
5.104 During RIIO-ED1, WPD has committed to reducing BCF by 5% compared to a 2012/13 reference position.

5.105 During 2017/18 we enhanced the data we collect for SF_6 by also including the volume of gas 'missing' from scrapped equipment. This data is only available for the ED1 period and was not included in the original baselines or targets so we have provided additional comparisons that show performance on a like-for-like basis.

5.106 The first chart below shows our overall BCF performance excluding the new SF_6 data. We have seen a 13% improvement in comparison to our 2012/13 reference position. The second chart shows our overall BCF performance including the new data for SF_6 and with this additional data we are still below target for 2017/18, achieving a 7% improvement.
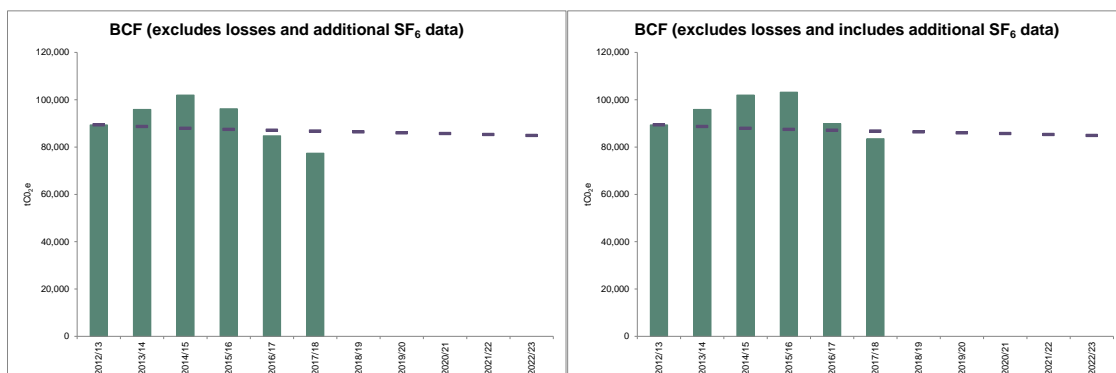
> Output (26) Make sure all replacement vehicles have lower CO_2 emissions than those they are replacing.   ✓

5.107 Our network is spread over an area of 55,500 km^2 and consequently we need to operate a large fleet of vehicles to allow our staff to serve this territory effectively. Emissions are calculated based on mileage information, in line with Defra guidance on conversion factors.

5.108 When operational vehicles reach the end of their useful lives they are replaced with more efficient models. Details of replacements for some of our most commonly used operational vehicles is shown below and this illustrates the reduced CO_2 emissions from new vehicles (emissions data comes from the vehicle registration certificate):

Emissions – operational vehicle replacements			
Previous vehicle	**CO2 emissions (grams per km)**	**Current vehicle**	**CO2 emissions (grams per km)**
Ford Fiesta Van 1.5	98	Vauxhall Corsa	94
Fiat Doblo SWB	137	Transit Connect SWB	115
Fiat Doblo LWB Euro 5	137	Transit Connect LWB	115
Landrover 110	295	Isuzu DMAX	183
Landrover 110 MEWP	295	Isuzu DMAX MEWP	183
Transit 350 MWB RWD	228	Transit 350 MWB RWD	185

5.109 Most operational vehicles have diesel engines, but with more alternatives becoming available WPD is trialling vehicles that utilise alternative fuels.

5.110 At present WPD is evaluating three electric operational vehicles. Criteria such as range between charging, payload (the weight capacity of the vehicle) and usage will be reviewed to identify the appropriateness of these vehicles for future WPD needs. To date some reliability issues have been identified with charging, cell failure and limits to range and payload in comparison to diesel equivalents. We are currently investigating the potential to trial an electric vehicle with a range extender - an auxiliary power unit used to increase the vehicles range.

5.111 In 2014 a project was initiated to trial commercial vans converted to dual fuel usage (diesel-hydrogen). Two vehicles have been converted to hydrogen usage and became operational in April 2018. Analysis of the project will be undertaken in conjunction with the University of South Wales and vehicles are likely to remain operational for around 6 years (depending on performance).

5.112 Operational vehicle emissions account for 42% of our overall BCF performance. Performance during 2017/18 has improved however operational vehicle emissions remain above target.
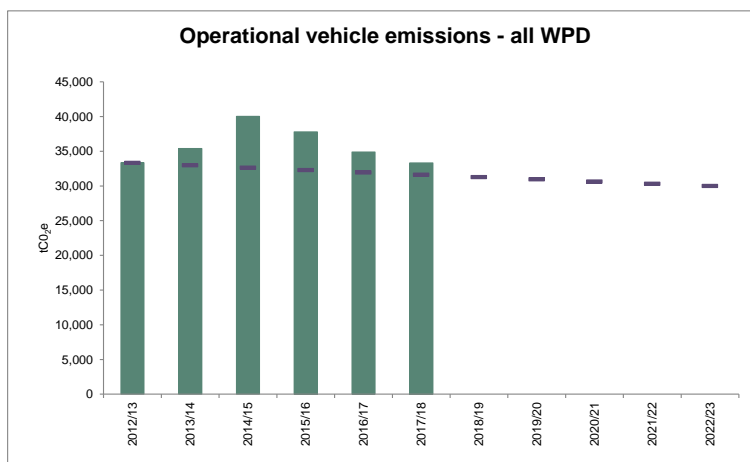
5.113 Alternative vehicles and fuel will continue to be considered by WPD over the RIIO-ED1 period depending on the availability of innovative options.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

> Output (27) Make sure all new or substantially refurbished buildings meet, as a minimum, the 'excellent' standard under the Building Research Establishment Environmental Assessment Method (BREEAM). ✓

5.114 WPD has an extensive property portfolio of offices that vary in age and construction type. WPD has committed to ensuring that opportunities for improving energy efficiency are maximised when building refurbishment is undertaken.

5.115 When refurbishment is carried out the work is assessed against the Building Research Establishment Environmental Assessment Method (BREEAM) standards. In line with the standards, the maximum rating that can be achieved for refurbishment works is 'Very Good', whilst new builds can achieve the maximum rating of 'Excellent'.

5.116 During 2017/18, two building projects were completed for depots in Birmingham and Leicester. The initial design stage certificates were issued during 2017/18 as a refurbishment Birmingham achieved the maximum 'Very Good' rating and Leicester as a new build achieved the maximum 'Excellent' rating. Post construction certificates will be issued in 2018/19.

Reducing electricity usage in offices

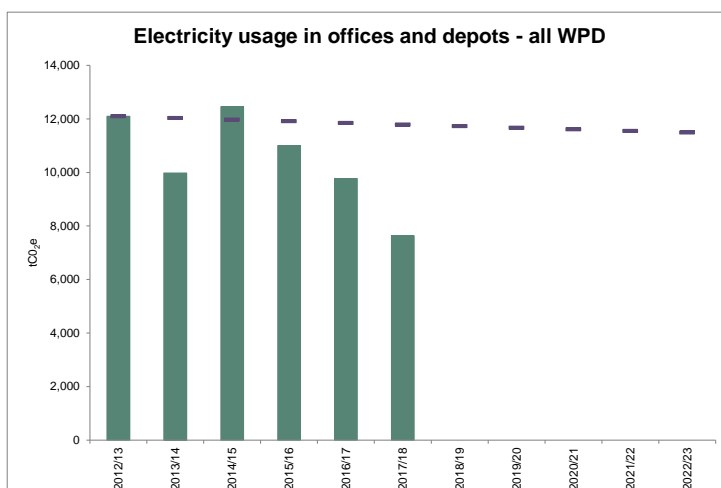5.117 During RIIO-ED1 WPD proposed to save 5% of electricity used in offices and depots.

5.118 Local depots and offices are encouraged to consider initiatives to save energy. Site managers receive a monthly report of electricity usage to assist them in targeting improvements. Local initiatives, such as the replacement of standard lighting with energy saving LED lighting, are complemented by company-wide initiatives to encourage energy efficiency.

Case study – Our Birmingham Depot

During 2017/18 work was completed on the refurbishment of the existing building acquired for our new Birmingham depot. The refurbished property achieved an excellent energy efficiency rating. The building has solar panels fitted and on a sunny day the depot is self-sufficient during working hours. Adding blinds to the side of the building which is warmed by sunshine throughout the day means that air conditioning usage is reduced and good insulation ensures that the escape of heat is limited.

Energy monitoring at the Birmingham Depot
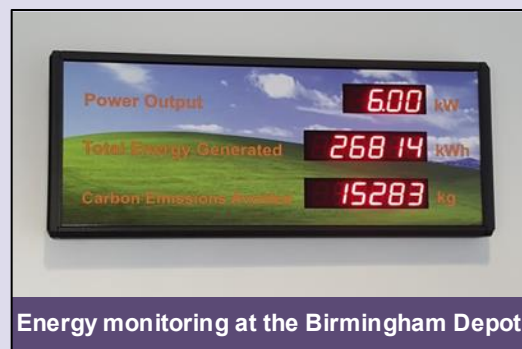
5.119 Overall progress in relation to the RIIO-ED1 targets for a reduction in electricity usage is shown below. We have achieved a 36.9% reduction in comparison to our benchmark year of 2012/13.

Electricity usage in offices and depots - all WPD

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

<table>
<tr><td>Output (28) Reduce the amount of waste sent to landfill by 20% over the first two years of RIIO-ED1 and 5% per year after this.</td><td>✓</td></tr>
</table>

5.120 WPD's business activities create waste. This includes metal from overhead lines, cables and redundant switchgear; wood from wooden poles; packaging from new components; paper from offices and various forms of plastic.

5.121 WPD has for a number of years, segregated and recycled waste, where possible, to limit the amount being sent to landfill.

5.122 During RIIO-ED1 WPD has committed to investigating the opportunities to reduce the waste being produced in the first place but also to reduce the amount of residual waste being sent to landfill by 20% over the first two years and 5% per annum thereafter. As the tonnage of waste produced annually will vary dependent upon the amount of work being carried out, our target is expressed as the percentage of overall waste which is sent to landfill.

5.123 We work closely with all of our waste contractors to ensure that, where possible, waste is diverted from landfill. Whilst the tonnage of waste produced has reduced in 2017/18 the proportion of this waste sent to landfill has increased.

5.124 Our performance can be seen below:
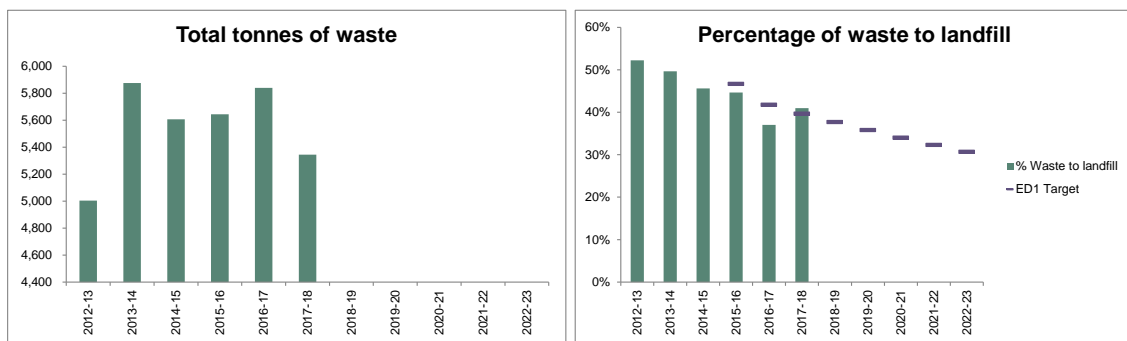
5.125 In our baseline year of 2012/13, 52% of the total waste produced by the business was sent to landfill, by 2017/18 this has reduced to 41%. Whilst this has increased from 2016/17 and is marginally over our target we continue to trial new initiatives to assist with reducing the amount of waste sent to landfill. In 2018/19 we will start to work with a new waste contractor and will work with them to find innovative ways to reduce waste and segregate waste at source.

Environment Standard ISO 14001 (2015)

5.126 We are committed to demonstrating effective and responsible environmental management and since 2011 WPD has been certified to ISO14001 (2004) Environmental Management Systems standard.

5.127 The standard has recently been revised to ISO14001 (2015). There were a number of changes to the structure, content and focus of the revised standard but WPD successfully transitioned and gained certification in May 2017 following a 10 day audit. Ongoing compliance will be monitored by audits carried out every six months during the three-year certification period.

5.128 To ensure compliance with the standard, each depot has an Environmental Management Plan. These plans provide a mechanism for improvement, identifying site specific environmental objectives. Each plan identifies targets and associated monitoring requirements and reviews environmental facilities and processes.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Reduce the environmental risk of leaks from equipment

5.130 Electrical equipment may contain oil or gas that is used to improve insulation properties or enhance cooling. Leaks can occur from time to time when equipment is damaged or seals deteriorate and steps are taken to minimise the environmental impact of such leaks.

5.131 The main options available to reduce the environmental impact of any leaks are quick repairs when damage occurs and replacement of the equipment in poorest condition with the highest leakage rates.
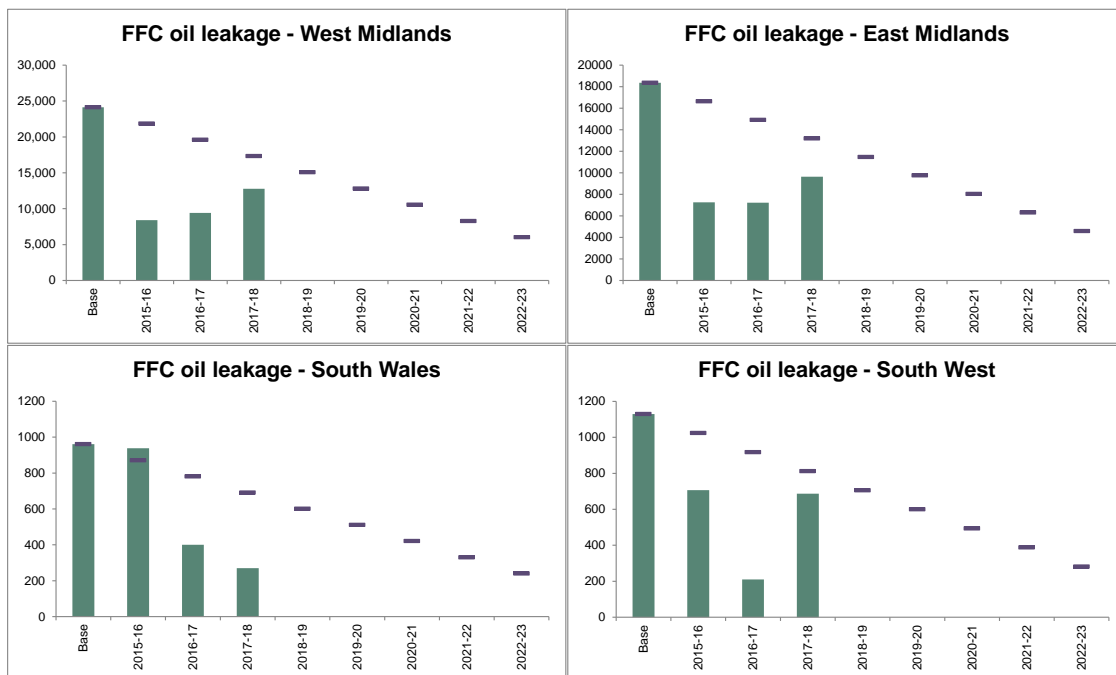
Output (30) Reduce by 75% the amount of oil lost through leaks from oil-filled cables.	✓

5.132 Older types of higher voltage cables (33kV and above) contain oil based fluids to assist in the insulation of the cables. These cables sometimes leak, either as a result of third party damage or age related degradation. New cable designs do not use this technology so the problems associated with these cables will reduce over time.

5.133 WPD has committed to reduce the volume of oil escaping from fluid filled cables by 75% over the 8 year RIIO-ED1 period. During 2017/18 we have seen increases in leakage in three out of the four licence areas. However we are achieving our in-year targets for RIIO-ED1 and the volume of oil escaping from fluid filled cables is 47.6% less than our benchmark position (a three year average from 2010/11 to 2012/13).

5.134 Progress against our targets by each licence area is shown below.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Application of PFT tagging

5.135 Fluid levels in all our cables are monitored remotely and loss of pressure triggers alarms within control centres. This allows us to react quickly to a leak event. However, traditional methods of leak location (using freezing techniques) can be a lengthy process.

5.136 A tagging system has been introduced which uses a small amount of Perfluorocarbon tracer (PFT) chemical. This is incorporated into the fluid and if a leak occurs can be readily detected above ground to pinpoint leaks quickly and to speed up the repair process. This reduces costs, inconvenience to customers and the volume of oil lost to the environment.

5.137 During RIIO-ED1 WPD committed to applying PFT to cables with a history of leakage and internal policy reflects this requirement.

Replacing poor condition fluid filled cable

5.138 WPD has committed to replacing 1% of the poorest condition cables which have the highest leak rates over RIIO-ED1.

5.139 Decisions on the replacement of cables are based on a variety of factors including, but not limited to, leak rates. The leakage of oil can be based on degradation of the cable's outer sheath, which is hard to repair, but can also be caused by problems related to the cable joints or fluid pressurising systems.

5.140 Joints, pressure tanks and associated pipework can be refurbished in circumstances where the cable itself is still sound and there may be occasions where replacing the cable is unnecessary even though the leak rate is high. Conversely a section of cable could have a relatively low leak rate and yet be in an environmentally sensitive location where the leak of any oil could have a more significant impact – for example where a cable runs adjacent to a canal or other water course.

5.141 Target leakage volumes have been calculated based on the length of fluid filled cables in service during 2014/15.

5.142 During the course of RIIO-ED1 we have decommissioned a total of 23.6 km of fluid filled cables as a result of the condition of the cables, representing 3.1% of our overall population of this asset type. We have achieved our RIIO-ED1 target of removing 1% of fluid filled cables as shown below.

Fluid filled cable disposals (km)					
	West Midlands	**East Midlands**	**South Wales**	**South West**	**WPD Total**
Population 2014/15	315.5	277.2	60.8	115.8	769.3
Forecast 1% disposals (total RIIO-ED1)	3.2	2.8	0.6	1.2	7.7*
Disposals during RIIO-ED1	20.2	3.2	0.2	0.0	23.6

* WPD total does not reconcile due to rounding

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

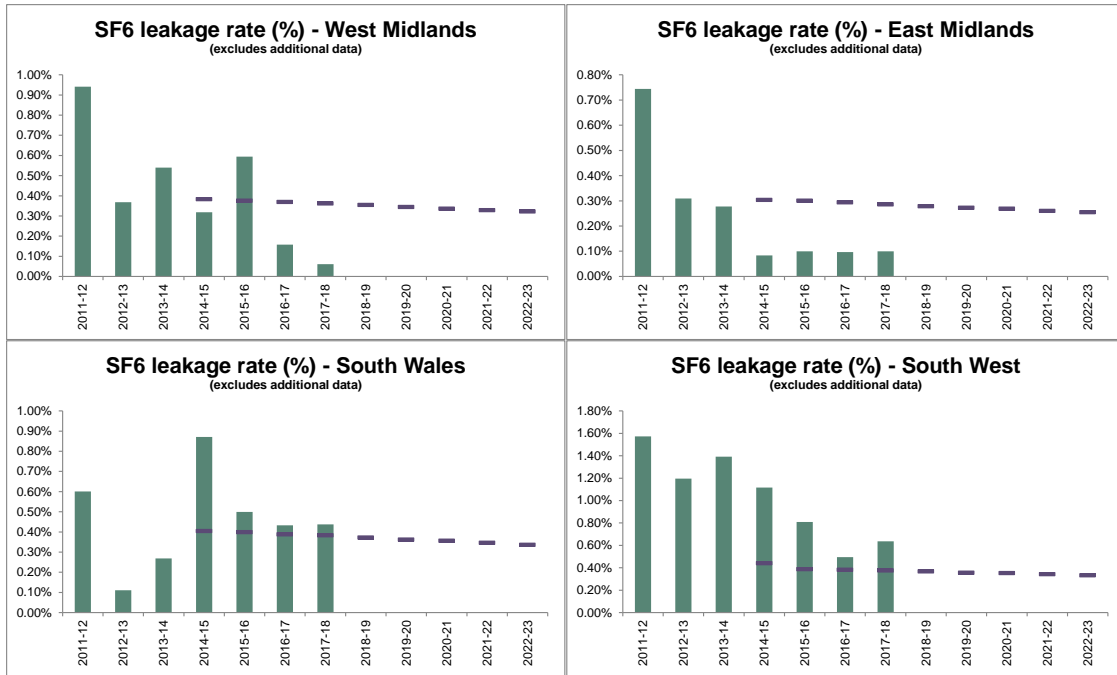| Output (31) Reduce by 17% the amount of SF6 gas that is lost from switchgear.	✓

5.143 SF_6 gas is used throughout the industry as an insulating medium in switchgear. Although it provides many benefits, it is a potent greenhouse gas. There are no current alternatives to SF_6.

