



2015-2023

# RIIO-ED1 BUSINESS PLAN

## Business Plan Commitments Report 2015/16

31 October 2016

## WPD's Business Plan Commitment Report

In June 2013, WPD published a detailed 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 in 2015/16 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. The different formats enable the reader to select the report type that best meets their requirement for either a high level summary or detailed understanding of the progress made by WPD during 2015/16.

The following are available:

- 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-2015-16](http://www.westernpower.co.uk/Performance-Snapshot-BP-Commitments-Report-2015-16)

- 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-2015-16](http://www.westernpower.co.uk/Summary-Business-Plan-Commitments-Report-2015-16)

- 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.

## Electronic Document Navigation

There are two ways to navigate to individual sections of the document:

- There is a hyperlinked sections list below
- There are '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.

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31 October 2016

Foreword  
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## Foreword

Our business is a simple one. Our purpose is to make sure the electricity network of poles, pylons, cables, wires and substations in our four distribution areas safely delivers power to homes and businesses around the clock.

WPD has an excellent track record of providing outstanding customer service and industry leading network performance. Following the acquisition of our two Midlands licence areas in 2011, we transformed the operational model and delivered dramatic performance improvements.

In June 2013 we published our RIIO-ED1 Business Plan setting out our expenditure proposals and service improvements for the eight year period from April 2015 to the end of March 2023. The Business Plan contained 76 outputs to be delivered over the period, informed by the requirements of our stakeholders.

Since publishing the Business Plan, we have worked hard to maintain our industry leading performance for network reliability and customer service. Stakeholders have told us that our highest priority should be to “keep the lights on” and we have seen some significant improvements in network performance since putting the business plan together:

- Customer Interruptions (power cuts) have decreased by 27%
- Customer Minutes Lost (the duration of power cuts) have decreased by 49%
- We have achieved a 99% reduction in the number of customers affected by a power cut for more than 12 hours.

During 2015/16 we maintained our position as the number one Distribution Network Operator (DNO) for customer service and also expanded the support we provide for vulnerable customers.

Our work on customer vulnerability was recognised through Ofgem’s Stakeholder Engagement and Consumer Vulnerability Incentive Scheme where we achieved the highest score out of all the companies assessed – including all DNOs, gas distributors and transmission companies.

In our forecasts we anticipated that environmental commitments would lead to increased distributed generation being installed on the network, however the volumes seeking connection to the network has surpassed all expectations, using up much of the spare capacity on the network. In response we have developed flexible connection arrangements that offer customers “alternative” constrained connections where a standard connection may not be immediately available due to capacity constraints.

Stakeholder input continues to influence the services that we provide. I personally meet with members of the WPD Customer Panel and the Customer Connections Steering Group several times a year to obtain direct feedback. Supplementing this, WPD has a wide programme of other stakeholder engagement where we provide information to our stakeholders, listen to what they say and act on their recommendations.

This report provides an update on our progress against our business plan commitments, focusing on performance in 2015/16; the first year of the eight year RIIO-ED1 period.

We are proud of our progress so far, but we recognise that we still have work to do in order to achieve all our targets for the eight year period.

Robert Symons, WPD Chief Executive



# Performance Snapshot

**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	2,463,217	2,622,449	1,122,920	1,590,050
Network Length				
Overhead lines (km)	23,590.0	21,356.5	17,964.8	27,893.9
Underground lines (km)	40,678.7	51,619.9	17,637.4	22,267.4
Other (Subsea cables) (km)	0.2	0.0	10.1	86.5
Total DNO Network Length (km)	64,269.0	72,976.4	35,612.3	50,247.8
Total Expenditure (TOTEX)				
Total Expenditure (£m)	294.1	290.4	134.2	210.4
RIIO-ED1 allowance (£m)	260.3	285.1	147.1	215.1
% of Allowed Totex	113%	102%	91%	98%
Quality of Service (unweighted)				
Customers Interrupted per 100 customers (including exceptional events)	66.0	43.6	50.0	56.9
Customer Minutes Lost (including exceptional events)	32.4	21.1	22.1	37.5
Customers Interrupted per 100 customers (excluding exceptional events)*	63.3	41.7	43.8	47.9
Customer Minutes Lost (excluding exceptional events)*	28.4	19.9	20.7	29.0
Unrestricted Domestic Tariff (adjusted for typical consumption)				
Tariff Charge (£)	79.5	75.6	95.8	106.9
Connections				
Time to Quote (LVSSA) (Days)	4.8	3.5	8.4	6.6
Time to Connect (LVSSA) (Days)	34.3	31.9	30.2	32.0
Customer Satisfaction				
Overall Broad Measure of Customer Satisfaction score (out of 10)	8.84	8.96	8.98	8.86
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 2015/16 the accident rate for WPD as a whole was 1.22 accidents per 100 staff. This is better than DPCR5 average and RIIO-ED1 target, but is a slight increase on the 2014/15 performance (1.16). This general good performance was overshadowed by the fatality of a colleague. In 2015/16 there were no HSE improvement notices and no HSE prohibition notices,			
Environmental impact				
Qualitative summary	The business carbon footprint has increased from the benchmark year of 2012/13. However, there has been a 3% reduction since 2014/15.			
Innovation				
Qualitative summary	18 innovation projects in progress during the year.			

\*The values shown are based upon data submitted to Ofgem in table SI1 as part of annual reporting in 31 July 2016. Subsequently, Ofgem has confirmed the value of exceptional events that can be excluded, which means that the values used elsewhere in the report vary slightly to the numbers in this table for CIs and CMLs.



## Business Plan Commitments Snapshot

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			 ENVIRONMENT			 CONNECTIONS			 CUSTOMER SATISFACTION			 SOCIAL OBLIGATIONS					
1	<a href="#">HSE Intervention</a>	✓	19	<a href="#">LCT response time</a>	—	34	<a href="#">Time to connect</a>	✓	44	<a href="#">BMCS</a>	✓	60	<a href="#">Understanding of vulnerable customers</a>	✓			
2	<a href="#">ESQCR clearances</a>	✓	20	<a href="#">Identifying LCT hotspots</a>	✓	35	<a href="#">Customer service</a>	✓	45	<a href="#">CSE certification</a>	✓	61	<a href="#">Training staff to recognise vulnerability</a>	✓			
3	<a href="#">Inspection and maintenance</a>	✓	21	<a href="#">Upgrading assets – LCT hotspot</a>	✓	36	<a href="#">Customer surveys – distributed generation</a>	✓	46	<a href="#">Telephone response times</a>	✓	62	<a href="#">Contacting PSR customers</a>	✓			
4	<a href="#">Accident frequency</a>	✓	22	<a href="#">Developing smart solutions</a>	✓	37	<a href="#">Online project tracking</a>	✓	47	<a href="#">Abandoned calls</a>	✓	63	<a href="#">Improving PSR data</a>	✓			
5	<a href="#">Powering Improvement</a>	✓	23	<a href="#">Using smart solutions</a>	✓	38	<a href="#">Online information</a>	✓	48	<a href="#">Call taker availability</a>	✓	64	<a href="#">Working with suppliers on PSR issues</a>	✓			
6	<a href="#">Working with trade unions</a>	✓	24	<a href="#">Oversizing transformers for losses</a>	✓	39	<a href="#">Connection surgeries</a>	✓	49	<a href="#">Providing restoration times</a>	✓	65	<a href="#">Publicising the PSR</a>	✓			
7	<a href="#">Investigating accidents</a>	✓	25	<a href="#">Upgrading cables for losses</a>	✓	40	<a href="#">Improving processes</a>	✓	50	<a href="#">Customer call backs – faults</a>	✓	66	<a href="#">Providing crisis packs</a>	✓			
8	<a href="#">Substation security</a>	✓	26	<a href="#">Lowering vehicle emissions</a>	✓	41	<a href="#">Guaranteed standards</a>	✓	51	<a href="#">Customer call backs – non faults</a>	✓	67	<a href="#">Contacting medically dependent customers during faults</a>	✓			
9	<a href="#">Educational sessions</a>	✓	27	<a href="#">Energy efficiency – buildings</a>	✓	42	<a href="#">Raising awareness of competition</a>	✓	52	<a href="#">On demand services</a>	✓	70	<a href="#">Practical support during power cuts</a>	✓			
10	<a href="#">Safety Literature</a>	✓	28	<a href="#">Reducing waste to landfill</a>	✓	43	<a href="#">Extending scope of contestable work</a>	✓	53	<a href="#">Self service options</a>	✓	71	<a href="#">Feedback from customers</a>	✓			
 RELIABILITY			29	<a href="#">Reducing BCF</a>	✗				54	<a href="#">Customer panel</a>	✓	72	<a href="#">Working with local resilience forums</a>	✓			
			30	<a href="#">Reducing oil leaks from cables</a>	✓				55	<a href="#">Stakeholder workshops</a>	✓	73	<a href="#">Database of referral agencies</a>	✓			
			31	<a href="#">Reducing SF6 leaks</a>	✗				56	<a href="#">Stakeholder report</a>	✓	74	<a href="#">Fuel poverty website links</a>	✓			
			32	<a href="#">Installing bunds</a>	✓				57	<a href="#">One day complaint resolution</a>	✓	75	<a href="#">Awareness campaigns of fuel poverty assistance</a>	✓			
			33	<a href="#">Undergrounding lines in AONBs</a>	✓				58	<a href="#">Ombudsman complaints</a>	✓	76	<a href="#">Fuel poverty training for staff</a>	✓			
									59	<a href="#">Power for life</a>	✓						
			11	<a href="#">Network performance</a>	✓												
			12	<a href="#">Speed of restoration</a>	✓												
			13	<a href="#">12 hour outages</a>	✓												
			14	<a href="#">Guaranteed standards</a>	✓												
			15	<a href="#">Worst served customers</a>	✓												
			16	<a href="#">Flood defences</a>	✓												
			17	<a href="#">Tree clearance (resilience)</a>	✓												
			18	<a href="#">Black start resilience</a>	✓												

### Key

- ✓ Achieved an annual output
- ✓ Output on track, some elements requiring further input
- Output under review
- ✗ Not met an annual output



# Executive Summary

## Who we are and what we do

**1.3** WPD is a Distribution Network Operator (DNO) and distributes electricity to 7.8 million customers across the West Midlands, East Midlands, South Wales and the South West. Our role is simple:

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

**1.4** Our costs make up around 16% of a domestic customer's bill.

## Our track record

**1.5** 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.

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

**1.7** Our track record is second to none:

- we deliver the best network performance, restoring customers' supplies after power cuts faster than any other network;
- 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;
- we operate local teams made up of our own staff who deliver work in a low cost and efficient way.

## Our stakeholders

**1.8** Our stakeholders' views are important and we have engaged directly with stakeholders across our business, using a range of engagement techniques.

**1.9** We used stakeholder input to shape our RIIO-ED1 Business Plan and we continue to use stakeholder input to refine the services we provide.

**1.10** One area that stakeholders have influenced is WPD's approach to business plan commitments reporting. This has led to a three tier approach with a high level single page summary, a short summary document focusing on specific areas of interest to stakeholders and this detailed report providing a progress update against all business plan output commitments.

**1.11** We will continue to work with stakeholders in order to ensure that reporting meets the needs of our stakeholders and we will amend our approach in future years in line with feedback.

## Our RIIO-ED1 outputs

**1.12** During RIIO-ED1 we have committed to delivering 76 outputs in the following categories:

Category	Commitment overview
Safety	<ul style="list-style-type: none"><li>To minimise the safety risks associated with operating the network</li></ul>
Reliability	<ul style="list-style-type: none"><li>To maintain a reliable supply of electricity and make the network more resilient to external events</li></ul>
Environment	<ul style="list-style-type: none"><li>To reduce WPD's impact on the environment and facilitate the use of low carbon technologies (LCTs)</li></ul>
Connections	<ul style="list-style-type: none"><li>To provide an excellent service for customers connecting to the network</li></ul>
Customer Satisfaction	<ul style="list-style-type: none"><li>To provide excellent customer service</li></ul>
Social Obligations	<ul style="list-style-type: none"><li>To meet the needs of vulnerable customers</li></ul>

### Safety

**1.13** Safety is at the heart of everything we do. During RIIO-ED1 we have targeted to improve our DPCR5 accident frequency rate by 10%. We have already achieved this target in the first year of the new price control.

**1.14** Our accident frequency rate for WPD as a whole during 2015/16 was 1.22 accidents per 100 staff. Whilst we are reporting better than target performance, this improvement is overshadowed by the fatality of a member of staff. This sad incident highlights the importance of striving to reduce accidents.

**1.15** 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. During 2015/16, 5,500 staff attended behavioural safety sessions designed to augment our strong safety culture.

**1.16** Focusing on the safety of others, we have undertaken over 1,100 educational sessions with just under 70,000 school children and issued safety literature to over 367,000 members of the public, targeting those individuals who could be exposed to higher risks as a result of their work or social activities.

**1.17** 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

**1.18** We have continued to maintain equipment, replace poor condition assets, provide additional network capacity and undertake tree clearance to ensure that we prevent power cuts. We have also installed remotely controlled equipment that allows us to limit the duration of outages.

**1.19** Our network performance has improved. 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 49% reduction in the average duration of power cuts. We will continue to work to ensure that this performance is sustained over RIIO-ED1.

**1.20** We also committed to reducing the number of customers off supply for more than 12 hours by 20% over the course of RIIO-ED1. WPD recognises the inconvenience of long duration power cuts so we have decided to go beyond this original target. We have reduced the number of customers off supply for more than 12 hours from 10,748 in 2012/13 to 57 in 2015/16: a 99% improvement.

**1.21** 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 will be 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. In 2015/16 we undertook schemes designed to benefit 4,797 customers.

- 1.22** 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 2015/16.
- 1.23** 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 completed 5% of the eight year work programme and we are analysing additional data on flooding risk provided by the Environment Agency to determine which sites require protection from rainwater (pluvial) flooding.
- 1.24** 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. We are on track with our work programmes for protection batteries, but behind target for SCADA batteries, with 1% of the eight year programme complete. The programme has been deferred to allow for ongoing survey works to determine the best approach to ensuring resilience and will accelerate once this process is complete in order to meet the commitments by the end of the period.

## Environment

- 1.25** The WPD RIIO-ED1 Business Plan subdivided environmental outputs into those that facilitate the increase of low carbon technology and those that reduce WPD's impact on the environment.
- 1.26** Low carbon technology (LCT) includes distributed generation (such as solar panels) the use of electricity for transport (electric vehicles) and alternative heating (heat pumps). Increased use of LCT, especially in the same local area can lead to a requirement to provide more network capacity. We have used socio-economic data to predict where such clustering may take place. This allows us to use larger capacity assets to cater for future LCT growth when we carry out work on the network. The volume of projects where this has been applied is currently low, but we anticipate that it will increase as more LCTs are connected to the network.
- 1.27** Moving towards a low carbon future is a major driver of innovation activity. During 2015/16 we had 18 active innovation projects. One of the main outcomes of our innovation programme is the introduction of alternative connections, which are being utilised to accommodate more generation onto the network and provide lower cost solutions for connection customers.
- 1.28** 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. Since the start of RIIO-ED1 we have seen a 3% improvement on 2014/15 performance.
- 1.29** We have committed to improving visual amenity in National Parks or Areas of Outstanding Natural Beauty by replacing 55km of overhead lines with underground cables over the course of RIIO-ED1. We are on target and have completed schemes totaling 8.8km across the licence areas.

## Connections

- 1.30** Ofgem has introduced a new incentive to drive DNOs to provide a faster connection service for small scale connection projects. 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 15 out of the 16 cases. The only area not to beat the target was the provision of quotations for single connections in South Wales.
- 1.31** Another new incentive called the Incentive for Connections Engagement (ICE) seeks to penalise companies that do not engage adequately with connection customers. WPD has engaged extensively with connection stakeholders to ensure that the service we deliver is continuously developed to meet the needs of such customers. Our connection engagement activities were explained within our ICE submission to Ofgem. No issues arose and no penalty has been applied.
- 1.32** As a result of engaging with over 3,000 connection stakeholders during 2015/16, we have amended our processes and procedures in line with customer requirements and we have a forward looking plan that builds upon the improvements already made.
- 1.33** We try hard to meet the needs of connection customers and as a result we score highly in customer satisfaction surveys. In 2015/16 we achieved the top four positions for our four licence areas in the section of Ofgem's Broad Measure of Customer Satisfaction (BMCS) that focusses on Connections.
- 1.34** The Guaranteed Standards of Performance (GSOPs) for connection 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. For 2015/16 we saw five failures, each was investigated and briefings were issued to prevent future failures. We will continue to work towards the target of zero failures during the course of RIIO-ED1.
- 1.35** Third party connection providers continue to expand their capabilities and we work with them to develop processes that facilitate competition within the connections market. To test these processes we have introduced two further trials for contestable work covering self-determined points of connection and self-approved designs.

## Customer satisfaction

- 1.36** During 2015/16 we have maintained our excellent levels of customer service.
- 1.37** WPD's four licence areas achieved the top four scores for overall customer satisfaction derived from an amalgamation of the three elements of Ofgem's Broad Measure of Customer Satisfaction (supply interruptions, connections and general enquiries).
- 1.38** We engaged with a range of stakeholders through a variety of events including four 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.
- 1.39** We have maintained our fast telephone response times answering calls in 1.51 seconds on average, beating our RIIO-ED1 target of two seconds.
- 1.40** For calls related to power cuts, we provided an estimated time of restoration for 99.8% of faults. In addition, we called back 97.8% of customers who had been in contact about a fault, proactively texted over 700,000 customers during HV power cuts and introduced new online options for customers looking for information about faults.
- 1.41** We have achieved our eight year target for RIIO-ED1 in relation to complaints, resolving 82% of complaints within one day against a target of 70%.

## Social obligations

- 1.42** We recognise that we have to provide enhanced services for vulnerable customers, especially those who would be impacted as a result of being without power.
- 1.43** We have worked with a range of expert partners during 2015/16 in order to improve our understanding of the needs of vulnerable customers. This has helped to shape the services that we provide.
- 1.44** The details of vulnerable customers 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 update the records. We now have the equivalent of 25 people dedicated to contacting vulnerable customers to ensure that we can meet our commitment of making contact with them at least every two years. During 2015/16, we contacted 543,401 such customers.
- 1.45** To help customers during power cuts we have developed crisis packs that we provide to vulnerable customers free of charge. During 2015/16, we distributed 965 crisis packs (against our target of issuing 10,000 packs during RIIO-ED1).
- 1.46** Our fuel poverty “Power-up” projects have been expanded to cover all four licence areas. “Power Up” has supported 5,197 customers to save £958,000 over 2015/16.

## Expenditure

- 1.47** Our RIIO-ED1 business plan required expenditure of £9.2bn over the eight year period, of which £7.1bn was covered by the price control mechanism, referred to as Totex.
- 1.48** In 2015/16, WPD expenditure was 2% higher than Totex allowances for costs within the price control.
- 1.49** Spend on load related capex (expenditure incurred in providing additional capacity on the network) was higher than forecast in the West Midlands, South Wales and South West, balanced against lower than forecast expenditure in the East Midlands. The most significant variation from forecast is associated with the amount of network reinforcement required for new connections.
- 1.50** Spend on non-load related capex (of which two thirds is on the replacement and refurbishment of poor condition assets), was 10% lower than allowances.
- 1.51** Spend on network operating costs (including inspections, repair and maintenance, faults and tree cutting) was higher than forecast. Variations in forecast 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.
- 1.52** Non-operational capex includes the purchase of new IT systems, property, vehicles, and small tools and equipment. Expenditure was lower than forecast, the main variation being due to the timing of IT system refreshes.
- 1.53** 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 18% higher than forecast, reflecting recent increases in levels of connection and reinforcement work.
- 1.54** Business support (including Human Resources, Finance and Regulation) costs have been 10% lower than forecast.
- 1.55** Costs outside the price control mechanism were broadly in line with forecast levels.

# Performance Summary of all 76 outputs

## Safety

Compliance with health and safety law		
<a href="#">1</a>	Target zero improvement notices, prohibition notices and prosecutions from the Health and Safety Executive. **	Zero Improvement notices. Zero Prohibition notices. One instance where legal proceedings for a historic incident were concluded.
<a href="#">2</a>	Complete work programmes to achieve compliance with ESQCR statutory clearance to structures or the ground.	Proximity to structure programme complete for West Midlands, East Midlands and South Wales. 56% of South West programme complete with completion timeframe of March 2018. Ground clearance defects - 100% completion of defects requiring rectification during the year.
<a href="#">3</a>	Complete inspection and maintenance programmes every year. **	All tasks are required to be completed during the year. A small volume of arrears arose due to access issues and mitigation plans were developed for these.

Reducing Accidents		
<a href="#">4</a>	Reduce our overall accident frequency rate by 10%.*	Accident rate in 2015/16 is better than the 10% improvement target set for RIIO-ED1 as a whole.
<a href="#">5</a>	Maintain our active participation in the ENA SHE 'Powering Improvement' initiatives that lead to improved safety performance.	Events designed around ENA themes of "Working with contractors" and "Managing occupational ill health risks" conducted within 2015/16.
<a href="#">6</a>	Work with our trade unions to enhance safety performance including the provision for additional 'Behavioural Safety' initiatives.	5,500 staff attended behavioural safety sessions.
<a href="#">7</a>	Investigate all accidents involving members of the public, contractors or our own staff to ensure that learning points are quickly understood and communicated.**	Investigated all 149 incidents occurring in year (80 staff accidents, 55 contractor accidents and 14 significant incidents involving the public).

Substation Security		
<a href="#">8</a>	Enhance security measures at 50 substation sites to reduce the number of repeat break-ins.*	Six substation sites which were the subject of repeat break-ins during 2015/16 had enhanced security measures installed.

Educating the public		
<a href="#">9</a>	Organise and run over 1,000 educational sessions to provide safety information to over 400,000 school children.*	1,114 sessions undertaken with 69,734 children participating
<a href="#">10</a>	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.*	367,298 "Think Safe. Stay Safe." leaflets issued or made available via 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



Network Performance		
<a href="#">11</a>	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 49% from the underlying performance benchmark calculated for 2011/12.
<a href="#">12</a>	Ensure that a minimum of 85% of customers have their power restored within an hour of an HV fault occurring.**	89.16% of customers were restored within one hour of an HV fault.

Guaranteed Standards of Performance		
<a href="#">13</a>	Reduce by 20% the number of customers experiencing a power cut lasting 12 hours or more.*	Only 57 customers were off supply for more than 12 hours – a 99% improvement on our 2012/13 benchmark figures.
<a href="#">14</a>	Target zero failures on all other GSOPs.**	12 failures, we aim to learn from each failure.

Worst Served Customers		
<a href="#">15</a>	Reduce by 20% the number of customers classified as worst served.*	Projects in 2015/16 targeted improvements for 4,797 customers. Over the course of RIIO-ED1 we are targeting improvements for 6,812 customers.

Enhance Network Resilience		
<a href="#">16</a>	Apply flood defences to 75 substations, reducing the risk of both damage to equipment and power cuts due to flooding.*	Four substations have had flood defences installed. Data analysis and site surveys carried out to identify requirements at other sites.
<a href="#">17</a>	Accelerate the programme of tree clearance for resilience by 40% with the objective to deliver the programme five years earlier than suggested by Government guidelines, clearing 700km of overhead lines per annum.*	Increased volumes completed for year in line with accelerated targets.
<a href="#">18</a>	Enhance substation battery life to be resilient for 72 hours in the event of major power losses.*	Protection batteries – 7% of eight year programme complete. SCADA batteries – 1% of eight year programme complete. Telecommunications sites – 51% 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



**Facilitate Increase Volumes of Low Carbon Technology (LCTs)**

<a href="#">19</a>	Improve the time to provide a response to customers wanting to use LCTs by 20%.*	Developing processes to monitor response times for LCT notifications/applications.
<a href="#">20</a>	Identify LCT hotspots using data from smart meters, expert organisations and local authorities and use this to inform decision making.	Data on LCT hotspots updated into WPD systems for use by planners.
<a href="#">21</a>	Selectively carry out asset replacement using larger sized assets.	Four asset replacement projects using larger sized assets carried out - specifically as a result of using LCT hotspots data.
<a href="#">22</a>	Reduce costs for future customers by developing smart solutions to provide alternative and innovative techniques for network management.	18 innovation projects in progress during the year.
<a href="#">23</a>	Provide additional network capacity through utilising traditional methods or smart intervention.	Three types of innovation solutions implemented as business as usual. Increase in issue of alternative connection quotations from 212 to 232 during 2015/16

**Reduce Technical Network Losses**

<a href="#">24</a>	Install oversize transformers when replacing assets at highly loaded locations.	Process in place to prompt installation of oversized transformers at highly loaded locations.
<a href="#">25</a>	Use larger sized cables when installing new network in LCT hotspots.	Process in place to prompt installation of larger sized cables when installing new network in LCT hotspots.

**Reduce The Carbon Footprint of the Business**

<a href="#">26</a>	Ensure all replacement vehicles have lower CO <sub>2</sub> emissions than those they are replacing.	New procurement processes implemented to ensure commitment is met. Two projects in place trialling alternative fuels for operational vehicles.
<a href="#">27</a>	Ensure all new or substantially refurbished buildings meet, as a minimum, the 'excellent' standard under the Building Research Establishment Environmental Assessment Method (BREEAM).**	The BREEAM standard allows only a maximum rating of 'very good' for refurbishments – during 2015/16 we completed one refurbishment which was rated 'very good'. In addition two new build projects were rated 'Excellent'.
<a href="#">28</a>	Reduce the amount of waste sent to landfill by 20% over the first two years of RIIO-ED1 and 5% per annum thereafter.	In our benchmark year of 2012/13, 83% of waste went to landfill; in 2015/16, this decreased to 71%.
<a href="#">29</a>	Reduce the carbon footprint of the business by 5%.*	The business carbon footprint has increased from the benchmark year of 2012/13. However there has been a 3% reduction since 2014/15.

**Reduce The Environmental Risk of Leaks from Equipment**

<a href="#">30</a>	Reduce by 75% the volumes of oil lost through leaks from oil filled cables.*	61% reduction of volumes of oil lost from oil filled cables.
<a href="#">31</a>	Reduce by 17% the volume of SF <sub>6</sub> gas that is lost from switchgear.*	The volume of SF <sub>6</sub> gas emitted as a percentage of the bank of SF <sub>6</sub> has increased.
<a href="#">32</a>	Install effective oil containment 'bunds' around plant containing high volumes of oil.*	13% of our eight year programme of 104 bunds is complete.

**Improve Visual Amenity in National Parks and Areas of Outstanding Natural Beauty**

<a href="#">33</a>	Underground 55km of overhead lines in National Parks and AONBs.*	8.8km of overhead lines undergrounded, 16% of our eight year programme.
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\* Targets are for the full eight year RIIO-ED1 period, not for a discrete year

\*\* Target to be achieved each year of RIIO-ED1

**Provide a Faster and More Efficient Connections Service**

<a href="#">34</a>	Improve the overall time to deliver a connection by 20%.*	Ofgem targets for Time to Quote and Time to Connect for LVSSA and LVSSB market segment achieved in all areas apart from South Wales for TTQ LVSSA.
<a href="#">35</a>	Provide excellent customer service so that customers continue to rank WPD as the top performing DNO group in customer satisfaction surveys.**	WPD is the top performing DNO for the Connections Customer Survey in Ofgem's Broad Measure of Customer Satisfaction, scoring an average of 8.74 out of 10 across WPD licence areas.
<a href="#">36</a>	Conduct surveys with distributed generation customers to gauge their satisfaction and identify improvements to the service provided.	Score of 8.52 out of 10 for distributed generation satisfaction surveys.

**Improve communication with customer**

<a href="#">37</a>	Develop and enhance online connections processing and progress tracking.	Range of amendments made in line with stakeholder requirements and published within our ICE work plan.
<a href="#">38</a>	Ensure information provided in documentation and online is effective.	Satisfaction score of 8.6 out of 10 from customers using our online application service.