5.144 When replacing switchgear priority is given to switchgear with the highest SF_6 leak rates. Within RIIO-ED1, WPD has committed to replacing any 11kV distribution assets that leak and higher voltage assets if they have leaked three times.

5.145 Leaks are identified by either a low gas alarm being triggered via control systems or from a low gas reading on a gauge being identified during a switching operation or a routine substation inspection. When a leak becomes apparent the source of the leak is located so that a strategy can be developed to manage the situation, taking into account the potential for repairs and the lead times for replacement switchgear.

5.146 During RIIO-ED1, WPD has committed to reducing the rate of SF_6 leakage by 17% based upon a four year average of emissions between 2009/10 and 2012/13.

5.147 The amount of SF_6 lost is expressed as a percentage of the overall 'bank' of switchgear containing SF_6 as this will vary over the period of RIIO-ED1 as new equipment is added and old equipment decommissioned.

5.148 The total volume of leakage is determined from a combination of sources. During 2017/18 we enhanced the data we collect for SF_6 by also including the volume of gas 'missing' from scrapped equipment. As this data was not included in the original information used to set targets we have provided additional comparisons that show performance on a like-for-like basis.

5.149 In 2017/18 we have beaten our overall target to reduce by 17% the amount of SF_6 gas that is lost from switchgear. (The following charts do not include the additional data gathered during 2017/18 from scrapped equipment).
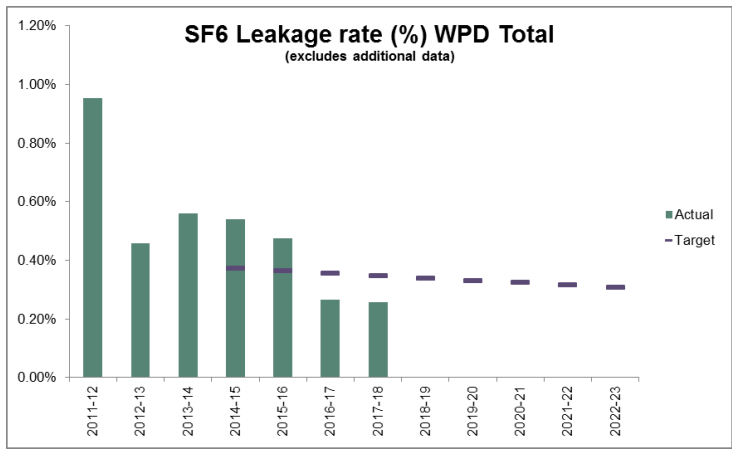
5.150 Performance against the RIIO-ED1 target for each licence area is shown below. Targets have been beaten in the West Midlands and East Midlands.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

SF6 leakage rate (%) - West Midlands
(excludes additional data)

SF6 leakage rate (%) - East Midlands
(excludes additional data)

SF6 leakage rate (%) - South Wales
(excludes additional data)

SF6 leakage rate (%) - South West
(excludes additional data)

5.151 When the new additional data from scrapped equipment is included in the totals the original targets have only been achieved by the East Midlands licence area.

SF$_6$ leakage rate (%) - West Midlands
(includes additional data)

SF$_6$ leakage rate (%) - East Midlands
(includes additional data)

SF$_6$ leakage rate (%) - South Wales
(includes additional data)

SF$_6$ leakage rate (%) - South West
(includes additional data)

5.152 WPD continues to work towards improving performance and to achieving the target reductions in SF$_6$ emissions. In 2016/17 we acquired leak detection equipment, which enables us to pinpoint the location of leaks once a leaking item of equipment is identified.

5.153 In September 2017 WPD launched the NIA project SF$_6$ Alternatives with the aim of evaluating alternative insulating mediums in place of SF$_6$. A methodology for testing alternative gases in switchgear was developed and potential gases have been tested. At present the options that were put forward by suppliers were not viable but we will test further options when they become available.

Output (32) Install effective oil containment 'bunds' around plant containing high volumes of oil.	✓

5.154 Large transformers, bulk oil containers and some items of switchgear contain large volumes of oil. This poses a risk of contamination should a leak arise, especially where the equipment is near water courses, water tables or drainage ditches.

5.155 Containment walls or 'bunds' can be constructed around the equipment to prevent oil leaking into the environment. These are designed to be able to contain the full volume of oil that is in the equipment. Bund pumps are installed to keep the bunds clear of water. These pumps can discriminate between oil and water and stop pumping when oil is detected.

5.156 During RIIO-ED1 WPD committed to ensuring that all 33kV, 66kV and 132kV transformers and other equipment containing oil in excess of 1,500 litres would have either a new bund installed or an existing bund refurbished to ensure effectiveness.

5.157 An initial forecast estimated that a volume of 104 bunds would be required. Site surveys have been undertaken to assess the requirement for either the repair of an existing bund or the establishment of a new bund. This has resulted in higher volumes of activity being carried out to those originally forecasted

5.158 Positive progress has been made across all licence areas; to date we have completed work on 113 bunds as detailed below, exceeding our target of 104 for the price control.

Oil containment bunds completed during RIIO-ED1					
	West Midlands	**East Midlands**	**South Wales**	**South West**	**WPD Total**
New bunds	1	13	1	2	17
Refurbished bunds	30	6	16	44	96

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Improve appearance in National Parks and Areas of Outstanding Natural Beauty (AONBs)

> **Output (33) Replace 55km of overhead lines in National Parks and AONBs with underground cables.**   ✓

5.160 WPD operates 91,000km of overhead lines predominantly in rural locations. Whilst overhead lines are widely accepted as being part of the countryside, there are a number of National Parks and Areas of Outstanding Natural Beauty (AONBs) across the WPD geographical footprint containing iconic sites where the removal of WPD overhead lines would improve the visual amenity.

5.161 The main method of improving visual amenity whilst maintaining supplies is to replace the overhead lines with underground cables.

5.162 Following stakeholder engagement WPD committed to undergrounding 55km of overhead line during RIIO-ED1 and our progress to date is shown in the table below.

Undergrounding in National Parks and AONBs (km)					
	West Midlands	East Midlands	South Wales	South West	WPD Total
Target for RIIO-ED1	14	10	10	21	55
Performance during RIIO-ED1	7.95	5.25	1.29	2.20	16.69

5.163 We work with representatives from AONBs and National Parks and there is a steering group in each license area.

5.164 The steering groups are responsible for identifying and prioritising where the work will take place. WPD provides information and appropriate assistance to stakeholders to help them in scheme selection including budget costing and feasibility assessments. The delivery of projects is dependent on the views of the steering group, timescales to develop and implement schemes and resource availability.

Case study – Loders Village

The village of Loders lies within The Dorset Area of Outstanding Natural Beauty, a collection of outstanding landscapes.

During 2017/18 work was undertaken to remove overhead power lines from the village, with the aim of improving both visual amenity and network reliability. The scheme involved removing 600 metres of low voltage mains wires serving approximately 100 homes and a primary school.

The £250,000 project took six months to complete.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

2015-2023

Western Power Distribution
RIIO-ED1 Business Plan Commitments Report
Year Three – 2017/18

31 October 2018

Connections

WESTERN POWER
DISTRIBUTION
Serving the Midlands, South West and Wales

Connections
Contents

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

6 Connections

6.1 Where a customer requires a new electricity supply WPD is responsible for providing a connection. There are three main categories of customer: demand (customers who use electricity); generation (customers who generate electricity and may wish to export it to the network); and unmetered connections (customers with equipment that does not have its own meter such as street lighting).

6.2 During 2017/18 we have also seen a growth in customers interested in energy storage connections. Energy storage is considered to be a demand when consuming power and a generator when emitting power.

6.3 Within these categories there are varying customer 'types' with different needs and expectations ranging from minor connection customers looking for a single service connection to major connection customers managing multiple/complex connections.

6.4 The objective of the connections outputs is to provide an excellent service for customers connecting to the network whilst facilitating competition in the connections market. The connections outputs are in five themes.

- Provide a faster and more efficient connections service.
- Improve communications with customers.
- Enhance engagement with major customers.
- Deliver guaranteed standards of performance.
- Facilitate a competitive connections market.

Regulatory framework

6.5 Ofgem has a package of incentive mechanisms to promote improvements in the connections service and these incentives influence WPD's approach to connections. The incentives are as follows.

- The Broad Measure of Customer Satisfaction (BMCS) results in rewards or penalties for customer service. Part of the mechanism measures customer satisfaction via a survey aimed at minor connection customers.
- The Time To Connect incentive focusses on the time taken to provide minor connection customers with a quotation and once the offer is accepted the time taken to complete the necessary works.
- The Incentive on Connection Engagement (ICE) penalises DNOs that do not engage adequately with major connection customers.
- Guaranteed Standards of Performance (GSOPs) are a legal obligation where customers are eligible for specified payments where a DNO fails to deliver specific levels of performance.

6.6 Ofgem is also keen on promoting competition in connections in order to provide customers with a choice of providers to undertake the physical connections work. Since the start of RIIO-ED1, regulatory policy for connections has continued to evolve with the development of a code of practice for competition in connections. The requirements of the code of practice have influenced delivery against the outputs proposed in the WPD RIIO-ED1 Business Plan.

6.7 Furthermore, the growth in low carbon technology, high volumes of distributed generation and installation of electricity storage has led to greater constraints on the network requiring more flexible approaches to managing capacity. Both Ofgem and the government department of Business, Energy and Industrial Strategy (BEIS) have recognised a greater need for flexibility and rules and requirements will continue to evolve during RIIO-ED1.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Overview of connections outputs

Provide a faster and more efficient connections service

34	Improve the overall time taken to deliver a connection by 20%.*	We achieved Ofgem's targets for 'time to quote' and 'time to connect' for both LVSSA (single domestic connections) and LVSSB customers (two to four domestic connections and single small commercial connection projects).
35	Provide excellent customer service so that customers continue to rank us as the top-performing DNO group in customer satisfaction surveys.**	We are the top-performing DNO for the Connections Customer Survey in Ofgem's Broad Measure of Customer Satisfaction, scoring an average of 8.78 out of 10 across our four licence areas.
36	Carry out surveys with distributed generation customers to find out if they are satisfied with our service and identify where we could improve.	We achieved a score of 8.83 out of 10 for distributed generation customer satisfaction surveys. We have specified a range of improvements within our work plan for the Incentive on Connections Engagement (ICE).

Improve communication with customers

37	Develop and improve the way we process online connection applications and make it easier for customers to track the progress of their application online.	We have made amendments to our online connections information in line with stakeholder requirements. These have been published in our ICE work plan.
38	Make sure that the information we provide in documents and online is effective.	We achieved a satisfaction score of 8.88 out of 10 from customers using our online application service.

Enhance engagement with major customers

39	Host 'surgeries' every three months to help connection customers to understand our processes.	50 customers attended nine surgeries across our four licence areas.
40	Work with major customers to identify where our processes can be improved and quickly put in place any changes.	We engaged with over 16,000 stakeholders through events and over 2,000 through customer satisfaction surveys. The actions in our ICE work plan are based on suggestions we received from these events and surveys.

Guaranteed Standards of Performance (GSOPs)

41	Aim to achieve no failures of the connection GSOPs.**	There was only one failure against the connection Guaranteed Standards of Performance during 2017/18. This was related to the time it took to provide a quote for a high voltage demand connection.

Further developing a competitive market

42	Improve customer awareness of other connection providers and regularly check that customers understand the options available to them.	We provide clear information for customers explaining that they can use other connection providers. We carry out a yearly survey to measure customer awareness. The 2017/18 survey showed that 81% of customers who had a new connection were aware of other providers.
43	Work with other connection providers to extend the type of work they can carry out, including high voltage and reinforcement work.	In 2017/18, we introduced a new group to focus on the specific needs of other connection providers. Sessions take place three times a year and we use feedback from stakeholders to improve our processes.

* Targets are for the full eight year RIIO-ED1 period, not for a discrete year
** Target to be achieved each year of RIIO-ED1

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Provide a faster and more efficient connections service

Output (34) Improve the overall time taken to deliver a connection by 20%.	✓

6.8 In the RIIO-ED1 business plan, WPD committed to providing a faster and more efficient connections service, improving the overall time to connect by 20%.

6.9 As connection processes have improved, it has become clearer that some customers do not necessarily require a faster service; they require an appropriate and timely service. This means that they may require the facility to reserve a space in a queue for a future connection or have the facility to request connections to individual plots on a large-scale development. Whilst WPD will remain focused on improving the time to provide a quote, we will also provide connection services in line with customer requirements.

6.10 The speed of overall connection is important for minor connection customers (single domestic connections referred to as LVSSA and 2-4 domestic connections or a small commercial connection not requiring reinforcement work known as LVSSB). Ofgem's Time to Connect incentive recognises this requirement and sets specific performance targets.

2017/18 performance for the Time to Connect incentive

6.11 The following table shows WPD's performance against the Ofgem Time to Quote and Time to Connect targets for LVSSA and LVSSB market segments in 2017/18. All targets have been beaten.

	Time to Quote (average number of days)		Time to Connect (average number of days)	
	LVSSA	**LVSSB**	**LVSSA**	**LVSSB**
West Midlands	4.14	4.47	28.08	40.28
East Midlands	3.51	4.91	28.16	35.21
South Wales	3.30	4.93	28.35	38.51
South West	4.87	5.40	25.73	29.94
Ofgem target	**8.21**	**11.73**	**42.08**	**52.70**

2017/18 performance for other market segments

6.12 For all other market segments, WPD specific targets have been set with the aim of achieving 20% improvement on benchmark performance (derived from an average of 2013/14 and 2014/15). The WPD RIIO-ED1 Business Plan specified that 2014/15 would be used as the benchmark year, but following the submission of business plans to Ofgem in 2012/13, discussions with the government led to a commitment to advance the improvements, making some prior to the start of the RIIO-ED1 period. The benchmark period was revised to incorporate the performance ahead of improvements being implemented.

Time to Quote performance for non-incentivised market segments (working days)					
Market segment	**LV**	**HV**	**DGLV**	**DGHV**	**EHV**
Benchmark (2 year average 13/14 14/15)	8.5	11.2	11.4	36.7	37.2
End of ED1 target (20% improvement)	6.8	8.9	9.2	29.4	29.7
2017/18 target	7.9	10.3	10.6	34.0	34.4
2017/18 performance	7.0	9.3	10.4	22.4	40.7

Time to Connect performance for non-incentivised market segments (working days)					
Market segment	LV	HV	DGLV	DGHV	EHV
Benchmark (2 year average 13/14 14/15)	105.2	132.6	53.5	169.9	299.6
End of ED1 Target (20% improvement)	84.1	106.1	42.8	135.9	239.7
2017/18 target	97.3	122.7	49.5	157.2	277.1
2017/18 performance*	95.7	122.2	51.1	231.2	242.6

*Actual performance is determined using an approach consistent with the regulatory reporting rules for time to connect which uses the later of the date of acceptance or date of payment. For larger connections, some customers elect to accept a quote to reserve network capacity, but pay some time later. This can lead to shorter time to connect measures especially for EHV connections.

6.13 There are a number of factors that can influence the time to provide a quote and time to deliver connection works, including fluctuations in the volumes of requests received, the complexity of the work required to provide the connection and managing external factors such as legal permissions and consents required for certain connections.

6.14 WPD has committed to regular reviews of connection processes to ensure that timescales are as short as possible and that feedback from customers is incorporated.

6.15 Delivery of connections has been made more efficient by improving the information available to customers before an application is made, improving the systems used to make an application and developing clear processes for each stage.

6.16 Targets for 2017/18 have been beaten in the LV, HV, DGLV and DGHV categories for time to quote and beaten for the LV, HV and EHV categories for time to connect.

Output (35) Provide excellent customer service so that customers continue to rank us as the top-performing DNO group in customer satisfaction surveys.	✔
Output (36) Carry out surveys with distributed generation customers to find out if they are satisfied with our service and identify where we could improve.	✔

6.17 During RIIO-ED1, WPD has committed to delivering excellent customer service so that WPD continues to be ranked as the top performing DNO group.

6.18 WPD recognises that customer satisfaction is very important to the success of the business. This applies to the whole connections process, from initial application processing through to final work on site. During the process customers interact with different WPD staff and all interactions should be of an equally excellent standard.

6.19 Since publishing the Business Plan there have been developments in the types of activity that we have seen with network connections. We have seen significant increases in activity levels in the connection of generation, which has led to network capacity being fully utilised on parts of the network, which means that the requirements of some customers cannot be accommodated without reinforcing the network. We have also seen changes in the types of connection enquiry that we receive, such as the growth in energy storage and interest from smaller community energy groups with different needs and experience to commercial developers.

6.20 As a result, clear communication and transparent processes have an even greater level of importance in maintaining customer satisfaction in this evolving environment.

6.21 Ofgem's Incentive on Connections Engagement (ICE) was introduced at the start of RIIO-ED1 to incentivise DNOs to understand and meet the needs of customers. Our ICE workplan details the steps that we take to engage with customers and to implement improvements based on feedback.   The documentation that we submit each year to evidence this work can be found on our website at the following link.

www.westernpower.co.uk/Connections/ICE.aspx

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

6.22 To understand how customers view WPD's service, and to assess the impact of our ICE workplan, we use the following surveys to measure the satisfaction of connections customers.

- The customer satisfaction survey score obtained as part of Ofgem's Broad Measure of Customer Satisfaction (BMCS). This assesses customer satisfaction specifically for minor connection customers (LVSSA and LVSSB).
- A WPD implemented survey for major demand customers (any customer not classified as LVSSA or LVSSB). This survey is undertaken on a monthly basis.
- A WPD implemented survey for distributed generation (DG) customers. This survey was carried out on an annual basis, however we are in the process of transferring this to a monthly survey to better align with the major customer survey and enable us to review satisfaction closer to the time the service is delivered.

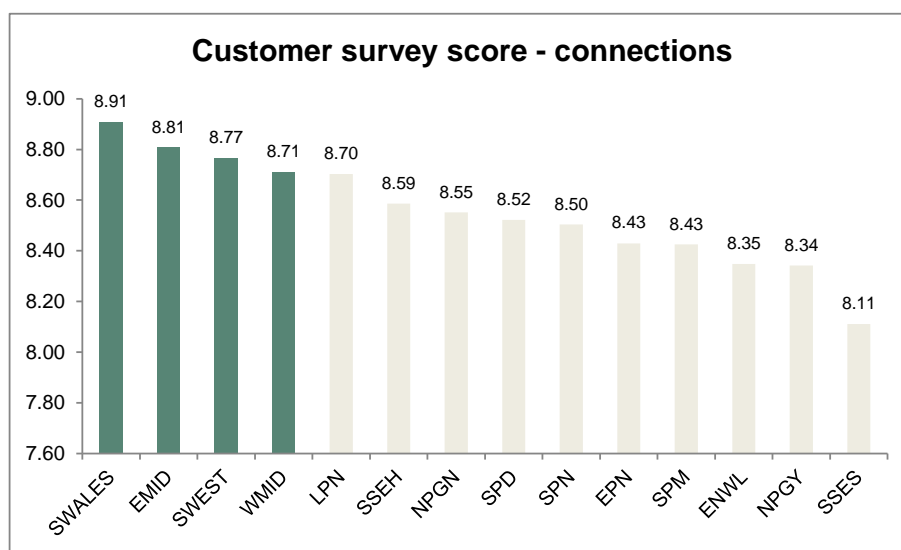**6.23** The two WPD surveys replicate the survey approach taken for BMCS.

2017/18 performance in customer satisfaction surveys

6.24 Ofgem specifies a target of 8.2 out of 10 for the customer satisfaction score part of BMCS and DNOs gain rewards or penalties relative to this target. In order to drive the business to provide service ahead of expectations, WPD has set a stretching internal target of 8.8.

6.25 WPD's 2017/18 performance for the three different customer groups is shown in the following table. Our performance exceeds Ofgem's target in all measures. Work is ongoing to achieve our stretching internal target of 8.8 for the BMCS and Major Connections Customer survey. We will continue to seek feedback from stakeholders in each customer group in order to improve our processes and identify best practice.

Connection customer satisfaction survey results 2017/18			
Customer Groups	**Ofgem target**	**Internal Target**	**Result**
Minor Connections (LVSSA and LVSSB)	8.2	8.8	8.78
Major Connections	n/a	8.8	8.65
Distributed Generation	n/a	8.8	8.83

6.26 The BMCS customer survey score for LVSSA and LVSSB connections provides a method of comparing DNO performance. The chart below shows the results for 2017/18 and customers have rated the four WPD licence areas in the top four places.