**Enhance engagement with major customers**

<a href="#">39</a>	Host quarterly 'surgeries' for connection customers to better understand processes.	43 customers attended surgeries across our four licence areas, a further 57 customers made enquiries as a result of advertised sessions and were supported via call backs or ad hoc meetings.
<a href="#">40</a>	Work with major customers to identify where process can be improved and quickly implement changes.	We engaged with over 3,000 stakeholders through events and over 2,300 through WPD commissioned satisfaction surveys. Suggestions from these interactions formed the outputs in our ICE work plan.

**Guaranteed Standards of Performance**

<a href="#">41</a>	Target zero failures of the connection GSOPs.**	Five failures, all investigated to prevent further failures of a similar nature.
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**Facilitation of competitive market**

<a href="#">42</a>	Improve customer awareness of third party connection providers and carry out regular checks with customers that they understand the options available to them.	New annual survey initiated to gauge customer awareness of alternative providers. 77% of customers who obtained a connection had an awareness of competitive connection providers.
<a href="#">43</a>	Work with third party connection providers to extend the scope of contestable work to HV and reinforcement work.	Two further trials underway for potential contestable work – self-determined points of connection and self-approved designs.

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\*\* Target to be achieved each year of RIIO-ED1

**Customer service**

<a href="#">44</a>	Continue to be the number one performing DNO group across all elements of the Broad Measure of Customer Satisfaction.**	WPD achieved the top four scores for overall customer satisfaction – a weighted amalgamation of results of the three surveys for supply interruptions, connections and general enquiries.
<a href="#">45</a>	Maintain certification to the Customer Service Excellence standard.**	Awarded 'Compliance Plus' status, the highest scoring organisation out of the 237 organisations accredited.

**Telephone response**

<a href="#">46</a>	Respond to telephone calls quickly; answering them within 2 seconds.**	Average response time for customer calls - 1.51 seconds.
<a href="#">47</a>	Ensure abandoned calls are less than 1%.**	Only 0.14% of calls were abandoned.
<a href="#">48</a>	Always provide customers with the option to talk to a WPD call taker.	Customers are always provided with the option to talk to a call taker.

**Communication with customers**

<a href="#">49</a>	Provide a restoration time for every outage.**	99.8% of outages had a restoration time provided.
<a href="#">50</a>	Call back all customers who have been in contact about a fault.**	97.8% of customers who contacted us about a fault received a call back.
<a href="#">51</a>	Contact customers within two days of receiving a non-fault enquiry.**	99.7% of customers who contacted us about a non-fault enquiry were contacted within two days.
<a href="#">52</a>	Provide on demand messaging via text and social media for customers who want to be kept informed by means other than the telephone.	On demand messaging is provided via text and social media. Our Twitter followers increased to 13,666, we launched a range of new campaigns via Facebook and sent 705,687 proactive text messages during HV outages.
<a href="#">53</a>	Develop 'self-service' options for customers to find information online.	We hosted 23,897 webchat conversations, launched a new power cut app on the website and saw usage of our power cut map increase from 323,837 hits to 666,323.

**Stakeholder engagement**

<a href="#">54</a>	Continue to host a Customer Panel where the CEO will meet with WPD's expert stakeholders four times a year.	The CEO met with the Customer Panel on four occasions during the year.
<a href="#">55</a>	Continue to host an annual round of at least six stakeholder workshops.	We hosted six sessions attended by 259 stakeholders across the WPD licence areas.
<a href="#">56</a>	Continue to produce a stakeholder report every year providing an update of actions taken as a result of stakeholder engagement.	The stakeholder report is replaced by the Business Plan Commitments Report and this summary document.

**Complaints**

<a href="#">57</a>	Resolve at least 70% of complaints within one day.**	82% of complaints were resolved within one day.
<a href="#">58</a>	Continue to have a target of zero complaints where the Ombudsman has to get involved.**	Zero complaints required ombudsman investigation.

**Guaranteed Standards of Performance awareness**

<a href="#">59</a>	Continue to send the 'Power for Life' publication to all 7.8 million customers which will include promotion of the GSOPs.**	'Power for Life' was issued to all 7.8 million customers in February 2015 and included information on GSOPs.
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\*\* Target to be achieved each year of RIIO-ED1

Improving understanding of vulnerability		
<a href="#">60</a>	Work with expert partners to improve understanding of the needs of vulnerable customers.	Engagement with a wide range of expert partners. Full compliance with the British Standards Institute's vulnerable customer standard (BS18477) for third consecutive year.
<a href="#">61</a>	Train staff to recognise the signs of vulnerability.	Members of our Priority Services Register (PSR) team attended specialist training on supporting vulnerable customers. All contact centre staff attended PSR recognition training.

Improving the data help on the priority services register		
<a href="#">62</a>	Proactively contact vulnerable customers at least once every two years to check the details on the Priority Service Register.	543,401 PSR customers proactively contacted. Our systems ensure that we contact vulnerable customers every two years.
<a href="#">63</a>	Improve the quality of Priority Services Register data by working with other agencies and sharing information.	Established a wide range of PSR referral networks involving agencies who work with vulnerable customers such as Local Authorities and consumer bodies.
<a href="#">64</a>	Coordinate meetings with suppliers to agree criteria for vulnerability.	We play a leading role in the 'Safeguarding Customers Working Group' which meets at least six times a year.

Improving the services provided for vulnerable customers		
<a href="#">65</a>	Raise awareness of the Priority Service Register.	Partnerships with over 20 agencies to register vulnerable customers to be included on the PSR. 21,652 customers added to the register following a parliamentary event to promote the PSR to MPs.
<a href="#">66</a>	Make 10,000 crisis packs available.*	965 crisis packs issued in 2015/16.
<a href="#">67</a>	Contact all medically dependent customers every three hours during power cuts.**	We prioritise calls to medically dependent customers during power cuts. We made 123,866 calls to PSR customers (including medically dependent customers) during power cuts.
<a href="#">68</a>	Continue to provide practical support via the RVS and British Red Cross.	British Red Cross provided support during five prolonged power cuts. New agreement launched with the Nationwide Caterers Association to provide hot food and drinks for communities.
<a href="#">69</a>	Seek feedback from vulnerable customers to improve service.	Customer satisfaction of 9.04/10 for individuals receiving a PSR data cleanse call and 8.92/10 for those referred for fuel poverty support.
<a href="#">70</a>	Develop mechanisms for sharing information with local resilience forums.	Worked with 19 forums across our four licence areas. Projects include a partnership with Fire and Rescue Services to share information on our PSR service.

Address fuel poverty by supporting customers to access key information		
<a href="#">71</a>	Build a database of regional agencies we can refer customers to for assistance.	Fuel poverty projects in all WPD areas, working with a network of support agencies. Assessment of third party services identified 177 agencies for potential collaboration.
<a href="#">72</a>	Work with partners to develop links to/from WPD's website.	Details on our fuel poverty projects, and links to our partner organisations available on WPD's website.
<a href="#">73</a>	Develop joint information, awareness campaigns and coordinate assistance with partners.	Four 'Power Up' fuel poverty schemes developed to support fuel poor customers. We supported 5,197 customers to save £958k.
<a href="#">74</a>	Provide bespoke training to WPD front line staff.	PSR team has received training and Contact Centre teams receive regular updates. Work is underway to finish training for our 4,500 field staff in 2016/17.
<a href="#">75</a>	Use data analysis to help identify localities with high concentration of vulnerable households.	We use data developed with the Centre for Sustainable Energy to target and support areas worst affected by fuel poverty.
<a href="#">76</a>	Develop local outreach services.	"Affordable Warmth" outreach schemes developed. We supported 1,162 fuel poor customers.

\* Targets are for the full eight year RIIO-ED1 period, not for a discrete year

\*\* Target to be achieved each year of RIIO-ED1

2015-2023

# RIIO-ED1 BUSINESS PLAN

## Business Plan Commitments Report 2015-16

31 October 2016

### Introduction

# Introduction Contents

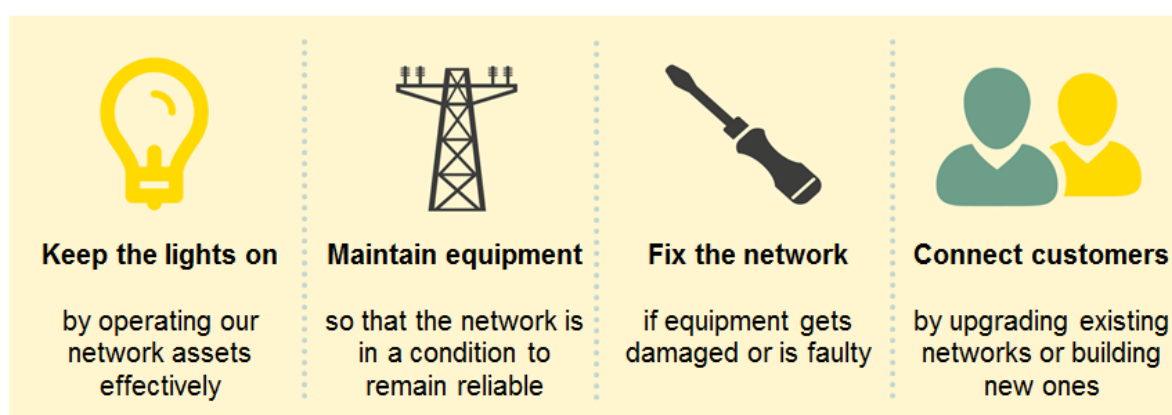
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## 2 Introduction

### Who we are and what we do

**2.1** WPD is a Distribution Network Operator (DNO) and distributes electricity to 7.8 million customers across the Midlands, South Wales and the South West. Our role is simple:

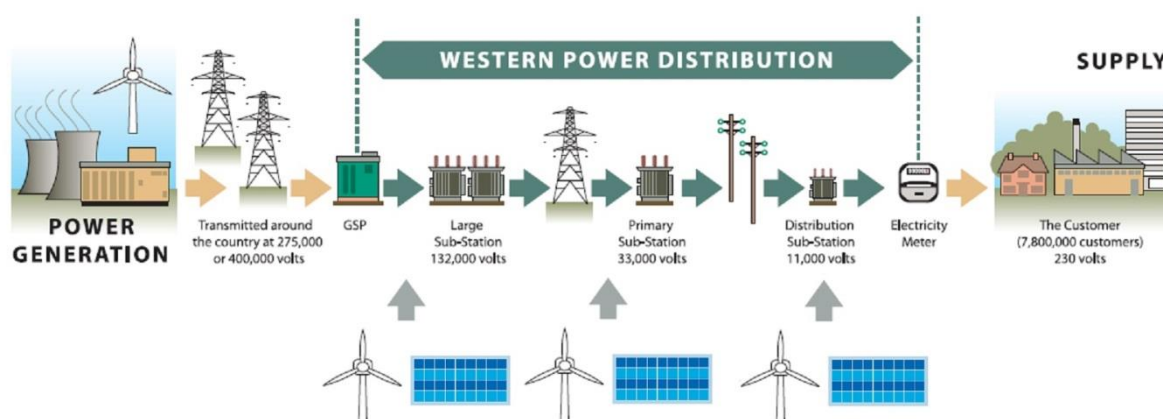
- we operate our network assets to 'keep the lights on';
- we maintain our assets so that they are in a condition to remain reliable;
- we fix our assets if they get damaged or if they are faulty;
- we upgrade the existing networks or build new ones to provide additional electricity supplies or capacity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



**2.2** All of these tasks are carried out having the highest regard to levels of safety, whether that is to members of the public, contractors or 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 network.



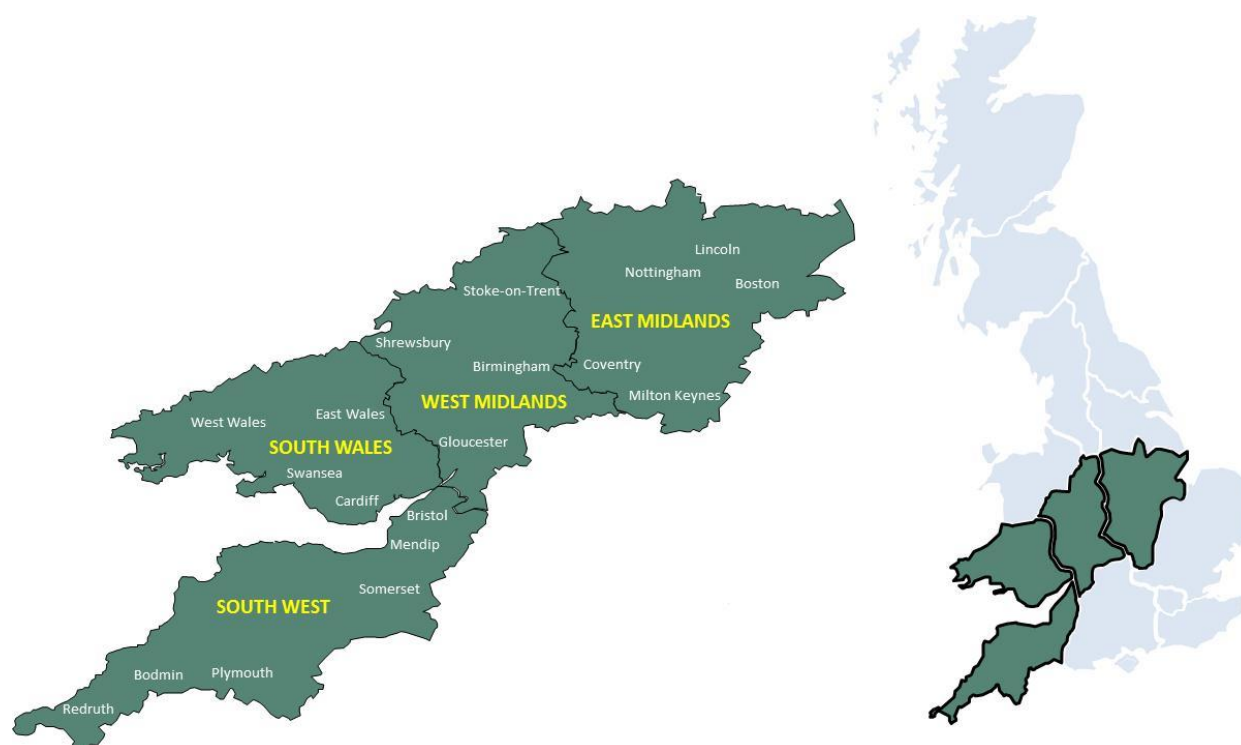


## 2.5 The WPD network currently comprises:

Network Assets						
Asset Type	Units	West Midlands	East Midlands	South Wales	South West	WPD Total
Overhead Lines	km	24,000	21,000	18,000	28,000	91,000
Underground Cable	km	41,000	52,000	18,000	22,000	132,000
Transformers	each	50,000	43,000	40,000	53,000	187,000
Switchgear	each	85,000	97,000	35,000	78,000	295,000
Poles	each	365,000	285,000	286,000	441,000	1,377,000
Towers (Pylons)	each	4,000	5,000	2,000	4,000	15,000
Customer Numbers	each	2,463,000	2,622,000	1,123,000	1,590,000	7,799,000
Licenced Area	km <sup>2</sup>	13,300	16,000	11,800	14,400	55,500

**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.

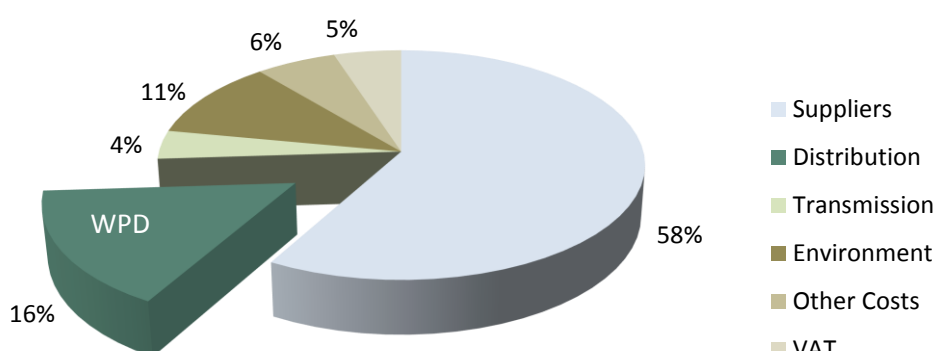
**2.9** At WPD we try to get whatever we are delivering right first time. To encourage this we stress that all employees should:

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

- 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, 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 16% of the make-up of an average domestic customer's bill. This percentage is based upon the latest Ofgem statistics that show distribution costs (publication Household Energy Bills Explained, January 2013). More recent data published by Ofgem and suppliers shows total network costs rather than separating transmission and distribution.

## Make-up of the customer bill

(source: Ofgem - Household Energy Bills Explained - Jan 2013)



## 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/About-us/Stakeholder-information/Our-Future-Business-Plan.aspx](http://www.westernpower.co.uk/About-us/Stakeholder-information/Our-Future-Business-Plan.aspx)

**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 the price control mechanism, referred to as Totex. The remaining £2.1bn covers costs that are directly remunerated by customers or costs such as rates, licence fees and transmission charges that are outside the control of WPD and 'passed through' to the charges we make to electricity suppliers.

**2.21** In 2015/16 we forecast to spend £908m of Totex and £301m on costs outside the price control, making £1,209m of total expenditure that would be charged to suppliers.

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

### Outputs (commitments)

**2.23** The business plan specified outputs in six main categories:

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

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

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

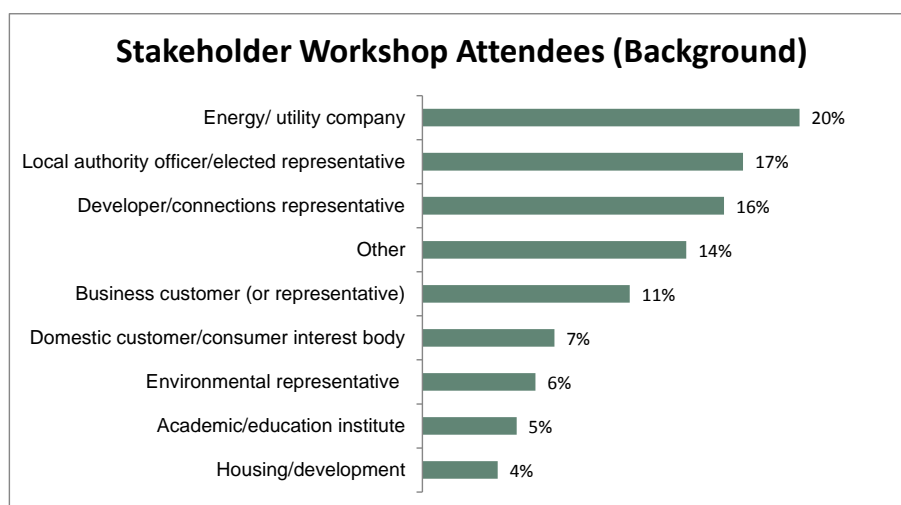
# Developing our approach to reporting

## Ofgem Guidance

- 2.26** Ofgem has issued guidance for the format of the Business Plan Commitment Reporting required in line with 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.
- 2.27** 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

- 2.28** DNOs are required to actively engage with stakeholders to determine the content of the report.
- 2.29** As part of our Stakeholder Engagement Strategy we hold an annual round of stakeholder workshops which provides the opportunity to introduce key topics to a range of stakeholders and gain feedback on our approach.
- 2.30** In January 2016 we used these workshops to discuss our approach to the Business Plan Commitments Report and to gauge stakeholder opinion on the key topics the report should cover.
- 2.31** The workshops took place in six separate sessions held across our licence areas and were attended by 259 individuals representing a variety of stakeholder groups as follows:



- 2.32** Stakeholders were provided with sample reporting documents and asked to provide their views on the suggested structure and content of the report.
- 2.33** Stakeholders showed strong support for a “three model” approach:
- 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.
- 2.34** Stakeholders provided individual feedback including suggestions such as:
- Using hyperlinks to connect the summary report to the detailed report;
  - Enabling comparison across DNOs where possible;

- Including a glossary and contents page;
- Producing a printer friendly version of the summary report where photos are included;
- Using signposting within the detailed document and structuring the content to ensure that key facts and figures are prominent.

**2.35** Stakeholders used electronic voting to identify the commitments that they considered should be prioritised for reporting.

**2.36** The results were as follows and have been used to determine the areas where more detail is provided in the shorter summary report.

Output category	Specific outputs viewed as priority by stakeholders	% of attendees who prioritised this output
Safety	Accident frequency rates	65
	Public safety education	53
Reliability	Power cut frequency and duration	83
	Percentage of customers restored within 1 hour	38
Environment	Facilitating increased volumes of Low Carbon Technologies (e.g. solar PV)	76
	Reducing technical network losses	40
Connections	Time taken to provide quotations and completed connections	62
	Customer satisfaction with the connections process	46
Customer Satisfaction	Customer satisfaction results	60
	= Consultations and engagement with stakeholders	41
	= Improved communication with customers (e.g. social media, online, accuracy of info, etc.)	
Social obligations	= Complaints	
	Improved support for customers during power cuts	58
	Data analysis to identify vulnerable customers and to better target services	52

**2.37** This report provides an update on all outputs, not just those specified for priority by stakeholders.

**2.38** We will continue to use feedback from future stakeholder events to review the scope and content of the business plan commitments report and summary document.

### Other Considerations

**2.39** In addition to the input provided from our stakeholder workshops the following have also been used to influence our approach to reporting:

- Citizens Advice document 'Beginning to see the light' which suggests principles for the content of consumer and stakeholder reports published under the RIIO framework.

[www.citizensadvice.org.uk/Global/CitizensAdvice/Energy/Beginning%20to%20see%20the%20light%20-%20reporting%20paper.pdf](http://www.citizensadvice.org.uk/Global/CitizensAdvice/Energy/Beginning%20to%20see%20the%20light%20-%20reporting%20paper.pdf)

- The outcome of Ofgem's Consumer First Panel published in April 2016. The panel focussed on consumer views on the approach to DNO performance reporting.

[www.ofgem.gov.uk/system/files/docs/2016/05/15-035666-01\\_ofgem\\_consumer\\_panel\\_wave\\_2\\_dno\\_290416\\_final\\_0.pdf](http://www.ofgem.gov.uk/system/files/docs/2016/05/15-035666-01_ofgem_consumer_panel_wave_2_dno_290416_final_0.pdf)

- The views of WPD's Customer Panel

## Useful Links

WPD's 2015/16 submissions for the Incentive on Connections Engagement:

[www.westernpower.co.uk/About-us/Stakeholder-information/Connection-Customer-Engagement.aspx](http://www.westernpower.co.uk/About-us/Stakeholder-information/Connection-Customer-Engagement.aspx)

Competition in Connections Code of Practice:

[www.westernpower.co.uk/docs/connections/competition-in-connections/15014-CiCCoP\\_final\\_ofgem\\_clean.aspx](http://www.westernpower.co.uk/docs/connections/competition-in-connections/15014-CiCCoP_final_ofgem_clean.aspx)

WPD's Competition in Connections webpage:

[www.westernpower.co.uk/Connections/Competition-in-Connections.aspx](http://www.westernpower.co.uk/Connections/Competition-in-Connections.aspx)

WPD's 2015/16 submissions for the Stakeholder Engagement and Customer Vulnerability Incentive:

[www.westernpower.co.uk/About-us/Stakeholder-information/Stakeholder-Reports.aspx](http://www.westernpower.co.uk/About-us/Stakeholder-information/Stakeholder-Reports.aspx)

Environment Report:

[www.westernpower.co.uk/About-us/Our-Business/Environment.aspx](http://www.westernpower.co.uk/About-us/Our-Business/Environment.aspx)

2016 Losses Strategy:

[www.westernpower.co.uk/docs/Innovation-and-Low-Carbon/Losses-strategy/Losses-Strategy-January-2016.aspx](http://www.westernpower.co.uk/docs/Innovation-and-Low-Carbon/Losses-strategy/Losses-Strategy-January-2016.aspx)

2016 Innovation Strategy:

[www.westernpower.co.uk/docs/Innovation-and-Low-Carbon/Losses-strategy/WPD-Innovation-Strategy-2016\\_FINAL\\_v1.aspx](http://www.westernpower.co.uk/docs/Innovation-and-Low-Carbon/Losses-strategy/WPD-Innovation-Strategy-2016_FINAL_v1.aspx)

Our RIIO-ED1 business plan:

[www.westernpower.co.uk/About-us/Stakeholder-information/Our-Future-Business-Plan.aspx](http://www.westernpower.co.uk/About-us/Stakeholder-information/Our-Future-Business-Plan.aspx)

Link to WPD's webpage for Guaranteed Standards of Performance:

[www.westernpower.co.uk/About-us/Our-Business/customer-service/Guaranteed-Standards.aspx](http://www.westernpower.co.uk/About-us/Our-Business/customer-service/Guaranteed-Standards.aspx)

2015-2023

# RIIO-ED1 BUSINESS PLAN

## Business Plan Commitments Report 2015-16

31 October 2016

### Safety



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## 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).

## Overview of Safety Outputs

Compliance with health and safety law		
<a href="#">1</a>	Target zero improvement notices, prohibition notices and prosecutions from the Health and Safety Executive.**	Zero Improvement notices. Zero Prohibition notices. One instance where legal proceedings for a historic incident were concluded.
<a href="#">2</a>	Complete work programmes to achieve compliance with ESQCR statutory clearance to structures or the ground.	Proximity to structure programme complete for West Midlands, East Midlands and South Wales. 56% of South West programme complete with completion timeframe of March 2018. Ground clearance defects - 100% completion of defects requiring rectification during the year.
<a href="#">3</a>	Complete inspection and maintenance programmes every year.**	All tasks are required to be completed during the year. A small volume of arrears arose due to access issues and mitigation plans were developed for these.

Reducing Accidents		
<a href="#">4</a>	Reduce our overall accident frequency rate by 10%.*	Accident rate in 2015/16 is better than the 10% improvement target set for RIIO-ED1 as a whole.
<a href="#">5</a>	Maintain our active participation in the ENA SHE 'Powering Improvement' initiatives that lead to improved safety performance.	Events designed around ENA themes of "Working with contractors" and "Managing occupational ill health risks" conducted within 2015/16.
<a href="#">6</a>	Work with our trade unions to enhance safety performance including the provision for additional 'Behavioural Safety' initiatives.	5,500 staff attended behavioural safety sessions.
<a href="#">7</a>	Investigate all accidents involving members of the public, contractors or our own staff to ensure that learning points are quickly understood and communicated.**	Investigated all 149 incidents occurring in year (80 staff accidents, 55 contractor accidents and 14 significant incidents involving the public).

Substation Security		
<a href="#">8</a>	Enhance security measures at 50 substation sites to reduce the number of repeat break-ins.*	Six substation sites which were the subject of repeat break-ins during 2015/16 had enhanced security measures installed.

Educating the public		
<a href="#">9</a>	Organise and run over 1,000 educational sessions to provide safety information to over 400,000 school children.*	1,114 sessions undertaken with 69,734 children participating
<a href="#">10</a>	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.*	367,298 "Think Safe. Stay Safe." leaflets issued or made available via 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

## Compliance with Health and Safety Law

3.5 The RIIO-ED1 business plan contained three outputs within this theme:

### Compliance with health and safety law

- (1) Target zero improvement notices, prohibition notices and prosecutions from the Health and Safety Executive.
- (2) Complete work programmes to achieve compliance with ESQCR statutory clearance to structures or the ground.
- (3) Complete inspection and maintenance programmes every year.

### *(1) Targeting zero improvement notices, prohibition notices and prosecutions*

3.6 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.

3.7 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.