Customer survey score - connections

SWALES 8.91, EMID 8.81, SWEST 8.77, WMID 8.71, LPN 8.70, SSEH 8.59, NPGN 8.55, SPD 8.52, SPN 8.50, EPN 8.43, SPM 8.43, ENWL 8.35, NPGY 8.34, SSES 8.11

6.27 WPD's performance is achieved through a strong culture of customer service embedded throughout the organisation, supported by a variety of management performance indicators which ensure customer service is treated as a priority.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Improve communication with connections customers

| Output (37) Develop and improve the way we process online connection applications and make it easier for customers to track the progress of their application online. | ✔ |

6.28 Customers are able to either apply for a new connection online or download a version of the application form to be completed on paper. In January 2016, an ongoing survey was implemented for customers using the online application form to gauge how easy the form is to complete and the quality of the information provided during the application process. Customers are asked to provide a score out of 10. In 2016/17 the customer satisfaction score was 8.73 out of 10; in 2017/18 this increased to 8.88 out of 10.

6.29 In 2017/18 our Customer Connection Steering Group (CCSG) identified a need for improvements to the application form and we implemented changes based on the feedback provided. This included:
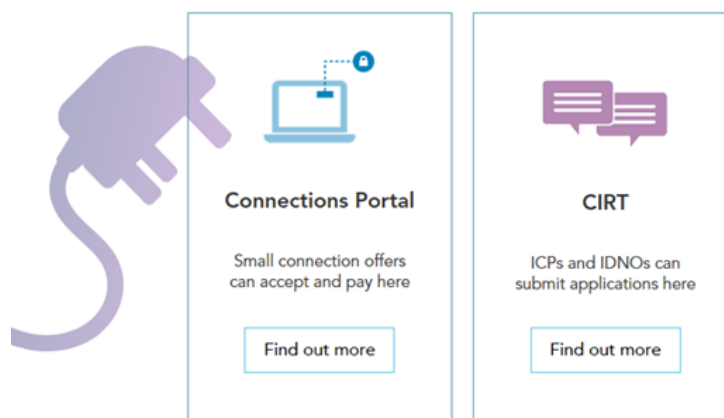
- An improved layout with clearly defined sections.
- A new section on the front page setting out what the quotation will include and other services the customer may need to budget for – such as on-site excavation.
- A next steps flowchart detailing what happens following receipt of a completed application form.

6.30 Some connection customers prefer to carry out transactions and track progress online. To facilitate this, WPD committed to enhancing online connections processing and progress tracking. We have two existing online systems: a Connection Portal and the CIRT system.

The Connection Portal

6.31 The Connection Portal allows customers applying for small projects and service alterations to access details of their connection offer (or budget estimate), accept the offer and pay for their connections work.

6.32 The Connection Portal was launched in 2014/15 and allows customers to request automatic email updates of key stages within the connection process.

Connections Portal

Small connection offers can accept and pay here

Find out more

CIRT

ICPs and IDNOs can submit applications here

Find out more

CIRT

6.33 The CIRT system was specifically designed for interactions with third party connection providers such as Independent Connection Providers (ICPs) and Independent Distribution Network Operators (IDNOs) for online submission of connection applications and progress tracking. The system has also been made available to developers.

6.34 During 2017/18 we began developing new functionality in CIRT, which will allow customers to check the current status of the legal land access process element of their new connection, keeping them informed in relation to the part of the process that relies on other parties.

6.35 Whilst some ICPs use CIRT, others prefer to use the online application process or email. We are therefore focusing developments on the online application process on the website and we have also developed an email-based process for submitting notifications for self-service schemes as an alternative to using CIRT.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Output (38) Make sure that the information we provide in documents and online is effective.	✔

6.36 WPD has committed to ensuring that customers requiring a connection receive clear information on the process. Information is provided to customers online via our website, through our contact centre staff or by direct contact with local planners. We regularly update the information provided to customers to ensure that it meets customer requirements.

6.37 The WPD website provides a valuable source of information and we undertake regular stakeholder engagement to identify potential improvements that could be made to the guidance that we provide.

6.38 Stakeholder requests and the improvements that we make as a result are detailed within WPD's ICE workplan and can be viewed on our dedicated ICE internet page.

www.westernpower.co.uk/Connections/ICE.aspx

6.39 Some of the improvements introduced during 2017/18 are detailed below.

Network Capacity Map

6.40 In March 2017 we introduced a new Network Capacity Map onto the website and we have continued to update the map in line with stakeholder feedback.

6.41 In 2017/18 we have implemented significant enhancements including:

- adding a new user interface to allow customers to narrow down the search to their specific requirements.
- increasing the amount of information provided for each substation adding demand information as well as generation. Users can now view substation details, demand capacity, generation capacity, fault levels and other technical information.
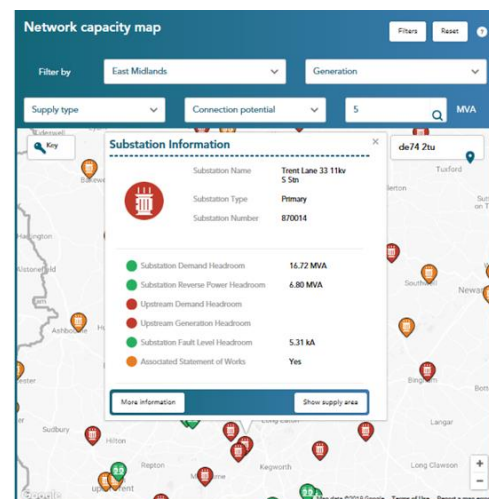
6.42 We presented the changes to expert stakeholders who attend our Customer Connections Steering Group and Distributed Generation Owner/Operator (DGOO) forum. Stakeholders had the chance to test a prototype of the updated map and provided additional input during the development stage.

6.43 In 2017/18 we had 20,574 hits on the capacity map, compared to 1,653 in 2016/17.

Generator Portal

6.44 In March 2017 we launched a new "Generator Portal" website. The portal was developed with the DGOO forum and provides registered users with information on planned outages for their connection as well as historic outage and constraint information.

6.45 Initially the portal served 33kV, 66kV and 132kV sites but has been expanded to include 11kV generation sites. We've introduced a new getting started guide to assist users with functionality.

6.46 To date there are 31 registered users for 379 generation sites.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Other Information Improvements

6.47 The following lists other areas where we have improved the information available about connections:

- Four online podcasts for community energy groups were launched to show examples of the work of existing groups and provide practical examples of existing schemes including battery storage and solar projects.

- A webinar was held to help distributed generation EHV customers understand Distribution Use of System (DUoS) charging for their connections.

- We added process flow charts to our website to describe the steps undertaken by WPD and the customer to complete a new connection to the network.

- The technical information site for connections customers has been integrated with our main website and a new "guest access" facility has been added based on feedback from Competition in Connections stakeholders.

- As a result of ambitious government plans to create new homes across the UK stakeholders from local authorities and local enterprise partnerships have identified a need for information on existing network capacity and potential reinforcement costs. A new webpage has been introduced specifically focussed on these groups and can be found at www.westernpower.co.uk/About-us/Our-Business/Our-network/Network-Development.aspx.

- A webpage specifically for community energy groups has been added to the website and can be found at the following link.
www.westernpower.co.uk/Connections/Generation/Community-Energy.aspx

- We developed and published a new guidance document on our website for Statement of Works – the process for determining whether any restrictions apply from National Grid Electricity Transmission where a large scale distributed generator wishes to connect to the WPD distribution network.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Improve our engagement with major customers

Output (40) Work with major customers to identify where our processes can be improved and quickly put in place any changes.	✓

6.48 Major connection customers (large site developers, multiple site developers and distributed generation customers) have a wide range of requirements for their connections, and the connection arrangements can be complex.

6.49 In RIIO-ED1, Ofgem has introduced a penalty-only incentive to encourage DNOs to improve interaction with major connection customers. The Incentive on Connection Engagement (ICE) requires DNOs to engage with major customers, develop improvement plans and implement changes.

6.50 The ICE penalties only apply to market segments that Ofgem has deemed as being non-competitive; however it is important to WPD that we engage with all connection stakeholders and WPD's ICE improvement plans are therefore focused on all market segments.

6.51 The incentive mechanism requires DNOs to submit reports to Ofgem detailing forward looking plans and reporting on previous proposals.

6.52 WPD's ICE submission for 2017/18 provides further detail on WPD's connections engagement and the actions this has led to. The submission can be found at the link below.

www.westernpower.co.uk/Connections/ICE.aspx

6.53 The main principle of the stakeholder engagement that we undertake is that it must lead to action. During 2017/18 we delivered 170 actions through our ICE workplan. This included substantially increasing the information available to customers, enhancements to our capacity map and the publication of a range of new guidance documents. We also increased the self-service options for Competition in Connection stakeholders which included enhancing self-design processes.

6.54 The following sections detail some of the mechanisms used to engage with connection stakeholders and the actions resulting from these interactions.

Customer Connections Steering Group

6.55 During 2017/18, we continued to work with our Customer Connection Steering Group (CCSG). The CCSG was formed in 2013 and meets on three occasions per annum, hosted by our Chief Executive.

6.56 The CCSG is made up of a range of stakeholders representing a cross section of connection customers in order to provide a balanced view of connection issues. The CCSG provides feedback on proposed initiatives and a strategic steer, ensuring that we correctly identify the priority areas for our ICE initiatives to address.

6.57 The CCSG directly influences ICE initiatives, for example in 2017/18 the CCSG prompted us to undertake work to improve guidance on DUoS charges for connection customers and to create

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

a new Competition in Connections (CiC) Group. The first CiC group was held in June 2017 and we held a webinar to provide information on DUoS charging in March 2018.

Stakeholder workshops

6.58 On an annual basis WPD holds generic stakeholder workshops across a variety of locations. These workshops are available for all stakeholders to attend, but they also include specific elective sessions dedicated to connections activity.

6.59 Feedback from our 2017 workshops led us to include enhancement of our engagement with local government authorities and local enterprise partnerships as an initiative in our ICE workplan for 2017/18.

6.60 This year we provided an update on the progress of the ICE workplan and the actions taken during the year to deliver the service improvements required by stakeholders. Stakeholders were asked to identify actions they would like to see implemented in future workplans and this feedback which has been factored into our ICE workplan process. A report on the sessions, including specific input from connections customers, can be found at the link below.

www.westernpower.co.uk/docs/Stakeholder-info/2018-(1)/WPD-Stakeholder-workshop-Jan-Feb-2018-Summary-Repo.aspx

Distributed generation workshops

6.61 WPD's fourth annual workshop for DG customers was held in November 2017 and attended by over 40 stakeholders from a range of backgrounds. The workshop is an opportunity for WPD to share progress, performance and new initiatives with DG stakeholders and, most importantly, for stakeholders to provide feedback. Topics for discussion at the November 2017 workshop included outage management, our transition to the role of Distribution System Operator and information provision.

6.62 During the workshops we asked attendees to identify their most important priorities for DG connections and feedback from attendees has been used to shape our 2018/19 ICE workplan. Stakeholders indicated that availability of information and online services was a priority but also highlighted the importance of WPD facilitating further DG connections to the network by developing more flexible solutions, and transitioning to the role of Distribution System Operator.

6.63 A feedback report from the event can be found at the link below.

www.westernpower.co.uk/About-us/Stakeholder-information/Connection-Customer-Engagement/Distributed-Generation-Stakeholder-Workshop.aspx

Community Energy workshops

6.64 WPD has provided Community Energy Workshops since 2014/15. These workshops provide an engagement opportunity specifically for stakeholders involved with community energy projects. These community led projects allow communities to share the costs of larger scale generation plants or for groups of households/businesses to install microgeneration with the benefit of bulk buying.

6.65 During 2017/18 we hosted eight community energy workshops across our licence areas, together with a further eight individual events, engaging with 541 stakeholders overall.

6.66 Over time, the workshops have demonstrated that community energy stakeholders have rapidly developed an understanding of the connections process and are now looking to explore the topic of alternative connections, energy storage and the associated potential for involvement in smart networks and demand side response.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

6.67 Our ICE initiatives have reflected this shift in knowledge and as a result we have expanded our Community Energy connections guide to include topics such as alternative connections. In collaboration with other DNOs we have developed new best practice guides which introduce the topic of energy storage and are designed to encourage communities to engage with change and innovation in the energy sector.

Case study – Community energy feast

In December 2017 we worked with environmental consultants Regen to undertake a new event with community energy stakeholders. A group of 36 community energy stakeholders were invited to Castle Drogo hydropower and biomass projects to learn more about these renewable energy systems.

After the site visit there was an event which provided attendees with the opportunity to discuss project ideas with WPD's Innovation Engineers.

Distributed generation owner operator (DGOO) forum

6.68 We introduced a customer forum for DG owners/operators during 2016/17 as a result of feedback from DG stakeholders identifying that they needed more information on planned system outages and constraints affecting their connections. Outage costs can be significant to the DG sector and stakeholders told us that it is important for them to be able to forecast to owners/investors when there will be outages.

6.69 We held four DGOO meetings during 2017/18. The forum provides input into the development of the ICE workplan, prompting new initiatives throughout the year. As an example during 2017/18 this included a request to provide visibility of known outages and constraints in a year ahead annual plan and this information has now been published on the Generation Portal.

6.70 Further outputs included expanding the Generation Portal to include 11kV generation sites, introducing a guide to using the portal, developing a report to record and quantify the amount of generation lost in MWh due to National Grid and WPD outages and providing more information on the portal in relation to outage history for specific network circuits.

6.71 Further information on the forum can be found on our website at:

www.westernpower.co.uk/Connections/Generation/Distribution-Generation-owner-operator-forum.aspx

Senior manager contact for major customers

6.72 Stakeholder feedback indicates that major customers can benefit from a single point of contact where they deal with a large number of schemes. As a result a senior manager point of contact was offered to 50 major customers (with the highest levels of activity) in 2016/17.

6.73 The role of the senior manager contact is to liaise with the customer to understand the range and scope of works they propose to undertake with WPD and act as a senior escalation point of contact to resolve issues. We have continued to offer this contact to major customers and the number of customers choosing this option has increased to 75. We have also extended the availability of this service to local government authorities and local enterprise partnerships to support long-term planning for connections growth.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

<table>
<tr><td>Output (39) Host 'surgeries' every three months to help connection customers to understand our processes.</td><td>✓</td></tr>
</table>

6.74 Local 'surgeries' for connections customers continue to be promoted.

6.75 In the first two years of RIIO-ED1 we advertised set surgery dates in specific locations in a range of relevant publications. We found however that customers were more interested in attending individual meetings arranged with a planner/engineer within their local depot with some simple queries being resolved over the phone.

6.76 We have therefore amended our approach, rather than advertising set dates over the year we offer customers the opportunity to arrange a surgery (referred to as a connection appointment) at a time and location that suits their application.

6.77 We advertise this opportunity on our connection webpages as well as publications such as 'British Farmer and Grower Magazine'.

6.78 During 2017/18, a total of 50 customers attended nine connection 'surgeries'.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Guaranteed Standards of Performance

Output (41) Aim to achieve no failures of the connection GSOPs.	✓

6.79 Every year WPD provides around 70,000 budget estimates and quotations, 30,000 connections and 10,000 street furniture service fault repairs for local authorities.

6.80 The Connection Guaranteed Standards of Performance detail minimum levels of service and set out the level of payments to customers where these standards are not met. There are thirty connection guaranteed standards of performance covering all aspects of connection provision.

6.81 Each failure against a standard results in a payment to the customer, with the majority of connection standards having a per day cumulative penalty.

6.82 WPD voluntarily doubles the value of payments for any failures against guaranteed standards.

6.83 During RIIO-ED1, WPD committed to a tough challenge, targeting zero failures against all of the connection guaranteed standards. In 2017/18 we have had only one GSOP failure, this related to the timeframes for providing a quote for a high voltage demand connection.

6.84 We aim to learn from every failure and to continue to work to maintain high standards throughout the RIIO-ED1 period.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Further developing a competitive market

> Output (42) Improve customer awareness of other connection providers and regularly check that customers understand the options available to them. ✓

6.85 Prior to the introduction of competition for the provision of connections, customers could only request a connection from the incumbent DNO. It is now possible for third parties to carry out connections work, 'in competition' with the DNO.

6.86 The industry has a code of practice to facilitate competition, this covers the processes, practices and requirements that a DNO will use where an ICP seeks to undertake contestable works. The code therefore influences some of the actions required by DNOs to facilitate competition.

6.87 Over time, the scope of contestable connections work which can be undertaken by third party providers has gradually been extended. During RIIO-ED1 WPD has committed to both improving customer awareness of third party providers and to extending the types of work that can be undertaken by these providers.

6.88 To ensure that connection customers are aware that alternative providers exist, we provide clear links to competition in connection information on the main connections page of the WPD website; our connection process flowcharts include the option of using third party connection providers and we include information about the availability of alternative connection providers in connection packs sent to customers.

6.89 Annual customer satisfaction surveys include questions designed to gauge customer awareness of alternative providers. The surveys ask large connection and distributed generation customers who have obtained a connection from WPD whether they were aware that they could have asked a third party to provide the connection.

6.90 Awareness continues to increase and the 2017/18 results of the survey show that awareness is high with 81% of customers aware that they can use an alternative provider to deliver their new connection.

Raising awareness of the Code of Practice

6.91 WPD actively participated in national working groups to develop the Competition in Connections (CIC) Code of Practice and has implemented new internal policies and procedures to ensure compliance. Information and guidance is also published on our website at the following link.

www.westernpower.co.uk/Connections/Useful-Information/Competition-in-Connections/Information-for-Customers.aspx

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Output (43) Work with other connection providers to extend the type of work they can carry out, including high voltage and reinforcement work.	✓

6.92 WPD actively assists competition by developing processes and systems to allow third party connection providers to extend the scope of what they can do.

Working with connection providers

6.93 We carry out specific engagement with Competition in Connection (CIC) stakeholders to ensure that we receive detailed feedback to enable us to make improvements in this area. In June 2017 we held a CIC workshop that was attended by 57 CIC stakeholders. The stakeholders took part in round table discussions and identified ways in which WPD could improve its CIC processes. Stakeholders were asked to feedback on their experience with WPD and highlight best practice from other DNOs. As a result of this workshop WPD included a range of additional actions in the ICE workplan targeted at CIC.

6.94 Following feedback from our CCSG and DG workshop we have created a forum to focus on the specific needs of CIC stakeholders; the CIC group. An inaugural meeting was held on 28th November 2017 and it was agreed that sessions would take place three times a year, attended by WPD senior management and a panel of expert CIC stakeholders covering a range of market segments. The group provides feedback on our CIC services, acting as a sounding board for improvement initiatives and informing the development of the ICE workplan. Details of the meetings, including minutes can be found at the following link.

www.westernpower.co.uk/About-us/Stakeholder-information/Connection-Customer-Engagement.aspx

Extending contestable work

6.95 Since 2013, WPD has been developing processes that allow third parties to carry out work on the HV network. Initially this focused on HV jointing, allowing third party jointers to carry out physical connection work on site. This was followed by the introduction of processes to allow third parties to carry out their own switching, testing and commissioning.

6.96 The scope of work that can be undertaken by competitors has gradually increased and this has been facilitated further by WPD's response to the implementation of the CIC Code of Practice. We have been working with CIC stakeholders to develop processes for the determining the point of connection to the network, approving the design of the connection and the delivery of connection work on site.

Design of Points of Connection

6.97 We have implemented processes that allow ICPs to self-determine the point of connection to the existing network (for the majority of straightforward connections).

6.98 These processes were implemented in September 2015 and take up was initially slow. However we have seen gradual increases in the numbers of self-determined POCs as detailed below.

Determined points of connection (all voltages)						
	2015/16		2016/17		2017/18	
	Volumes	%	Volumes	%	Volumes	%
Self-Determined POC by ICP	8	0.13%	172	3.04%	239	4.03%
WPD Determined POC	6,242	99.87%	5,485	96.96%	5,697	95.97%
Total POC's	**6,250**		**5,657**		**5,936**	

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

6.99 In addition ICPs have the option to design the network connection without the need for design approval from WPD. Processes and procedures for authorised ICPs to carry out self-approval have been developed to facilitate competition in connections. Again take up of this has been slow but we have seen gradual increases in the number of self-approved designs.

Approval of ICP designs (all voltages)						
	2015/16		2016/17		2017/18	
	Volumes	%	Volumes	%	Volumes	%
ICP Self-Approved Design	2	0.60%	203	26.13%	292	35.96%
WPD Design Approval	329	99.40%	574	73.87%	520	64.04%
Total Design Approvals	**331**		**777**		**812**	

6.100 The growth has been assisted by the ICE initiatives delivered during 2017/18 which enhanced the policy and procedures for self-design by ICPs.

Delivery of physical connection work

6.101 During 2013 HV jointing trials were initiated, allowing third party jointers to carry out physical connection work on site, this was followed by the introduction of processes to allow third parties to carry out their own switching, testing and commissioning.

6.102 We work with stakeholders to support the development of competition in connections work. In 2016/17 stakeholders indicated that our processes for HV self-connection could be simplified and we trialed a new option for safety authorisation. This involved an agreement that switching could be undertaken under WPD's safety rules whilst the associated jointing work could be undertaken under the ICP's safety rules. This hybrid option (referred to as Option 4) was implemented in July 2017 and communicated to ICPs.

6.103 There is a progressive year-on-year increase in the volumes of HV connections completed by a third party ICP. The volumes are shown in the table below. Of the 19 connections completed by third parties 11 were carried out under 'option 4'.

HV connections completed						
	2015/16		2016/17		2017/18	
	Volumes	%	Volumes	%	Volumes	%
HV connected by ICP	10	4.46%	15	6.58%	19	7.79%
HV for ICP connected by WPD	214	95.54%	213	93.42%	225	92.21%
Total POC's	**224**		**228**		**244**	

6.104 Within the RIIO-ED1 business plan, WPD committed to facilitating the extension of contestable work to allow third parties to undertake network reinforcement. Network reinforcement is required where there is limited capacity on the existing network to accommodate the load of new connections. It may result in upstream assets being increased in size or additional circuits being provided. To date there has been no take up of this option by third party providers; we are reviewing the existing trial application criteria with the aim of broadening the range of potentially interested parties.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

2015-2023

Western Power Distribution
RIIO-ED1 Business Plan Commitments Report
Year Three – 2017/18

31 October 2018

Customer satisfaction

WESTERN POWER
DISTRIBUTION
Serving the Midlands, South West and Wales

Customer satisfaction
Contents

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

7 Customer satisfaction

7.1 The provision of excellent customer service for WPD's 7.9 million customers is a core business objective.

7.2 WPD has committed to a range of outputs to improve customer satisfaction.

7.3 The Customer Satisfaction outputs are in six themes.

- Customer service
- Telephone response
- Communication with customers
- Stakeholder engagement
- Complaints
- Guaranteed Standards of Performance awareness

Regulatory framework:

7.4 Ofgem assesses customer service using the Broad Measure of Customer Satisfaction (BMCS). BMCS is an incentive mechanism that provides rewards or penalties in three areas of customer service – customer satisfaction, complaints and stakeholder engagement.

7.5 Customer satisfaction is assessed through a survey and deals separately with three types of interaction.

- Customers requesting a connection (minor connections only).
- Customers experiencing a supply interruption.
- Customers making a general enquiry.

7.6 The complaints element of the BMCS results in penalties where DNOs do not meet specified target performance. The measure is subdivided into four components with greater weighting applied to repeat complaints and complaints that take longer than 31 days to resolve.

7.7 The final part of the BMCS considers stakeholder engagement with rewards available for DNOs that engage well and use the information obtained to improve the service provided to customers. This incentive has been strengthened to encourage DNOs to focus more on issues relating to vulnerable customers.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Overview of customer satisfaction outputs

Customer service

44	Continue to be the top-performing DNO group across all elements of the Broad Measure of Customer Satisfaction.**	We achieved the top four scores for overall customer satisfaction across all of the DNOs. This overall rating combines results of the three surveys for supply interruptions, connections and general enquiries.
45	Maintain certification to show that we meet the Customer Service Excellence standard.**	We were awarded 'Compliance Plus' status for 43 of the 57 standards. We were the highest-scoring organisation out of all those accredited.

Telephone response

46	Respond to phone calls quickly, answering them within two seconds.**	Our average response time for customer calls was 1.84 seconds.
47	Limit the number of calls that are abandoned before we can answer them to less than 1%.**	Only 0.13% of calls were abandoned.
48	Always provide customers with the option to talk to a member of staff when they call our contact centre.	Our systems allow us to make sure that customers are always provided with the option to talk to a member of staff.

Communication with customers

49	Provide a restoration time for every power cut.**	All power cuts have an estimated restoration time which is updated as further information is provided by field teams.
50	Call back all customers who have been in contact about a fault.**	We called back 99.7% of customers who contacted us about a fault.
51	Contact customers within two days of receiving an enquiry which was not about a fault.**	We contacted 99.6% of customers who contacted us with an enquiry which was not about a fault within two days.
52	Provide 'on-demand' messaging through text and social media for customers who want to be kept informed in other ways, rather than a phone call.	We provided on-demand messaging through text and social media. We sent 623,348 text messages during high voltage power cuts.
53	Develop 'self-service' options for customers to find information online.	We hosted 28,720 webchat conversations, our app for reporting power cuts was downloaded 4,515 times and we had over one million hits on our online map showing power cuts.

Stakeholder engagement

54	Continue to host a customer panel where our CEO will meet with our expert stakeholders four times a year.	Four customer panel meetings were scheduled during the year. One panel meeting was cancelled due to heavy snow.
55	Continue to host at least six stakeholder workshops each year.	We hosted six general sessions, attended by over 250 stakeholders across our licence areas.
56	Continue to produce a stakeholder report every year providing an update on the actions we have taken as a result of stakeholder involvement.	This yearly Business Plan Commitments summary report and the separate detailed report replace the stakeholder report.

Complaints

57	Resolve at least 70% of complaints within one day.**	We resolved 85% of complaints within one day.
58	Continue to have a target of no complaints where the Ombudsman has to get involved.**	There were no complaints referred to the Ombudsman.

Guaranteed Standards of Performance awareness

59	Continue to send the 'Power for Life' publication to all 7.9 million customers and make sure it promotes the GSOPs.**	We issued 'Power for Life' to all 7.9 million customers in September 2017. It included information on the GSOPs.

* Targets are for the full eight year RIIO-ED1 period, not for a discrete year
** Target to be achieved each year of RIIO-ED1

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Customer service

Output (44) Continue to be the top-performing DNO group across all elements of the Broad Measure of Customer Satisfaction	✓

7.8 WPD is committed to remaining the top performer in the customer satisfaction survey part of Ofgem's Broad Measure of Customer Satisfaction.

7.9 There are three separate customer satisfaction surveys that are carried out covering connections, supply interruptions and general enquiries.

7.10 Performance in each component is subject to separate assessment, leading to rewards or penalties based upon comparison against a target score of 8.2 out of 10. In RIIO-ED1, Ofgem has placed a greater emphasis on connections within incentive reward and penalty mechanisms. The relative weighting for the three categories is shown below.

Relative weighting of customer satisfaction survey	
Connections	50%
Supply interruptions	30%
General enquiries	20%

7.11 This relative weighting can be used to combine the scores from the three components into an overall customer satisfaction score.

Overall customer satisfaction

7.12 WPD achieved the top four scores in 2017/18 for overall customer satisfaction (amalgamating results for the three surveys for connections, supply interruptions and general enquiries) when compared with the other DNOs, as shown below.

Customer survey score - overall weighted score

DNO	Score
SWALES	9.03
WMID	8.91
EMID	8.90
SWEST	8.90
SSEH	8.85
LPN	8.75
SPM	8.75
SPN	8.74
EPN	8.73
NPGN	8.72
SPD	8.70
NPGY	8.56
ENWL	8.47
SSES	8.34

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary
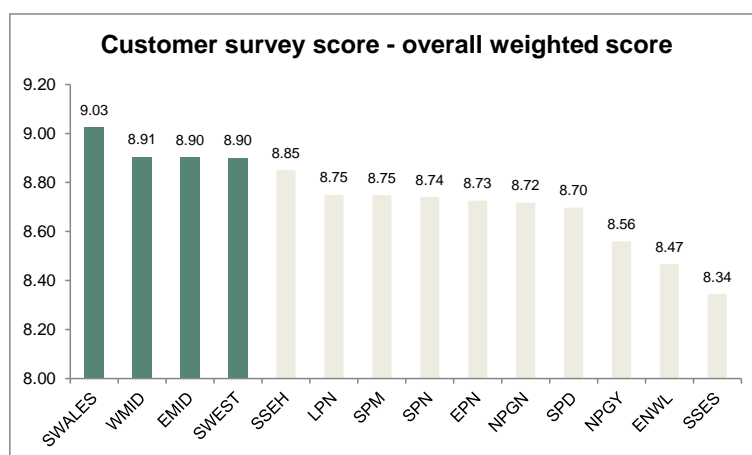
7.13 The 2017/18 performance in the three separate components is shown below.

Customer survey score - connections

SWALES	EMID	SWEST	WMID	LPN	SSEH	NPGN	SPD	SPN	EPN	SPM	ENWL	NPGY	SSES
8.91	8.81	8.77	8.71	8.70	8.59	8.55	8.52	8.50	8.43	8.43	8.35	8.34	8.11

Customer survey score - supply interruptions

SSEH	SWALES	WMID	EPN	SWEST	EMID	SPM	SPD	SPN	NPGN	LPN	SSES	NPGY	ENWL
9.22	9.10	8.99	8.88	8.87	8.87	8.86	8.82	8.79	8.77	8.77	8.75	8.73	8.32

Customer survey score - general enquiries

SPM	SWEST	WMID	SPN	EPN	SWALES	EMID	NPGN	ENWL	SSEH	SPD	LPN	NPGY	SSES
9.39	9.29	9.27	9.25	9.23	9.21	9.19	9.05	8.98	8.96	8.95	8.84	8.84	8.32

7.14 Improvements to customer service have been implemented by acting on the feedback customers provide during the surveys. This involves senior managers reviewing individual comments to identify specific business changes that will lead to maintaining industry leading performance.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Output (45) Maintain certification to show that we meet the Customer Service Excellence standard.	✔

7.15 In order to gain an independent view of customer service WPD committed to continuing to maintain the Customer Service Excellence standard. The Customer Service Excellence standard is a Government scheme which recognises organisations that provide effective and excellent customer service.

7.16 WPD has been certified to the standard since 1992 (when it was known as the Charter Mark).

7.17 Every year Customer Service Excellence assessors review customer service against five criteria.

- Customer insight
- Culture of the organisation
- Information and access
- Delivery
- Timeliness and quality of service

7.18 In 2017/18 WPD increased the number of 'Compliance Plus' ratings from 38 to 43, out of a total of 57 standards (receiving a compliance rating for all others). WPD was the highest scoring organisation out of 590 companies.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Telephone response

Output (46) Respond to phone calls quickly, answering them within two seconds. ✔

7.19 Allowing customers to speak to someone is an essential part of good customer service. We continue to operate regionally based in-house Contact Centres that are adequately staffed to provide a fast response.

7.20 Where circumstances lead to exceptionally high call volumes we expand the number of call takers by using trained staff across our business to maintain service levels and provide customers with information. We also provide facilities for contact centre and other trained staff to take calls at home, should bad weather prompt this need.

7.21 We recognise that customers can be frustrated when their calls are not answered quickly. WPD has a track record of answering calls quickly and we will continue to do so.

7.22 During RIIO-ED1 we have committed to target answering calls within two seconds.

7.23 For 2017/18 average response times were as follows.

Average response time for customer calls					
	West Midlands	**East Midlands**	**South Wales**	**South West**	**WPD total**
Average time taken for response by an agent (seconds)	2.09	1.97	1.59	1.70	1.84

7.24 The West Midlands telephone response times were affected by increased numbers of faults during snow storms in December, including Storm Caroline. We saw nearly twice the average number of calls in December 2017 for the West Midlands and as a result call response times were longer than normal. Excluding December the average response time for customer calls in the West Midlands was 1.71 seconds.

Output (47) Limit the number of calls that are abandoned before we can answer them to less than 1%. ✔

7.25 Abandoned calls arise when customers decide to hang up before they speak to a call taker. This typically arises when customers are being kept on hold for a long time. WPD's approach of answering calls quickly results in very few abandoned calls. During RIIO-ED1 we have committed to a target of having less than 1% of our inbound calls being abandoned. Within 2017/18 only 0.13% of calls were abandoned.

Output (48) Always provide customers with the option to talk to a member of staff when they call our contact centre. ✔

7.26 When a customer calls about a fault, WPD uses recorded messages to provide information relating to the area where the incoming call is placed. These messages are updated as more information about supply interruptions becomes known.

7.27 Whilst providing recorded messaging is adequate for some customers, many prefer to speak to a call taker to find out further information or to get reassurance about when supplies will be restored. The telephony systems used by WPD always provide customers with the option to talk to a call taker.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Communication with customers

7.28 Keeping customers informed and updated about enquiries and services is important.

7.29 WPD uses a variety of methods to ensure that communication remains effective and appropriate for our broad customer base. During RIIO-ED1, we have committed to developing new channels of communication beyond the traditional telephone and written methods – including online, e-mail, text, smart phone and social networks.

Output (49) Provide a restoration time for every power cut.	✓

7.30 When supplies are interrupted, customers require information about when they will be back on supply. In the RIIO-ED1 Business Plan, we stated that we would be obtaining regular progress updates from field staff in order to be able to provide a restoration time for every outage.

7.31 In May 2016 we introduced a process whereby an estimated restoration time (ETR) is automatically populated into our incident management systems. ETR estimates are based on an analysis of the details of the fault – i.e. whether it affects the high or low voltage network, and typically how long it takes for specific fault types to be resolved.

7.32 All contact centre staff have access to the data and can ensure that customers are kept well informed in relation to the likely timeframes for restoration of supply.

7.33 During the course of a fault, dispatch teams gather information from field staff at regular intervals. The incident management system automatically reviews the ETR status of each fault every five minutes and uses an algorithm to prompt members of the dispatch team to update these in advance of the ETR expiring.

7.34 The data about ETRs is linked to the WPD website and to our Power Cut app which provides automatic alerts to customers. This enables customers to keep track of the ETR without having to contact WPD directly.

Output (50) Call back all customers who have been in contact about a fault.	✓

7.35 When customers contact WPD because they are off supply the main thing they want to know is when the power will be restored. Although we provide an estimated time of restoration for every fault, it may become necessary to revise the estimate as the fault progresses. For these situations WPD has implemented a process of proactively contacting customers to keep them updated.

7.36 During RIIO-ED1, we committed to calling back *all* customers who contact WPD about a fault. As well as providing progress updates to customers, this also provides the opportunity to identify any customer service related issues.

7.37 When a customer calls about a power outage their details are logged and automatically added to a call back list. When not taking inbound calls, contact centre staff progressively work through the call back list during the course of the fault. Customers who are medically dependent on electricity are given priority.

7.38 The call back process can have a number of outcomes including: a contact centre team member speaking to the customer; leaving a message or sending a text message. Where there is no reply or an engaged tone the customer's details will be returned to the call back queue.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

7.39 A small proportion of customers refuse a call back or do not provide contact details and on occasion we also receive calls from third parties who are not able to provide the customer's contact details.

7.40 During 2017/18 call backs (or another form of contact) were made to 99.72% of customers who were in contact about a fault; this figure reflects the number of customers that we attempted to call including those who did not answer.

Output (51) Contact customers within two days of receiving an enquiry which was not about a fault.	✓

7.41 When customers make any non-fault related general enquiry, their details are logged by central administrative staff and a prompt is created for local teams to contact the customer.

7.42 During RIIO-ED1 WPD has committed to contacting customers with non-fault enquiries within two working days. During 2017/18 the percentage of customers contacted within two working days of a non-fault enquiry are as follows.

Customers contacted within two days of a non-fault enquiry (%)					
	West Midlands	**East Midlands**	**South Wales**	**South West**	**WPD Total**
Number of enquiries	59,429	60,187	21,565	51,321	192,502
Percentage contacted within 2 working days	99.85%	99.34%	99.58%	99.50%	99.57%

7.43 In order to achieve these levels of performance WPD uses a more challenging internal target of contacting customers within one day. Where contact has not been made within one working day of the enquiry, an automated email is sent to the local manager, which is repeated daily until the contact is made.

7.44 There are occasions where the customer does not respond to telephone contact and in these circumstances an email or letter is sent to identify next steps so that the enquiry can be either progressed or closed.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Output (52) Provide 'on-demand' messaging through text and social media for customers who want to be kept informed in other ways, rather than a phone call.	✓

7.45 During RIIO-ED1 WPD has committed to providing network information for customers through on demand messaging via text and social media – sending information to customers who wish to be kept informed.

Twitter

7.46 WPD started to use Twitter to interact with customers in July 2013. The number of Twitter followers has grown year on year, increasing from 13,666 in 2015/16 to 23,800 in 2017/18. Our Twitter feed provides customer updates on outages (using the handle #powercut) and enables customers to interact with us, ask questions and provide information. We proactively tweet on all faults where over 500 customers are off supply and on faults that have prompted a number of social media queries or calls. We also use Twitter to promote WPD information campaigns such as public safety. Our feed can be found at www.twitter.com/wpduk.

7.47 We seek to use Twitter innovatively to raise awareness of the business and to interact with our customer base – often reaching customers who might be less likely to engage via more traditional methods.

Facebook

7.48 WPD launched a profile on Facebook in February 2015, using it as a mechanism to provide customers with information on outages but also to raise awareness on key matters such as landowner safety, child safety, our apprenticeship scheme and our annual customer awareness campaign 'Power for Life'.

7.49 We look to post on Facebook once a day, on average, providing engaging content with regular features, latest news updates, business/industry information and key messages promoting who we are and what we do. Our Facebook Page can be found at www.facebook.com/wpduk.
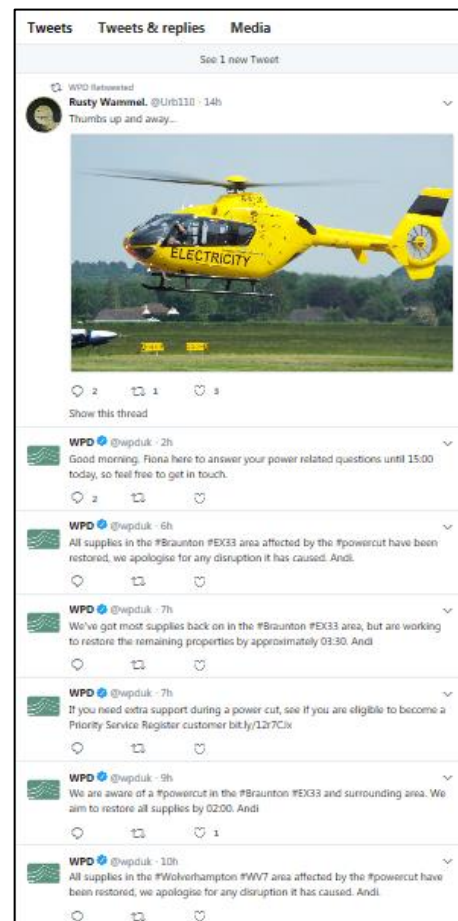
LinkedIn

7.50 We launched a WPD LinkedIn page in February 2017 page and have established over 2,500 followers. LinkedIn is used to provide business news and to promote general campaigns as well as information on careers within WPD. We use the page as a forum to generate discussion on our business and the wider industry. Our LinkedIn page can be found at www.linkedin.com/company/western-power-distribution.

Text messaging

7.51 In 2015/16 we introduced a system to send proactive text message updates to customers affected by power cuts. In 2016/17 this was developed as a two way text messaging service so that customers could respond to our messages with queries, initially this was introduced for deaf/hard of hearing customers but we have expanded usage to include all customers.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

7.52 Customers who have contacted us regarding a power cut are automatically added to a list to receive a proactive call back to provide them with updates regarding the fault. Call backs can now be made via a text message as customer feedback indicates that phone calls can at times be intrusive.

7.53 There are exceptions to using text messages – for example we will always call customers on our Priority Services Register and if customers have experienced a supply interruption within the last week we will also ensure that they receive a phone call rather than a text message. Customers are given the opportunity to respond by text and we answer queries and provide further information in this way.

7.54 During 2017/18 we sent 623,348 proactive texts to customers and the two way messaging service was used 139,519 times.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Output (53) Develop 'self-service' options for customers to find information online.	✔

7.55 We ensure that our website is accessible to all customers, supporting individuals with a range of needs such as impaired vision, dyslexia or customers for whom English is a second language. A dedicated 'accessibility' page is clearly signposted on every page of the website. The page provides guidance on a range of options including adjusting font size, altering background colour and the availability of free software which allows the website to be read aloud or translated depending on customer need.

7.56 During 2017/18 we introduced new website functionality to enhance the accessibility of the website. This included the following.

- 'ReciteMe' which has a range of features including the ability to convert text to speech, reading out content to the user. The functionality allows translation into 103 languages and a text only view which provides a reading ruler and adjustable colour schemes for people with dyslexia and visual impairment.
- 'Robobraille' which allows PDFs, images and other files to be converted into an e-book, text file, audio or braille and covers over 30 languages.
- 'Interpreternow' allows deaf customers to contact us in British Sign Language (BSL) via an online interpreter, users simply download the free app.
- A series animated customer information videos provide information in BSL.

7.57 The Royal National Institute of Blind People (RNIB) undertook an audit of our website in June 2017 and confirmed that our site complies with internationally recognised web content accessibility guidelines.