3.8 During 2015/16 there have been no improvement notices or prohibition notices issued by the HSE.

3.9 Two notices of contravention (observations) were identified by the HSE during 2015/16, both were addressed:

- An observation was made in June 2015 in relation to the application of Regulation 18 of the Construction (Design and Management) Regulations 2007. The specific incident was investigated and referred to as a learning point within a series of briefings associated with revisions to the regulations.
- An observation was made in October 2015 in relation to the application of Regulation 22(1) (a) of the Construction (Design and Management) Regulations 2007. The specific incident was investigated and a "look and learn" reminder was circulated across the business to prevent a repeat event.

3.10 In December 2015, the legal proceedings concluded for an incident where a member of the public died after coming into contact with a low overhead line on 10 April 2013. WPD admitted to failings. The fine and costs have been paid.

### *(2) Work programmes to achieve compliance with ESQCR statutory clearance*

3.11 The Electricity Safety, Quality and Continuity Regulations 2002 (ESQCR) specify requirement for clearance to objects and ground. In particular:

- 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 programme for West Midlands, East Midlands and South Wales is complete. Agreement was reached with the HSE to extend the timeframe for the South West licence area to 31 March 2018. At the close of 2015/16, 56% of the work programme for South West was complete.
- 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 timescale for rectification of low clearance defects and therefore provide deadlines for the forward plan (between 3 and 10 years). The assessment policy requires all road crossings to be inspected by December 2016 and the majority of these inspections had been completed by March 2016. The total volume of defects exceeds the volumes of activity proposed for RIIO-ED1, but since the timescales for defect rectification extend up to ten years 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 2015/16 there were no regulation 17 defects or regulation 18 risks that had not been rectified within the timeframes indicated by the risk assessment process.

### *(3) Inspection and maintenance work programmes*

- 3.15** One method of ensuring that the network remains safe is through regular and thorough inspection, defect rectification and maintenance.
- 3.16** Inspection and maintenance policies have evolved over time, taking into account changes to legislation, evolution of technology, regulatory requirements and policy effectiveness. 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.
- 3.17** Local teams use the tasks to manage inspection and maintenance work and the completion of tasks is monitored on a weekly basis through 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.
- 3.18** 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.
- 3.19** 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.
- 3.20** WPD continues to seek ways of improving efficiency and using technology to enhance inspection and maintenance activities. All field teams are issued with iPads for recording of information. During 2015/16 a number of bespoke applications were introduced and others are being developed to allow better checking of existing records and automatic updates of information from site.

# Reducing accidents

3.21 The RIIO-ED1 business plan contained four outputs within this theme:

## Reducing accidents

- (4) Reduce our overall accident frequency rate by 10%.
- (5) Maintain our active participation in the ENA SHE 'Powering Improvement' initiatives that lead to improved safety performance.
- (6) Work with our trade unions to enhance safety performance including the provision for additional 'Behavioural Safety' initiatives.
- (7) Investigate all accidents involving members of the public, contractors or our own staff to ensure that learning points are quickly understood and communicated.

## (4) Reducing overall accident frequency rate

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.

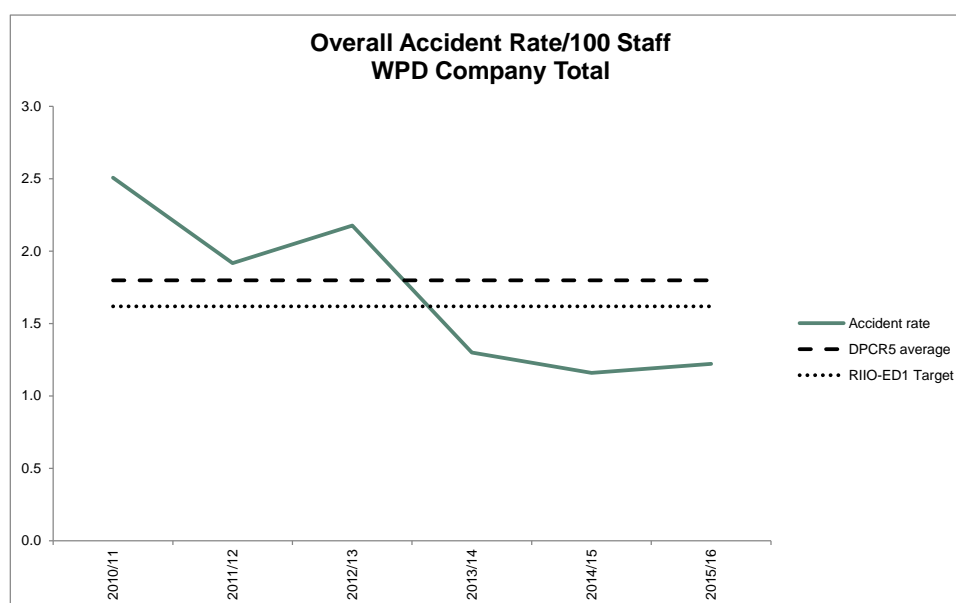
3.25 In 2015/16 a range of initiatives were used to promote safety including:

- The introduction (in September 2015) of a new training course called 'Technical Managing Safely' aimed at practical actions to manage health and safety for individuals leading operational teams and projects. The programme will be rolled out to all relevant staff over the next three years.
- Hosting (in May 2015) the ENA SHE Management conference – a forum for industry stakeholders aimed at sharing best practice.
- Launching a safety webpage for contractors, giving all contractors access to a range of information including policies and procedures, accident statistics and safety bulletins issued to WPD staff. The webpage was initiated as a result of contractor feedback at annual Contractor Safety conferences.
- The development of the safety applications used on field based iPads – including revisions to the risk assessment application based on discussions with trade union representatives and the trial of a new application for recording site safety visits.
- Changes to policy on the use of protective eyewear following a successful initiative proposed within a local depot where eyewear was worn more proactively and for a greater range of tasks.

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.

3.27 In 2015/16 the accident rate for WPD as a whole was 1.22 accidents per 100 staff. This was a slight increase on the 2014/15 performance of 1.16 but is an improvement on the DPRC5

average and better than the RIIO-ED1 target. The trend in safety performance can be seen below:



**3.28** Whilst we are reporting better than target performance, the statistics include the fatality of a member of staff. This sad incident highlights the importance of striving to reduce accidents.

### *(5) Health and Safety strategy – working with the Energy Networks Association*

**3.29** WPD continues to actively participate in the industry strategy 'Powering Improvement'. Powering Improvement is a 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:

- 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'

**3.30** Powering Improvement is supported by member companies of the Energy Networks Association (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.

**3.31** WPD has chosen to identify initiatives for each theme in the preceding year. This enables us to be prepared for better engagement in the process. The Powering Improvement theme for 2015 was 'Working with Contractors'. In June 2015 WPD held four regional contractor safety forums which were attended by all major contractors and a selection of sub-contractors. The agenda covered best practice, WPD expectations for safety, a challenge to improve accident rates and behavioural safety.



**3.32** The Powering Improvement initiative in 2016 is 'Managing Occupational Ill Health Risks' and to prepare for this WPD undertook a series of 'Switched on to Health' workshops for staff between October and November 2015.

**3.33** These workshops signposted the health related services available to staff and ways for individuals to maintain a healthy lifestyle both at work and at home. Sessions focussed on the leading causes of ill health for individuals working in the electricity industry, such as musculoskeletal and cardiovascular issues, and looked at ways of avoiding them.

**3.34** As a result of the workshops, we saw a 41% increase in referrals to our funded physiotherapy programme and a 32% increase in self-referrals to our Employee Assistance Programme, when comparing referrals between October and December for 2014 and 2015.

## *(6) Working with trade unions*

**3.35** 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.

**3.36** 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.

**3.37** 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.

**3.38** Additional topics covered in 2015/16 included:

- the development of new and existing iPad applications;
- a review of policy and training following revisions to the Construction (Design and Management) Regulations;
- the introduction of new processes for checking driving licences for employees using company vehicles;
- techniques on the management of asbestos;
- mechanisms for weighing vehicles;
- the correct moving and handling approach for specific equipment;
- the provision of feedback on the suitability or availability of particular personal protective equipment.

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

**3.40** In 2015/16, the four safety conferences took place in March and April 2016 and were attended by the company's Safety and Training Manager and the Occupational Health Manager. Topics for discussion were locally driven by the trade union forums and agendas therefore varied for each licence area. Examples of the topics covered include:

- safety performance improvement opportunities;
- the Powering Improvement initiative 'Corporate Memory' which provided the chance to reflect back on significant learning points from past incidents;
- a review of local Safety Action plans.

**3.41** Trade union representatives are informed of all accidents and have the remit to independently investigate accidents if they wish to do so.

- 3.42** In addition, trade union representatives are provided with the opportunity to undertake the same training provided for supervisors carrying out Site Safety Visits. During 2015/16 18 safety representatives attended this training, enabling them to independently audit operational sites.

### Behavioural safety

- 3.43** 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.
- 3.44** In 2015, WPD launched a fresh behavioural safety initiative 'Switched on to Safety' with every member of staff invited to attend a training session designed to enable them to 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.
- 3.45** 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.

#### Case Study (East Midlands)

After attending behavioural safety training each team within the Nottingham depot met to discuss potential ways in which continuous improvements in safety performance could be achieved. As a result a number of initiatives were instigated including a concentrated approach to improve safety in the stores department. It was identified that:

- Signage when a fork lift truck was in operation was inadequate, signage was reviewed and improved;
- There were potential manual handling issues where individuals were removing cable from large cable drums, new racking for the drums was installed;
- Walkways were not marked and there were potential tripping hazards as a result of materials not being stored correctly, walkways were painted to minimise this risk;
- Generator leads presented a tripping hazard, these were temporarily reorganised and a decision was made that these will be moved to a new garage site once it becomes operational in 2016/17;
- Problems accessing an oil bund with a fork lift truck were eliminated by installing a new gate to the bund to enable this to be kept clear of hazards and therefore safe for staff.

Engaging all staff through a behavioural safety approach resulted in positive actions.

- 3.46** These local team plans are gathered and reviewed by the central Safety Team so that best practice can be shared across the whole business.
- 3.47** The 2015/16 safety conferences provided an additional opportunity for these action plans to be revisited and discussed with local safety representatives.
- 3.48** Since January 2015 over 5,500 staff have attended behavioural safety sessions:

Behavioural Safety Training Sessions			
	January to March 2015	2015/16	Totals
Staff sessions	2,678	1,571	4,249
Business manager sessions	537	745	1,282
Total sessions	3,215	2,316	5,531

- 3.49** As a result of discussions on behavioural safety at contractor safety forums, a number of contractors requested to attend the same training provided for WPD staff. This resulted in 15

contractor behavioural safety sessions being conducted between February and March 2016 with 337 individuals attending from 50 different suppliers and contractors.

- 3.50** In 2016/17 the behavioural safety programme will be added to our apprentice induction to ensure that new staff joining the company learn about its importance.

### *(7) Investigating accidents*

- 3.51** 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.

- 3.52** During 2015/16 there were 80 staff accidents, 55 contractor accidents and 14 significant incidents involving the public. All 149 were investigated.

- 3.53** 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;
- 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 2015/16 six Safety Bulletins were issued – each bulletin provides an explanation of the issue, relevant learning points and the actions required by individuals for the future.

- 3.54** 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). A 'Safety Flash' system allows individuals to submit information anonymously should they wish to do so.

- 3.55** In 2015/16, 119 near misses were reported and five 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.

## Substation security

**3.56** The RIIO-ED1 business plan contained one output within this theme:

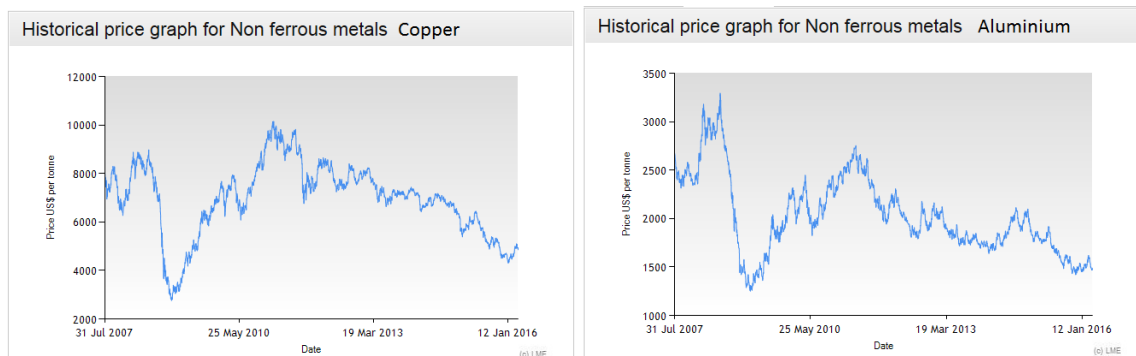
### Substation security

- (8) Enhance security measures at 50 substations sites to reduce the number of repeat break-ins.

### *(8) Enhancing security measures at substations*

**3.57** Historical increases in the value of metals have 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, potentially exposing WPD employees and members of the public to increased risks.

**3.58** Metal prices have reduced more recently (as shown in the London Metal Exchange charts below) and prices for 2015/16 were relatively low in comparison to previous years. Such fluctuations have the potential to impact on levels of theft and as a result the cost benefit of security related interventions will vary over time, as will the level of priority placed on metal theft by external agencies such as police forces.



### Monitoring break-ins to substations

**3.59** 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 and identified 13 occasions where a specific substation was targeted more than once and was therefore a candidate for potential security enhancements.

**3.60** Of the 13 substations where a repeat break-in occurred upgrading works have been undertaken at six sites during 2015/16. Measures taken varied from the installation of CCTV to providing additional lighting or upgrading the perimeter fencing. Work is scheduled for one further site in 2016/17. Two of the six sites that had enhanced security installed during 2015/16 were already scheduled for upgrading works.

### Increasing substation security in the West Midlands and East Midlands

**3.61** 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. WPD committed to ensuring that all grid and primary sites would be provided with an intruder system as a minimum, with some sites also being fitted with CCTV and/or electric fences if identified to be high risk. Some of the required security enhancements were carried out prior to the start of the RIIO-ED1 period.

**3.62** In order to determine the works required at each site, local site surveys have been conducted. As a result of these surveys and work being already completed, we have revised the number of

sites requiring enhancements (compared to the volumes provided within the RIIO-ED1 business plan).

- 3.63** 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 – in order to determine the enhancements required. The targets and progress are detailed below:

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 undertaken during 2015/16 (Sites)	8	9

## Educating the public on electricity safety matters

3.64 The RIIO-ED1 business plan contained two outputs within this theme:

### Educating the public

- (9) Organise and run over 1,000 educational sessions to provide safety information to over 400,000 school children.
- (10) Continue to publish literature on maintaining safety around electricity apparatus and send more than 500,000 copies of this literature to targeted landowners, businesses or leisure operators.

### (9) Providing safety information for school children

3.65 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.

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

3.67 During 2015/16, over 1,100 sessions were delivered to 69,734 school children across the four WPD licence areas as follows:

Education sessions delivered 2015/16		
	Number of sessions	Number of children
West Midlands	139	15,021
East Midlands	426	11,795
South Wales	150	18,988
South West	399	23,930
<b>WPD Total</b>	<b>1,114</b>	<b>69,734</b>

3.68 Sessions are delivered in a variety of ways, including:

- Individual school safety talks aligned to the national curriculum;
- Crucial Crew and Life Skills sessions, co-facilitated with emergency services and delivered in schools to teach young people about safety, including electrical safety;
- Hazard Alley – a permanent centre based in Milton Keynes where sessions are held to teach children about safety, including electrical safety;
- WPD's Education Liaison Officer attending family or child centred events – in 2015/16 this included events such as the Royal Welsh Show, enabling interaction with children and families.

3.69 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.

3.70 In 2015/16, WPD launched a Child Safety social media campaign to raise awareness of potential electrical safety hazards. The campaign featured a series of social media posts on Twitter and Facebook which were aimed at families and young adults.

3.71 The campaign included an interactive safety quiz which attracted 3,000 participants and required entrants to answer multiple choice questions about electrical hazards.







2015-2023

# RIIO-ED1 BUSINESS PLAN

## Business Plan Commitments Report 2015-16

31 October 2016

### Reliability

# Reliability Contents

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## 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 incentives mechanisms.

- The Interruption Incentive Scheme provides rewards for outperformance (and applies penalties for underperformance) against targets for the average number of customer interruptions and the average duration of those interruptions.
- 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.
- Recovery of costs associated with investment for worst served customers will not be funded unless specified thresholds for improvements in network performance are met.
- Longer term asset stewardship is encouraged through secondary deliverables which use asset health and criticality metrics to track the delivery of asset replacement and refurbishment work. Under-delivery will be penalised and justified over-delivery will lead to additional funding.
- Resilience is the ability of the electricity distribution networks to continue to supply electricity to customers during disruptive events, such as severe storms or floods. DNOs are required to design and operate their networks in accordance with relevant statutes, codes and standards to maintain resilience.

**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 longer term.

## Overview of Network Performance Outputs

Network Performance		
<a href="#">11</a>	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 49% from the underlying performance benchmark calculated for 2011/12.
<a href="#">12</a>	Ensure that a minimum of 85% of customers have their power restored within an hour of an HV fault occurring.**	89.16% of customers were restored within one hour of an HV fault.

Guaranteed Standards of Performance		
<a href="#">13</a>	Reduce by 20% the number of customers experiencing a power cut lasting 12 hours or more.*	Only 57 customers were off supply for more than 12 hours – a 99% improvement on our 2012/13 benchmark figures.
<a href="#">14</a>	Target zero failures on all other GSOPs.**	12 failures, we aim to learn from each failure.

Worst Served Customers		
<a href="#">15</a>	Reduce by 20% the number of customers classified as worst served.*	Projects in 2015/16 targeted improvements for 4,797 customers. Over the course of RIIO-ED1 we are targeting improvements for 6,812 customers.

Enhance Network Resilience		
<a href="#">16</a>	Apply flood defences to 75 substations, reducing the risk of both damage to equipment and power cuts due to flooding.*	Four substations have had flood defences installed. Data analysis and site surveys carried out to identify requirements at other sites.
<a href="#">17</a>	Accelerate the programme of tree clearance for resilience by 40% with the objective to deliver the programme five years earlier than suggested by Government guidelines, clearing 700km of overhead lines per annum.*	Increased volumes completed for year in line with accelerated targets.
<a href="#">18</a>	Enhance substation battery life to be resilient for 72 hours in the event of major power losses.*	Protection batteries – 7% of eight year programme complete. SCADA batteries – 1% of eight year programme complete. Telecommunications sites – 51% 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

## Network performance

4.5 The RIIO-ED1 business plan contained two outputs within this theme:

### 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.
- (12) Ensure that a minimum of 85% of customers have their power restored within an hour of an HV fault occurring.

### *(11) Improving network performance*

- 4.6 Customers expect power to be available all of the time because many household activities and business processes rely on electricity.
- 4.7 Distribution companies are incentivised to improve network performance through the Interruptions Incentive Scheme (IIS) where rewards are available for outperformance and penalties applied where targets are not met. IIS measures the average number of interruptions per 100 customers and the average length of time in minutes each customer is without power (it excludes power cuts that are under three minutes).
- 4.8 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.
- 4.9 Overall WPD has 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). These improvement targets were calculated based on performance data up to 2011/12. This data was used for discussions with stakeholders when developing the WPD RIIO-ED1 Business Plan.
- 4.10 Since proposing the Business Plan, WPD has continued to drive improvements in performance and by 2015/16 this has led to a 27% improvement in the number of power cuts and a 49% improvement in the average duration of power cuts. This performance already exceeds the targets for the end of RIIO-ED1 and the challenge for the future will be maintaining these improvements.

## Performance for Customer Interruptions

**4.11** Customer Interruptions are expressed as the average number of interruptions per 100 customers. The following tables and charts compare actual performance against proposed 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								33%
East Midlands	58.8	48.7	45.0	41.7								29%
South Wales	55.5	45.8	52.6	45.0								19%
South West	57.4	49.3	47.9	48.5								16%
WPD Total	69.1	56.3	53.9	50.4								27%



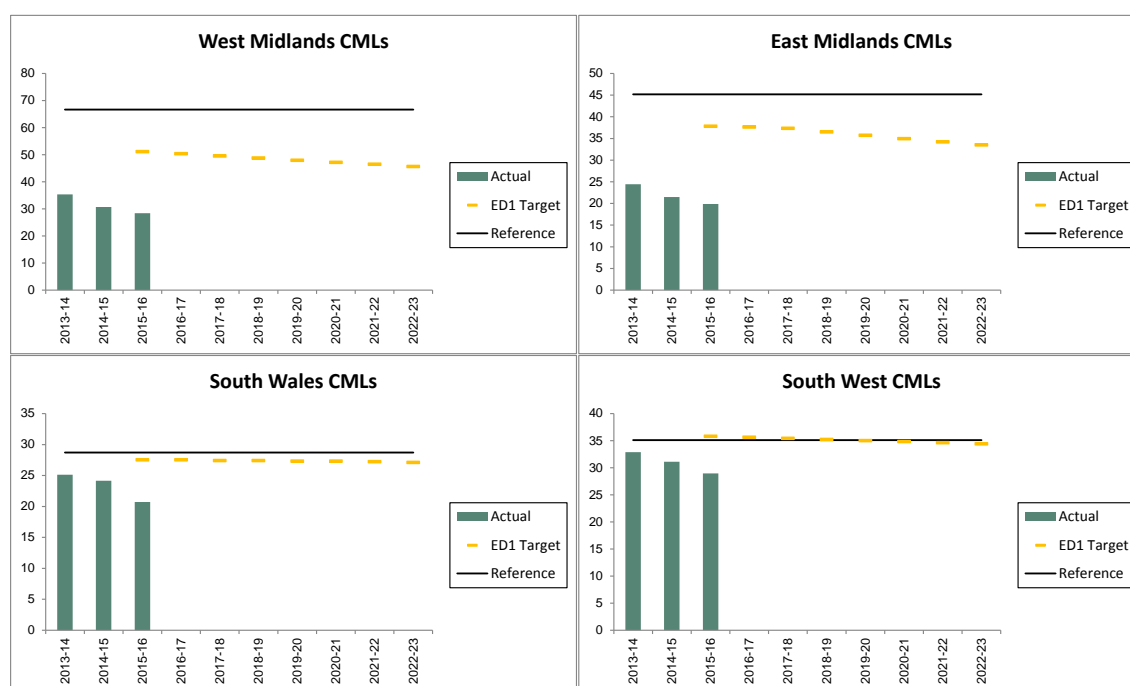
**4.12** For 2015/16 performance for Customer Interruptions is better than the overall RIIO-ED1 improvement target and beats the in-year regulatory target.

## Performance for Customer Minutes Lost:

**4.13** Customer Minutes Lost are expressed as the average length of time in minutes each customer is without power (excluding power cuts that are under three minutes). The following tables and charts compare actual performance against proposed 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								57%
East Midlands	45.2	24.4	21.5	19.9								56%
South Wales	28.7	25.1	24.2	20.7								28%
South West	35.1	32.9	31.1	29.0								17%
WPD Total	47.7	29.7	26.7	24.5								49%



**4.14** For 2015/16 performance for Customer Minutes Lost is better than the overall RIIO-ED1 improvement target and beats the in-year regulatory target.



## Reducing the number of faults

### *Completing inspection and maintenance programmes*

- 4.15** Ensuring the completion of inspection and maintenance work programmes assists in limiting faults by identifying poor condition assets, repairing defects and replacing worn components that could otherwise lead to faults.
- 4.16** Local teams manage inspection and maintenance work and the completion of tasks is monitored by weekly management key performance indicators. WPD targets the completion of all inspection and maintenance tasks within the time periods required by policy, 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 identification. Managers receive monthly prompts identifying outstanding poles that have not been addressed. During 2015/16 each licence area achieved 100 per cent completion against these indicators.

### *Replacing assets*

- 4.20** 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 of the network.
- 4.21** Work programmes for RIIO-ED1 have been established using a combination of condition based risk assessment and longer term statistical forecasting. Condition based risk assessment considers both the health of assets and the consequence of failure.
- 4.22** In developing the RIIO-ED1 Business Plan, WPD used bespoke analysis to determine the change in risk that would be delivered by asset replacement and refurbishment activity.
- 4.23** Ofgem has placed an obligation upon all DNOs to work collaboratively to develop a Common Network Asset Indices Methodology (CNAIM) for the reporting of asset risk and the change in risk delivered by asset replacement and refurbishment work. WPD has actively contributed to industry work on developing CNAIM and is implementing new models to enable reporting to be based upon the common methodology. Ofgem has recognised that reporting will take time to implement and has allowed DNOs until December 2016 to carry out this work.
- 4.24** This means that data is not available at the time of this report to show the rebased risk reduction targets and progress against them. Further information will be provided in future reporting.

### *Reinforcing the network to provide enough network capacity*

- 4.25** The amount of power that the network can carry (i.e. the capacity of the network) is limited by the rating of equipment and configuration of the assets. 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.

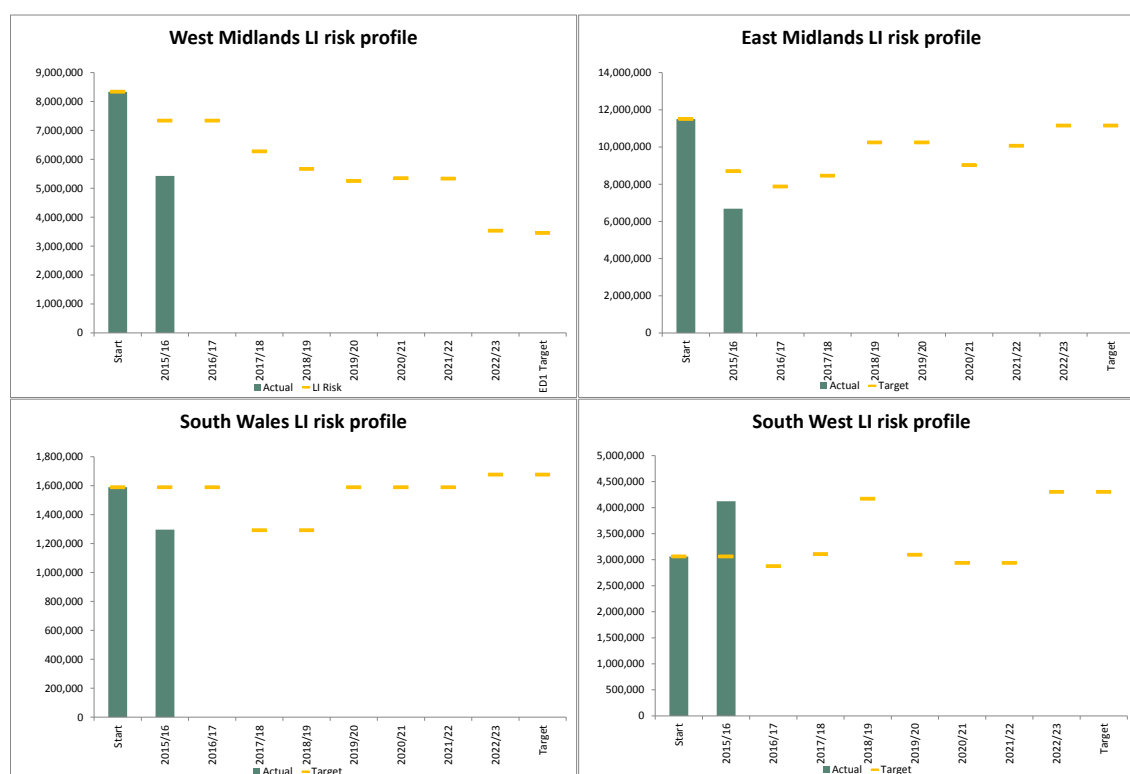
**4.26** This intervention can be either the reinforcement of the network to provide more capacity, by the addition of more assets or changing existing equipment to higher rated equipment, or load management to reduce the maximum demand on the network.