7.58 There are a number of 'self-service' options made available on the WPD website including the following.

- Webchat functionality (introduced in December 2014) which allows visitors to the website to communicate online in real time with a WPD advisor 24 hours a day. Usage of the functionality has remained high, with 28,720 'chats' taking place in 2017/18 with 93.3% satisfaction indicated by users.
- A Power Cut app (introduced in February 2016) that can be downloaded for free, which enables individuals to register a post code so that they will receive an automatic alert if a power cut occurs. There is no limit to the number of post codes that can be registered. The app also allows customers to report power cuts, register for the Priority Services Register and self-diagnose problems such as a fuse box trip or a pre-payment meter issue. During 2017/18 the app was downloaded 4,515 times.
- The ability for customers to check either their supplier or distribution company, and find contact details, by entering their post code.
- A notification system where customers can register to be informed of any website changes such as amendments to content or the addition of new functionality. This removes the need to visit the website regularly to check for changes.
- The option to register to receive storm bulletins via email – there are three categories of bulletin, one sent in advance of a predicted event, one during a storm and one post event. We inform customers of the latest weather conditions, areas affected, the

number of customers off supply and key steps we are taking to restore power. The bulletins were first used for Storm Angus in January 2017 and during 2017/18 848 customers registered their email addresses.

- An online form 'Help us to help you' which encourages customers to provide their contact details so that we can contact them if required during a power cut. The form was introduced in February 2017 and during 2017/18 a total of 3,287 customers provided their details.
- A network capacity map was launched in March 2017 and allows users to quickly view the capacity status at each of our substation sites. During 2017/18 we enhanced the functionality of the map and the data accessible in line with customer feedback; it was viewed 20,533 times.
- The option to register to join our Priority Services Register online.
- A power cut map that enables customers to access up to date incident information. The map shows an overview of current power cuts for all areas allowing the user to look at local information by entering a post code. The map provides estimated restoration times and contact information should the customer wish to speak to a member of WPD staff directly. During 2017/18 we have enhanced the user interface of the map to provide more general information and to link to the information provided via our Twitter account.
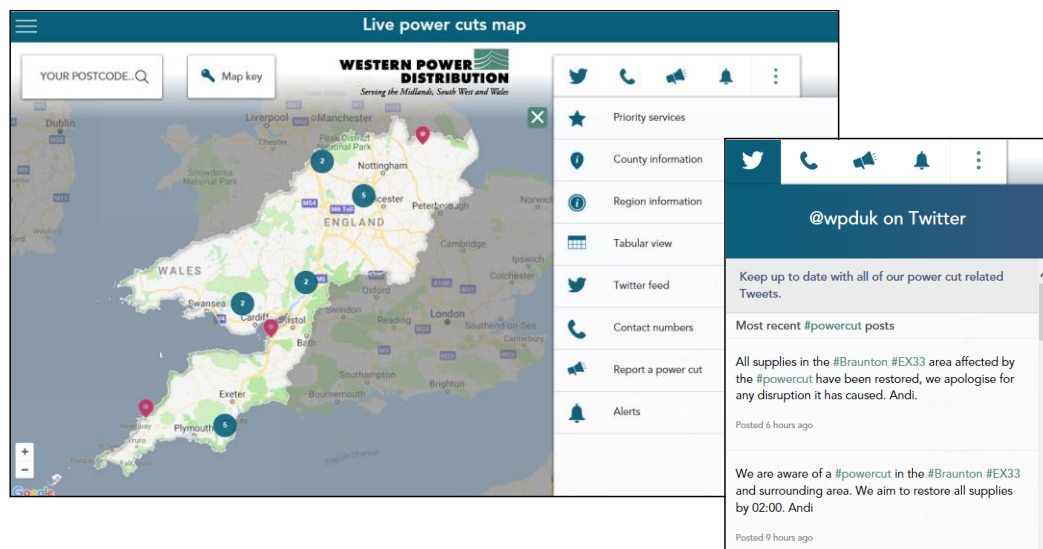
7.59 Usage of our self service options has grown in most areas since 2014/15; a snapshot of the growth of some of our services is shown below.

Growth in use of 'self-service' online information				
Self-service option	2014/15	2015/16	2016/17	2017/18
Power cut map	323,837 hits	666,323 hits	918,083 hits	1,283,935 hits
Post code search	575,533 hits	916,960 hits	1,302,210 hits	1,997,075 hits
Online connection applications	2,811 applications received	3,399 applications received	4,390 applications received	5,239 applications received
Find your distributor	85,150 hits	68,378 hits	78,523 hits	139,252 hits
Who is my supplier (*went live in Jan '15)	31,803 enquiries	602,713 enquiries	738,040 enquiries	994,264 enquiries
Priority Services Register applications (online)	1,555	2,489	6,747	11,237

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Involving stakeholders

7.60 Regular stakeholder engagement is used to improve day to day operations and inform business priorities. WPD has a database of approximately 5,500 stakeholder contacts, categorised into customer segments, allowing targeted engagement on specific issues.

7.61 We engage with stakeholders on a variety of levels, dependent upon their knowledge and level of interest as demonstrated in the diagram below.

Level 1 - Expert
Groups such as our Customer Panel and industry working groups, providing critical challenge to our strategy

Level 2 - Interested
Individuals who interact regularly with WPD and have a good knowledge of our service, providing valuable input to our annual stakeholder workshops

Level 3 - Little/no prior knowledge
Those impacted by WPD but with little knowledge of us, this includes customer survey recipients

Level 4 - Future
Those impacted by the future or our decisions, we undertake education events and social media campaigns

High stakeholder knowledge and interest

Low stakeholder knowledge and interest

7.62 Part of the Broad Measure of Customer Satisfaction relates to stakeholder engagement. For RIIO-ED1, Ofgem has placed a greater emphasis on service for vulnerable customers as part of the assessment of DNO performance.

7.63 Under Ofgem's Stakeholder Engagement and Consumer Vulnerability (SECV) incentive all DNOs provide information to an Ofgem expert panel about their stakeholder engagement activities and the panel score each company's performance. The results of the assessment in 2017/18 are shown in the chart below, with WPD scoring the highest.

Stakeholder Engagement and Customer Vulnerability (SECV) incentive outcomes

Company	Score
WPD	8.75
Northern Powergrid	7.50
UK Power Networks	7.25
Scottish Power	6.35
Electricity North West	5.75
Scottish and Southern Energy	5.50
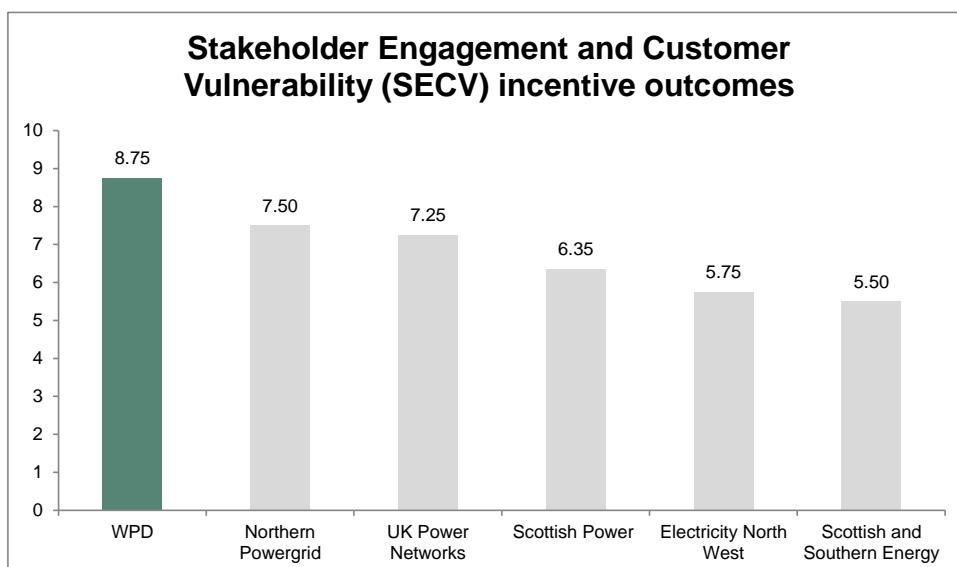
> Output (54) Continue to host a customer panel where our CEO will meet with our expert stakeholders four times a year. ✓

7.64 Every quarter, WPD's CEO meets with an expert Customer Panel to shape our thinking and future priorities. Whilst four meetings were scheduled during 2017/18 one meeting had to be cancelled due to heavy snowfall making it unsafe for participants to travel.

7.65 The objective of the panel is to bring together expert representatives from every major stakeholder group to critically evaluate our performance, make informed decisions about our activities and to provide a strategic steer.

7.66 Each meeting of the Customer Panel includes a session focusing on a different strategic priority. The topics covered during 2017/18 included the following:

- Resilience
- Government policy
- Environment and Sustainability
- Distribution System Operator and Connections update

7.67 The Customer Panel provides independent challenge with the aim of improving service delivery for all customers. The Customer Panel has produced a report which explains the role of the panel and some of the key highlights of their work with WPD during 2017/18. This report can be found on our webpage for the Customer Panel.

www.westernpower.co.uk/customers-and-community/customer-panel

> Output (55) Continue to host at least six stakeholder workshops each year. ✓

7.68 In addition to the Customer Panel, WPD engages with a wider audience through an annual round of six generic stakeholder workshops. These have been carried out each year for the last 8 years and we have proposed to continue these workshops during RIIO-ED1.

7.69 In January 2018 we hosted six sessions in locations across the WPD licence areas. Over 250 stakeholders attended from a range of backgrounds, covering all customer groups. Each workshop included four sessions.

- The company's current performance
- Key changes in the energy industry
- Influencing the company's developing Business Plan for RIIO-ED2
- Transition to Distribution System Operator

7.70 In addition WPD also invited Citizens Advice to present independent workshops on methods of engagement.

7.71 A summary report detailing the output of these sessions can be found on our website. To view these documents please use the following weblink.

www.westernpower.co.uk/docs/Stakeholder-info/2018-(1)/WPD-Stakeholder-workshop-Jan-Feb-2018-Summary-Repo.aspx

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Output (56) Continue to produce a stakeholder report every year providing an update on the actions we have taken as a result of stakeholder involvement.	✓

7.72 A detailed and summary report will continue to be produced every year providing an update of progress toward delivering RIIO-ED1 output measures.

7.73 The summary report will be produced concurrently with this detailed report and will focus on the key areas of interest indicated by stakeholders. The 2017/18 summary report is published on WPD's website; this can be found at the following link.

www.westernpower.co.uk/Summary-Business-Plan-Commitments-Report-2017-18

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Complaints

7.74 WPD endeavours to get things right first time but sometimes things can go wrong. When complaints are received they are treated with urgency and with an aim to resolve them to the customer's satisfaction quickly. Local team managers are responsible for dealing with complaints; actively visiting customers where necessary to understand what can be done to put things right.

7.75 Performance in relation to complaints is measured within Ofgem's Broad Measure of Customer Satisfaction (BMCS) in four categories.

- Complaints resolved in day 1
- Complaints remaining unresolved after 31 days
- Repeat complaints
- The number of Energy Ombudsman decisions that go against the DNO

7.76 WPD aims to have leading performance in each of these categories, avoiding penalties from Ofgem. For 2017/18 we have improved (reduced) our overall complaints scores in each licence area (calculated using a weighted amalgamation of the four categories). We have some of the lowest complaints scores across all of the DNOs as shown below.

Overall complaints metric

DNO	Score
WMID	1.33
EMID	1.48
SHEPD	1.60
SWEST	1.90
SPD	2.09
ENWL	2.29
SWALES	2.49
SPMW	2.71
SEPD	2.77
EPN	3.65
SPN	4.15
LPN	4.34
NPGY	4.64
NPGN	5.08

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary
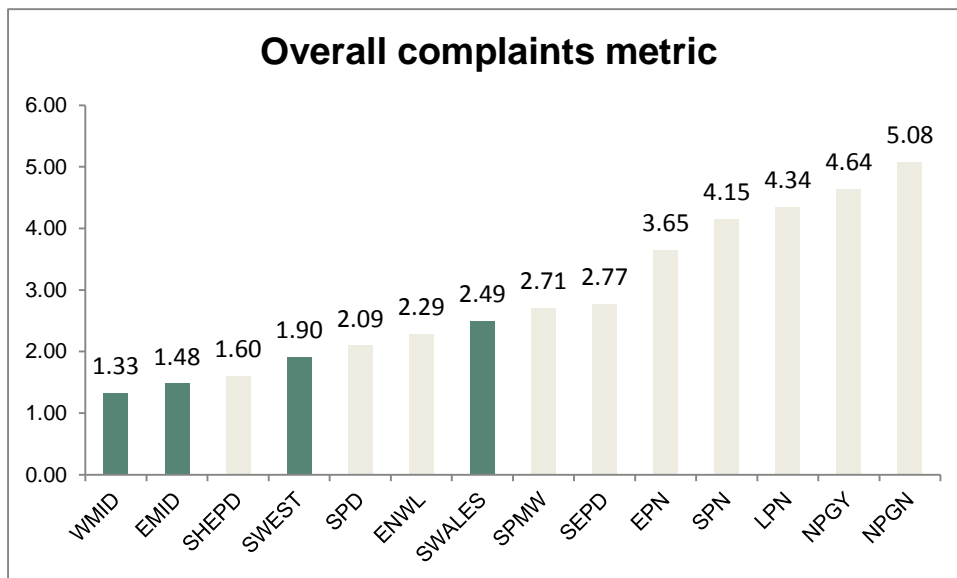
Output (57) Resolve at least 70% of complaints within one day.	✔

7.77 WPD has committed to resolving at least 70% of complaints within one day. This target has been achieved in each of the four WPD licence areas.

Complaints resolved in one day (%)					
	West Midlands	**East Midlands**	**South Wales**	**South West**	**WPD Total**
Percentage of complaints resolved in day 1 – 2017/18	88%	87%	79%	84%	85%

Complaints resolved within 31 days

7.78 WPD's focus on dealing with complaints quickly means that over 99% are resolved within 31 days.

Complaints resolved within 31 days (%)					
	West Midlands	**East Midlands**	**South Wales**	**South West**	**WPD Total**
Percentage of complaints resolved within 31 days – 2017/18	99.39%	99.18%	98.40%	99.00%	99.08%

Repeat complaints

7.79 A repeat complaint occurs where a customer returns to WPD at a later date to complain about the same issue. There were no repeated complaints during 2017/18.

Output (58) Continue to have a target of no complaints where the Ombudsman has to get involved.	✔

7.80 Where customers are dissatisfied with a DNO's response to a complaint they have the option to raise their complaint with the industry Ombudsman. During RIIO-ED1 WPD has committed to ensuring that every complaint is adequately dealt with by WPD staff with zero complaints needing to be investigated by the Ombudsman.

7.81 The WPD output is subtly different to the Ofgem measure which forms part of the BMCS: Ofgem measures when an Ombudsman decision is made against a DNO, whereas the WPD output aims to prevent complaints being referred to the Ombudsman in the first place.

7.82 During 2017/18 there were no complaints raised with the industry Ombudsman.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Guaranteed Standards of Performance awareness

> **Output (59) Continue to send the 'Power for Life' publication to all 7.9 million customers and make sure it promotes the GSOPs.**   ✔

7.83 Guaranteed Standards of Performance (GSOPs) set out the minimum service standards that DNOs must meet under Ofgem's regulatory framework. Where a standard is not met then a payment is made to that customer. GSOPs cover the provision of connections, supply interruptions and response to problems such as voltage complaints.

7.84 Where WPD is aware of a failure a payment will be made without the need for a customer to make a claim.

7.85 WPD has committed to publicising the GSOPs in WPD's 'Power for Life' publication that is posted to all WPD customers. 'Power for Life' was issued in September 2017 to all 7.9 million customers and included information on GSOPs – directing customers to find out more on the company's website.
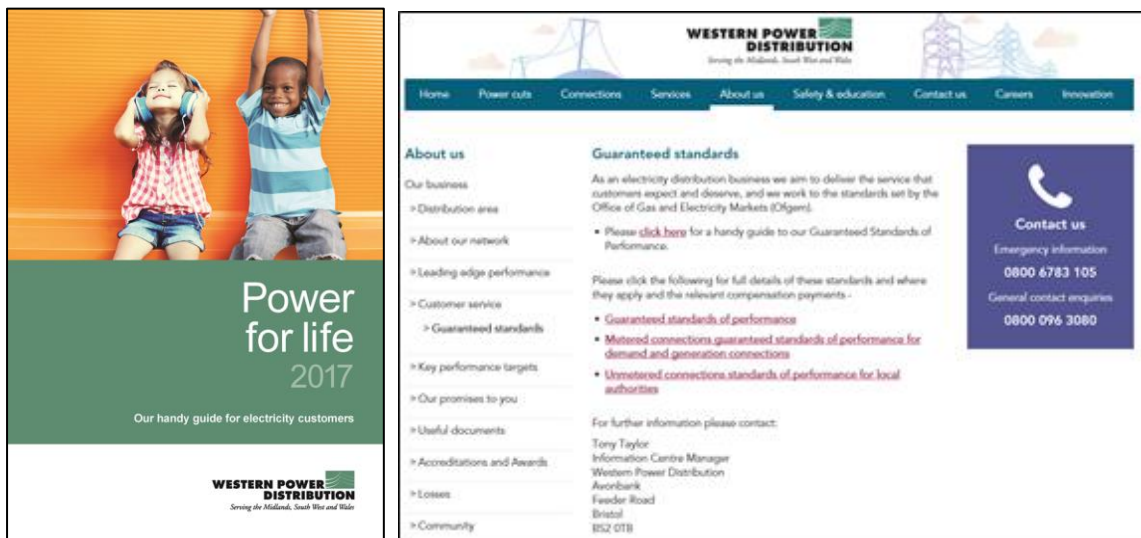
Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

2015-2023

Western Power Distribution
RIIO-ED1 Business Plan Commitments Report
Year Three – 2017/18

31 October 2018

Social obligations

WESTERN POWER
DISTRIBUTION
Serving the Midlands, South West and Wales

Social obligations
Contents

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

8 Social obligations

8.1 In delivering electricity to 7.9 million customers, we provide a range of services to fulfil our social obligations.

8.2 WPD broadly defines 'social obligations' as the role we have as a Distribution Network Operator to help customers in vulnerable circumstances.

8.3 In RIIO-ED1, WPD's social obligations outputs are in four themes.

- Improve understanding of vulnerability.
- Improve the data held on the Priority Services Register.
- Improve the services provided for vulnerable customers.
- Address fuel poverty by supporting customers to access key information.

Regulatory framework:

8.4 For RIIO-ED1 Ofgem introduced the Stakeholder Engagement and Consumer Vulnerability – referred to as SECV. The incentive aims to encourage network companies to engage proactively with stakeholders in order to anticipate their needs and 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.

8.5 WPD's SECV submissions for 2017/18 can be found via the following weblink.

www.westernpower.co.uk/About-us/Stakeholder-information/Stakeholder-Reports.aspx

8.6 The submissions provide information explaining WPD's approach to social obligations as well as broader information on stakeholder engagement and consumer vulnerability and the positive outcomes that we have delivered for customers. In 2017/18 we delivered 195 key outputs and positive outcomes for customers, all of which are detailed in the submission.

8.7 Ofgem's expert panel reviewed the submissions and awarded WPD's actions a rating of 8.75 out of 10. This is the highest score awarded in 2017/18, significantly higher than all other electricity distribution network operators (DNOs), gas distribution network operators, gas transmission operators and electricity transmission operators. This is the seventh consecutive year that WPD has been rated number one in the industry for stakeholder engagement.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Overview of social obligations outputs

Improving understanding of vulnerability		
60	Work with expert partners to improve our understanding of the needs of customers in vulnerable situations.	We worked with a wide range of expert partners and were accredited with the British Standards Institute (Standard BS18477), which specifies requirements for responding to customers in vulnerable situations.
61	Train staff to recognise the signs of vulnerability.	We provided specialist training to the Priority Services Register (PSR) teams and contact centre staff. We provided field staff with refresher training on referring customers in vulnerable situations to the PSR.

Improving the data held on the Priority Services Register		
62	Contact customers in vulnerable situations at least once every two years to check the details we hold on the Priority Services Register.	We contacted 955,664 PSR customers during 2017/18.
63	Improve the quality of Priority Services Register data by working with other agencies and sharing information.	We developed new methods for referring people to the Priority Services Register, with a focus on direct sign-ups. We hosted best-practice sessions with our 63 referral partners.
64	Co-ordinate meetings with suppliers to agree criteria for vulnerability.	27 new 'common needs codes' are now in use across the industry.