**4.27** Substations are rated according to utilisation of capacity. The utilisation of an asset is the amount of maximum demand expressed as a percentage of the capacity of the asset. This is converted to a load index (LI) banding using the values specified by Ofgem and shown below:

LI Rank	Definition	Loading	Weighting
LI1	Significant spare capacity	0-80%	1
LI2	Adequate spare capacity	80%-95%	1
LI3	Highly utilised	95-99%	1
LI4	Fully utilised, mitigation requires consideration	100% for <9 hours per year	20
LI5	Fully utilised, mitigation required	100% for > 9 hours per year	100

**4.28** The load indices are converted to risk points by applying weighting to each LI band and multiplying by customer numbers. As demand increases more capacity is used up leading to higher utilisation, higher LI band ranking and higher load index risk points. Providing more capacity at a substation will reduce the load index and associated risk.

**4.29** In the RIIO-ED1 Business Plan, WPD proposed a work programme of reinforcement which used demand forecasting to identify parts of the network that would require additional capacity. The combination of demand growth and reinforcement intervention generated a year by year profile of load index risk points. Progress against the risk profile is shown below, which shows that LI risk points are lower than forecast (except in the South West where load growth on the network has caused more substations than forecast to be classified as having an LI4 load index):



- 4.30** 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.
- 4.31** 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.
- 4.32** Where networks become overloaded to the extent that the requirements of P2/6 cannot be met, derogations against compliance with the standard are put in place and an action plan is developed to ensure compliance is achieved.
- 4.33** Where the amount of demand that could be interrupted is greater than 60MW, derogations must be submitted to Ofgem. At lower demands, Ofgem has introduced a self-derogations process but this still requires action plans to be developed and implemented.
- 4.34** At the close of 2015/16 there are no Ofgem derogations and five self-derogations. Each derogation has an action plan and a target completion date in place.

P2/6 derogations					
	West Midlands	East Midlands	South Wales	South West	South West
Ofgem derogations	0	0	0	0	0
Self-derogations	1	4	0	0	5

#### Completing routine tree clearance programmes

- 4.35** Trees can cause interruptions by falling into overhead lines or by branches coming into contact with conductors.
- 4.36** Routine cyclical tree clearance is carried out to provide sufficient clearance to prevent faults and keep the public safe. Clearance is carried out to maintain the distances specified within Industry Standard ENA TS 43-8. This routine clearance is supplemented by a separate resilience clearance programme.
- 4.37** For routine clearance, spans are inspected and will either be declared clear of tree proximity or cutting will be undertaken to achieve the required clearance. The volume of clearance will vary across licence areas depending on the size of the network and the nature of the network i.e. whether it is largely urban or rural. During 2015/16 the following volumes of spans were cut:

Routine Tree Trimming (Number of Spans cut) in 2015/16					
	West Midlands	East Midlands	South Wales	South West	WPD Total
LV (spans)	6,984	4,337	13,023	27,620	51,964
HV (spans)	8,705	4,513	17,552	17,908	48,678
EHV (spans)	729	492	503	579	2,303
132kV (spans)	696	302	513	297	1,808

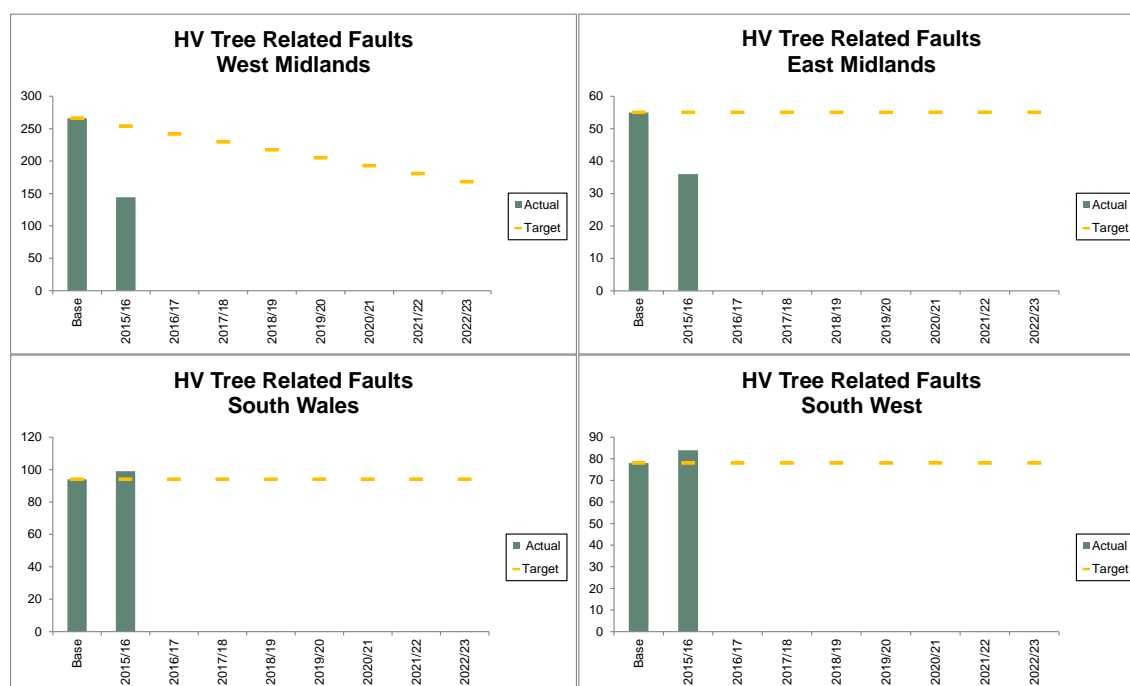
- 4.38** Effective tree clearance assists in the reduction of tree related faults and within RIIO-ED1 WPD targeted an overall 20% reduction in both HV and LV tree related faults for all four licence areas as a whole. For LV tree clearance 20% improvement was expected across all four licence areas, but at HV it was expected that 37% improvements in West Midlands would lead to an overall 20% improvement.

## HV Tree Related Faults

**4.39** During 2015/16 we achieved a 26% improvement in the number of HV tree related faults for WPD as a whole, 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	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
2015/16 Performance	144	36	99	84	363
Percentage improvement	46%	35%	-5%	-8%	26%



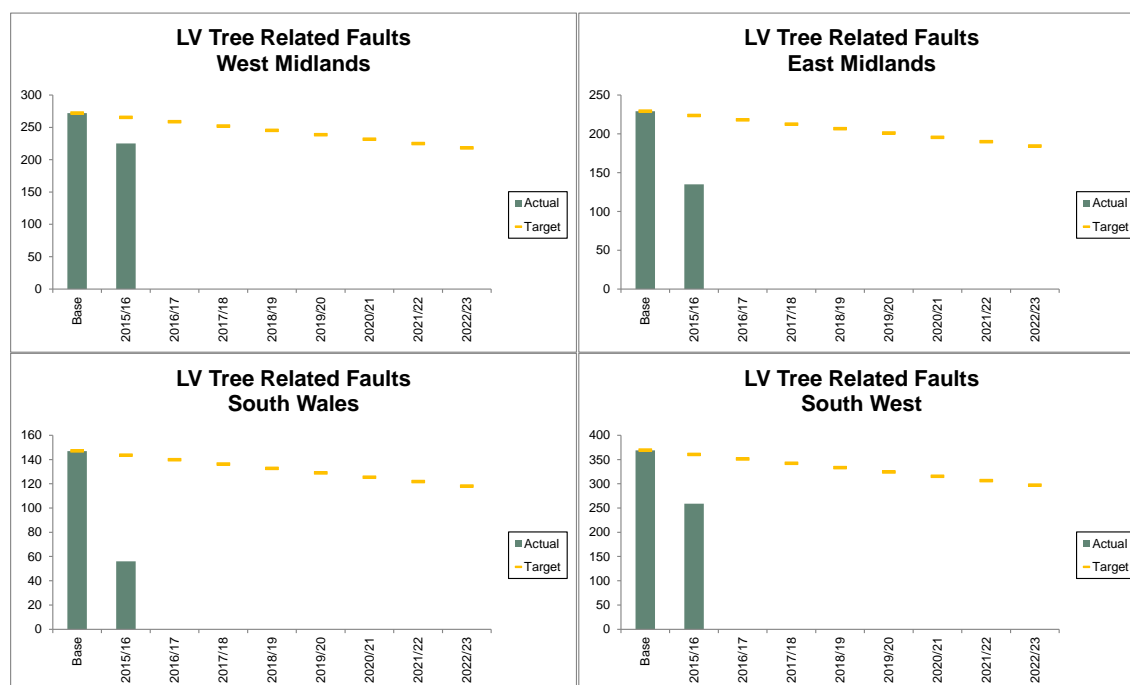
**4.40** South Wales and the South West have seen a small increase in the level of HV tree related faults.

## LV Tree Related Faults

**4.41** During 2015/16 we achieved a 34% 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	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
2015/16 Performance	225	135	56	259	675
Percentage improvement	17%	41%	62%	30%	34%



**4.42** All licence areas are beating the annual targets with East Midlands, South Wales and South West already exceeding the target to reduce LV tree related faults by 20% by the end of RIIO-ED1.

## Reducing the number of customers affected by power cuts

- 4.43** 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 by faults.

### *Network Automation*

- 4.44** Reductions in the number of customers affected by unplanned HV incidents are achieved by increasing the amount of network automation. This includes the installation of remotely controlled switches, installation of additional protection equipment and the application of computerised switching algorithms.
- 4.45** The installation of additional remotely control devices provide the benefit of being able to quickly reconfigure network running arrangements, allowing supplies to be rerouted without the need to send a person to site. The switching operations can be initiated by the control centre or automatically where computer algorithms are applied.
- 4.46** Additional protection equipment, such as circuit breakers and intelligent fuses, enable circuits to be subdivided into smaller protection zones reducing the number of customers that are affected by a fault.
- 4.47** The development of automatic switching algorithms allows switching actions to take place without the intervention of a Control Engineer. The algorithms use information provided by fault passage sensors to indicate which section of the network contains the fault and then communicate with remotely controlled devices to confirm the current running arrangement and then work out a sequence of switching to restore supplies to the maximum number of customers possible.
- 4.48** The application of this technology results in an improvement in the average number of customers affected by faults. The table below compared the RIIO-ED1 targets and performance in 2015/16:

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
2015/16 performance	426	406	230	222

- 4.49** Targets have already been achieved in all four licence areas and we will continue to work to maintain this achievement over the RIIO-ED1 period.

## Reducing the time it takes to restore supplies

**4.50** WPD has a clear focus on restoring supplies quickly.

### *Managerial Focus*

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

**4.52** 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.

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

**4.54** This focus can be illustrated by the response taken to a major transformer failure which affected over 26,000 customers in the Lichfield area of West Midlands in December 2015. The failure led to a fire which meant that it was not possible to provide supplies from the Lichfield Primary Substation. Within 10 hours of the event occurring WPD had reconfigured the network and installed 26 mobile generators to restore all supplies. Having done this, the focus moved to providing a permanent repair and WPD sourced a replacement 132kV transformer from Europe, shipped it to Lichfield Primary Substation and installed and commissioned it within eighteen days of the incident.

### *(12) Target 60*

**4.55** High voltage (HV) faults can affect several thousand customers, but increased volumes of automation on the network have progressively reduced the average number of customers affected by a fault. WPD focusses on quickly restoring supplies to the affected customers.

**4.56** An internal initiative called 'Target 60' measures the percentage of customers who are restored within one hour of when an 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 2015/16:

Target 60 - Restoration within one hour of an HV fault (% of Customers)					
	West Midlands	East Midlands	South Wales	South West	WPD Total
Performance 2015/16	91.54%	89.41%	86.41%	85.10%	89.16%

**4.57** Each HV fault is monitored for restoration performance. Where Target 60 performance is not achieved, the local Team Manager is required to investigate why and produce a report by the following morning to identify the factors that contributed to failure. This report is escalated to senior managers. In this way a continuous learning process is used to identify improvement opportunities.



## Guaranteed Standards of Performance (GSOPs)

4.58 The RIIO-ED1 business plan contained two outputs within this theme:

### Guaranteed Standards of Performance (GSOPs)

- (13) Reduce by 20% the number of customers experiencing a power cut lasting 12 hours or more.
- (14) Target zero failures on all other GSOPs.

### *(13) Reducing the number of customers off supply for 12 hours or more*

4.59 The Electricity (Standards of Performance) Regulations 2015 define the guaranteed minimum standards that DNOs must meet under the regulatory framework. The guaranteed standards cover a range of different network reliability circumstances, where customers are entitled to payments where DNOs fail to meet the standards.

4.60 In RIIO-ED1, GSOP EGS2 requires customer supplies to be restored within 12 hours of an outage in normal weather, a reduction from the previous requirement of 18 hours.

4.61 WPD pre-empted the introduction of the enhanced requirements prior to the start of RIIO-ED1 and implemented internal key performance indicators in advance of the change in regulatory requirements.

4.62 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 when compared to performance in 2012/13. Subsequently we have placed a greater focus on this and actual performance has surpassed these targets and failures against the standard have been almost eliminated.

4.63 The targets and actual performance are shown in the table below:

Customers affected by interruptions lasting 12 hours or more					
	West Midlands	East Midlands	South Wales	South West	WPD Total
Reference performance in 2012/13	5,080	3,367	272	2,029	10,748
Target performance - end of RIIO-ED1	4,064	2,694	218	1,623	8,599
2015/16 performance	24	0	0	33	57

4.64 In achieving this we took a number of actions including:

- Expanding the 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;
- Amending contracts for excavation so that a digging team is on site within one hour (reduced from two hours).

#### (14) Targeting zero failures on all other GSOPs

- 4.65** 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](http://www.westernpower.co.uk/About-us/Our-Business/customer-service/Guaranteed-Standards.aspx)

- 4.66** WPD has set itself a tough target to have zero failures against all the other guaranteed standards.
- 4.67** During 2015/16 there were 12 occasions where we failed to meet these standards, we aim to learn from each failure in order to achieve our RIIO-ED1 target of zero failures.

Guaranteed Standards of Performance failures in 2015/16 (excluding restoration of supply within 12 hours)					
	West Midlands	East Midlands	South Wales	South West	WPD Total
Main fuse failure	-	-	-	2	2
Multiple interruptions	-	-	-	-	-
Major incident	-	-	-	-	-
Rota disconnection	-	-	-	-	-
Planned interruptions	-	3	1	5	9
Voltage enquiries	-	-	-	-	-
Missed Appointments	-	-	1	-	1
Missed Payments	-	-	-	-	-
Storm supply restoration	-	-	-	-	-

- 4.68** 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 and to drive exceptional performance.

## Making improvements for worst served customers

4.69 The RIIO-ED1 business plan contained one output within this theme:

### Worst served customers

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

### (15) Reducing the number of worst served customers

4.70 Within RIIO-ED1, Ofgem has defined worst served customers as those that experience 12 or more higher voltage interruptions over a three year period.

4.71 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.

4.72 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.

4.73 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.

4.74 In 2012/13 WPD estimated that 20,000 customers would be classified as being worst served and WPD committed to a 20% reduction, impacting 4,000 customers and 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.

4.75 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

4.76 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. The way that the network has evolved historically in each licence area can also affect the number of worst served customers.

4.77 In addition it may take a number of years to identify improvement opportunities, plan the schemes and deliver the 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 completed.

4.78 Since these variations can affect the results, the following table shows both the number of worst served customers in 2015/16 and the number of customers targeted by the projects carried out in 2015/16.

Worst served customer numbers					
	West Midlands	East Midlands	South Wales	South West	WPD Total
Customers classified as worst served in 2015/16	13,252	407	10,031	10,667	34,357
Customers targeted for Worst Served Customer work in ED1 to date	1,229	689*	1,072	1,807	4,797

\* The number of customers impacted is larger than the number of customers classified in 2015/16 due to projects being triggered by Worst Served Customers in prior years.

**4.79** The type of work carried out to make improvements can vary. The solution depends on fault history and the opportunities available to reduce the number of future faults. Examples are:

- A project, affecting 30 customers in the East Midlands, to install bird flight diverters to prevent birds taking off from local ponds and flying into overhead lines. This also includes the installation of additional automated switching so that fewer customers are affected when faults occur.
- A larger project in South Wales, designed to impact 191 customers, involving installing automatic sectionalising links to segregate overhead line into zones so that fewer customers are affected when faults occur along with replacement of poor condition overhead line and poles.

## Enhancing network resilience

**4.80** The RIIO-ED1 business plan contained three outputs within this theme:

### Enhancing network resilience

- (16) Apply flood defences to 75 substations; reducing the risk of both damage to equipment and power cuts due to flooding.
- (17) Accelerate the programme of tree clearance for resilience by 40% with the objective to deliver the programme five years earlier than suggested by Government guidelines, clearing 700km of overhead lines per annum.
- (18) Enhance substation battery life to be resilient for 72 hours in the event of major power losses.

**4.81** 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
- black start
- overhead lines

## (16) Applying flood defences

- 4.82** 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.
- 4.83** 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)
- 4.84** 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.
- 4.85** 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 determine risk supplemented by independent, detailed, hydrological surveys undertaken as necessary.

### Fluvial flood risk

- 4.86** Work undertaken for fluvial sites during 2015/16 is as follows:

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 in 2015/16	0	4	0	0	4

### Pluvial flood risk

- 4.87** During 2015/16 the focus has been on data analysis and site surveys to establish a work programme, so no pluvial remedial works have been completed during the year. The forecast RIIO-ED1 volumes and actual delivery is shown in the table below.

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 in 2015/16	0	0	0	0	0

- 4.88** During the year a total of 48 site surveys were undertaken for sites identified as potentially at risk, two in the West Midlands and 46 in the South West. Work to undertake further site surveys will be ongoing. Work on flood defences for pluvial flood risk will commence in 2016/17.

## (17) Overhead line resilience

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

**4.90** Overhead line fault rates are influenced by:

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

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

### Resilience tree clearance

**4.92** 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.

**4.93** 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. This is an enhanced requirement compared to routine tree clearance. The requirements sought to progressively clear trees to make 20% of the network resilient within 25 years.

**4.94** 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 2015/16 is as follows:

Tree clearance – resilience cutting					
	West Midlands	East Midlands	South Wales	South West	WPD Total
Target for 2015/16 (km)	181	162	149	211	703
Achieved 2015/16 (km)	207	191	149	219	766
Percentage of annual programme	114%	118%	100%	104%	109%



## Overhead fault volumes

**4.95** The overall impact of managing the condition of overhead lines and routine and resilience tree programmes can be assessed through overhead line fault volumes.

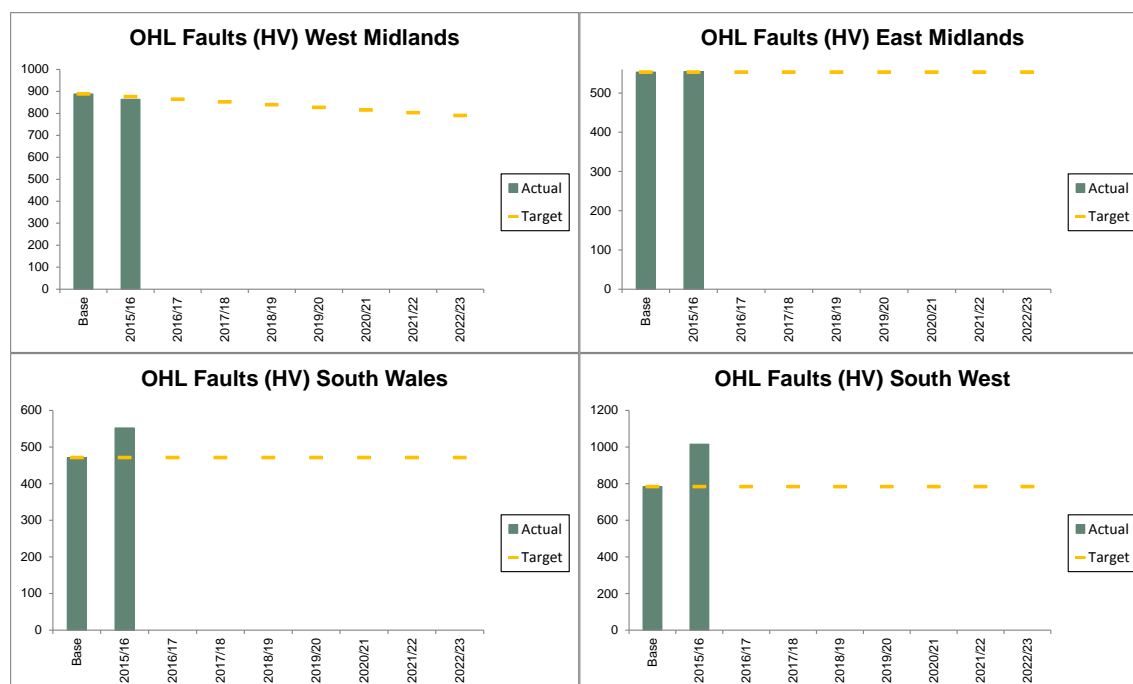
**4.96** It was forecast that the main driver of overhead line fault volume reductions would be routine tree clearance, with other overhead line activities maintaining existing fault volumes.

**4.97** The target and actual overhead line fault performance is shown below:

*HV overhead line faults:*

HV Overhead line fault Targets					
	West Midlands	East Midlands	South Wales	South West	WPD Total
Underlying performance (4 year average from 2009/10 to 2012/13)	888	553	471	783	2,695
Target - end RIIO-ED1	790	553	471	783	2,597
Percentage improvement	11%	0%	0%	0%	4%

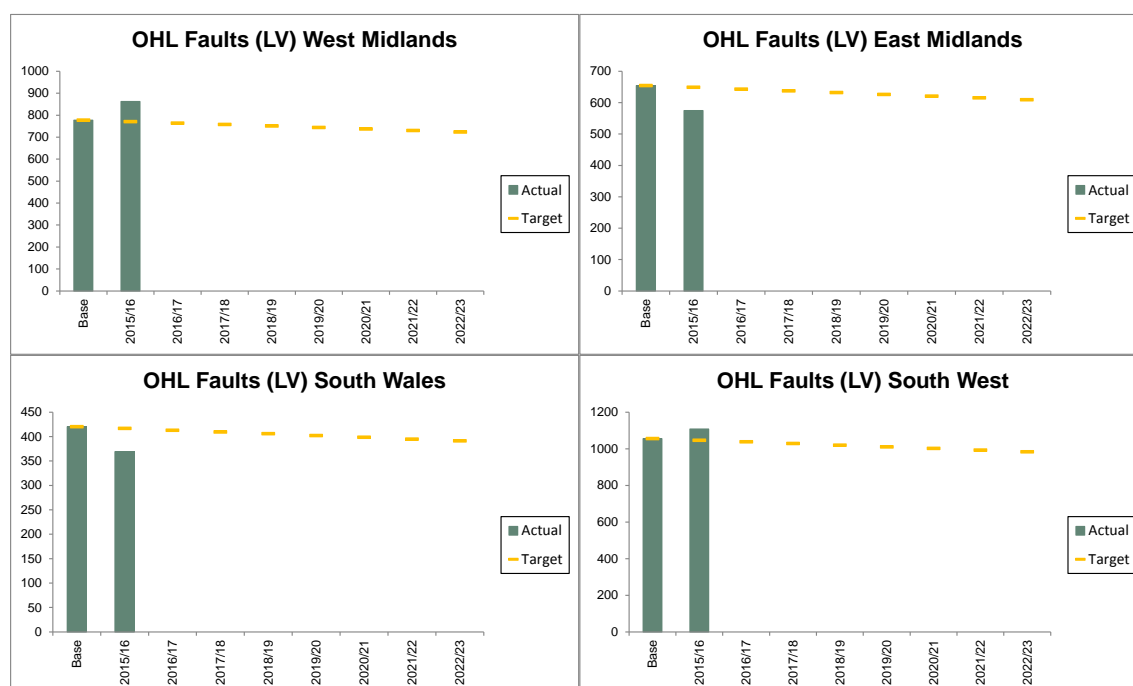
HV Overhead line fault Actual					
	West Midlands	East Midlands	South Wales	South West	WPD Total
Underlying performance (4 year average from 2009/10 to 2012/13)	888	553	471	783	2,695
2015/16 Performance	864	554	552	1,015	2,985
Percentage improvement (-ve indicates increase)	3%	0%	-17%	-30%	-11%



## LV overhead line faults:

LV Overhead line fault Targets					
	West Midlands	East Midlands	South Wales	South West	WPD Total
Underlying performance (4 year average from 2009/10 to 2012/13)	777	654	420	1,055	2,906
Target - end RIIO-ED1	723	609	391	983	2,706
Percentage improvement	7%	7%	7%	7%	7%

LV Overhead line fault Actual					
	West Midlands	East Midlands	South Wales	South West	WPD Total
Underlying performance (4 year average from 2009/10 to 2012/13)	777	654	420	1,055	2,906
2015/16 Performance	862	575	369	1,108	2,914
Percentage improvement (-ve indicates increase)	-11%	12%	12%	-5%	0%



## (18) Enhancing black start capability

**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) have 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 remain operational for 72 hours. The main consideration is the length of time that protection, SCADA and telecommunication system batteries will last.

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

- managing the capacity of protection batteries by installing load disconnection schemes to limit the drain on batteries used for tripping of switchgear and protection;
- increasing the capacity of SCADA telecommunications batteries by replacing existing batteries with higher capacity alternatives or placing additional batteries alongside the existing assets to increase capacity;
- Enhancing the power supply capability at communication sites by either installing additional battery capacity or on-site generation.

**4.101** The target volume of works to achieve 72 hour resilience and progress to date are as follows:

### Protection batteries

**4.102** We have developed operational policy for the installation and operation of load disconnections schemes, which has allowed us to commence our programme to make protection batteries resilient. In 2015/16 we have delivered 7% of the overall programme and work will be accelerated in 2016/17 to achieve our overall targets by the end of RIIO-ED1.

**4.103** Performance in each licence area is detailed 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 in 2015/16	11	43	42	3	99

### SCADA batteries

**4.104** All SCADA batteries are being reviewed on a site by site basis to determine the most efficient method to achieve resilience. The decision to replace or enhance will be influenced by other work requirements at the sites.

**4.105** Due to the focus being on site assessment during 2015/16, just over 1% of the forecast 1,433 batteries requiring action have been declared resilient to the 72 hour standard and work will accelerate once the survey process is complete.

## 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 sites have also been identified at sites in South Wales and the South West.

**4.108** Progress against the RIIO-ED1 target has been positive with 51% of the original programme (109 sites) already complete. The progress against the targets is shown 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 in 2015/16	21	35	6	7	69

## Non-operational sites

**4.109** 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.

2015-2023

# RIIO-ED1 BUSINESS PLAN

## Business Plan Commitments Report 2015-16

31 October 2016

### Environment

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## 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)

### Regulatory Framework

**5.3** There is no specific output requirement from Ofgem in relation to driving sustainable networks. Instead it is anticipated that other outputs and incentives (for reliability, connections, efficiency and innovation) will drive transition to a low carbon economy.

**5.4** Environmental impacts are reliant on a reputational system to demonstrate the management of business carbon footprint.

**5.5** Ofgem has introduced a new licence obligation for DNOs to reduce losses that will operate alongside the existing obligation to develop an efficient, co-ordinated and economical network. This aims to ensure that the most cost effective approach to reducing losses is followed. In addition, Ofgem has introduced a discretionary reward incentive awarded to DNOs that adopt innovative ways of reducing losses.