Improving the services provided for customers in vulnerable situations		
65	Raise awareness of the Priority Services Register.	We worked with a range of organisations, including water utilities and gas distribution networks, to raise awareness of the PSR.
66	Make 10,000 crisis packs available.*	To date we have issued 5,494 crisis packs over the RIIO-ED1 period.
67	Contact all customers who depend on a power supply for medical reasons every three hours during power cuts.**	During power cuts we prioritise contacting customers who depend on a power supply for medical reasons. We made 170,254 calls to PSR customers (including those who depend on a power supply for medical reasons) during power cuts.
68	Continue to provide practical support through the British Red Cross and other organisations as appropriate.	We provided British Red Cross support during 21 prolonged power cuts and once during a planned interruption.
69	Ask for feedback from customers in vulnerable situations about our service.	We achieved customer satisfaction ratings of 9.20 out of 10 from customers on the PSR who had received a routine call to check their personal details.
70	Develop ways of sharing information with local resilience forums.	We worked with 19 forums across our four licence areas. This included providing guidance to support businesses to plan for power cuts.

Reduce fuel poverty by supporting customers to access help		
71	Build a database of regional agencies we can refer customers to for help.	There are fuel poverty projects in all our areas, working with a network of support agencies. During 2017/18 we introduced a new project with Air Liquide, who provide medical equipment in our areas.
72	Work with partners to develop links to and from our website.	Details on our fuel poverty projects and links to partner organisations are available on our website.
73	Develop joint information and awareness campaigns, and co-ordinate with partners to provide customers with help.	We have four 'Power Up' fuel poverty schemes to support customers who are facing fuel poverty. We supported 8,021 customers to save over £2.1 million a year.
74	Provide fuel poverty training to our staff who have contact with members of the public.	We provide field staff and staff in our contact centre with customised training on fuel poverty and customers in vulnerable situations.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

75	Use data analysis to help identify areas with a high concentration of vulnerable households.	In 2017/18, we refreshed the data analysis that we use to identify areas with a high concentration of vulnerable households. We also carried out further analysis on the types of organisations that currently work with vulnerable customers.
76	Develop local outreach services.	'Affordable Warmth' and other outreach services helped 7,208 customers to save over £3.3 million a year.

* Targets are for the full eight year RIIO-ED1 period, not for a discrete year
** Target to be achieved each year of RIIO-ED1

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Improving understanding of vulnerability

8.8 WPD has a consumer vulnerability strategy which was built through extensive engagement with stakeholders and was introduced in 2013. It focusses primarily on enhancing the ability of customers to cope during power cuts and developing an increasingly sophisticated understanding of the dynamic and multi-dimensional nature of vulnerability.

8.9 Traditionally our Consumer Vulnerability Strategy focused on specific obligations to customers with health issues who might have a greater vulnerability during power cuts (e.g. those using dialysis machines) however this has been broadened to include a wider range of vulnerable customers, such as those who may be temporarily vulnerable (e.g. customers who have recently left hospital) and customers struggling with energy affordability.

8.10 We have varied interactions with customers and consequently as part of our routine work we may identify individuals that are vulnerable or have social issues. To help these customers we have developed a range of services.

8.11 Central to WPD's Consumer Vulnerability Strategy is the Priority Services Register (PSR). The PSR is a free, confidential, register of customers who require priority assistance, for reasons including:

- medical dependencies on electricity;
- disability;
- communication needs;
- age; or
- temporary vulnerabilities.

8.12 The PSR enables WPD to offer targeted services such as welfare support during power cuts and proactive notification ahead of planned work.

8.13 During RIIO-ED1, we are improving our understanding of vulnerability which in turn influences how we interact with customers in vulnerable situations and enables us to refine the services that we provide.

8.14 Our strategy is reviewed on an annual basis, together with our detailed action plan containing timescales, outcomes, costs and owners. For 2017/18 we worked with stakeholders to refine our plans which resulted in the following:

- a commitment that all projects should use social indicator mapping to ensure that we target those most in need;
- ensuring that vulnerable customers benefit from our progress towards smart networks of the future; and
- collaborating with the health sector to target groups of customers who we might not otherwise come into contact with.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Output (60) Work with expert partners to improve our understanding of the needs of vulnerable customers.	✔

8.15 WPD uses input from a variety of social groups, through stakeholder engagement and partnership projects, to enhance our understanding of vulnerability.

8.16 Working with a variety of third parties ensures that we:

- consider a variety of viewpoints;
- are aware of evolving issues impacting stakeholders;
- overcome areas where we lack core expertise; and
- improve customers' awareness of the services WPD can provide.

The Customer Panel

8.17 The Customer Panel is hosted by WPD's Chief Executive and is a key part of our engagement programme. The panel brings together expert representatives from the major stakeholder groups and entrusts them with full transparency in relation to WPD's performance and future plans. This enables them to critically evaluate our performance, make informed decisions about our activities and provide strategic steer.

8.18 The Customer Panel consists of 44 permanent members who meet quarterly. The group consists of subject matter experts, consumer representatives and wider stakeholders from 11 key segments including businesses, utilities and vulnerable customers. The diversity of the Customer Panel ensures that we are provided with a balanced representation of the views of our stakeholders.

8.19 The Customer Panel includes an in-depth surgery session on 'social obligations' at every meeting.

8.20 Initiatives and outcomes from meetings held during 2017/18 included the following.

- Panel led decisions on the utilisation of social indicator data and horizon scans of available partnership schemes;
- Review of connection application forms to reduce length and complexity; and
- Development of processes to enable customers to elect to receive proactive power cut calls out of hours.

Stakeholder workshops

8.21 WPD hosts annual generic stakeholder workshops which provide the opportunity to gain feedback on activities and proposals from a range of interested stakeholders and to ensure that our approach to vulnerability is on track.

8.22 The workshops held in January 2018 were attended by 257 individuals representing stakeholder groups that included local authorities, domestic customers, consumer bodies, businesses, developers, utilities and other DNOs.

8.23 The agenda for these workshops included a specific surgery on our approach to social obligations, testing stakeholder views on our proposals.

8.24 Summary findings reports from the workshops can be found at the link below.

www.westernpower.co.uk/docs/Stakeholder-info/2018-(1)/WPD-Stakeholder-workshop-Jan-Feb-2018-Summary-Repo.aspx

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Working with partner organisations

8.25 We work with a range of partners to identify vulnerable customers, to examine the social issues facing them and to co-deliver projects.

8.26 Working with partner organisations allows us to share knowledge and explore alternative approaches, whilst extending our reach beyond those customers who contact us directly. The approach is cost effective because we utilise the expertise of partners rather than duplicating the activity of existing organisations.

8.27 We now have a network of 63 referral partners for our Priority Services Register and 85 fuel poverty partners.

External validation of our approach

8.28 Our success in continuing to develop our understanding of vulnerability has been measured through different types of external validation, as follows.

Ofgem Consumer Vulnerability Assessment

8.29 As part of Ofgem's annual Stakeholder Engagement and Consumer Vulnerability (SECV) Incentive, the consumer vulnerability programmes of all Distribution Network Operators (DNOs) undergo an external, independent audit assessment using a balanced score card. This assesses how well we understand vulnerability and the effectiveness of our actions.

8.30 There are five components to Ofgem's annual Stakeholder Engagement and Consumer Vulnerability Incentive, including an assessment of "the quality of the network company's strategy to address consumer vulnerability and the quality of the outcomes delivered". WPD achieved the highest score in this particular category as shown below.

Consumer vulnerability score

	Score
WPD	9
Northern PowerGrid	8
UK Power Networks	8
Scottish Power	7
Scottish and Southern Energy	6
Electricity North West	6
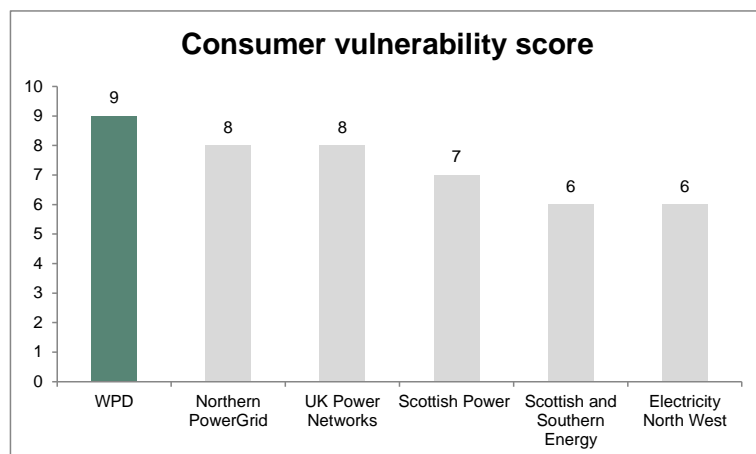
Customer Service Excellence Standard

8.31 Each year WPD's customer service is assessed against the government's Customer Service Excellence standard, part of which tests our customer insight, including the services we provide for vulnerable customers.

8.32 In January 2018, we were successfully reaccredited against the Customer Service Excellence Standard and achieved five additional 'Compliance Plus' ratings. In total we increased our 'Compliance Plus' ratings to 43 out of the 57 standards (achieving compliance in the rest).

8.33 The final assessment reported that 'WPD has developed insight about customers through a very wide range of mechanisms. WPD has improved service and developed appropriate action plans as a result.'

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Certification for inclusive service provision

8.34 The British Standards Institute certification (BSI) – BS18477: Inclusive Service Provision specifies requirements for identifying and responding to consumer vulnerability. It recognises that vulnerability is dynamic and multi-dimensional and may vary over time and in different settings.

8.35 WPD uses assessment against the standard to improve the ability of the organisation to recognise and address the broad and complex nature of consumer vulnerability, and as a result provide flexible and inclusive services. We put forward all key, new projects developed over the previous 12 months for the BSI to assess in terms of project effectiveness and inclusivity.

8.36 In 2017/18 the BS18477 went from a voluntary standard to a formal certification process. A robust four day audit of WPD was undertaken, assessing our processes against 36 elements in the standard. The audit critically evaluated whether WPD's services effectively address consumer vulnerability, which included demonstrating that:

- policies and processes have been implemented to help employees to identify situations when consumers might be vulnerable;
- front-line staff have been trained and are empowered to act; and
- new and flexible services have been developed for customers.

8.37 WPD maintained full compliance with the standard for the fifth consecutive year.

Centre for Sustainable Energy (CSE) independent audit

8.38 We commission the Centre for Sustainable Energy (CSE) to undertake an annual independent audit of our social obligations programme to assess whether we are addressing relevant social issues in a strategically coherent way. We have done so annually since 2014, prior to the introduction of the SECV incentive in 2015.

8.39 The approach, utilising a balanced scorecard, formed the basis of the consumer vulnerability assessment criteria adopted by Ofgem.

8.40 This mechanism helps to enhance our understanding of vulnerability and identify improvements to our programme. We were reassessed in May 2018 for our 2017/18 performance and we achieved the highest rating of 'excellent' in every category assessed.

Louder than Words charter mark

8.41 'Louder than Words' is a nationally recognised accreditation for organisations striving to offer excellent levels of service and accessibility for customers who are deaf or have hearing loss.

8.42 Assessment is carried out against 10 quality standards and WPD has achieved the 'Louder than Words' charter mark, providing further assurance that our services are accessible.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Output (61) Train staff to recognise the signs of vulnerability.	✓

8.43 In 2013 WPD established a dedicated team of staff focused on updating and maintaining WPD's Priority Services Register (PSR). This team is at the forefront of our work with vulnerable customers and it has the objective of contacting PSR customers to:

- update customer records;
- remind customers about WPD and how to contact us;
- offer power cut resilience advice; and
- offer referrals for practical fuel poverty support.

8.44 The process for contacting PSR customers was designed with the help of our Customer Panel. It has no scripts or time quotas for calls.

8.45 The PSR team is based across our contact centres in East Midlands and South Wales. The call handlers receive specialist empathy skills training and attend a range of training and development events to build their understanding of the needs of vulnerable customers.

8.46 In 2016/17 we started the process to have all 138 staff in our contact centres accredited as 'Dementia Friends'. Staff in the South Wales contact centre attended expert face-to-face training during 2017 and training for staff in the East Midlands contact centre was scheduled for 2018. All these staff have now achieved 'Dementia Friend' status. The training helps to change perceptions of how dementia can affect people and how staff can assist customers.

8.47 In 2017 WPD became a member of the Dementia Action Alliance.

8.48 Other training events included a sign language session for contact centre staff during deaf awareness week, deaf awareness sessions specifically tailored for our Social Media team facilitated by Action on Hearing Loss and sessions with Parkinson's UK exploring how customers might feel during a power cut.

8.49 We tailored each training package to include sections on appropriate language to use with customers. This alleviated any apprehension amongst our teams about asking potentially difficult questions when updating and discussing PSR categories. Staff were provided with practical skills to approach such questions in an appropriate, tactful, way.

8.50 Refresher training is provided to all contact centre staff each year, including an update on the PSR process and the activities of the PSR team. This training is held in advance of the busy winter months to ensure that staff are prepared.

8.51 In 2017/18 we delivered refresher training to all 5,500 field staff on the PSR including how to identify potentially vulnerable customers and refer them to the PSR. We have provided field staff with credit card sized information cards, enabling them to keep PSR and power cut information handy so that can assist vulnerable customers, when required.

8.52 Further training is planned for contact centre staff with Parkinson's UK and the Royal National Institute of Blind People (RNIB).

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Improving the data held on the Priority Services Register

> **Output (62) Contact vulnerable customers at least once every two years to check the details we hold on the Priority Services Register.** ✓

8.53 It is important that the data held on WPD's Priority Services Register (PSR) is accurate so that advice and practical support can be effectively deployed to those customers most in need.

8.54 We undertake a range of activities to improve the data we hold on the PSR including extensive data cleansing, working with suppliers, using data models to identify vulnerable customers and working with other agencies.

8.55 We have 20 staff working across two dedicated teams who undertake calls to check the details that we hold for individuals on the PSR and our other contact centre staff are trained to assist with this activity during quiet periods.

8.56 Our systems prompt us to contact vulnerable customers every two years. In 2017/18 we proactively contacted 955,664 PSR customers, successfully updating 34% of records as a result of this contact. 785,410 customers were contacted via WPD's data cleanse teams, and 170,254 were contacted via proactive calls to individuals on the PSR during power cuts. We also removed 250,923 out-of-date records.

8.57 We contact customers to update their details but also take the opportunity to offer advice to assist customers to improve their resilience to a power cut should such an event occur. Priority is placed on the quality, rather than quantity, of calls. There are no time limits for a conversation. We treat calls with sensitivity and we listen.

8.58 In order to ensure we are getting it right, we carry out annual, independent satisfaction research to measure the effectiveness of our engagement and identify improvements. In 2017/18 PSR customers who undertook a survey rated our service as 9.20 out of 10, our highest ever satisfaction levels.

8.59 In 2017/18 we received feedback to suggest that the fact that calls from WPD appear as a 'withheld' number was leading some customers not to respond. We always leave clear voicemail messages for customers who do not answer to explain the purpose of our call. In response to the feedback we made system changes to release our telephone number when making PSR data cleanse calls in order to increase trust and confidence. Incoming calls to our PSR teams have increased by 30% as a result.

8.60 We adopted best practice from BT by ensuring that during PSR data cleanse calls we capture details of nominated contacts on behalf of vulnerable customers, including carers and relatives. We are amending our processes to ensure that during proactive calls we contact both the customer and the nominated person to discuss their needs.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Output (63) Improve the quality of Priority Services Register data by working with other agencies and sharing information.	✓

8.61 We actively work with other agencies to:

- promote the PSR;
- share information with others already working with vulnerable customers where those customers may be eligible to join the PSR; and
- improve the quality of the data that we currently hold.

Informed consent

8.62 In 2015/16 we introduced an initiative to ensure that customers join the PSR with informed consent. This allows third parties to register vulnerable customers on the PSR and, more recently, allows us to share the customer data with other utilities.

8.63 We work with a network of partner organisations that have access to a range of customer groups. These partner organisations are well placed to discuss the PSR with customers directly and to identify whether the customer is happy for the agency to add them to the PSR. We hold best practice events for partners and in 2017/18 we produced an e-learner tool which provides guidance on the process for adding customers to the register. These were sent to over 250 agencies.

Collaborating with others already working with vulnerable customers

8.64 During 2017/18 we refreshed the data mapping that we use to identify potential referral partners and as a result increased our partnerships from 34 to 63 groups.

8.65 Our data mapping influences the type of referral partners that we target. For example, when mapping indicates high levels of medical dependencies and health issues that can impact customers' ability to cope during power cuts, we target NHS Trusts or other health organisations. We have a target to increase our referral partners to 81 by 2019 ensuring that within each operational area we have three diverse options covering a health referral partner, a local authority and a charity.

8.66 WPD has a number of fuel poverty outreach projects in place. Whilst the primary driver of these projects is to provide support to customers struggling to afford their energy, we ensure that projects also address power cut vulnerability, the provision of resilience advice and promoting the PSR. For example, WPD's 'Affordable Warmth' projects, which offer fuel poverty support via a consortium of partner organisations, includes a remit to gain customers' informed consent to directly sign them up to the PSR on WPD's behalf.

8.67 To support our partners we have published our social indicator data mapping, which reveals areas with potentially high levels of power cut vulnerability and/or fuel poverty in a downloadable format so that groups are able to better target their own services.

Data sharing

8.68 The UK Regulator's Network has called on utilities to collaborate and securely share non-financial vulnerability data. An industry working group has been set up to progress data sharing between networks and all water companies by 2020. WPD is leading the work stream focusing on data and systems.

8.69 WPD's Customer Panel encouraged us to take a lead by ensuring that we have processes in place to share and receive data, and proactively engage utilities in our region to initiate data sharing. As a result, since July 2017, when we register new PSR customers we also capture their informed consent to share data with other utilities. We now have informed consent for 692,655 customers. We have formal agreements in place with the three gas networks in our

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

region to sign-up customers to the PSR on our behalf and for this data to be automatically shared with WPD.

8.70 Building on this model we contacted all eight water companies in our region to offer to send them details of PSR customers in our shared areas. In November 2017 we launched the UKs first DNO-Water PSR automated data share process. We now automatically send PSR data to Welsh Water to avoid customers having to sign up twice and have sent 13,673 PSR records during the regulatory year. We are waiting for the remaining water companies to implement internal systems capable of receiving this data.

Learning from others

8.71 In 2017/18 we utilised outputs from Sustainability First's Project Inspire to enhance our PSR services and data. Project Inspire was established by Sustainability First (an environmental think tank) to help ensure that consumers, including customers in vulnerable situations, are able to benefit from the changes in the energy market bought about by digital change such as the introduction of smart meters. Project Inspire published 70 best practice case studies and these were reviewed by WPD, leading to the implementation of a range of changes.

8.72 One example of best practice that we have adopted came from an approach used by EON. WPD has introduced a PSR 'Care and Assessment' Tool. When speaking to vulnerable customers we now ask what assistance they need from WPD in a power cut rather than making assumptions based on the PSR industry needs code they are assigned. WPD's call agents ask appropriate questions in order to build a personalised picture of their bespoke needs and to ensure the quality of the data that we hold.

| Output (64) Co-ordinate meetings with suppliers to agree criteria for vulnerability. | ✓ |

8.73 As members of the Energy Networks Association (the industry body for UK electricity transmission and distribution) WPD worked with other DNOs, Suppliers, Ofgem, charities and consumer bodies to implement a new, common set of PSR needs codes.

8.74 The Safeguarding Customers Working Group agreed 27 new common needs codes to be used by all parties nationally to identify and register customers. The new codes recognise the multi-dimensional nature of vulnerability and replace categorisations which were over 15 years old.

8.75 Since the introduction of automated two-way data flows between DNOs and suppliers in July 2017 WPD has sent over 325,819 accurate, complete customer records to suppliers.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Improving the services provided for vulnerable customers

8.77 We continue to develop and improve the services provided for customers in vulnerable situations. This includes:

- raising awareness of the PSR and the services available to those who are registered;
- assisting vulnerable customers to be prepared for a power cut;
- assisting vulnerable customers during a power cut; and
- assisting vulnerable customers during an emergency.

Output (65) Raise awareness of the Priority Services Register.	✓

8.78 In addition to the proactive work that we undertake with partners to identify vulnerable customers we also take steps to raise awareness of the PSR via a variety of mechanisms, as detailed below.