**5.6** Ofgem has also introduced a new licence obligation for DNOs to produce an annual Environment Report to be published on 31 October each year. The Environment Report requires DNOs to detail their activities in relation to environmental matters and facilitating the low carbon transition. The 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](http://www.westernpower.co.uk/About-us/Our-Business/Environment.aspx)



## Overview of Environmental Outputs

Facilitate Increase Volumes of Low Carbon Technology (LCTs)		
<a href="#">19</a>	Improve the time to provide a response to customers wanting to use LCTs by 20%.*	Developing processes to monitor response times for LCT notifications/applications.
<a href="#">20</a>	Identify LCT hotspots using data from smart meters, expert organisations and local authorities and use this to inform decision making.	Data on LCT hotspots updated into WPD systems for use by planners.
<a href="#">21</a>	Selectively carry out asset replacement using larger sized assets.	Four asset replacement projects using larger sized assets carried out - specifically as a result of using LCT hotspot data.
<a href="#">22</a>	Reduce costs for future customers by developing smart solutions to provide alternative and innovative techniques for network management.	18 innovation projects in progress during the year.
<a href="#">23</a>	Provide additional network capacity through utilising traditional methods or smart intervention.	Three types of innovation solutions implemented as business as usual. Increase in issue of alternative connection quotations from 212 to 232 during 2015/16.

Reduce Technical Network Losses		
<a href="#">24</a>	Install oversize transformers when replacing assets at highly loaded locations.	Process in place to prompt installation of oversized transformers at highly loaded locations.
<a href="#">25</a>	Use larger sized cables when installing new network in LCT hotspots.	Process in place to prompt installation of larger sized cables when installing new network in LCT hotspots.

Reduce The Carbon Footprint of the Business		
<a href="#">26</a>	Ensure all replacement vehicles have lower CO <sub>2</sub> emissions than those they are replacing.	New procurement processes implemented to ensure commitment is met. Two projects in place trialling alternative fuels for operational vehicles.
<a href="#">27</a>	Ensure all new or substantially refurbished buildings meet, as a minimum, the 'excellent' standard under the Building Research Establishment Environmental Assessment Method (BREEAM).**	The BREEAM standard allows only a maximum rating of 'very good' for refurbishments – during 2015/16 we completed one refurbishment which was rated 'very good'. In addition two new build projects were rated 'Excellent'.
<a href="#">28</a>	Reduce the amount of waste sent to landfill by 20% over the first two years of RIIO-ED1 and 5% per annum thereafter.	In our benchmark year of 2012/13, 83% of waste went to landfill; in 2015/16, this decreased to 71%.
<a href="#">29</a>	Reduce the carbon footprint of the business by 5%.*	The business carbon footprint has increased from the benchmark year of 2012/13. However there has been a 3% reduction since 2014/15.

Reduce The Environmental Risk of Leaks from Equipment		
<a href="#">30</a>	Reduce by 75% the volumes of oil lost through leaks from oil filled cables.*	61% reduction of volumes of oil lost from oil filled cables.
<a href="#">31</a>	Reduce by 17% the volume of SF <sub>6</sub> gas that is lost from switchgear.*	The volume of SF <sub>6</sub> gas emitted as a percentage of the bank of SF <sub>6</sub> has increased.
<a href="#">32</a>	Install effective oil containment 'bunds' around plant containing high volumes of oil.*	13% of our eight year programme of 104 bunds is complete.

Improve Visual Amenity in National Parks and Areas of Outstanding Natural Beauty		
<a href="#">33</a>	Underground 55km of overhead lines in National Parks and AONBs.*	8.8km of overhead lines undergrounded, 16% of our eight year programme.

\* Targets are for the full eight year RIIO-ED1 period, not for a discrete year

\*\* Target to be achieved each year of RIIO-ED1

## Facilitate increased volumes of low carbon technology

5.7 The RIIO-ED1 business plan contained five outputs within this theme:

### Facilitate increased volumes of low carbon technologies (LCTs)

- (19) Improve the time to provide a response to customers wanting to use LCTs by 20%.
- (20) Identify LCT hotspots using data from smart meters, expert organisations and local authorities and use this to inform decision making.
- (21) Selectively carry out asset replacement using larger sized assets.
- (22) Reduce costs for future customers by developing smart solutions to provide alternative and innovative techniques for network management.
- (23) Provide additional network capacity through utilising traditional methods or smart intervention.

5.8 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.

5.9 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.

### *(19) Providing a faster response to customers*

5.10 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.

5.11 Certain categories of smaller installation are unlikely to cause disruption to the network and in these circumstances customers can simply connect and notify their distribution network operator of the installation. Other connections will require investigation and the connection may be restricted until the network is reinforced.

5.12 Where the installation only requires acknowledgement, WPD has introduced an internal target of responding to the customer in writing within five working days, with the vast majority being dealt with on the day they are received.

5.13 Other installations require a more detailed network impact assessment and WPD has continued to evolve design and planning processes to provide an efficient service for customers wanting to connect LCTs.

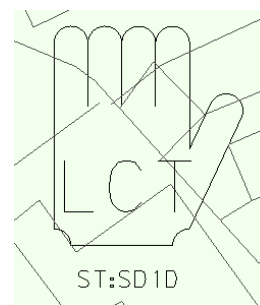
5.14 Currently these are dealt with either as an unclassified connection enquiry or a new supply enquiry and performance is embedded within analysis of timeframes for all connection categories.

5.15 We are considering the introduction of additional enquiry categories to cover the specific situations where assessment is required to determine the impact of the connection of LCTs. These would cover small scale embedded generation (domestic solar panels, small-scale wind and hydro projects), electric vehicle charging and domestic heat pump heating systems.

5.16 These new categories will allow us to determine benchmark performance for the time between a customer notifying WPD of an installation of an LCT and a response being sent. This would then allow the calculation of a 20% reduction improvement target.

## *(20) Identifying LCTs hotspots*

- 5.17** LCT hotspots are parts of the network where there is a clustering of LCT that can lead to requirements to reinforce the network. This clustering can be influenced by social demographics and WPD uses forecast uptakes of LCT to determine where LCT hotspots are likely to arise.
- 5.18** In 2012/13, data was obtained from the Centre for Sustainable Energy which used information on social demographics and housing stock types to determine the likelihood of LCTs being adopted. This data was used to determine which distribution substations were considered likely to be LCT hotspots.
- 5.19** 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.
- 5.20** When work is planned that affects these locations, the existence of the flags and symbols prompts planners to consider uprating works (using larger sized transformers or cables rather than replacing like for like). This uprating provides additional capacity for the predicted future growth.
- 5.21** 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.
- 5.22** Understanding the impact of technology growth on the network will be an ongoing process during RIIO-ED1. Whilst work with the Centre for Sustainable Energy has been used to inform planning at a local level for small scale schemes, further work has been undertaken with environmental consultants to assess the potential growth in distributed generation (both small and large scale) for the purpose of informing strategic network planning.
- 5.23** In January 2016 a report was published for the South West region assessing the potential network constraints and options for reinforcement. During 2016/17 a report will be produced for South Wales and reports for the Midlands have been commissioned and will be published in due course.



## *(21) Using larger capacity equipment when replacing assets*

- 5.24** The WPD RIIO-ED1 Business Plan identified that there was the potential for the replacement of poor condition assets to occur in LCT Hotspots. Initial forecasts suggested that 7% of asset replacement activity would occur within LCT hotspot areas.
- 5.25** Policy for the use of LCT hotspot data was introduced in May 2015 and this data has started to influence asset replacement project planning. In 2015/16, four asset replacement projects used larger capacity assets to cater for future LCT growth.
- 5.26** The volume of uprating equipment in LCT hotspots is low in comparison to forecasts, but this is anticipated to increase as planners become more familiar with the options available for installing higher rated equipment.

## (22) Developing smart solutions

- 5.27** Where increases in load cause the maximum demand to exceed the capacity of the equipment, the traditional approach to reinforcement has been to either increase the size of equipment or install additional equipment.
- 5.28** Reinforcement work at higher voltages can be an expensive and lengthy process, especially where new routes or revised agreements with landowners are required.
- 5.29** Increased focus is therefore being placed on the development and implementation of “smart” solutions; techniques that can utilise existing capacity more effectively or actively manage the load on the networks by constraining demand or generation.
- 5.30** Smarter ways of operating the network and providing capacity are being researched, trialled and tested with the aim of developing new techniques into standard business processes. The WPD innovation programme is detailed within WPD’s Innovation Strategy which is reviewed and re-issued on an annual basis. The 2016 Innovation Strategy can be found at:
- [www.westernpower.co.uk/docs/Innovation-and-Low-Carbon/Losses-strategy/WPD-Innovation-Strategy-2016\\_FINAL\\_v1.aspx](http://www.westernpower.co.uk/docs/Innovation-and-Low-Carbon/Losses-strategy/WPD-Innovation-Strategy-2016_FINAL_v1.aspx)
- 5.31** The Environment Report also provides an update on the progress of the Innovation Strategy and the individual projects detailed within the RIIO-ED1 Business Plan. The Environment Report can be found at:
- [www.westernpower.co.uk/About-us/Our-Business/Environment.aspx](http://www.westernpower.co.uk/About-us/Our-Business/Environment.aspx)
- 5.32** The following projects were active during 2015/16:

Name	Project Aim
Sunshine Tariff	To trial the feasibility of incentivising customers to use domestic demand at the same time as peak production times for PV generation (solar panels), thereby mitigating the impact of increased generation on networks with limited capacity.
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.
Electric Boulevards	To facilitate the decarbonisation of public transport by trialling opportunistic wireless charging for electric buses around bus routes and charge deferral to minimise the impact of charging at peak demand times.
ECHO – Energy Control for Household Optimisation	To understand the scope for Domestic Demand Response. 200 premises will have plug in devices installed which schedule the use of domestic appliances to understand how such technology can be used to help manage network capacity.
Losses Investigation	Understanding technical losses on the LV & HV distribution network and determining the minimum information required to accurately predict network losses.
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.
Solar Storage	To investigate the technical and commercial feasibility of battery storage embedded within distributed generation installations.
D-SVC Phase 2	To analyse mechanisms to control voltage on 11kV rural networks affected by wind turbines to deal with the network efficiency and capacity issues caused by the variable output of this type of distributed generation.
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.
Time Series Data Quality	To identify mechanisms for analysing network data
Voltage Reduction Analysis	To build on previous studies, looking at the potential to reduce voltage to achieve potentially positive impacts on demand and customer consumption.

Collaborative projects:

Name	Project Aim
Review of Engineering Recommendation P2/6	To review the requirements for and function of planning standard P2/6 and if appropriate produce an updated version. Led by Electricity North West (ENWL)
REACT	To assess the options for transmission voltage control. Project led by National Grid Electricity Transmission (NGET).
Smart Grid Forum Work Stream 7 - DS2030	To develop power system analysis and future modelling to ensure that networks can operate effectively by 2030. Project led by National Grid Electricity Transmission (NGET).

**5.33** All projects detailed above are Network Innovation Allowance Projects (NIA). The NIA is an Ofgem funding mechanism for smaller innovation projects and sits alongside the Network Innovation Competition (NIC) which funds large scale projects. There are currently no “live” NIC projects active during 2015/16.

**5.34** Prior to the introduction of NIA and NIC, funding was provided through the DPCR5 Low Carbon Network Fund (LCNF) mechanism. The following projects instigated through LCNF had ongoing expenditure during 2015/16:

Name	Project Aim
FlexDGrid	The connection of generation to urban HV networks can lead to raised fault levels. The FlexDGrid project looks at ways to connect generation without the need to install higher rated assets to manage this increased fault level.
Falcon	Expanding the understanding of the way that the 11kV network is utilised.
Bristol	To provide an innovative approach to operating networks utilising battery storage in customers' premises. Batteries are installed to utilise output from PV generation.
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.

## (23) Provide additional network capacity

- 5.35** The provision of additional network capacity is carried out when demands are forecast to exceed equipment ratings under the requirements of planning standards. This ensures that equipment is not overloaded, which can lead to premature ageing and failure.
- 5.36** Demand growth can occur progressively as customers use more electricity or in step changes where new domestic property developments or commercial buildings require new connections.
- 5.37** 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.
- 5.38** Whilst traditional methods of reinforcement will continue to be used, increasing use is being made of smart interventions that can lead to faster connections. At present the following alternative options to traditional reinforcement are available as a result of the learning gained from innovation projects:

Innovation projects which allow us to utilise capacity more effectively	Uptake
<p>Dynamic line ratings for EHV lines are now available as an option to provide additional capacity without changing the conductor in overhead lines.</p> <p>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.</p> <p>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).</p>	<p>Whilst dynamic line ratings are now available to customers, uptake has been limited to trial projects as the required conditions for usage have not matched customer connection requirements.</p>
<p>The LV Templates project which 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.</p>	<p>Planning assumptions have been revised to allow 20% more availability for installations without the need for reinforcement</p>
<p>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.</p> <p>These agreements require the network to have the capacity available.</p> <p>With the increase in distributed generation there are parts of the network where there is insufficient capacity available to provide further generators with standard generation connection agreements and to do so would require costly and long-duration network reinforcement.</p> <p>To overcome this, WPD has developed a range of alternative connections which enable more active management of network capacity to allow additional connections without further reinforcement.</p> <p>The options currently available to customers are as follows:</p> <ul style="list-style-type: none"> <li>• Timed – output is permitted during specific time periods when historical data analysis shows that the network would not be adversely affected</li> <li>• Intertrip – remote control or “intertrip” technology is used to constrain output when certain network conditions are identified</li> <li>• Active Network Management – certain areas of the network have been enabled to automatically allow control systems to manage the output of connections, constraining output as and when necessary.</li> <li>• Export limiting – where customers are considering installing generation to offset import requirements customers may consider output restrictions where costly reinforcement would be required to allow export.</li> </ul>	<p>2014/15 - 212 alternative connection quotations were issued with 44 schemes subsequently accepted, 4 sites were energised.</p> <p>2015/16 232 alternative connection quotations were issued, with 42 subsequently accepted, 11 sites were energised.</p>



## Reducing technical network losses

**5.39** The RIIO-ED1 business plan contained two outputs within this theme:

### Reduce technical network losses

- (24) Install oversize transformers when replacing assets at highly loaded locations.
- (25) Use larger sized cables when installing new network in LCT hotspots.

**5.40** 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”.

**5.41** The environmental impact of this is that more electrical energy has to be produced to counteract the effect of the losses.

**5.42** Since publishing the WPD RIIO-ED1 Business Plan, WPD’s losses strategy has been evolved. The strategy is updated on a yearly basis and published on the company’s website. The strategy can be found at:

[www.westernpower.co.uk/docs/Innovation-and-Low-Carbon/Losses-strategy/Losses-Strategy-January-2016.aspx](http://www.westernpower.co.uk/docs/Innovation-and-Low-Carbon/Losses-strategy/Losses-Strategy-January-2016.aspx)

### Ofgem Discretionary Reward

**5.43** 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

**5.44** In 2015/16 WPD was awarded a total of £160,000 as part of tranche 1 (12% of the maximum reward available).

**5.45** Feedback from Ofgem identified a need for WPD to provide further detail on the approach to the management of losses. This feedback will be considered as part of future annual reviews of the Losses Strategy.



## (24) Installing oversize transformers

- 5.46** During RIIO-ED1 WPD specifically committed to installing oversize transformers for areas of predicted load growth. The volumes were forecast based upon the work done with the Centre for Sustainable Energy in identifying potential LCT hotspots.
- 5.47** Oversizing transformers in anticipation of future load growth provides a losses benefit until the additional capacity of the transformers is used up.
- 5.48** During 2015/16 the processes for installing oversize transformers were introduced and therefore the volumes are lower than forecast as shown in the table below:

Installing oversized transformers		
	Forecast (per annum)	Actual 2015/16
Distribution transformers	109	2

## Discontinuation of small sized transformers

- 5.49** Work with manufacturers has identified that operating larger size transformer with the same load as smaller size transformers produced lower losses. Consequently WPD has discontinued the used of small size ground mounted and pole mounted transformers.
- 5.50** The following table shows the volume of smaller sized transformers that would have been used during 2015/16 had they not been discontinued. By using a larger size transformer there has been an overall loss reduction benefit.

Volume of small size transformers no longer used	
Transformers	WPD Total (units)
Discontinuation of 315kVA ground mounted transformers	263
Discontinuation of 16kVA single phase pole mounted transformers	568
Discontinuation of 25kVA three phase pole mounted transformers	6

## Replacement of pre-1958 transformers

- 5.51** 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.
- 5.52** WPD has introduced the early replacement of pre-1958 transformers and will track the progress of this programme in future years.

## (25) Installing oversize cables

**5.53** 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.

**5.54** The forecast volumes and actual volumes are shown in the table below:

Installing oversized cables		
	Forecast (per annum)	Actual 2015/16
LV cables	75km	<1km

## Discontinuation of small sized cables

**5.55** 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.

**5.56** The following table shows the length of smaller sized cable that would have been used during 2015/16 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 <sup>2</sup> 11kV cable	151
Discontinuation of 95mm <sup>2</sup> LV cable	187
Discontinuation of 16mm <sup>2</sup> service cable	342

## Reducing business carbon footprint

5.57 The RIIO-ED1 business plan contained four outputs within this theme:

### Reduce the carbon footprint of the business

- (26) Ensure all replacement vehicles have lower CO<sub>2</sub> emissions than those they are replacing.
- (27) Ensure all new or substantially refurbished buildings meet, as a minimum, the 'excellent' standard under the Building Research Establishment Environmental Assessment Method (BREEAM).
- (28) Reduce the amount of waste sent to landfill by 20% over the first two years of RIIO-ED1 and 5% per annum thereafter.
- (29) Reduce the carbon footprint of the business by 5%.

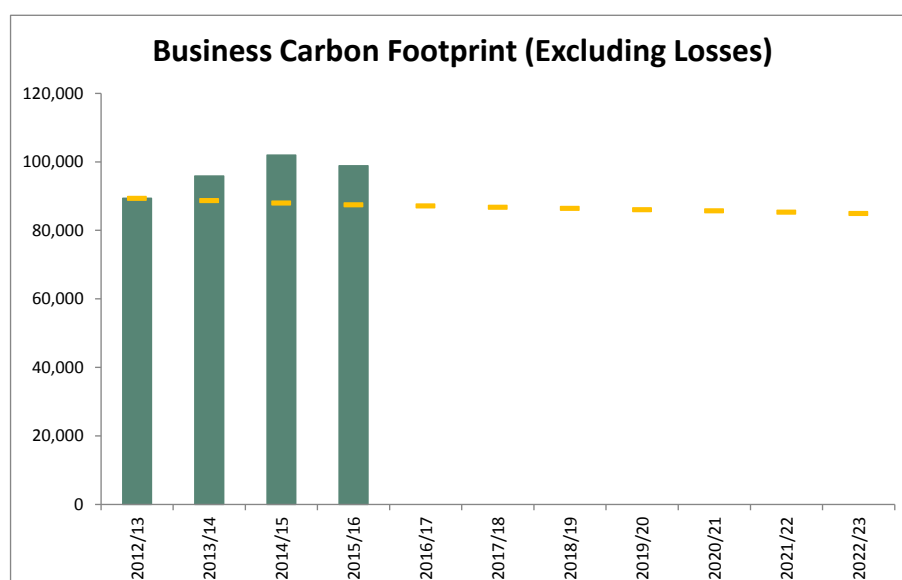
### *(29) Reducing the carbon footprint of the business by 5%*

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

5.59 During RIIO-ED1, WPD has committed to reducing BCF by 5% compared to a 2012/13 reference position.

5.60 BCF increased in 2013/14 and 2014/15 but has decreased by 3% in 2015/16 (compared to 2014/15). This shows that BCF performance is higher than both the target and starting point.

5.61 Progress to achieve the target by the end of 2022/23 will continue to be challenging given initial performance during RIIO-ED1. Whilst performance in the majority of the elements that make up BCF has been positive the total has been negatively impacted by increases in the leakage of SF6 from switchgear and increases in fuel usage for business transport (non-operational vehicles):



## (26) Reducing emissions from vehicles

**5.62** Our network is spread over an area of 55,500 km<sup>2</sup> 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.

**5.63** When operational vehicles reach the end of their useful lives they are replaced with more efficient models. An example of replacements for some of our most commonly used operational vehicles is shown below and illustrates the reduced CO<sub>2</sub> emissions (emissions data comes from the vehicle registration certificate):

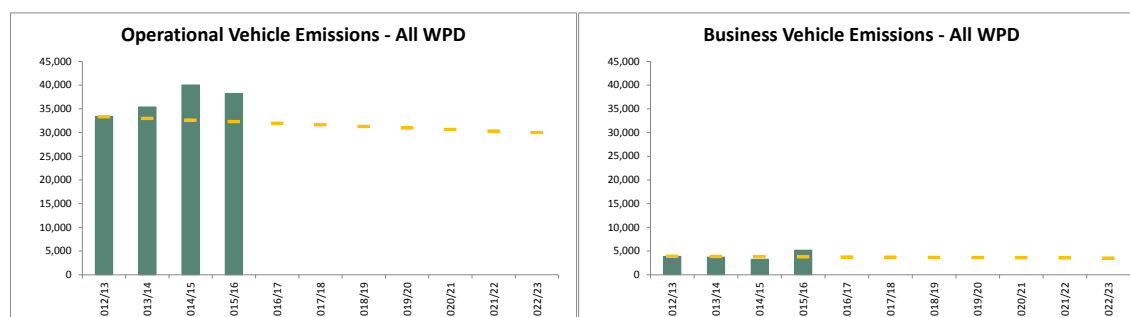
Emissions – operational vehicle replacements			
Previous vehicle	CO2 emissions (grams per km)	Current vehicle	CO2 emissions (grams per km)
FIAT DOBLO SWB	137	TRANSIT CONNECT LWB	124
FIAT DOBLO LWB EURO5	137	TRANSIT CONNECT SWB	124
LANDROVER 110	295	ISUZU D MAX	192
LANDROVER 110 MEWP	295		
TRANSIT 350 LWB RWD	234	TRANSIT 350 LWB RWD	214
TRANSIT 350 LWB AWD	252		
TRANSIT 350 2.2 E5	228	TRANSIT 350 2.2 E5	214
TRANSIT 350 MWB RWD	228	TRANSIT 350 MWB RWD	214
FORD FIESTA VAN 1.5	98	FORD FIESTA VAN 1.5	82

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

**5.65** At present the company has five electric operational vehicles being evaluated. The performance of two of these vehicles will be assessed in 2017 and the remaining three in 2020. Criteria such as range between charging, payload (the weight capacity of the vehicle) and usage will be reviewed in order to identify the appropriateness of these vehicles for future WPD needs. At this stage in the project, some reliability issues have been identified with charging, cell failure and limits to range and payload in comparison to diesel equivalents.

**5.66** In 2014 a project was initiated to trial commercial vans which have been converted to dual fuel usage (diesel-hydrogen). Two vehicles are being converted to be operational in 2016/17. 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).

**5.67** The contribution of vehicle emissions to our overall BCF performance is measured in terms of fuel usage converted to the equivalent tonnes of carbon dioxide. Performance during 2015/16 has improved for operational vehicles but is still higher than both the starting point and targeted improvement. Performance for business vehicles is also above target.



**5.68** Alternative vehicles and fuel will continue to be considered by WPD over the RIIO-ED1 period depending on the availability of innovative options.

## (27) Saving energy following redevelopment of offices

**5.69** 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.

**5.70** When refurbishment is undertaken the Building Research Establishment Environmental Assessment Method (BREEAM) standards are applied. 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”.

**5.71** During 2015/16 three building projects were certified in line with BREEAM (construction work was completed in 2014/15). These were as follows:

Redevelopment of offices		
Non-operational depot	Development type	BREEAM Rating
Chesterfield	Refurbishment	Very Good
Boston	New build	Excellent
Hereford	New build	Excellent

**5.72** At present work is underway on a new build project for the Bude depot within the South West licence area, the project is due to be completed in December 2016. A pre-assessment of the building project, based on the provisional design, was undertaken in October 2015. An external contractor assessed plans against the BREEAM requirements and provided a provisional “Excellent” rating. The assessment process considered a range of criteria, from the approach taken to insulation to the use of energy efficient equipment within the building.

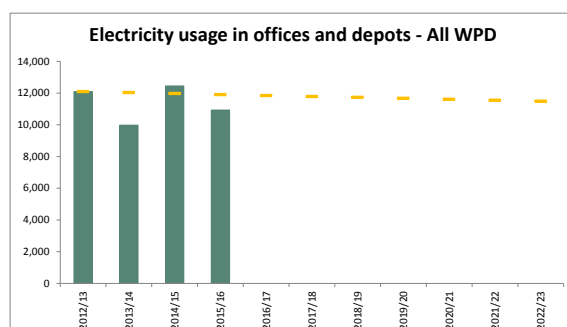
**5.73** Further updates on building projects and BREEAM ratings will be provided over the period of RIIO-ED1.

## Reducing electricity usage in offices

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

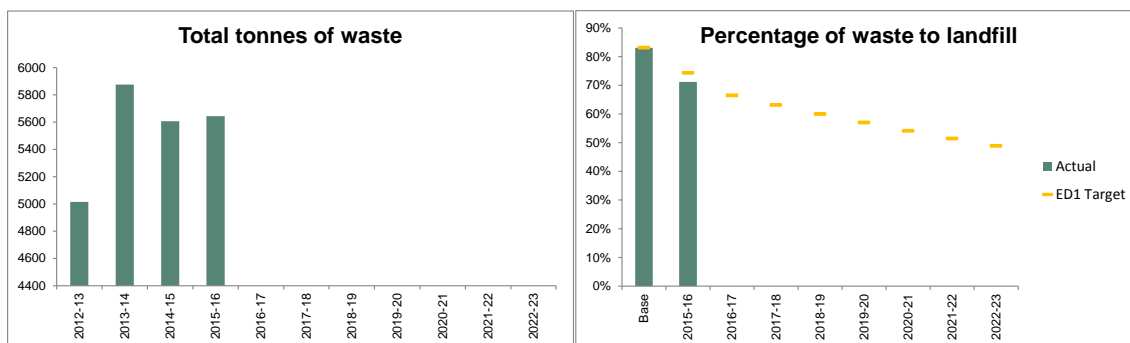
**5.75** Local depots and offices are encouraged to consider initiatives to save energy. An example of this is the replacement of standard lighting with LED lighting within the workshop of the South Wales Plant Centre in November 2015. Existing systems used 442 Watts per circuit whereas the replacement circuits have an anticipated usage of 213 Watts. Electricity usage for the workshop will be monitored over time to identify the impact of the change. A similar project has been undertaken in the West Midlands and another is planned within the East Midlands.

**5.76** Overall progress in relation to the RIIO-ED1 targets for a reduction in electricity usage is shown below:



## (28) Improved management of residual waste

- 5.77** 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.
- 5.78** WPD has for a number of years, segregated and recycled waste to limit the amount being sent to landfill.
- 5.79** 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.
- 5.80** 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 annually has increased by 9.6% from our baseline year of 2012/13, the proportion of this waste that is sent to landfill has decreased and we are on track to achieve our targets for RIIO-ED1. In 2012/13, 83% of the total waste produced by the business was sent to landfill; in 2015/16, this decreased to 71%.



- 5.81** A range of initiatives have been introduced to reduce the amount of waste that is sent to landfill, examples include:
- Disposing of old wooden poles via a waste to energy plant
  - Providing operational teams with separate bags for general waste and recycling to promote the separation of waste types.
  - Using branded bins in offices across the business in order to simplify the recycling process by making it clear what can be recycled.

### Environment Standard ISO 14001

- 5.82** All four licence areas achieved ISO 14001 certification for environmental management in 2014/15
- 5.83** In line with the ISO14001 standard, depots have an Environmental Management Plan. These plans provide a mechanism for improvement, identifying site specific environmental objectives. Each plan identifies targets and monitoring processes as well as reviewing existing facilities and processes.
- 5.84** For example for Ty Coch, a depot in South Wales, the depot plan includes the installation of solar panels, reducing energy and diesel use, changes to more energy efficient lighting, raising awareness of waste segregation and a review of the waste management skips. A risk register is used to monitor and promote improvements.