- WPD's annual newsletter 'Power For Life' was sent to all 7.9m customers in September 2017 promoting the PSR, who is eligible and how to register.
- 16,708 leaflets promoting the PSR and providing advice on power cuts were sent to customers, these included a freepost registration form to provide an easy mechanism for customers to join the register.
- In January 2018 WPD held our third annual parliamentary event with 85 MPs and policymakers.   The theme of the event was 'energy affordability' and attendees were also asked to help promote the PSR to their constituents. We saw 4,564 PSR sign ups after the event, an increase of 28% on the same period the previous year.
- WPD staff who interact with customers are a valuable resource for promoting awareness of the PSR. During 2017/18 we published an article and competition in our internal newsletter encouraging staff to sign up eligible friends and family to the PSR.
- A newsletter promoting the PSR was delivered to 13,000 customers via Somerset community nursing team.
- Working with National Energy Foundation we piloted a new scheme for young people looking to complete the volunteering section of the Duke of Edinburgh award. We delivered tailored outreach events at 10 schools to engage students about the causes and consequences of power cuts in order to generate innovative ideas from students on promoting the PSR.
- We held two community energy workshops focused on vulnerability where we provided information packs to help community energy groups identify and engage vulnerable customers about the PSR, smart meters and energy saving tips.
- We expanded our Power Discovery Zone website (an interactive, curriculum-linked website for schools) to include information on the PSR and renewable energy.
- Worked with a theatre company in West Wales to promote the PSR through street theatre events, live "adverts" were performed to promote WPD and the PSR, resulting in 90 new PSR customers.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Output (66) Make 10,000 crisis packs available.	✔

8.79 Direct assistance for customers is made available (as required) through the distribution of crisis packs.

8.80 WPD committed to distributing 10,000 crisis packs during RIIO-ED1. In 2017/18 we distributed 1,914 packs, with a cumulative total so far for the RIIO-ED1 period of 5,494 packs.

8.81 At present crisis packs include items such as a flask, battery powered torch, gloves, a hat, a reusable hand-warmer, a foil blanket and information leaflets. Digital phones reliant upon mains power may not work during a power cuts so we provide analogue telephones to vulnerable customers who need them. We regularly review the contents of our crisis packs with our Customer Panel. In February 2018 changes were agreed that will be implemented in 2018/19, including substituting the battery powered torch for a wind up torch.

8.82 Crisis packs are distributed in a range of ways.

- Contact centre staff can arrange for a pack to be provided if they feel that it would be beneficial as a result of discussions during a customer call.
- Field staff can distribute packs as a result of a site visit and discussion with customers.
- Partners such as the British Red Cross and Age UK are provided with stocks of crisis packs to distribute to customers where they identify a requirement.
- Local distribution teams are provided with stocks of crisis packs that can be distributed as required if a power cut lasts longer than six hours.

8.83 Customer service training for field staff held during 2017/18 included a reminder on the availability of crisis packs. Staff are trained to identify signs of vulnerability in the customers they interact with and can provide crisis packs, arrange for the customer to join the PSR or activate support from the British Red Cross.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Output (67) Contact all customers who depend on a power supply for medical reasons every three hours during power cuts.	✔

8.84 For unplanned outages, WPD committed to contacting medically dependent customers within the first three hours of a prolonged power cut to provide updates on power restoration times and to identify if additional support or further contact is required. It is not always clear from the start of an outage that a power cut will be prolonged. To avoid contacting customers unnecessarily, when power may be restored in a short time period, contact centre staff are prompted (via an automated system) to call medically dependent customers three hours into the power cut. Calls are only made between 9am to 8pm to avoid disrupting customers during unsocial hours.

8.85 During 2017/18 we contacted 99.41% of medically dependent customers affected by a power cut that lasted more than three hours. This figure reflects the number of customers where contact was attempted, including those who did not answer a phone call.

8.86 In total WPD made 170,254 proactive calls to PSR customers during power cuts in 2017/18, our highest ever number.

8.87 During 2017/18 we introduced two new mechanisms that will benefit customers who are dependent on their power supply for medical reasons:

- Smart meters models with a 'last gasp' feature are able to notify WPD that the customer has lost supply, PSR customers will be able to specify individual preferences if they wish to receive phone calls outside of our usual 9am to 8pm sociable hours policy to let them know about power cuts.
- A new "Power Cut Alarm" feature has been added to our Power Cut Reporter App for smartphones and tablets. The app raises an alarm if power to the device is lost. The feature was developed following feedback from a sleep apnoea sufferer on our PSR register whose monitoring equipment does not have a built in alarm. The app is used to wake customers up when there is no power for their medical equipment. It has been promoted to the 8,569 customers with sleep apnoea on the PSR.

8.88 Where an outage is planned the project manager arranging the shutdown is responsible for ensuring that customers who are medically dependent on electricity are contacted in advance, checking that they have received the standard shutdown notification letter (used for all customers). This process allows WPD to identify any customers who may require additional support such as a site visit in advance to discuss the outage or the provision of a generator during an outage.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Output (68) Continue to provide practical support through the British Red Cross and other organisations as appropriate.	✓

8.89 During prolonged outages we request assistance from partner organisations to provide support to customers. For RIIO-ED1 we proposed to continue to work with the British Red Cross and the Royal Voluntary Service for these services, but the Royal Voluntary Service ceased to provide the support we require, we therefore established a new arrangement with the Nationwide Caterers Association.

8.90 Contact centre staff have the facility to request that the British Red Cross assist with the provision of warm meals, drinks, crisis packs and general welfare checks during an outage. Use of the British Red Cross can also be prompted by field staff who are concerned about customers and in 2017/18 they provided support during 21 prolonged power cuts and one planned outage.

8.91 Our agreement with the Nationwide Caterers Association enables us to provide hot food and drinks for communities impacted by prolonged power cuts. However there have been no occasions where this was needed in 2017/18. During RIIO-ED1 we will randomly carry out trial call-outs to ensure that the service remains effective.

8.92 WPD liaises with oxygen providers to obtain postcode data of individuals who are reliant on oxygen supplies. In the event of a power cut, WPD uses this information to automatically flag that these customers are affected so that a proactive call can be made to provide information on restoration times and to check if the individual will require additional support.

Providing assistance during system emergencies

8.93 System emergencies such as damage caused by severe weather can leave vulnerable customers without power for prolonged periods of time.

8.94 WPD has a range of vehicles suitable for operating in severe weather conditions that can be used to reach vulnerable customers to provide support. This includes use of the WPD helicopter fleet (where weather conditions permit flying), boats and amphibious vehicles.

8.95 The key capabilities of the Helicopter Unit have been extended to include:

- delivery of provisions to remote customers who are without power;
- customer evacuation; and
- delivery of high volume pumps and generation.

8.96 Providing these options requires staff to be trained to prepare them for the challenges associated with severe weather. During 2017/18 the following training was delivered.

Staff training for severe weather (staff trained)					
Training type	West Midlands	East Midlands	South Wales	South West	Total WPD
All terrain vehicles – including waterlogged ground	28	23	85	52	188
Flood rescue boat operator	5	0	0	20	25
Off road driver training	39	8	5	34	86
Water first responder – operating safely in or near flood water	28	0	54	28	110

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Output (69) Ask for feedback from vulnerable customers about our service.	✔

8.97 Feedback from customers is invaluable in assisting us to make sure that we are supporting customers effectively and that the service we provide is appropriate.

8.98 As well as the surveys undertaken as part of Ofgem's Broad Measure of Customer Satisfaction, WPD commissions additional research which tests the satisfaction levels of a broader group of customers and identifies potential improvements to our services. Research is conducted by expert external research providers to ensure that the results are objective and robust. We survey customers to measure satisfaction after actions have been taken and to identify potential improvements.

8.99 At the start of RIIO-ED1 we introduced two surveys specifically designed to understand the views of vulnerable customers. The surveys measure the impact of the PSR data cleanse team and the views of customers who have been referred to a 'Power Up' partner agency for fuel poverty advice. In 2017/18 we have introduced a new survey for customers who have been identified by one of our four Affordable Warmth fuel poverty outreach schemes. Customers are asked to rate our service out of ten.

8.100 The results of these surveys are shown below.

Customer satisfaction scores 2017/18

Category	Score
Data cleanse calls	9.20
Fuel poverty scheme - 'Power Up'	8.87
Fuel poverty scheme - 'Affordable Warmth'	8.90
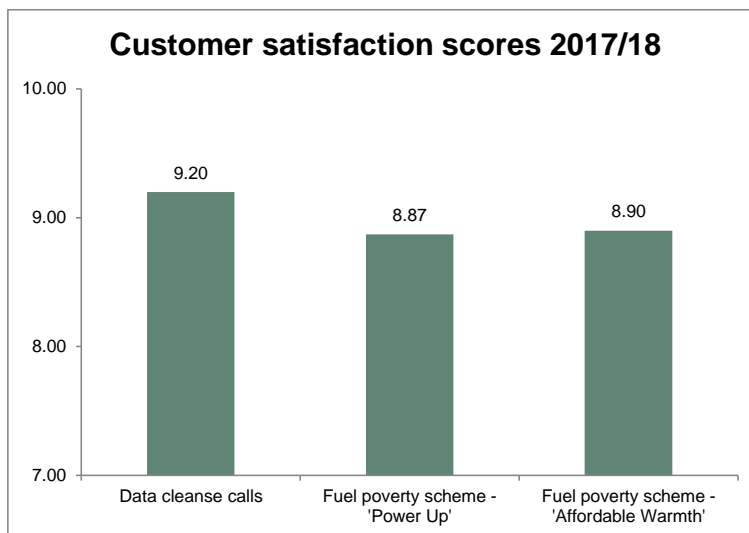
8.101 The satisfaction surveys are used to ensure that we deliver the right levels of service and that customers are happy with the partners that we work with.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Output (70) Develop ways of sharing information with local resilience forms.	✓

8.102 We work with Local Resilience Forums (LRF) on an ongoing basis to ensure that we are able to provide a range of services during emergencies. During 2017/18 WPD worked with 19 forums across the four licence areas, developing external partnerships as a result. Activities in 2017/18 included the following.

- Briefing ten police forces on resilience, this included installing private mobile radios in each force control room to enable easy contact during any emergency situation.
- Offering the support of our helicopter unit to resilience partners in order to prepare for future activities which might include food drops in the event of severe weather such as heavy snow blocking access routes.
- Making formal data agreements with seven local resilience forums which will enable improved emergency response processes.

8.103 WPD continues to be committed to working with the emergency services and taking an active part with Gold Command arrangements for emergency response during severe weather conditions. During 20178/18 we participated with Gold Command exercises in Lincolnshire, Devon and Cornwall as a result of winter storms causing disruption in February and March 2018.

8.104 We participate with training exercises to ensure that we are prepared for emergencies. For example in February 2018 we participated in an exercise facilitated by the Emergency Planning Society and the Environment Agency which was designed to test collaborative cross-county working in response to a major flooding incident affecting the River Trent in the Midlands.

8.105 During 2016/17 we developed a power cut advice booklet to be issued to 50,000 small businesses through the Chambers of Commerce. 10,000 booklets were issued in 2016/17 and we issued a further 41,822 booklets in 2017/18. In 2017/18 we have also launched an online version of the booklet.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary
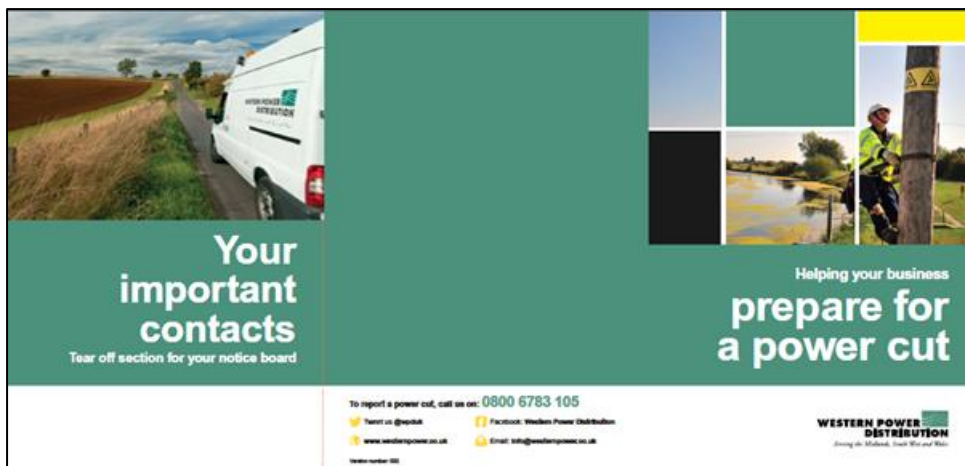
Providing information during an emergency

8.106 We have developed our website to ensure that effective updates are available during emergencies for customers, the media, local authorities and other emergency resilience partners.

8.107 When a storm is forecast we increase staffing and provide more communication. We also produce storm bulletins which are emailed to customers who have registered their interest. There are three categories of bulletin – one sent in advance of a predicted event, one during a storm and one post event. The thresholds for triggering a bulletin have been agreed with the Customer Panel. The bulletins inform stakeholders of the latest weather conditions, areas affected, the number of customers off supply and key steps we are taking to restore power.

8.108 In the event of a storm we open up additional 'ramp-up' contact centres staffed by non-operational staff. With the additional assistance provided by our ramp-up centres our main contact centres can prioritise outbound calls, particularly those made to vulnerable customers.

Case study – how we communicated during the 'Beast from the East' and Storm Emma

Having received weather forecasts several days in advance we arranged for additional staff to be available in contact centres and for workers to be on standby at home to take calls if required.

The contact centres received a total of 40,680 calls, with an average speed of response of 3.16 seconds. As well as providing summary data though the website, the Press Office was available 24 hours a day handling all media enquiries.

We had 258,046 hits on our power cut map and power cut information pages; we made 12,320 proactive calls to customers (including 4,699 calls to customers on the PSR) and held 900 live webchats with customers to provide updates, with an average response time of 59 seconds.

8.109 During severe weather, regular updates are provided to the government and industry regulator - detailing contingency planning arrangements before the event, the number of customers affected during the event, advising on risks to the electricity network and information on restoration times after the event. WPD produces an extensive closedown report for key stakeholders such as Ofgem, BEIS, local resilience forums and the media, with statistics for specific regions, actions taken and lessons learnt.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Reducing fuel poverty by supporting customers to access help

8.110 Some customers struggle to afford their energy and to effectively heat their properties. WPD has contact with over 2 million customers each year, which provides an opportunity to identify customers in fuel poverty and offer assistance. Contact centre staff are trained to recognise the signs of fuel poverty and can arrange referrals to our partner organisations where required.

8.111 Since the publication of the RIIO-ED1 Business Plan, WPD's approach to addressing fuel poverty has developed significantly; being informed by the results of trial initiatives and the extensive ongoing stakeholder engagement.

Output (71) Build a database of regional agencies we can refer customers to for help.	✓

8.112 WPD uses the expertise of other organisations to provide support for fuel poverty. Two different approaches are used.

- WPD referring PSR customers to our partners for fuel poverty support.
- Partners referring customers they have worked with to WPD for registration on the PSR

8.113 In 2017 we carried out an extensive research 'horizon scan' project to identify and map existing vulnerable customer support agencies and schemes in our region and to identify partnership opportunities that would help us to target hard-to-reach customers via trusted agencies. Our research identified 156 existing vulnerable customer support agencies.

8.114 A previous 'horizon scan' in 2015 was used to reveal fuel poverty schemes. In 2017 we expanded the scope to include providers of resilience support and those working in off-gas grid areas who may be able to help promote the PSR; conducting in-depth surveys to identify the specific services provided. We select the organisations that we work with based on matching the services they can provide with the customer needs revealed by our social indicator mapping.

8.115 The 'horizon scan' process helps WPD to tackle consumer vulnerability to power cuts and fuel poverty in a cost-effective and strategic way. We work with partners rather than duplicating their activities. Performing this exercise every two years is vital as the types of agencies and the support provided regularly changes. For example in 2017 we identified 60 new providers including local resilience forums, housing groups, community energy groups and charities.

8.116 We have worked extensively with stakeholders to define WPD's role in tackling fuel poverty. They tell us projects must deliver a holistic service dealing with a range of issues that could be contributing to fuel poverty. To ensure comprehensive support, we have therefore defined criteria that every WPD project must be capable of delivering. These are:

- Income maximisation e.g. debt management
- Energy tariff advice e.g. switching
- Energy efficiency measures e.g. home insulation schemes
- Heating solutions e.g. boiler replacement schemes
- Behavioural changes e.g. effective use of heating systems
- Health & wellbeing e.g. mobility aids and fire safety checks

8.117 To deliver this full range of capabilities, we have established a framework of multiple partners, each of which is capable of delivering support to customers over the phone and face-to-face. Working with multiple agencies has the risk of the customer having to interact with too many agencies, so we work with one lead agency (responsible for supporting the customer throughout the process and reporting on outcomes) who then manages a network of regional expert partners.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

| Output (72) Work with partners to develop links to and from our website. | ✔ |

8.118 Further details on our fuel poverty projects, and links to our partner organisations, can be found on WPD's website together with a contact details for our Social Obligations team.

www.westernpower.co.uk/About-us/Priority-Services/Addressing-fuel-poverty.aspx

| Output (73) Develop joint information and awareness campaigns, and co-ordinate with partners to provide customers with help. | ✔ |

8.119 The 'Power Up' initiative is WPD's referral service where customers identified as requiring help with fuel affordability are provided assistance. Evolving from a single pilot scheme in 2014, we now have a 'Power Up' scheme in each licence area. Each scheme is administered by one lead agency, who then manages a network of local partners to provide comprehensive support.

8.120 Our lead agencies are Citizens Advice Coventry, Citizens Advice Northamptonshire, Energy Saving Trust and Centre for Sustainable Energy.

8.121 Performance of each scheme is reviewed monthly, which includes tracking the outcome for every referral. Quantitative financial savings (for the customers) are recorded only when the outcome is confirmed (e.g. following a tariff switch or benefit entitlement change), alongside qualitative outcomes (e.g. free stair lift installations or subsidised connections to the gas network).

8.122 During 2017/18 we held best practice events with partners; these events allowed us to set new targets for elements such as the time taken to contact the customers once we refer them and to agree simple service arrangements such as introducing text message appointment confirmations for customers.

8.123 In total, WPD's 'Power Up' schemes supported 7,975 fuel poor customers during 2017/18; these customers saved a combined £2.1m. The outcomes achieved are summarised below:

Outputs:			
POWER UP! East Midlands	POWER UP! South Wales	POWER UP! South West	POWER UP! West Midlands
1,322 referrals	2,370 referrals	2,799 referrals	1,484 referrals
Saving £897k a year	Saving £425k a year	Saving £410k a year	Saving £355k a year
8.6/10 customer satisfaction	9.0/10 customer satisfaction	9.0/10 customer satisfaction	8.9/10 customer satisfaction

8.124 In 2017/18 we launched a new 'Power Up Health' scheme. Air Liquide provides medical equipment to almost every oxygen user in our region. As part of their interactions they identify customers who may be vulnerable to fuel poverty. Replicating the existing 'Power Up' model we have launched a pilot scheme in the South West region where Air Liquide supports 9,000 patients a year. It will deliver practical fuel poverty support covering the six interactions outlined in output 71, but with a particular focus on tariff switching and energy efficiency measures. In the four months from launching the scheme 46 customers were supported to save £27k.

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Output (74) Provide fuel poverty training to our staff who have contact with members of the public.	✓

8.125 Every member of our PSR team has received bespoke training on fuel poverty through expert agencies such as the Energy Savings Trust and Citizens Advice. Contact Centre staff receive regular updates.

Output (75) Use data analysis to help identify areas with a high concentration of vulnerable households.	✓

8.126 In 2013, we worked with the Centre for Sustainable Energy to develop social indicator maps that identified geographic areas with high concentrations of vulnerable people. The data enabled us to start to target partnership projects to those areas with the greatest need. We committed to refreshing this data on a regular basis.

8.127 In 2016/17 we took account of changes to definitions of vulnerability and fuel poverty and refreshed our original social indicator mapping combining WPD network and PSR data with 41 other sources including government statistics on benefit claims and long term disability, health data and a more extensive range of socio-demographic datasets. We also initiated a 'horizon scan' to understand the range of potential referral partners operating within our licence areas. Combining these two sets of data enabled us to identify areas of low PSR membership but high levels of network vulnerability.

8.128 During 2017/18 we have expanded our data mapping process to enable us to look at data at a more granular level, allowing us to identify partners working in local areas within communities with a high concentration of vulnerable households. As a result we target our projects to areas of greatest need whilst working with the most appropriate agencies.

8.129 During 2017/18 we have also taken a more strategic, targeted approach to our PSR referral networks identifying the top ten areas of highest PSR eligibility but lowest take up, in each of our operational areas. We approach and work with relevant organisations in these areas.

8.130 The data influences the type of referral partners we target. For example when mapping indicates high levels of medical dependencies and health issues that can impact on customers' ability to cope during power cuts we target NHS Trusts or other health organisations. For older populations we have worked with local authorities to integrate PSR referrals as part of stair-lift and mobility-aid installations.

8.131 We have seen an increase in the ratio of PSR take up in comparison to total eligibility, as shown below for some of the areas where we saw lowest take up in 2015.