# Reducing leakage from electrical equipment

5.85 The RIIO-ED1 business plan contained three outputs within this theme:

## Reduce the environmental risk of leaks from equipment

- (30) Reduce by 75% the volume of oil lost through leaks from oil filled cables.
- (31) Reduce by 17% the volume of SF<sub>6</sub> gas that is lost from switchgear.
- (32) Install effective oil containment 'bunds' around plant containing high volumes of oil.

5.86 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.

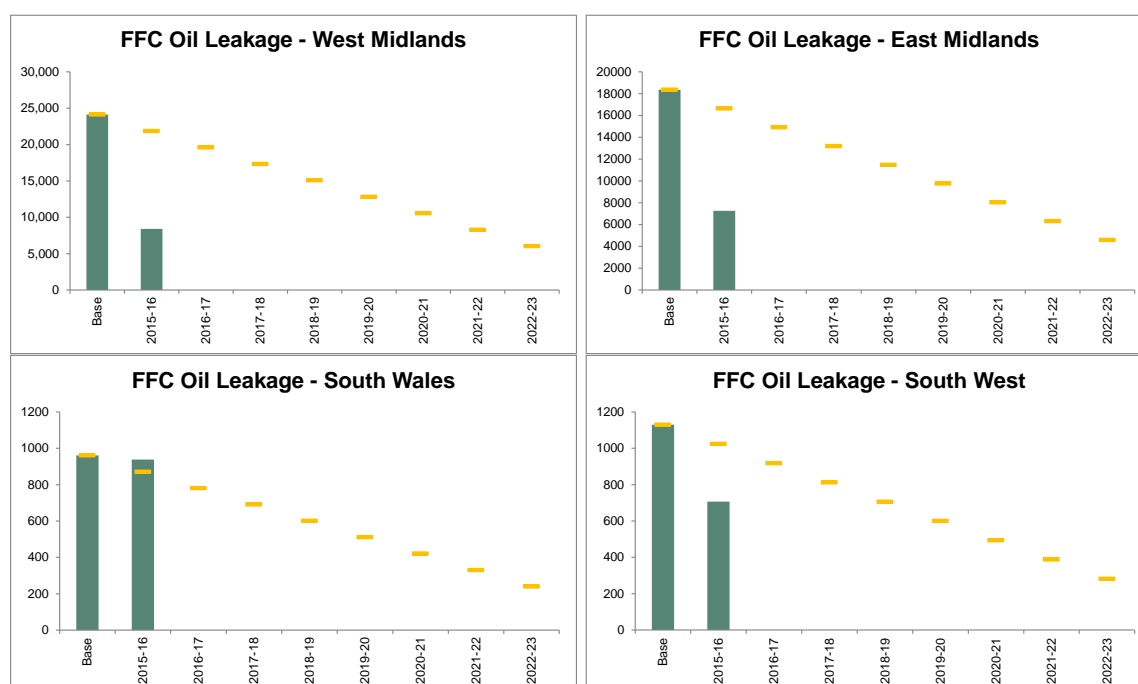
5.87 The main options available to reduce the environmental impact of any leaks are quick repairs when damage occurs and replacement of the equipment in poorest condition with the highest leakage rates.

## (30) Reducing oil leakage from fluid filled cables

5.88 Older types of higher voltage cables (33kV and above) contain oil based fluids to assist in the insulation and cooling of the cables. These cables sometimes leak, 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.

5.89 WPD has committed to reduce the volume of oil escaping from fluid filled cables by 75% over the 8 year RIIO-ED1 period.

5.90 In 2015/16 the overall volume of oil (litres) leaking across WPD has reduced by 61% from benchmark data (a three year average from 2010/11 to 2012/13). The reduction has been driven by significant reductions in the volume of leakage in West Midland and East Midlands as shown below.





## Application of PFT tagging

- 5.91** 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 can be a lengthy process.
- 5.92** A tagging system has been introduced which uses a small amount of Perfluorocarbon tracer (PFT) chemical that can be readily detected above ground that helps 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.
- 5.93** During RIIO ED1 WPD committed to applying PFT to cables with a history of leakage and internal policy reflects this requirement. PFT was used on 12 occasions during 2015/16.

## Replacing poor condition fluid filled cable

- 5.94** WPD have committed to replacing 1% of the poorest condition cables which have the highest leak rates over RIIO-ED1.
- 5.95** 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 relate to problems related to the cable joints.
- 5.96** Joints 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 source.
- 5.97** Target volumes have been calculated based on the length of fluid filled cables in service during 2014/15. Over 2015/16 we have decommissioned 5.6 km of fluid filled cables, 0.7% of our overall population of this asset type, making effective progress towards our RIIO-ED1 target of 1% as shown below:

Fluid Filled Cable Disposals (km)					
	West Midlands	East Midlands	South Wales	South West	WPD Total
Population 2014/15	312.3	277.3	60.8	115.8	766.1
Forecast 1% disposals (total RIIO-ED1)	3.1	2.8	0.6	1.2	7.7
Actual disposals (2015/16)	2.8	2.6	0.2	0.0	5.6

## (31) Reducing the leakage of SF<sub>6</sub>

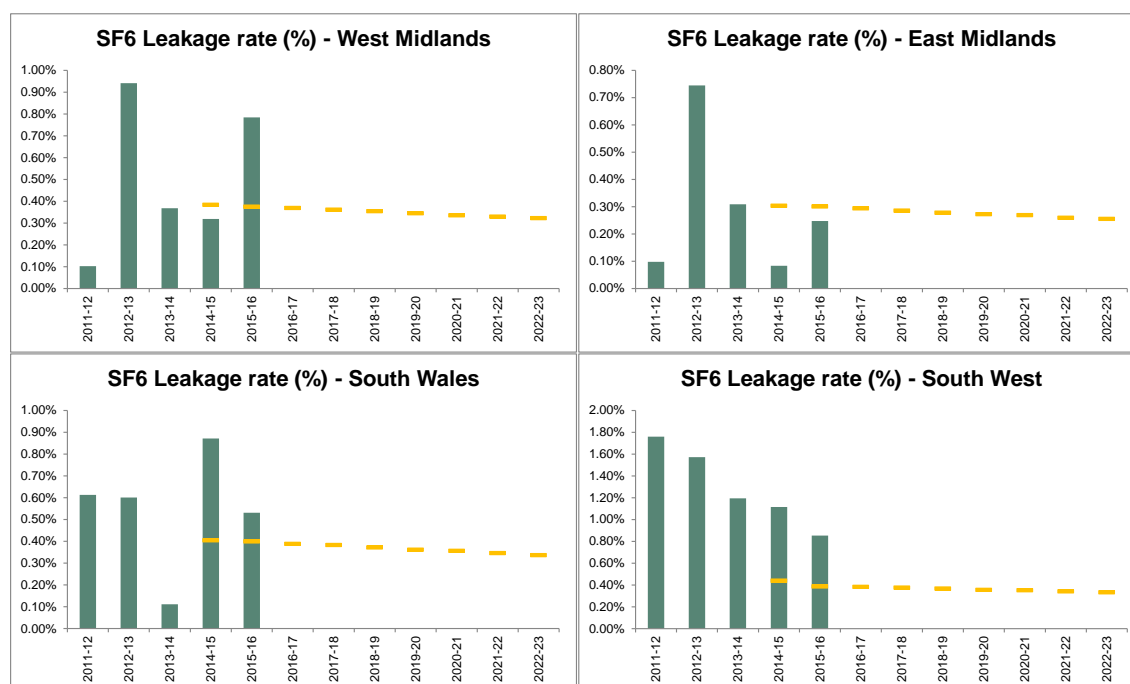
- 5.98** SF<sub>6</sub> gas is used throughout the industry as an insulating medium in switchgear. Although it provides many benefits, it is a potent greenhouse gas. There are no current alternatives to SF<sub>6</sub> and so it is replaced when necessary on a like for like basis.
- 5.99** When replacing switchgear priority is given to switchgear with the highest leak rates.
- 5.100** Within RIIO-ED1 WPD has committed to replacing any 11kV distribution assets that leak and higher voltage assets if they have leaked three times.
- 5.101** SF<sub>6</sub> leaks are monitored and logged within the company's asset database. The volume of leakage is determined by the volume of gas required to top up the asset or the amount taken out of the unit if it is to be replaced.
- 5.102** 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.

**5.103** During RIIO-ED1 WPD has committed to reducing the SF<sub>6</sub> leakage by 17% relative to the leak rate based upon a four year average of emissions between 2009/10 and 2012/13.

**5.104** The amount of SF<sub>6</sub> lost is expressed as a percentage of the overall “bank” of switchgear containing SF<sub>6</sub> as this will vary over the period of RIIO-ED1 as new equipment is added and old equipment decommissioned.

**5.105** Performance against the RIIO-ED1 target is shown below:



**5.106** As shown by historical data the emission of SF<sub>6</sub> is variable on a year on year basis due to the impact that a significant leak event can have. Longer term trends will be monitored over the period of RIIO-ED1 to demonstrate that on average the required reductions are achieved.

**5.107** WPD continues to work towards improving performance and to achieving the target reductions in SF<sub>6</sub> emissions. We have:

- continued to seek new ways to identify leaks at an early stage so that the amount of SF<sub>6</sub> lost when a leak occurs can be limited. In 2015/16 WPD invested in an infrared SF<sub>6</sub> gas leak camera which enables the detection of SF<sub>6</sub> gas leaks without the need for an outage, adding to the options for leak identification.
- initiated an innovation project investigating alternatives to SF<sub>6</sub>, the project has been scoped and will commence during 2016/17

## (32) Installing oil containment bunds

**5.108** Large transformers 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.

**5.109** 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.

**5.110** During RIIO-ED1 WPD committed to ensuring that all 33kV transformers and above and any bulk storage sites (those with equipment containing oil in excess of 1,500 litres) would have either a new bund installed or an existing bund refurbished to ensure effectiveness.

**5.111** An initial expenditure forecast indicated that a volume of 104 bunds would be required split as follows across the licence areas:

RIIO-ED1 Forecast Volumes of Oil containment bunds					
	West Midlands	East Midlands	South Wales	South West	WPD Total
Forecast requirement	32	32	16	24	104

**5.112** Site surveys are being undertaken to assess the requirement for either the repair of an existing bund or the establishment of a new bund. Site surveys for South Wales have been completed and indicate that all 33kV transformers and bulk storage sites have adequate existing bunds and that no new bunds are required.

**5.113** Progress in 2015/16 is as follows:

Oil containment bunds completed 2015/16					
	West Midlands	East Midlands	South Wales	South West	WPD Total
New Bunds	0	12	0	1	13
Refurbished bunds	15	3	3	21	42

## Improving visual amenity

**5.114** The RIIO-ED1 business plan contained one output within this theme:

### Improve visual amenity in National Parks and Areas of Outstanding Natural Beauty (AONBs)

- (33) Underground 55km of overhead lines in National Parks and AONBs.

#### (33) Undergrounding overhead lines

**5.115** 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.

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

**5.117** Following stakeholder engagement WPD have committed to undergrounding 55km of overhead line during RIIO-ED1. Positive progress has been made to fulfil the target, performance for WPD as a whole is as follows:

**5.118** Work undertaken by licence area is as follows:

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
2015/16 performance	4.7	4.2	0.0	0.0	8.8*

\*Total does not reconcile due to rounding

**5.119** Within each licence area a steering group has been established with representatives from AONBs and National Parks.

**5.120** 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.

2015-2023

# RIIO-ED1 BUSINESS PLAN

## Business Plan Commitments Report 2015-16

31 October 2016

### Connections

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## 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** Within these three 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.
- 6.3** The objective of 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
  - Guaranteed standards of performance
  - Facilitation of competitive market

### Regulatory framework

- 6.4** 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) is an incentive mechanism that provides rewards or penalties for customer service. Part of the mechanism measures customer satisfaction via a survey and is 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 larger connection customers.
  - Guaranteed Standards of Performance (GSOPs) where customers are eligible for specified payments where a DNO fails to deliver specific levels of performance.
- 6.5** Ofgem is also keen on promoting competition in connections, to provide customers with a choice of providers to undertake the physical connections work. 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.



## Overview of Connections Outputs

### Provide a Faster and More Efficient Connections Service

<a href="#">34</a>	Improve the overall time to deliver a connection by 20%.*	Ofgem targets for Time to Quote and Time to Connect for LVSSA and LVSSB market segment achieved in all areas apart from South Wales for TTQ LVSSA.
<a href="#">35</a>	Provide excellent customer service so that customers continue to rank WPD as the top performing DNO group in customer satisfaction surveys.**	WPD is the top performing DNO for the Connections Customer Survey in Ofgem's Broad Measure of Customer Satisfaction, scoring an average of 8.74 out of 10 across WPD licence areas.
<a href="#">36</a>	Conduct surveys with distributed generation customers to gauge their satisfaction and identify improvements to the service provided.	Score of 8.52 out of 10 for distributed generation satisfaction surveys.

### Improve communication with customer

<a href="#">37</a>	Develop and enhance online connections processing and progress tracking.	Range of amendments made in line with stakeholder requirements and published within our ICE work plan.
<a href="#">38</a>	Ensure information provided in documentation and online is effective.	Satisfaction score of 8.6 out of 10 from customers using our online application service.

### Enhance engagement with major customers

<a href="#">39</a>	Host quarterly 'surgeries' for connection customers to better understand processes.	43 customers attended surgeries across our four licence areas, a further 57 customers made enquiries as a result of advertised sessions and were supported via call backs or ad hoc meetings.
<a href="#">40</a>	Work with major customers to identify where process can be improved and quickly implement changes.	We engaged with over 3,000 stakeholders through events and over 2,300 through WPD commissioned satisfaction surveys. Suggestions from these interactions formed the outputs in our ICE work plan.

### Guaranteed Standards of Performance

<a href="#">41</a>	Target zero failures of the connection GSOPs.**	Five failures, all investigated to prevent further failures of a similar nature.
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### Facilitation of competitive market

<a href="#">42</a>	Improve customer awareness of third party connection providers and carry out regular checks with customers that they understand the options available to them.	New annual survey initiated to gauge customer awareness of alternative providers. 77% of customers who obtained a connection had an awareness of competitive connection providers.
<a href="#">43</a>	Work with third party connection providers to extend the scope of contestable work to HV and reinforcement work.	Two further trials underway for potential contestable work – self-determined points of connection and self-approved designs.

\* Targets are for the full eight year RIIO-ED1 period, not for a discrete year

\*\* Target to be achieved each year of RIIO-ED1

# Providing a faster and more efficient connections service

6.6 The RIIO-ED1 business plan contained three outputs within this theme:

## Provide a faster and more efficient connections service

- (34) Improve the overall time to deliver a connection by 20%.
- (35) Provide excellent customer service so that customers continue to rank WPD as the top performing DNO group in customer satisfaction surveys.
- (36) Conduct surveys with distributed generation customers to gauge their satisfaction and identify improvements to the service provided.

## (34) Improve the overall time to deliver a connection by 20%

6.7 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%.

6.8 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 focussed on improving the time to provide a quote, we will also provide connection services in line with customer requirements.

6.9 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 targets and performance.

## 2015/16 performance for the Time to Connect incentive

6.10 The following table shows WPD's performance against the Ofgem Time to Quote and Time to Connect targets for LVSSA and LVSSB market segments during 2015/16. This is the first year of reporting against this new regulatory incentive mechanism.

	Time to Quote (average number of days)		Time to Connect (average number of days)	
	LVSSA	LVSSB	LVSSA	LVSSB
West Midlands	4.80	6.11	34.32	44.80
East Midlands	3.48	5.20	31.89	41.25
South Wales	8.37	11.10	30.26	34.55
South West	6.64	7.87	32.01	37.68
<b>Ofgem target</b>	<b>8.21</b>	<b>11.73</b>	<b>42.08</b>	<b>52.70</b>

6.11 All targets have been achieved with one exception - time to quote performance in the LVSSA category for South Wales.

## 2015/16 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, discussions with the government led to a commitment to advance the improvements, making some prior to the start of the ED1 period. The benchmark period has been changed to incorporate 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
2015/16 Target	8.3	10.9	11.2	35.8	36.2
2015/16 Performance	7.4	9.8	13.6	25.5	41.5

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
2015/16 Target	102.5	129.3	52.1	165.7	292.1
2015/16 Performance*	56.1	64.5	48.3	77.1	34.8

\*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 leads 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.

### *(35-36) Providing excellent customer service*

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

**6.17** 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.

**6.18** Since publishing the Business Plan there has been a significant increase in the level of activity in the connection of generation. This has led to network capacity being fully utilised on parts of the network, which means that the requirements of some customers cannot be accommodated. Clear communication and transparent processes therefore have an even greater level of importance to maintain customer satisfaction in this environment.

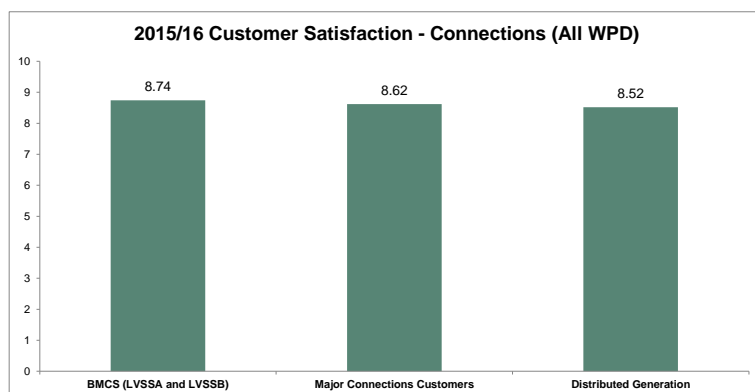
**6.19** To understand how customers view WPD's service, we use the following surveys to measure the satisfaction of connections customers.

- The customer satisfaction survey score for connections. This is part of Ofgem's Broad Measure of Customer Satisfaction (BMCS) and 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 customers. This survey is undertaken on an annual basis and was introduced following feedback from stakeholders. The latest survey was conducted in 2015/16 for projects completed in 2014/15.

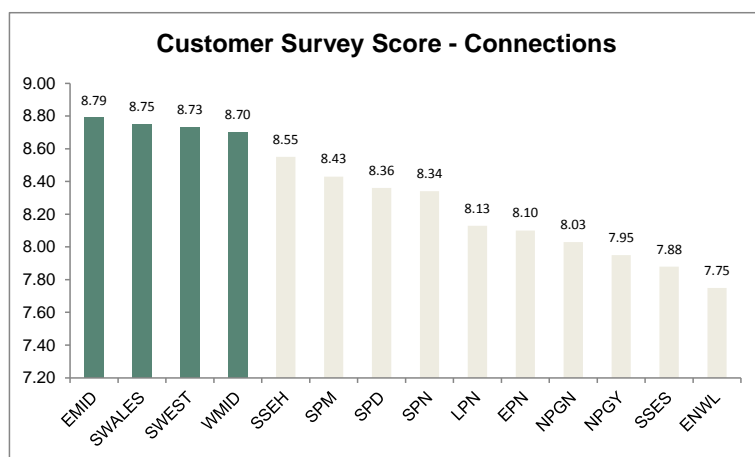
**6.20** The two WPD surveys replicate the survey approach taken for BMCS.

## 2015/16 performance in customer satisfaction surveys

- 6.21** Ofgem specify 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 an internal target of 8.8 for each area.
- 6.22** WPD's performance is shown in the following chart. Whilst performance exceeds Ofgem's target, work is ongoing to achieve the aspirational target of 8.8. We anticipate that this will continue to be a challenging target for distributed generation where there are constraints on the network capacity available to generation customers.



- 6.23** The BMCS customer survey score for LVSSA and LVSSB connections provides a method of comparing DNO performance. The chart below shows the results for 2015/16 where customers have rated the four WPD licence areas in the top four positions.



- 6.24** WPD's leading performance is achieved through a strong culture of customer service embedded throughout the organisation.

## Improving communication with connections customers

6.25 The RIIO-ED1 business plan contained two outputs within this theme:

### Improve communication with customers

- (37) Develop and enhance online connections processing and progress tracking.
- (38) Ensure information provided in documentation and online is effective.

### *(37) Providing effective information online*

6.26 WPD has committed to ensuring that customers requiring a connection receive clear information on their options, the process for connection and what they need to do.

6.27 Information is provided to customers online via our website, through our contact centre staff or by direct contact with local planners.

6.28 The WPD website provides a valuable source of information for customers requiring a connection. In order to ensure the effectiveness of the information provided we undertake regular stakeholder engagement and review the information available.

6.29 All connection related improvements to the website are detailed within WPD's ICE workplan and can be viewed at:

[www.westernpower.co.uk/About-us/Stakeholder-information/Connection-Customer-Engagement.aspx](http://www.westernpower.co.uk/About-us/Stakeholder-information/Connection-Customer-Engagement.aspx)

6.30 During 2015/16 we:

- reviewed process flow charts on the website in October 2015, ensuring that each step of the connections process is clearly described and indicates roles and responsibilities for each stage;
- reviewed our online distributed generation capacity register which indicates the potential capacity available for new generation connections. The register is now updated monthly to show available capacity. In addition the scope of information has been expanded to include detail of generation connections which have been offered but not yet accepted;
- asked all users of the WPD Technical Information website to identify whether it provided appropriate information to enable Independent Connection Providers (ICPs) and Independent Distribution Network Operators (IDNOs) to self-design points of connection to the network. The resultant feedback was used to make improvements to the website in September 2015.

6.31 All customers are able to register to receive updates on any changes to the WPD website (not just changes to the connections pages). In addition approved users of the Technical Information website automatically receive email notifications of any changes and additions to the system.

6.32 WPD also contributes to updating the industry wide Distributed Generation Connection Guide. The guide is available on the Energy Networks Association website:

[www.energynetworks.org/electricity/engineering/distributed-generation/dg-connection-guides.html](http://www.energynetworks.org/electricity/engineering/distributed-generation/dg-connection-guides.html)

6.33 The guide is aimed at distributed generation owners and developers wishing to connect to the network, providing them with generic information about connection processes.

6.34 Contact centre staff attend regular refresher training on any business changes, which enables them to direct customers to the appropriate team for further information.

### *(38) Online connections processing and progress tracking*

- 6.35** 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. To date, WPD has developed two online systems; a Connection Portal and the CIRT system.
- 6.36** The Connection Portal is available 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.
- 6.37** The CIRT system is specifically designed for ICPs and IDNOs for online submission of connection applications and progress tracking.

#### The Connection Portal

- 6.38** The Connection Portal was launched in 2014/15 and during 2015/16 1,495 enquiries were made via this route, representing 6.7% of the total enquiries. Of these, 148 resulted in an offer being accepted via the online system and 103 had an online payment made. The extent to which usage grows will continue to be monitored within the ICE key performance indicators and user feedback will be used to improve functionality.
- 6.39** In January 2016, a 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 were asked to provide a score out of 10 and for the period January 2016 to March 2016 customers rated the service at 8.6. This is a good result, but usability will continue to be monitored.



#### CIRT

- 6.40** CIRT has been improved in response to user feedback. The improvements include adding the functionality for customers to download offer letters rather than relying on email or postage and the ability to register multiple contact addresses per enquiry.
- 6.41** During 2015/16, 1,579 (23.7%) of enquiries from ICPs and IDNOs were raised via CIRT. Usage will continue to be monitored and feedback from customers will be used to improve the system.
- 6.42** As an example of potential future enhancements, the 2016/17 WPD ICE workplan commits to investigating the feasibility of providing legal and consent progress status to connection customers via the system to keep them informed in relation to the part of the process that relies on other parties.



## Enhancing engagement with customers

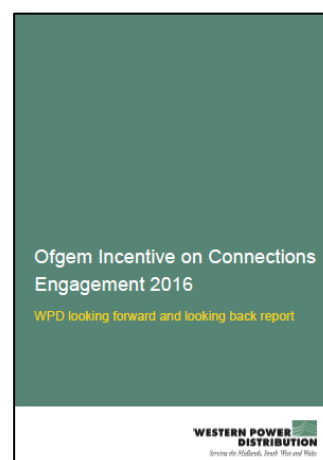
6.43 The RIIO-ED1 business plan contained two outputs within this theme:

### Enhance engagement with major customers

- (39) Host quarterly 'surgeries' for connection customers to better understand processes.
- (40) Work with major customers to identify where processes can be improved and quickly implement changes.

### *(40) Working with customers to improve processes and implement change*

- 6.44 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.
- 6.45 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.
- 6.46 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 focussed on all market segments.
- 6.47 The incentive mechanism requires DNOs to submit ICE reports to Ofgem detailing forward looking plans and reporting on previous proposals. These 'looking forward and looking back' reports are used by Ofgem, along with feedback from stakeholders, to determine whether penalties should be applied. Ofgem has determined that WPD's ICE plan meets the requirements.
- 6.48 The development of WPD's ICE plans means that some of the engagement approaches described within our RIIO-ED1 business plan have evolved and been absorbed into a more detailed engagement structure.
- 6.49 WPD's ICE submission for 2015/16 provides further detail on the approaches to connections engagement and can be found at:
- [www.westernpower.co.uk/About-us/Stakeholder-information/Connection-Customer-Engagement.aspx](http://www.westernpower.co.uk/About-us/Stakeholder-information/Connection-Customer-Engagement.aspx)
- 6.50 The main mechanisms of connections engagement include:
- Customer Connections Steering Group
  - Dedicated sessions at Stakeholder workshops
  - Distributed generation workshops
  - Community energy workshops
  - Connection surgeries





## Customer Connections Steering Group

- 6.51** During 2015/16, 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.
- 6.52** 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. Two examples of the areas where the CCSG has influenced the 2015/16 WPD ICE workplan are shown in the table below:

CCSG areas of influence in WPD ICE Plan	
Requirement	WPD Action
Improvements to the processes of obtaining the legal permissions and consents required for a new connection.	WPD developed a suite of information and created a new section on the WPD website containing process flow charts, policies and template documents
<p>Keeping customers informed about the assessments required by National Grid Electricity Transmission (NGET) for the connection of large scale distributed generation to the distribution network.</p> <p>When customers apply for the connection of a large scale distributed generator, WPD is required to apply to NGET to determine any grid restrictions in a process referred to as Statement of Works.</p> <p>Stakeholders were critical of the lengthy timeframes required for the process, the impact of restrictions on connection schemes, communication about the process and transparency on the decisions made.</p>	<p>To address these concerns, WPD has</p> <ul style="list-style-type: none"> <li>contributed to national working groups looking at joint solutions,</li> <li>introduced alternative connection agreements that still allow connections to be made (with some constraints) even though restrictions are in place,</li> <li>established a central Statement of Works team to deal with enquiries,</li> <li>introduced new policies and procedures; and</li> <li>published information on the WPD website.</li> </ul> <p>This includes publication of NGET responses to applications so that customers have a clear understanding of the decisions made by NGET.</p>

## Stakeholder Workshops

- 6.53** In January 2016 WPD held six stakeholder workshops, across a variety of locations, attended by 259 stakeholders. These workshops are available for all stakeholders to attend, but specific sessions are dedicated to connections activity.
- 6.54** This year, "The Connections Improvement Plan" was a topic for discussion allowing WPD to test and refine the ICE plan priorities for 2016 with a variety of connection stakeholders.

## Distributed Generation workshops

- 6.55** WPD initiated dedicated workshops for distributed generation stakeholders in 2014. The second annual workshop was held in November 2015 and all 875 registered distributed generation stakeholders were invited to attend. This resulted in 66 stakeholders attending and 55 providing written feedback. The sessions were used to test our understanding of the key issues experienced by stakeholders to further develop the ICE workplan. A summary of the workshop can be found on the WPD website found at:

[www.westernpower.co.uk/docs/About-us/Stakeholder-information/November-2015-workshop/WPD-DG-workshop-report-November-2015.aspx](http://www.westernpower.co.uk/docs/About-us/Stakeholder-information/November-2015-workshop/WPD-DG-workshop-report-November-2015.aspx)

## Community Energy workshops

- 6.56** In 2014/15 WPD initiated Community Energy Workshops. These workshops provide an engagement opportunity specifically for community energy projects which may not have the technical knowledge or experience that developers have. Projects generally focus around the opportunity for 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.