PSR take up in comparison to eligibility		
Locations with low PSR take up	2015	2017
Ceredigion	12.9%	38.2%
Cotswolds	13.3%	26.1%
Powys	15.3%	48.6%
Gwent	27.4%	78.1%

8.132 WPD has published the data in a downloadable format to help groups to better target their services, it can be found at the following link.

www.westernpower.co.uk/customers-and-community/priority-services/social-indicator-mapping

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Output (76) Develop local outreach services.	✔

8.133 As well as having our own referral networks, we also support fuel poverty outreach schemes.

8.134 Stakeholder feedback identified that non-financial concerns, such as well-being during emergencies, often go hand-in-hand with financial issues such as debt or fuel poverty. In 2017 we commissioned research into the correlation between power cut vulnerability and fuel poverty. This identified that of the total customers in fuel poverty, 43% were eligible for the PSR. This suggests that around half of the customers in fuel poverty are likely to be vulnerable to power cuts. This has led us to develop schemes that target fuel poor customers to identify if they are eligible for PSR services.

8.135 WPD's 'Affordable Warmth' projects were initiated in November 2014 to provide funding for fuel poverty advice to be given via existing community support schemes already working in deprived areas.

8.136 As with 'Power Up' we work with one lead agency who then co-ordinates with a number of smaller agencies and we have established schemes in all four licence areas.

8.137 In addition to providing fuel poverty support, partners are funded to provide power cut resilience advice, to promote WPD's PSR and gain informed consent to sign up eligible customers to WPD's PSR directly. During 2017/18, 6,387 customers were supported to save £3m a year through 'Affordable Warmth'; 3,780 of these individuals were added to the PSR.

8.138 As a new initiative we provided partners with our social indicator mapping and mandated that each project specifically targeted the top ten areas of highest fuel poverty deprivation. This led to dramatic increases in savings.

8.139 In 2016/17 we launched an innovation fund to identify new approaches that utilise health-related services to tackle fuel poverty and identify hard-to-reach customers for the PSR. Stakeholders reviewed the output of the resulting pilots and asked us to expand and replicate the two most successful schemes as detailed below.

- Derbyshire County Council's 'Healthy Homes' scheme, working with GP practices and social providers to support low-income rural residents with long-term illnesses exacerbated by the cold has been replicated with Derby City Council, targeting urban areas. The projects bring together a large network of partners and differs to our core 'Affordable Warmth' projects by prioritising home visits to help to fully understand each client's needs.
- Cornwall Rural Community Charity supports carers of rurally isolated people in fuel poverty by delivering health checks, energy efficiency measures and fuel debt advice. We replicated this with Devon Communities Together. The projects are unique as they work with hospitals to offer a home support service for people waiting to be discharged, specifically the elderly, adults with learning disabilities and mental health issues and unpaid carers. Home visits are again prioritised given the complex and personal nature of each individual's vulnerability.

8.140 These expanded 'Affordable Warmth Health' schemes worked with 409 customers to support them to save £193k.

8.141 We have also introduced an 'Affordable Warmth' off-gas scheme, targeting non-gas customers in areas with high power cut rates. Working with YES Energy, the scheme offered fuel poverty interventions together with facilitated connections to the gas network and new heating solutions to reduce customers' dependence on electricity. 412 customers were added to the PSR and given resilience advice and fuel poverty to save them £89k.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

2015-2023

Western Power Distribution
RIIO-ED1 Business Plan Commitments Report
Year Three – 2017/18

31 October 2018

Expenditure

Expenditure
Contents

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

9 Expenditure

Introduction

9.1   In the RIIO-ED1 Business Plan, WPD proposed an overall 8-year expenditure of £9.2bn, of which £7.1bn was covered by the price control mechanism referred to as Totex. The remaining £2.1bn covers costs that DNOs do not have control over such as rates, licence fees and transmission charges that are 'passed through' to the charges we make to electricity suppliers.

9.2   The expenditure covers all aspects of running a distribution network including the following.

- Load related capex
- Non-load related capex
- Network operating costs
- Non-operational capex
- Closely associated indirects
- Business support
- Other costs within the price control
- Activity costs outside the price control – not included in Totex
- Non activity based costs (outside the price control) – not included in Totex

9.3   Each year, we report the expenditure across all these areas to Ofgem in line with Standard Licence Obligation 46, which has an extensive set of rules and definitions called Regulatory Instructions and Guidance. The data shown in this section is based upon the data reported for the period 1 April 2017 to 31 March 2018.

9.4   Within this section all values are quoted in 2012/13 prices, as this is the price base used for setting allowances, within licence conditions and within Ofgem financial models. Costs incurred in 2017/18 have been deflated to be comparable to the allowances.

9.5   Allowed costs include the forecast level of above inflation cost increases known as 'real price effects'.

9.6   Costs are shown after the deduction of customer contributions and other cost recoveries.

9.7   Indirect activities have been allocated across activities within and outside the price control.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Expenditure summary

9.8 In 2017/18, WPD Totex expenditure was 2% lower than allowances for total costs within the price control. Whilst expenditure was slightly lower than allowances this follows the first two years of RIIO-ED1 where costs were ahead of plan. We forecast that costs will be within our overall allowance for the eight year RIIO-ED1 period as a whole.

9.9 The following table summarises all the areas of expenditure showing the allowed values and actual values for all four licence areas and WPD as a whole.

9.10 The allowed levels of expenditure for worst served customers and visual amenity are subject to an ex-post (after the expenditure has been incurred) adjustment up to an overall cap for the RIIO-ED1 period.

2017/18 expenditure vs allowance (2012/13 prices) £million										
	West Midlands		East Midlands		South Wales		South West		WPD Total	
	Allow'd	17/18	Allow'd	17/18	Allow'd	17/18	Allow'd	17/18	Allow'd	17/18
Connections related reinforcement	2.4	3.2	2.2	18.7	1.2	1.0	1.0	2.5	6.7	25.4
General reinforcement	21.1	12.5	18.8	13.6	3.7	3.5	7.1	12.3	50.7	41.9
LOAD RELATED CAPEX	**23.4**	**15.6**	**21.0**	**32.3**	**4.9**	**4.5**	**8.1**	**14.8**	**57.4**	**67.3**
Asset replacement and refurbishment	67.2	59.9	56.3	52.4	37.8	34.9	58.5	56.9	219.7	204.2
Diversions	9.1	8.5	13.4	12.8	9.4	3.3	7.9	10.5	39.8	35.1
Operational IT and telecoms	7.9	8.0	8.7	7.9	6.4	2.0	6.0	4.3	28.9	22.3
Quality of supply	2.7	1.7	1.5	1.6	0.5	2.0	0.5	1.7	5.3	7.0
Worst served customers *	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.3
Safety and overhead line clearances	3.4	2.9	3.5	6.0	1.4	3.5	8.1	7.6	16.3	20.0
Flood defences	0.2	0.1	0.9	0.3	1.2	0.8	0.1	0.2	2.3	1.5
Environmental	0.6	0.6	0.6	0.4	0.3	0.4	0.3	0.5	1.8	1.9
Visual amenity *	0.0	0.0	0.0	0.0	0.0	0.2	0.0	1.0	0.0	1.1
NON-LOAD RELATED CAPEX	**91.1**	**81.9**	**84.9**	**81.4**	**56.9**	**47.2**	**81.3**	**82.8**	**314.2**	**293.3**
Faults and other unplanned repairs	29.4	33.8	33.7	32.6	13.5	12.7	24.4	25.2	101.0	104.3
Tree cutting	8.2	14.8	6.4	11.9	7.9	6.8	11.1	11.4	33.6	44.9
Inspections	2.7	3.1	2.8	3.2	2.0	2.4	2.9	2.9	10.4	11.5
Repair and maintenance	6.6	7.5	5.5	7.0	2.8	4.6	3.8	4.7	18.7	23.9
Other operating costs	4.6	3.8	5.3	4.0	2.1	2.0	3.2	2.8	15.2	12.7
NETWORK OPERATING COSTS	**51.5**	**63.1**	**53.8**	**58.6**	**28.4**	**28.6**	**45.3**	**47.1**	**178.9**	**197.3**
NON-OPERATIONAL CAPEX	**7.1**	**13.3**	**7.6**	**10.0**	**5.8**	**8.0**	**9.1**	**11.8**	**29.6**	**43.0**
CLOSELY ASSOCIATED INDIRECTS	**52.7**	**62.6**	**52.5**	**62.1**	**29.4**	**30.1**	**43.2**	**44.9**	**177.8**	**199.7**
BUSINESS SUPPORT	**27.4**	**22.9**	**28.4**	**23.1**	**14.7**	**12.2**	**23.6**	**20.9**	**94.0**	**79.1**
OTHER COSTS WITHIN THE PRICE CONTROL	**0.0**	**-4.9**	**0.0**	**-6.7**	**0.0**	**-5.0**	**0.0**	**-8.7**	**0.0**	**-25.4**
PRICE CONTROL ADJUSTMENTS		**-3.2**		**-5.2**		**-2.7**		**-5.0**	**0.0**	**-16.1**
TOTAL COSTS WITHIN PRICE CONTROL	**253.2**	**251.2**	**248.2**	**255.7**	**140.0**	**122.8**	**210.5**	**208.6**	**851.9**	**838.3**
PRICE CONTROL ADJUSTMENTS		**3.2**		**5.2**		**2.7**		**5.0**	**0.0**	**16.1**
ACTIVITY COSTS OUTSIDE PRICE CONTROL	**17.8**	**18.8**	**17.5**	**12.4**	**5.8**	**8.5**	**9.2**	**12.7**	**50.3**	**52.4**
NON ACTIVITY BASED COSTS	**69.7**	**38.0**	**76.4**	**42.5**	**56.6**	**20.8**	**71.7**	**24.2**	**274.4**	**125.4**
TOTAL COSTS	**340.7**	**311.2**	**342.0**	**315.7**	**202.5**	**154.8**	**291.5**	**250.5**	**1176.6**	**1032.2**

** The values shown may show small differences to the values stated in the performance snapshot provided in section one of this report as a result of rounding. The performance snapshot is based on data submitted to Ofgem in table SI1 as part of annual reporting on 31 July 2018. Totals may not reconcile as a result of rounding.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Load related capex

9.11 Load related capex is expenditure incurred in providing additional capacity on the network. This reinforcement may be required to enable a new connection to be made or where the existing capacity is reaching limits as a result of load growth. Work may also be required to accommodate more distributed generation.

9.12 In 2017/18 expenditure across the whole of WPD was £67.3m against an allowance of £57.4m. Expenditure was higher than the original business plan forecast in the East Midlands and South West and lower than forecast in the West Midlands and South Wales.

9.13 The most significant variation is associated with the amount of network reinforcement required for new connections. Expenditure is over three times higher at £25.4m compared to an allowance of £6.7m. The allowance (based on forecasts in 2012/13) assumes a lower level of higher voltage demand and generation connections than have actually arisen. This is particularly the case in East Midlands where expenditure is £18.7m against an allowance of £2.2m.

9.14 The high levels of customer driven reinforcement in East Midlands have impacted the amount of general reinforcement that has been carried out. Some lower risk general reinforcement projects have been delayed to allow resources to focus on customer connection related work.

9.15 The South West has also seen higher than forecast primary reinforcement costs. This is as a result of constraints on the network related to increases in distributed generation and providing export capability from the Cornwall and Devon peninsular.

9.16 All DNOs have seen lower than forecast secondary reinforcement expenditure due to lower than forecast impact from low carbon technology.

Non-load related capex expenditure

9.17 Non-load related capex is capital investment in the network, of which two thirds is on replacement and refurbishment of poor condition assets. Other large areas of expenditure are diversions and network safety work including removal of overhead line clearance issues.

9.18 In 2017/18, total WPD expenditure for non-load related capex was 7% lower than allowance, compared to an overspend of 1% in 2016/17.

9.19 £204.2m was spent on asset replacement and refurbishment against an allowance of £219.7m. Expenditure varies across the licence areas but some trends are identifiable. There were lower volumes of pole replacements as fewer poles were found in poor condition and lower volumes of overhead line replacement. Volumes for switchgear replacements and transformer replacements were higher than forecast as we advanced programmes from the remainder of RIIO-ED1.

9.20 Diversion costs were lower than allowance for WPD as a whole, but in the South West licence area there were higher than forecast volumes at LV and HV which led to expenditure of £10.5m against allowances of £7.9m.

9.21 WPD's RIIO-ED1 business plan forecast included electricity network diversions associated with the electrification of four railway lines within our licence areas. In July 2017 the government announced a scaling back on plans for rail electrification and as a result WPD will return £77m of allowances.

9.22 Network performance is a key business driver and we continue to invest in remotely controlled devices and other initiatives to reduce the number of customer affected by faults and the length of time customers are without power. We spent £7m in this area compared to an allowance of £5.3m.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

9.23 Another area of higher expenditure is related to safety work for removing overhead line clearance issues. A programme of road crossing inspections has led to the identification of a number of lines where their height has to be increased. The scale of this programme is greater than allowances.

Network operating costs

9.24 Network operating costs include inspections, repair and maintenance, faults and tree cutting. All these areas are incurring higher costs than forecast with the total WPD expenditure being £197.3m against an allowance of £178.9m.

9.25 WPD has an excellent track record of minimising the impact of faults on customers. This is achieved by responding quickly, with adequate resources and utilising mobile generation to provide temporary supplies. The change made to the guaranteed standard for normal weather supply restoration, reducing it from 18 hours to 12 hours, has proven to be achievable, albeit at a cost.

9.26 WPD has enhanced its fault response processes to virtually eliminate the number of customers affected for more than 12 hours. This has involved using more teams to respond to faults, a requirement for excavation contractors to provide a one-hour response and greater use of mobile generation. These enhancements have resulted in fault costs being higher than allowances.

9.27 WPD uses contractors for tree clearance activities. RIIO-ED1 cost allowances were based upon historical costs, but market conditions have led to higher contract costs.

Non-operational capex

9.28 Non-operational capex includes the purchase of new IT systems and equipment, property, vehicles and small tools and equipment. Expenditure was £43m against a forecast of £29.6m, this contrasts to an underspend of £5.9m in 2016/17 and £8.3m in 2015/16.

9.29 New properties, across all four DNOs, have been built and developed during RIIO-ED1 to date. These activities were not anticipated at the time that the business plan was produced. There have also been changes in the timing of IT system refreshes. There is also an ongoing evaluation of IT requirements as a result of our transition to the role of DSO and work to ensure the security of our systems in the light of cyber security threats.

Closely associated indirects

9.30 Closely associated indirect costs relate to the costs of staff and systems that enable the work on the network to be carried out. This includes network design, planning and project management as well as the costs of wayleaves (paying private individuals for having equipment on their land) and the training of new staff and apprentices.

9.31 Expenditure of £199.7m was incurred in 2017/18, which is 12% higher than forecast.

9.32 Higher costs mainly relate to expenditure on core labour and this will continue to be reviewed as RIIO-ED1 progresses. There are also increases in expenditure on operational training, which includes additional recruitment of engineering trainees, rather than craft apprentice roles, as well as more refresher training for existing operational staff.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Business support

9.33 Business support costs include a number of corporate activities that are provided by central functions including human resources, finance and regulation.

9.34 Expenditure in these areas was approximately 16% lower than forecast at £79.1m.

Other costs within the price control

9.35 Other costs within the price control include atypical activity costs and costs associated with innovation activity which are funded by the Totex allowance.

9.36 The nature of these activities meant that minimal expenditure was included in the 2012/13 business plan. Negative costs within this area in 2017/18 relate to the unwinding of a pre-payment into pension schemes made in 2016/17.

Price control adjustments

9.37 Adjustments are made to specific costs within the price control in line with guidance provided by the regulator.

Activity costs outside the price control – not included in Totex

9.38 These costs relate to work funded directly by customers and not through the price control, for example some types of connections work.

Non-activity based costs outside of the price control – not included in Totex

9.39 There are some costs that do not form part of 'regulated' expenditure because they form costs that DNOs do not have control over, some of which are treated as 'pass through' costs. Non activity based costs were lower than forecasted with expenditure of £125.4m against an allowance of £274.4m. This is primarily due to lower pension deficit repair payments due to the pre-payment made in 2016/17.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Forecast for RIIO-ED1

9.40 As part of regulatory reporting requirements we provide a forecast for the expenditure out-turn for the whole price control. The forecast submitted for the end of 2017/18 takes into account actual expenditure from 2015/16 to 2017/18 together with potential developments and known challenges for the remainder of RIIO-ED1 such as changing activity volumes and developments in UK energy policy.

9.41 The following table summarises revised forecasts for load and non-load related investment on the network within the price control:

ED1 Forecast Expenditure vs Allowance (2012/13 prices) £million										
	West Midlands		East Midlands		South Wales		South West		WPD Total	
	Allow'd	F'cast	Allow'd	F'cast	Allow'd	F'cast	Allow'd	F'cast	Allow'd	F'cast
Connections Related Reinforcement	20.0	29.2	18.8	141.6	9.5	9.1	9.3	22.0	57.6	202.0
General Reinforcement	203.3	144.8	278.4	171.1	45.4	33.6	86.5	64.9	613.6	414.3
LOAD RELATED CAPEX	**223.2**	**174.0**	**297.2**	**312.7**	**54.9**	**42.7**	**95.9**	**86.9**	**671.2**	**616.3**
Asset Replacement and Refurbishment	547.6	488.1	459.4	419.6	311.5	275.9	474.6	427.0	1793.1	1610.5
Diversions	75.1	62.8	80.9	88.4	32.8	34.4	75.4	77.4	264.1	262.9
Operational IT and Telecoms	35.6	39.4	43.2	40.0	27.1	21.8	29.9	31.7	135.9	132.9
Quality of Supply	16.5	12.2	9.2	12.9	3.1	7.8	3.1	8.0	31.9	40.9
Worst Served Customers *	0.0	0.2	0.0	0.4	0.0	1.3	0.0	0.6	0.0	2.6
Safety and Overhead Line Clearances	26.9	35.8	28.1	37.7	11.6	26.3	38.6	58.8	105.3	158.7
Flood Defences	1.2	0.6	5.1	3.6	7.9	2.4	1.2	1.0	15.5	7.6
Environmental	4.5	6.7	5.0	3.9	2.3	3.0	2.5	3.8	14.3	17.4
Visual Amenity *	0.0	2.5	0.0	0.7	0.0	1.2	0.0	2.9	0.0	7.3
NON-LOAD RELATED CAPEX	**707.5**	**648.3**	**630.9**	**607.3**	**396.3**	**374.1**	**625.2**	**611.2**	**2360.0**	**2240.8**

*Allowances for Worst Served Customers and Visual Amenity are shown as zero because there is an ex-post allowance adjustment for these activities

9.42 Our 2017/18 forecast suggests that load related expenditure will be around 8% lower than we anticipated within the RIIO-ED1 Business Plan in light of the lower impact of low carbon technologies such as heat pumps for domestic heating; we will continue to review these assumptions as the use of electric vehicles and other low carbon technologies changes.

9.43 We have forecasted an underspend of 5% in non-load capex for the remainder of RIIO-ED1 which takes into account expenditure to date; it anticipates that output targets will be met within these levels with efficiencies being made.

9.44 WPD is undertaking significant strategy development work in relation to future DSO requirements; the current forecast assumes costs of £36m for DSO implementation, increasing expenditure across load, operational IT, telecoms and indirect activities. This forecast will continue to be re-evaluated throughout RIIO-ED1 as the transition work progresses.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

2015-2023

Western Power Distribution

RIIO-ED1 Business Plan Commitments Report
Year Three – 2017/18

31 October 2018

Glossary

10 Glossary

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

Computer controlled decision making linked to remotely controlled devices which allows 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 take 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.

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)

An incentive scheme made up of a customer satisfaction survey, an assessment of how complaints are dealt with and a review 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.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

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 effect our work has on the environment. 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

Historically, the incumbent DNO would have provided new connections. Over recent price controls, Ofgem has promoted greater involvement of third parties in both the design of connections and on-site delivery of connections work. This means that third party connection providers compete for the business of providing new connections in a competitive market.

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.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

Contestable work

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

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. Replaced by the Department for Business, Energy and Industrial Strategy.

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 Energy Resources (DER)

Smaller power sources embedded in the distribution network that can be used to provide the power to meet demand.

Distributed Generation (DG)

Electricity 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.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

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.

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.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

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.

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.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

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 third party company that can construct new connections and the associated 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.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

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 network reinforcement work.

M

Medically dependent customers

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

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.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

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 Services Register (PSR)

A database that records details about customers in vulnerable circumstances so that additional support can be provided if needed.

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.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

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

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. It places 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 eight year 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 2028. Ofgem has determined that the RIIO-ED2 price control will be five years in length

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

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.

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

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

supply points that supply tens of thousands of customers to pole mounted substations that may supply a single property.

Sulphur Hexafluoride (SF$_6$)

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. SCADA batteries provide the power for system communication between sites and 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.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary

U

Uprating 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.

Whole system outcomes

Transmission system operators and distribution network operators coordinating their activities in order ensure that networks as a whole are managed efficiently and in the best interest of consumers.

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.

Snapshot Executive Summary

Introduction

Safety

Reliability

Environment

Connections

Customer Satisfaction

Social Obligations

Expenditure

Glossary