- 6.57** The WPD Community Energy Workshops held in 2015/16 expanded on previous workshops and covered

- guides to getting connected,
- constraints on the WPD network,
- Statements of Work with National Grid, and
- innovative solutions to grid constraints.

- 6.58** The feedback at these events was very positive with 100% rating the sessions as 'good' or 'very good'. Again these events have provided outputs which have informed the issues and priorities for our looking forward plans and actions in our 2016/17 ICE Workplan.



## (39) Connection Surgeries

- 6.59** Local ‘surgeries’ for connections customers continue to be promoted with at least four sessions taking place in a year. These are advertised in a range of relevant publications such as Utility Week, Construction News and Farmers Weekly.
- 6.60** Customers interested in attending an event contact a central team who pass on the enquiry to the relevant local depot to assess the customer’s requirements before inviting them to a local surgery. Where possible, simple queries are resolved over the phone and, if necessary, a meeting with a local planner will be arranged ahead of a surgery.
- 6.61** During 2015, 43 customers attended surgeries and a further 57 customers were provided with a call back or ad hoc meeting.



### Case Study (East Midlands January 2016):

A company specialising in landfill gas compound generation sites wished to enquire about connections for a number of sites with around 2 megawatts of generation likely at each location.

The customer wished to discuss the options available prior to making an application. A local planner explained the factors that the customer needed to consider prior to applying and provided an initial assessment of the proposed sites against network maps, explaining any restrictions in terms of network capacity and site specific issues. The planner explained the policy on connections and helped the customer to consider how to tailor the applications so that they could be assessed without delay.

After the session the customer thanked those involved for their “proactive help”.

## Connections Guaranteed Standards of Performance

6.62 The RIIO-ED1 business plan contained two outputs within this theme:

### Guaranteed Standards of Performance

- (41) Target zero failures of the connection GSOPs.

#### (41) Guaranteed Standards of Performance

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

6.64 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.

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

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

6.67 During RIIO-ED1, WPD has committed to a tough challenge, targeting zero failures against all of the connection guaranteed standards. The following table shows that this aspiration was almost achieved in 2015/16:

Connection Guaranteed Standard of Performance Failures 2015/16						
	Metered Estimates / Quotations	Metered Connection Works	Unmetered Fault Repairs	Unmetered Connections	CIC Connections	Payments & Quotation Accuracy
West Midlands	-	-	-	-	-	-
East Midlands	4	-	-	-	-	-
South Wales	-	-	-	-	-	-
South West	-	1	-	-	-	-
<b>WPD total</b>	<b>4</b>	<b>1</b>	-	-	-	-

6.68 Where failures occur, the circumstances are investigated and briefings are issued to prevent further failures of a similar nature. WPD will continue to work towards the target of zero failures against all of the connection guaranteed standards.

## Facilitation of a competitive market

6.69 The RIIO-ED1 business plan contained two outputs within this theme:

### Facilitation of competitive market

- (42) Improve customer awareness of third party connection providers and carry out regular checks with customers that they understand the options available to them.
- (43) Work with third party connection providers to extend the scope of contestable work to HV and reinforcement work.

6.70 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 incumbent DNO.

6.71 During DPCR5, Ofgem implemented measures to facilitate competition in the provision of connections. One of these was the creation of a 'competition test' assessment process whereby DNOs could apply to have price regulation lifted if they were able to demonstrate that competition was sufficiently effective.

6.72 Since the industry only achieved competition status in a third of cases, Ofgem carried out a review of the market in 2014. This led to Ofgem concluding that the industry required a code of practice to facilitate competition in the provision of connections to DNOs' distribution systems by third-party connection providers.

6.73 The code of practice covers the end-to-end 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.

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

### (42) Customer awareness of alternative providers

6.75 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 and our connection process flowcharts include the option of using third party connection providers.

6.76 We also include information about the availability of alternative connection providers in connection packs sent to customers.

6.77 An annual survey was initiated in 2015/16 to gauge customer awareness of alternative providers. The survey asked 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.

6.78 The results of the survey showed that 77% of customers had an awareness of competitive connection providers and that 20% had considered the use of an independent connection provider. It is proposed to repeat the surveys each year to track how awareness changes over the course of RIIO-ED1.



## Raising awareness of the Code of Practice

- 6.79** WPD actively participated with national working groups to develop the Competition in Connections Code of Practice and implemented new internal policies and procedures to ensure compliance. Information and guidance was also published on our website
- 6.80** We engaged with stakeholders to ensure that they were aware of new processes and we have held bilateral meetings with ICP/IDNOs to ensure familiarity with the changes. We have also carried out internal briefings with staff to ensure consistency of approach.
- 6.81** Further information on the work undertaken to develop the Competition in Connections Code of Practice can be found within our 2015/16 ICE Plan. The plan can be found at:

[www.westernpower.co.uk/About-us/Stakeholder-information/Connection-Customer-Engagement.aspx](http://www.westernpower.co.uk/About-us/Stakeholder-information/Connection-Customer-Engagement.aspx)

### *(43) Extending the scope of contestable work*

- 6.82** WPD actively assists competition by developing processes and systems to allow third parties to extend the scope of what they can do.
- 6.83** During 2013 HV jointing trials were initiated, allowing third party jointers to carry out physical connection work on site, followed by the introduction of processes to allow third parties to carry out their own switching, testing and commissioning. Trials are ongoing and take up by third parties has gradually increased with some amendments to processes under discussion. Once trials are complete, the arrangements will be incorporated into Connections Charging Statements.
- 6.84** For 2015/16 the volumes of third party connections (referred to as HV Points of Connection (POC)) were as follows:

HV POC Connections Completed in 2015/16		
	Volumes	%
HV POC connected by ICP	10	4.46%
HV POC for ICP connected by WPD	214	95.54%
<b>Total connected HV POCs</b>	<b>224</b>	

- 6.85** 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.
- 6.86** To date there has been no take up of this option by third party providers; however the option to facilitate trials remains available.

## Impact of the Code of Practice on Contestable Work

**6.87** The introduction of the Competition in Connections Code of Practice has led to the implementation of trials for two other elements of contestability. As a result of the Code of Practice, WPD introduced a process to trial self-assessment of the Point of Connection by ICPs (for the majority of straightforward connections).

**6.88** In addition a trial was introduced for accredited ICPs to self-approve their own designs.

**6.89** These processes were implemented in September 2015 and take up has been slow as shown in the following tables:

Self-determined points of connection in 2015/16		
	Volumes	%
Self-Determined POC by ICP	8	0.13%
WPD Determined POC	6242	99.87%
<b>Total POC's</b>	<b>6,250</b>	

Self-approved designs in 2015/16		
	Volumes	%
ICP Self-Approved Design	2	0.60%
WPD Design Approval	329	99.40%
<b>Total Design Approvals</b>	<b>331</b>	



2015-2023

# RIIO-ED1 BUSINESS PLAN

## Business Plan Commitments Report 2015-16

31 October 2016

### Customer Satisfaction

# Customer Satisfaction Contents

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## 7 Customer Satisfaction

- 7.1** The provision of excellent customer service for WPD's 7.8 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) mechanism. 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.

## Overview of Customer Satisfaction Outputs

Customer service		
<a href="#">44</a>	Continue to be the number one performing DNO group across all elements of the Broad Measure of Customer Satisfaction.**	WPD achieved the top four scores for overall customer satisfaction – a weighted amalgamation of results of the three surveys for supply interruptions, connections and general enquiries.
<a href="#">45</a>	Maintain certification to the Customer Service Excellence standard.**	Awarded 'Compliance Plus' status, the highest scoring organisation out of the 237 organisations accredited.

Telephone response		
<a href="#">46</a>	Respond to telephone calls quickly; answering them within 2 seconds.**	Average response time for customer calls - 1.51 seconds.
<a href="#">47</a>	Ensure abandoned calls are less than 1%.**	Only 0.14% of calls were abandoned.
<a href="#">48</a>	Always provide customers with the option to talk to a WPD call taker.	Customers are always provided with the option to talk to a call taker.

Communication with customers		
<a href="#">49</a>	Provide a restoration time for every outage.**	99.8% of outages had a restoration time provided.
<a href="#">50</a>	Call back all customers who have been in contact about a fault.**	97.8% of customers who contacted us about a fault received a call back.
<a href="#">51</a>	Contact customers within two days of receiving a non-fault enquiry.**	99.7% of customers who contacted us about a non-fault enquiry were contacted within two days.
<a href="#">52</a>	Provide on demand messaging via text and social media for customers who want to be kept informed by means other than the telephone.	On demand messaging is provided via text and social media. Our Twitter followers increased to 13,666, we launched a range of new campaigns via Facebook and sent 705,687 proactive text messages during HV outages.
<a href="#">53</a>	Develop 'self-service' options for customers to find information online.	We hosted 23,897 webchat conversations, launched a new power cut app on the website and saw usage of our power cut map increase from 323,837 hits to 666,323.

Stakeholder engagement		
<a href="#">54</a>	Continue to host a Customer Panel where the CEO will meet with WPD's expert stakeholders four times a year.	The CEO met with the Customer Panel on four occasions during the year.
<a href="#">55</a>	Continue to host an annual round of at least six stakeholder workshops.	We hosted six sessions attended by 259 stakeholders across the WPD licence areas.
<a href="#">56</a>	Continue to produce a stakeholder report every year providing an update of actions taken as a result of stakeholder engagement.	The stakeholder report is replaced by the Business Plan Commitments Report and this summary document.

Complaints		
<a href="#">57</a>	Resolve at least 70% of complaints within one day.**	82% of complaints were resolved within one day.
<a href="#">58</a>	Continue to have a target of zero complaints where the Ombudsman has to get involved.**	Zero complaints required ombudsman investigation.

Guaranteed Standards of Performance awareness		
<a href="#">59</a>	Continue to send the 'Power for Life' publication to all 7.8 million customers which will include promotion of the GSOPs.**	'Power for Life' was issued to all 7.8 million customers in February 2015 and included information on 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

## Customer Service

7.8 The RIIO-ED1 business plan contained two outputs within this theme:

### Customer service

- (44) Continue to be the number one performing DNO group across all elements of the Broad Measure of Customer Satisfaction.
- (45) Maintain certification to the Customer Service Excellence standard.

### *(44) Continuing to be the number one for customer service satisfaction*

7.9 WPD is committed to remaining the top performer in the customer satisfaction survey part of Ofgem's Broad Measure of Customer Satisfaction.

7.10 There are three separate customer satisfaction surveys that are carried out covering

- General enquiries
- Supply interruptions
- Connections

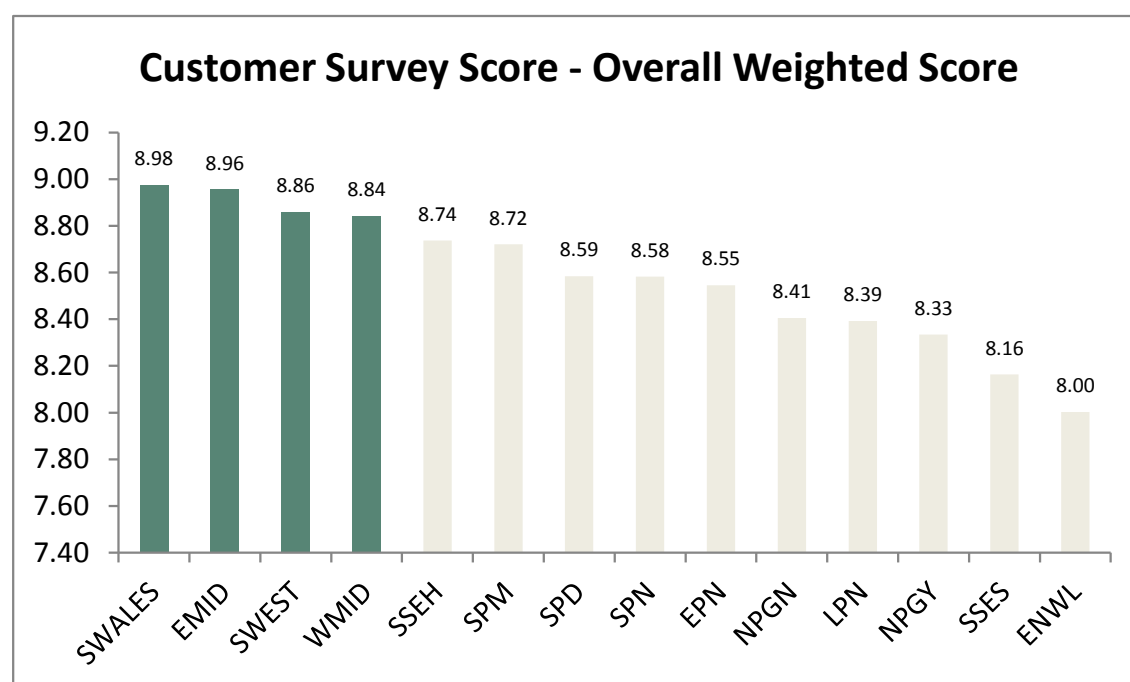
7.11 Performance in each component is subject to separate assessment, leading to rewards or penalties based upon comparison against a target score of 8.2 out of 10. In RIIO-ED1, Ofgem has placed a greater emphasis on connections within incentive reward and penalty mechanisms and the relative weighting for the three categories is shown below

Relative weighting of customer satisfaction survey	
General enquiries	20%
Supply interruptions	30%
Connections	50%

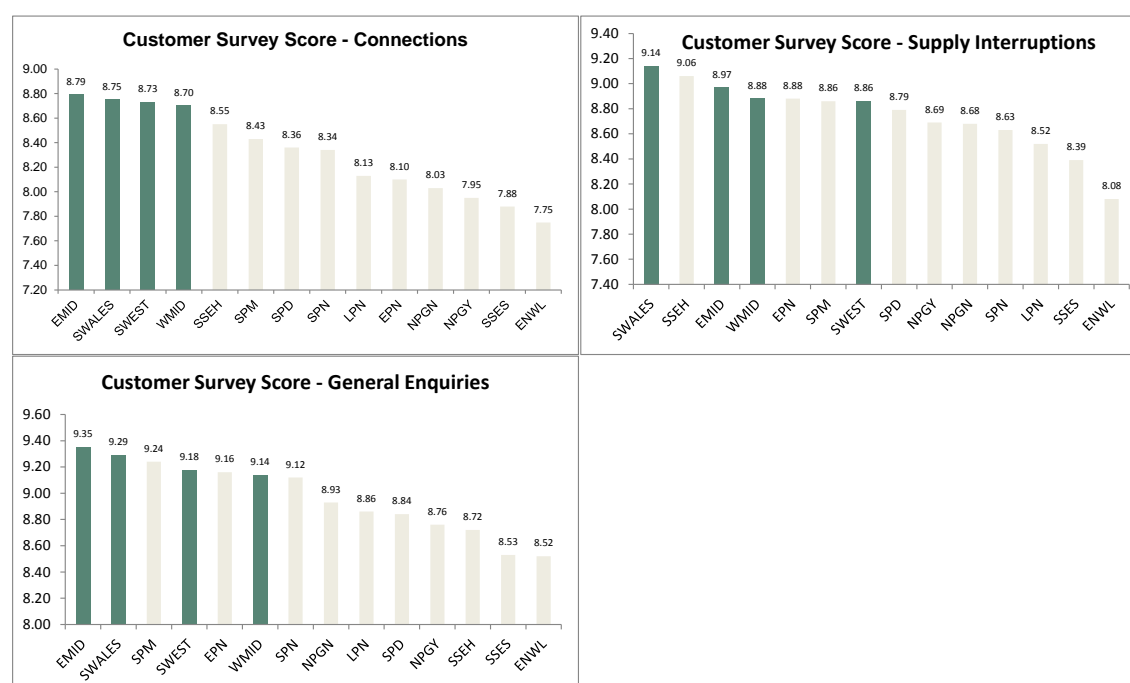
7.12 This relative weighting can be used to combine the scores from the three components into an overall customer satisfaction score.

## Overall Customer satisfaction

**7.13** WPD achieved the top four scores for overall customer satisfaction (amalgamating results for the three surveys for supply interruptions, connections and general enquiries) when compared with the other DNOs:



**7.14** The performance in the three separate components is shown below:



**7.15** 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.

## *(45) Customer Service Excellence Standard*

**7.16** 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.

**7.17** WPD has been certified to the standard since 1992 (when it was known as the Charter Mark).

**7.18** 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

**7.19** In 2015/16 WPD achieved 'Compliance Plus' ratings against 36 of the 57 standards (receiving a compliance rating for all others) and became the highest scoring organisation out of the 237 that were accredited.



## Telephone response

**7.20** The RIIO-ED1 business plan contained three outputs within this theme:

### Telephone response

- (46) Respond to telephone calls quickly; answering them within 2 seconds.
- (47) Ensure abandoned calls are less than 1%.
- (48) Always provide customers with the option to talk to a WPD call taker.

### *(46) Responding to telephone calls within 2 seconds*

**7.21** Allowing customers to speak to someone is an essential part of good customer service. We continue to operate in-house Contact Centres that are adequately staffed to provide a fast response.

**7.22** 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.

**7.23** 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.

**7.24** During RIIO-ED1 we have committed to target answering calls within two seconds.

**7.25** For 2015/16 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)	1.75	1.46	1.45	1.40	1.51

### *(47) Abandoned calls*

**7.26** 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 2015/16 only 0.14% of calls were abandoned.

### *(48) Speaking to a call taker*

**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 (which include automated system messages) always provide customers with the option to talk to a call taker.

## Communicating with customers

7.28 The RIIO-ED1 business plan contained five outputs within this theme:

### Communication with customers

- (49) Provide a restoration time for every outage.
- (50) Call back all customers who have been in contact about a fault.
- (51) Contact customers within two days of receiving a non-fault enquiry.
- (52) Provide on demand messaging via text and social media for customers who want be kept informed by means other than the telephone.
- (53) Develop 'self-service' options for customers to find information online.

7.29 Keeping customers informed and updated about enquiries and services is important.

7.30 WPD uses a variety of methods to ensure that communication remains effective and appropriate for the 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.

### *(49) Provide a restoration time for every outage*

7.31 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.

7.32 In order to achieve this commitment, central dispatch teams gather information from field teams at regular intervals and are prompted by the control system to ask for updates before the previous estimated time of restoration (ETR) provided by field teams expires.

7.33 The ETR is populated against the incident within the control system so that all contact centre staff have access to the data and can provide the best estimate of the likely timeframes for restoration of supply.

7.34 The data about ETR logged in the control system is also linked to the WPD website. This enables customers to keep track of the ETR without having to contact WPD directly.

7.35 During 2015/16 an ETR was provided for 99.80 % of outages.

7.36 In addition to this overall measure, WPD uses an internal performance indicator to ensure that ETRs are provided promptly. This measures the percentage of ETRs determined within 15 minutes of a power cut occurring. Performance across WPD in 2015/16 was 99.29%. The following table shows this for all four licence areas.

Average response time for customer calls					
	West Midlands	East Midlands	South Wales	South West	WPD Total
Incidents with an ETR	99.92%	99.92%	99.72%	99.56%	99.80%
Incidents with ETR in 15 minutes	99.51%	99.64%	99.18%	98.80%	99.29%

## *(50) Call back customers who have been in contact about a fault*

- 7.37** 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 aim to provide an estimated time of restoration for every fault, in some situations it is difficult to accurately predict the duration of an outage and as the fault progresses it may become necessary to revise the estimated time of restoration. For these situations WPD has implemented a process of proactively calling customers back to keep them updated.
- 7.38** During RIIO-ED1, we have 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.
- 7.39** From 1 October 2015 systems for monitoring calls back to customers were amended to allow a greater level of reporting and tracking. When a customer calls about a power outage their details are logged and automatically added to a call back list. Contact Centre staff not receiving inbound calls progressively work through the call back list during the course of the fault. Customers who are medically dependent on electricity are given priority. An attempt is made to contact all the customers on the call back list.
- 7.40** During the period 1 October 2015 to 31 March 2016, 97.8% of customers who were in contact about a fault were called back. This resulted in 157,112 call backs. This figure reflects the number of customers that we called, including those that did not answer. In some cases the customer details are incorrect or missing or the customer has requested not to be called back which leads to the values being less than 100%. Performance during 2015/16 by licence area was as follows:

Call Backs to customers in contact about a fault (%) (1 October 2015 to 31 March 2016)					
	West Midlands	East Midlands	South Wales	South West	WPD Total
Customers called back	98.2%	98.1%	97.2%	97.3%	97.8 %

## *(51) Contact customers within two working days for non-fault enquiries*

- 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 2015/16 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	47,319	52,710	25,282	46,124	171,435
Percentage contacted within 2 working days	99.75%	99.64%	99.77%	99.73%	99.71%

- 7.43** In order to achieve these levels of performance WPD uses an 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.

## (52) Providing on-demand messaging

- 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 introduced a WPD twitter handle in July 2013. Customer comments via twitter are monitored and used as a prompt to proactively provide information and updates. In 2015/16 WPD achieved 13,666 followers and posted 15,038 tweets providing customer updates on outages but also promoting a range of WPD information campaigns such as public safety.



- 7.47** WPDs Twitter page can be found at [www.twitter.com/wpduk](http://www.twitter.com/wpduk).

- 7.48** 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.

- 7.49** For example, to support our apprentice recruitment during 2015/16 we launched an interactive forum on Twitter #apprenticehour, which allowed potential applicants to contact us in real time via Twitter in order to ask questions about the apprenticeship and engage with current apprentices. The initial hour long session was extensively promoted on Twitter using specific Tweets in the lead-up to the event and a positive response led to the arrangement of a further question and answer session a week later.

### Facebook

- 7.50** 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'.

- 7.51** We look to post on Facebook about once a day to retain good engagement with customers, providing interesting and engaging content with regular features, latest news updates, business/industry information and key messages promoting who we are and what we do.

- 7.52** Our Facebook Page can be found at [www.facebook.com/wpduk](http://www.facebook.com/wpduk)

### Text messaging

- 7.53** During 2015/16 we developed a bespoke system to send proactive text message updates to customers affected by power cuts on the HV network. We incorporated 2.9 million mobile phone records and rolled out a new process to capture additional records via all inbound calls. As a result we sent 705,687 proactive text messages to update customers during HV outages.

- 7.54** In November 2015, a text service was launched to allow deaf customers to contact us for any power cut queries; the number is available via the company's accessibility page on the WPD website and for the period November 2015 to March 2016 341 messages were received and responded to.

### (53) 'Self-service' online information

**7.55** In February 2016 WPD's website was redeveloped so that information is quick to find and in a format that is easy to use. This redevelopment included the company's mobile site so that those using smart mobile devices are provided with a user friendly interface of the same standard as the main website.

**7.56** The redevelopment ensures that the website is accessible to all customers, supporting individuals with a range of needs such as those associated with 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.

**7.57** We have worked with the Royal National Institute of Blind People (RNIB) to develop the website and will participate in an audit in 2016/17 in order to achieve their accreditation.

**7.58** There are a number of 'self-service' options made available on the WPD website including:

- Webchat functionality (introduced in December 2014) which allows visitors to the website to communicate online in real time with a WPD advisor. Webchat is available 365 days a year, 7 days a week between 8am and 8pm. Usage of the functionality has been high, with 23,897 'chats' taking place in 2015/16 with 94.2% satisfaction indicated by users.
- A map based online information system that enables customers to access up to date incident information. The map shows an overview of current power cuts for all areas and provides the user the option of drilling down to more detailed local information specific to postcodes. The user is provided with information on estimated restoration times together with contact information should they wish to speak to a member of WPD staff directly.
- 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. During the initial months of February and March 2016 the app was downloaded 882 times. 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. The functionality to self-report power cuts will be added to the main WPD website in the future.
- 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.
- A Connections Portal (launched in June 2015) built on the existing online applications service that enables customers to access details of their connection offer and to accept and pay for connections work.
- Registering to join our Priority Services register online.

**7.59** Usage of self service options has grown in all areas since 2014/15:

Growth in use of 'Self Service' online information		
Self Service Option	2014/15	2015/16
Power cut map	323,837 hits	666,323 hits
Post code search	575,533 hits	916,960 hits
Who is my supplier (*went live in Jan '15)	*31,803 enquiries	602,713 enquiries
Online connection applications	2,811 applications received	3,399 applications received
Find your distributor	85,150 hits	153,528 hits
Priority Service Register applications (online)	1,555	2,489

# Stakeholder Engagement

**7.60** The RIIO-ED1 business plan contained three outputs within this theme:

## Stakeholder engagement

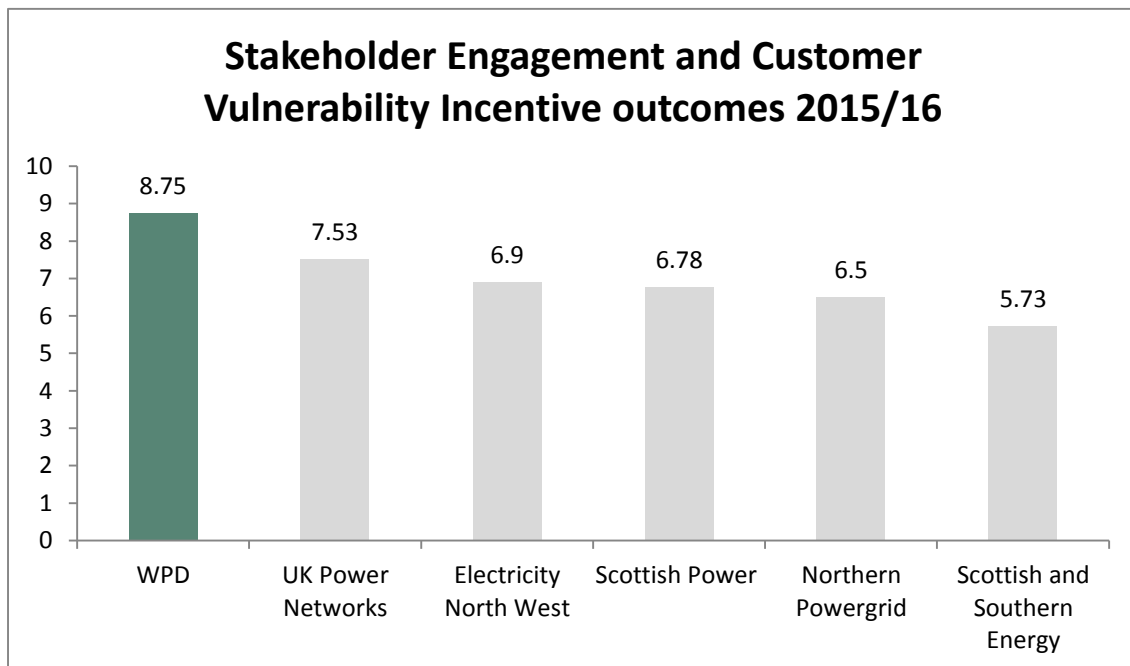
- (54) Continue to host a Customer Panel where the CEO will meet with WPD's expert stakeholders four times a year.
- (55) Continue to host an annual round of at least 6 stakeholder workshops.
- (56) Continue to produce a stakeholder report every year providing an update of actions taken as a result of stakeholder engagement.

**7.61** Regular stakeholder engagement is used to improve day to day operations and inform business priorities. WPD has approximately 5,000 stakeholder contacts, categorised into customer segments, allowing targeted engagement on specific issues.

**7.62** Part of the Broad Measure of Customer Satisfaction relates to stakeholder engagement. For ED1, Ofgem has placed a greater emphasis on service for vulnerable customers as part of the assessment of DNO performance. Ofgem has implemented a Stakeholder Engagement and Consumer Vulnerability (SECV) incentive

**7.63** All DNOs provide information to an Ofgem expert panel about their stakeholder engagement activities and the panel score each company's performance.

**7.64** The results of the assessment in 2015/16 are shown in the chart below, with WPD scoring the highest:





## *(54) The Customer Panel*

- 7.65** Every quarter, WPD's CEO meets with an expert Customer Panel to shape our thinking and future priorities. 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 for 2015/16 were:
- Government legislation and policy
  - Customer awareness
  - Fuel poverty
  - Smart networks

## *(55) Stakeholder Workshops*

- 7.67** In addition to the Customer Panel, WPD engages with a wider audience through an annual round of six stakeholder workshops. These have been carried out for the last 8 years and we have proposed to continue these each year during RIIO-ED1.

- 7.68** In January 2016 we hosted six sessions in locations across the WPD licence areas. 259 stakeholders attended from a range of backgrounds, covering all customer segments. Each workshop included four sessions:



- WPD's Business Plan and reporting progress – stakeholders were consulted on a proposed 3 tier approach to annual reporting
  - Review of WPD's long-term priorities – asking stakeholders to rank their importance and identify any new priorities or emerging factors to consider
  - Spotlight on 'Smart Networks' and 'Affordability' – reviewing our proposed actions and identifying new ones
  - Choice of three specific surgeries covering 'Social Obligations', 'Connections' and 'Becoming a Distribution System Operator'
- 7.69** A summary report detailing the output of these sessions can be found at:
- [www.westernpower.co.uk/docs/Stakeholder-info/2016/Final-Summary-report.aspx](http://www.westernpower.co.uk/docs/Stakeholder-info/2016/Final-Summary-report.aspx)
- 7.70** Proposed actions resulting from stakeholder workshops were reviewed with the Customer Panel for expert consideration before being published in our submission for the Ofgem Stakeholder Engagement and Customer Vulnerability incentive scheme. To view the submission, which provides a detailed summary of our approach to stakeholder engagement please use the following weblink.

[www.westernpower.co.uk/About-us/Stakeholder-information/Stakeholder-Reports.aspx](http://www.westernpower.co.uk/About-us/Stakeholder-information/Stakeholder-Reports.aspx)

## *(56) Producing a stakeholder report*

- 7.71** A report will continue to be produced every year providing a summary update of progress toward delivering RIIO-ED1 output measures. The summary report will be produced concurrently with this detailed report and will focus on the key areas of interest selected by stakeholders. The 2015/16 report is published on WPD's website; this can be found at the following link.

[www.westernpower.co.uk/Summary-Business-Plan-Commitments-Report-2015-16](http://www.westernpower.co.uk/Summary-Business-Plan-Commitments-Report-2015-16)



## Resolution of complaints

**7.72** The RIIO-ED1 business plan contained two outputs within this theme:

### Complaints

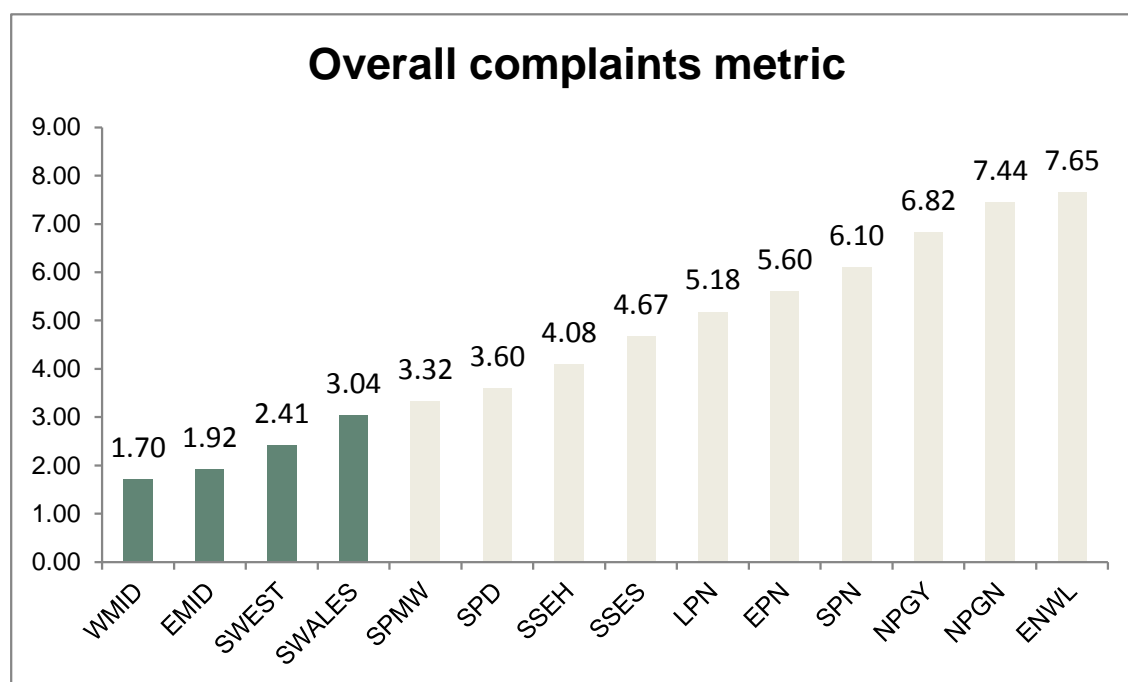
- (57) Resolve at least 70% of complaints within one day.
- (58) Continue to have a target of zero complaints where the Ombudsman has to get involved.

**7.73** 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.

**7.74** Performance in relation to complaints is measured within Ofgem's 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

**7.75** WPD aims to have leading performance in each of these categories, avoiding penalties from Ofgem. For 2015/16 WPD achieved the four lowest complaints scores (calculated using a weighted amalgamation of the four categories) across the DNOs:



**7.76** For 2015/16 the outcomes in each category are detailed below.

### *(57) Complaints resolved in day 1*

**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 licence areas:

Complaints resolved in one day (%)					
	West Midlands	East Midlands	South Wales	South West	WPD Total
Percentage of complaints resolved in day 1 (2015/16)	85%	84%	76%	80%	82%

### Complaints 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	99.26%	98.89%	97.99%	98.53%	98.74%

### Repeat complaints

**7.78** A repeat complaint occurs where a customer returns to WPD at a later date to complain about the same issue. We have had only one repeat complaint during 2015/16.

### *(58) Ombudsman referrals*

**7.79** Where customers are dissatisfied with a DNO's response customers 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.

**7.80** During 2015/16 there have been no complaints requiring investigation by the Ombudsman.

# Awareness of Guaranteed Standards of Performance

7.81 The RIIO-ED1 business plan contained one output within this theme:

## Guaranteed Standards of Performance (GSOPs) awareness

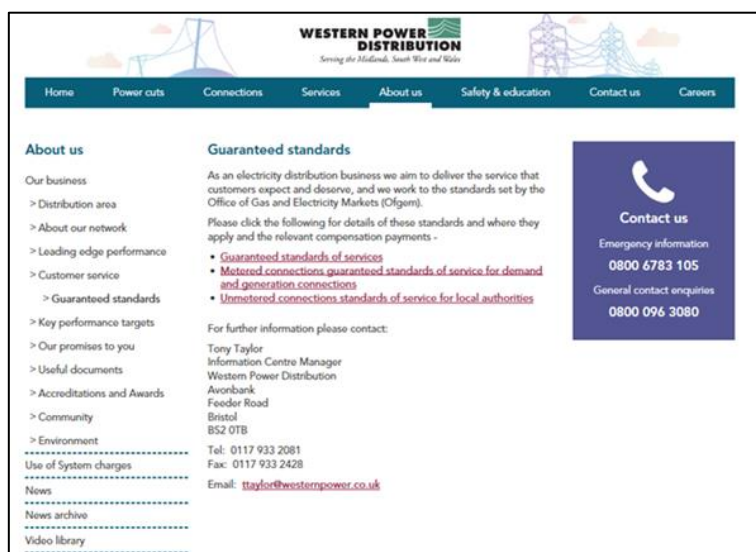
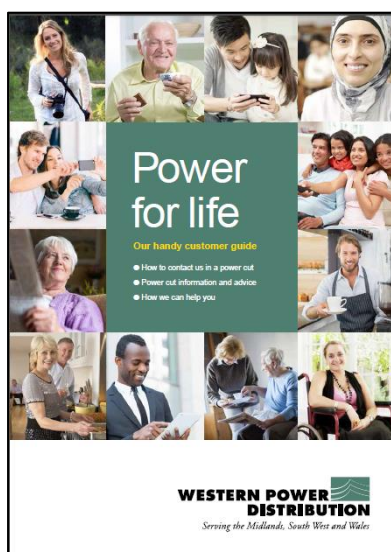
- (59) Continue to send the 'Power for Life' publication to all 7.8 million customers which will include promotion of the GSOPs.

## (59) Raising Awareness of Guaranteed Standards of Performance

7.82 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.

7.83 Where WPD is aware of a failure a payment will be made without the need for a customer to make a claim.

7.84 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 February 2015 to all 7.8 million customers and included information on GSOPs – directing customers to find out more on the company's website. Similar information will be included in the 2016 publication, which has deliberately delayed to coincide with the introduction of the national power loss number 105.



2015-2023

# RIIO-ED1 BUSINESS PLAN

## Business Plan Commitments Report 2015-16

31 October 2016

### Social Obligations

# Social Obligations Contents

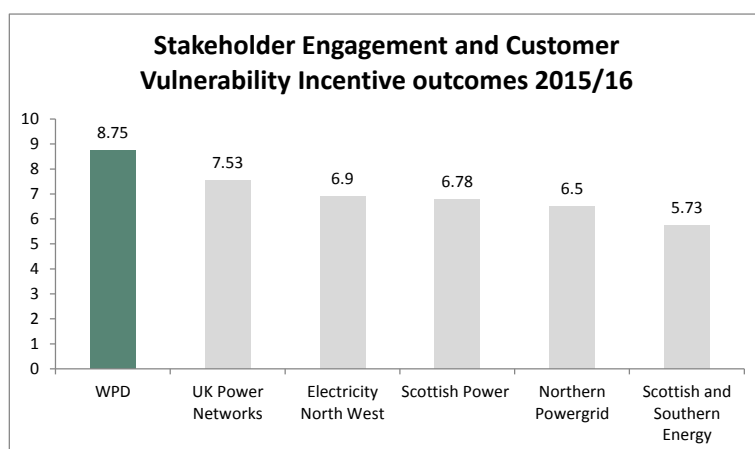
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## 8 Social Obligations

- 8.1** In delivering electricity to 7.8 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 vulnerable customers.
- 8.3** This is informed by Ofgem's definition of vulnerability as circumstances that make an individual 'significantly less able than a typical consumer to protect or represent their own interests; and/or significantly more likely to experience detriment, or for that detriment to be more substantial.'
- 8.4** 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:

- 8.5** Ofgem has implemented a Stakeholder Engagement and Consumer Vulnerability incentive mechanism (SECV). The SECV incentive aims to encourage network companies to engage proactively with stakeholders in order to anticipate their needs and deliver a consumer focussed, socially responsible and sustainable energy service. Rewards are available to network companies who can demonstrate high quality activities against set criteria.
- 8.6** WPD's SECV submissions for 2015/16 can be found via the following weblink:
- [www.westernpower.co.uk/About-us/Stakeholder-information/Stakeholder-Reports.aspx](http://www.westernpower.co.uk/About-us/Stakeholder-information/Stakeholder-Reports.aspx)
- 8.7** The submission provides information explaining WPD's approach to social obligations as well as broader information on stakeholder engagement.
- 8.8** Ofgem's expert panel reviewed the submission and awarded WPD's actions a rating of 8.75 out of 10. This is the highest score awarded in 2015/16, significantly higher than all other electricity distribution network operators (DNOs), gas distribution network operators, gas transmission operators and electricity transmission operators.
- 8.9** Our performance in comparison to the other DNOs can be seen below:



## Overview of Social Obligations Outputs

Improving understanding of vulnerability		
<a href="#">60</a>	Work with expert partners to improve understanding of the needs of vulnerable customers.	Engagement with a wide range of expert partners. Full compliance with the British Standards Institute's vulnerable customer standard (BS18477) for third consecutive year.
<a href="#">61</a>	Train staff to recognise the signs of vulnerability.	Members of our Priority Services Register (PSR) team attended specialist training on supporting vulnerable customers. All contact centre staff attended PSR recognition training.

Improving the data help on the priority services register		
<a href="#">62</a>	Proactively contact vulnerable customers at least once every two years to check the details on the Priority Service Register.	543,401 PSR customers proactively contacted. Our systems ensure that we contact vulnerable customers every two years.
<a href="#">63</a>	Improve the quality of Priority Services Register data by working with other agencies and sharing information.	Established a wide range of PSR referral networks involving agencies who work with vulnerable customers such as Local Authorities and consumer bodies.
<a href="#">64</a>	Coordinate meetings with suppliers to agree criteria for vulnerability.	We play a leading role in the 'Safeguarding Customers Working Group' which meets at least six times a year.

Improving the services provided for vulnerable customers		
<a href="#">65</a>	Raise awareness of the Priority Service Register.	Partnerships with over 20 agencies to register vulnerable customers to be included on the PSR. 21,652 customers added to the register following a parliamentary event to promote the PSR to MPs.
<a href="#">66</a>	Make 10,000 crisis packs available.*	965 crisis packs issued in 2015/16.
<a href="#">67</a>	Contact all medically dependent customers every three hours during power cuts.**	We prioritise calls to medically dependent customers during power cuts. We made 123,866 calls to PSR customers (including medically dependent customers) during power cuts.
<a href="#">68</a>	Continue to provide practical support via the RVS and British Red Cross.	British Red Cross provided support during five prolonged power cuts. New agreement launched with the Nationwide Caterers Association to provide hot food and drinks for communities.
<a href="#">69</a>	Seek feedback from vulnerable customers to improve service.	Customer satisfaction of 9.04/10 for individuals receiving a PSR data cleanse call and 8.92/10 for those referred for fuel poverty support.
<a href="#">70</a>	Develop mechanisms for sharing information with local resilience forums.	Worked with 19 forums across our four licence areas. Projects include a partnership with Fire and Rescue Services to share information on our PSR service.

Address fuel poverty by supporting customers to access key information		
<a href="#">71</a>	Build a database of regional agencies we can refer customers to for assistance.	Fuel poverty projects in all WPD areas, working with a network of support agencies. Assessment of third party services identified 177 agencies for potential collaboration.
<a href="#">72</a>	Work with partners to develop links to/from WPD's website.	Details on our fuel poverty projects, and links to partner organisations available on WPD's website.
<a href="#">73</a>	Develop joint information, awareness campaigns and coordinate assistance with partners.	Four 'Power Up' fuel poverty schemes developed to support fuel poor customers. We supported 5,197 customers to save £958k.
<a href="#">74</a>	Provide bespoke training to WPD front line staff.	PSR team has received training and Contact Centre teams receive regular updates. Work is underway to finish training for our 4,500 field staff in 2016/17.
<a href="#">75</a>	Use data analysis to help identify localities with high concentration of vulnerable households.	We use data developed with the Centre for Sustainable Energy to target and support areas worst affected by fuel poverty.
<a href="#">76</a>	Develop local outreach services.	"Affordable Warmth" outreach schemes developed. We supported 1,162 fuel poor customers.

\* Targets are for the full eight year RIIO-ED1 period, not for a discrete year

\*\* Target to be achieved each year of RIIO-ED1



## Improving understanding of vulnerability

**8.10** The RIIO-ED1 business plan contained two outputs within this theme:

### Improving understanding of vulnerability

- (60) Work with expert partners to improve understanding of the needs of vulnerable customers.
- (61) Train staff to recognise the signs of vulnerability.

**8.11** Traditionally the company has focussed on the specific obligations we have to customers with health issues who may have a greater vulnerability during power cuts (e.g. those using dialysis machines). Stakeholder engagement has influenced what we do and our approach has been widened, leading to the introduction of a Consumer Vulnerability Strategy.

**8.12** The Consumer Vulnerability Strategy encapsulates the company's decision to address social obligations for a broader group of vulnerable customers including customers who have transient vulnerabilities to a power cut (e.g. customers who have recently left hospital) and customers struggling with energy affordability.



**8.13** As a regionally-based DNO, WPD has a number of interactions with customers. Through these interactions we may identify customers that are vulnerable or that have social issues. To help these customers we have developed a range of services.

**8.14** 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:

- age,
- disability,
- medical dependencies on electricity,
- communication needs or
- temporary vulnerabilities.

**8.15** The PSR enables WPD to offer targeted services such as welfare support during power cuts and proactive notification ahead of planned work.

**8.16** During RIIO-ED1, we are improving our understanding of vulnerability to influence how we speak and interact with vulnerable customers and to refine the services that we provide.

## (60) The mechanisms used to improve understanding of vulnerability

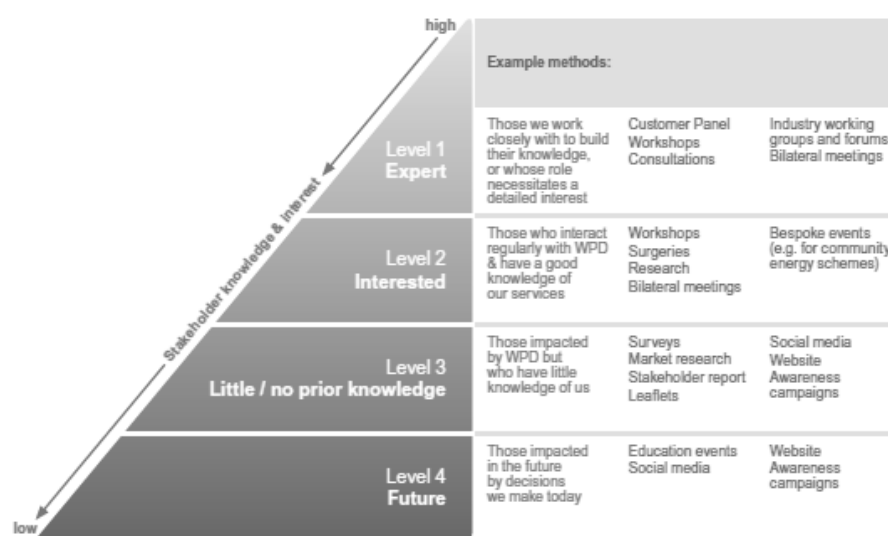
**8.17** WPD uses input from a variety of social groups through stakeholder engagement and partnership projects to help to understand vulnerability.

**8.18** 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
- improve customers' awareness of the services WPD can provide.

### Stakeholder engagement

**8.19** We engage with stakeholders on a variety of levels as demonstrated in the diagram below:



### The Customer panel

**8.20** WPD's Customer Panel is hosted by WPD's Chief Executive and is a key part of WPD's engagement programme. It brings together expert representatives from the major stakeholder groups and entrusts them with full transparency about WPD's performance and future plans. This enables them to critically evaluate our performance, make informed decisions about our activities and provide strategic steer.

**8.21** The Customer Panel is an expert group of 30 permanent members who meet quarterly. Members include an NHS trust, Warm Wales, the National Energy Foundation, British Red Cross, Citizens Advice and Energy Saving Trust, Parish Councillors, a gas distribution network (National Grid) and a supplier (British Gas). The diversity of the customer panel ensures that we are provided with a balanced representation of the views of our stakeholders.

**8.22** The Customer Panel includes an in-depth surgery session on 'social obligations' at every meeting. The outcomes from meetings held during 2015/16 included:

- An updated WPD Consumer Vulnerability Strategy;
- Development of the scope of WPD's key fuel poverty referral schemes, including the introduction of six key capabilities each scheme must deliver;
- The introduction of monthly satisfaction research for WPD's vulnerable customer partnership schemes.

## Stakeholder workshops

- 8.23** WPD hosts annual 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.
- 8.24** The workshops held in January 2016 were attended by 259 individuals representing stakeholder groups that included local authorities, domestic customers, consumer bodies, businesses, developers, utilities and other DNOs.
- 8.25** The agenda for these workshops included a session on 'affordability', which provided stakeholders with the opportunity to review and shape our action plans. A summary presentation was followed by facilitated roundtable discussions and electronic voting to capture stakeholder views. In addition, attendees were provided with an opportunity to attend a more detailed afternoon surgery on 'social obligations' allowing for in-depth discussions of key issues.
- 8.26** Summary findings reports from the workshops, including WPD's action plan to address the key feedback received, can be found at:

[www.westernpower.co.uk/About-us/Stakeholder-information.aspx](http://www.westernpower.co.uk/About-us/Stakeholder-information.aspx) .

## Working with partner organisations

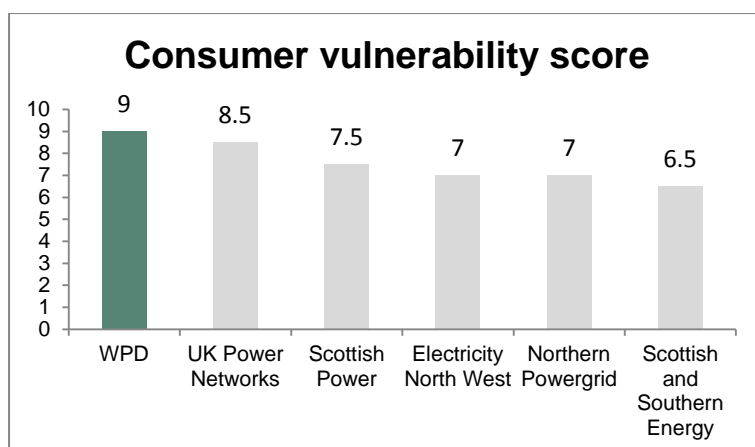
- 8.27** Working with partner organisations helps us to identify vulnerable customers and assist with social issues facing them.
- 8.28** We specifically support a range of partnership projects focussed on issues of consumer vulnerability and fuel poverty.

## External validation of our approach

- 8.29** 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*

- 8.30** As part of Ofgem's annual Stakeholder Engagement and Consumer Vulnerability Incentive, the consumer vulnerability programmes of all Distribution Network Operators undergo an external, independent audit assessment using a balanced score card. This assesses how well we understand vulnerability and the effectiveness of our actions to address this.
- 8.31** In 2015/16 WPD were rated the top performer in the industry for the specific element "Quality of the network company's strategy to address consumer vulnerability and the quality of outcomes delivered".



### 8.32

#### *Standard for inclusive service provision*

**8.33** The British Standards Institute (BSI) – BS18477: Standard for Inclusive Service Provision specifies requirements for identifying and responding to consumer vulnerability. It recognises that vulnerability is dynamic and multi-dimensional, which may vary over time and in different settings.

**8.34** 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, by providing flexible and inclusive services.

**8.35** Each year, BSI undertakes a two day audit of WPD assessing processes against 36 elements in the standard. The audit critically evaluates whether WPD's services effectively address consumer vulnerability, which includes 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;
- New and flexible services have been developed for customers.

**8.36** In April 2016, WPD was assessed as being fully compliant with all aspects of the standard for the third consecutive year – the only UK company to have done so.

**8.37** The BSI standard has led us to make a number of service improvements for customers as a result of our improved understanding of vulnerability. For example as a direct result of the BSI assessment process we have introduced the capability for customers with transient vulnerabilities to join the PSR temporarily for 6, 12 or 18 months. We have adjusted our systems to allow registrations for circumstances such as a customer having a new-born child at home or where a customer has recently been discharged from hospital.

#### *Louder than Words Charter Mark*

**8.38** '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.

**8.39** 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.

#### *Customer Service Excellence Standard*

**8.40** 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.

**8.41** In 2016, the Customer Service Excellence Standard rated WPD 'Compliance Plus' for our consumer vulnerability strategy.

*Centre for Sustainable Energy (CSE) independent audit*

**8.42** Since 2014, prior to the introduction of the SECV incentive, we commissioned the 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.

**8.43** The approach, utilising a balanced scorecard, formed the basis of the consumer vulnerability assessment criteria adopted by Ofgem.

**8.44** This mechanism helps to enhance our understanding of vulnerability and identify improvements to our programme. For example, CSE challenged WPD to introduce targets for key projects before delivery commences, to enable us to better evaluate whether the outputs achieved meet the objectives.

## *(61) Training staff to recognise vulnerability*

**8.45** In 2013 WPD established a dedicated team of staff focussed on updating and maintaining WPD's Priority Services Register. This team is at the forefront of our work with vulnerable customers, 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
- Offer referrals for practical fuel poverty support

**8.46** The process for contacting PSR customers was designed with the help of our Customer Panel. It has no scripts or time quotas.

**8.47** The PSR team is based across both WPD Contact Centres in East Midlands and South Wales. The call handlers have received specialist empathy skills training and attend a range of training and development events to build their understanding of the needs of vulnerable customers. In 2015/16 this included sessions with Dementia UK and Citizens Advice for East Midlands staff and Age Cymru, the Centre for Sustainable Energy and the Energy Savings Trust for South Wales staff.

**8.48** In addition, all Contact Centre staff in South Wales have undertaken specialist training with Hijinx Theatre – a company who employ actors with learning disabilities. Staff participated in bespoke role play sessions which enabled them to build their confidence in communicating effectively with individuals from a range of backgrounds. East Midlands staff are scheduled to attend training with Hijinx Theatre in 2016. Initially the training of PSR staff will be prioritised but this will be extended to include all East Midlands Contact Centre staff in due course.

**8.49** Refresher training is provided to all Contact Centre staff each year. In 2015/16 this included an update on the PSR process and the activities of the PSR team.

**8.50** In 2015/16 we began a programme to develop training for all field staff to help them recognise vulnerability; this training is due to be undertaken in 2016/17.

**8.51** Feedback from customers helps us to ensure that the training we provide is effective. Each month, we survey a proportion of the vulnerable customers who have been contacted by the PSR team. In 2015/16 the overall satisfaction rating of PSR customers receiving calls was 9.04 out of 10.

# Improving the data held on the Priority Services Register

8.52 The RIIO-ED1 business plan contained three outputs within this theme:

## Improve the data held on the Priority Services Register

- (62) Proactively contact vulnerable customers at least once every two years to check the details on the priority service register.
- (63) Improve the quality of Priority Services Register data by working with other agencies and sharing information.
- (64) Co-ordinate meetings with suppliers to agree criteria for vulnerability.

### *(62) Contacting vulnerable customers every two years*

8.53 It is important that the data held on WPD's Priority Service Register (PSR) is accurate so that advice and practical support can be effectively deployed to registered vulnerable customers.

8.54 Most historic data has been added to the PSR via notification from electricity suppliers and over time some of the data held has become out of date.

8.55 We therefore 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.

8.56 Our systems prompt us to contact vulnerable customers every two years. In 2015/16 we proactively contacted 543,401 PSR customers. We contact customers to update their details but also take the opportunity to proactively offer advice to assist customers to improve their resilience to a power cut in advance of such an event.

### *(63) Improving the quality of the Priority Services Register data*

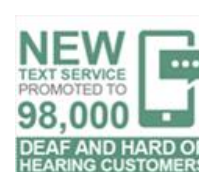
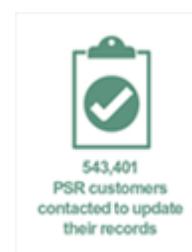
8.57 WPD's dedicated PSR team is responsible for undertaking data cleansing of existing records.

8.58 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.

8.59 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.

8.60 In 2015/2016:

- 543,401 PSR customers were contacted overall. 419,535 of these were contacted via WPD's data cleanse teams, with 58% of the records of those contacted being updated; and 123,866 were contacted via proactive calls to individuals on the PSR during power cuts.
- "Deceased" records were purchased from a data specialist to cross reference with our PSR records. This resulted in the removal of 40,000 records, negating the need for potentially upsetting phone calls to relatives, at a lower cost than making PSR data cleanse calls.
- WPD introduced a new text messaging number for deaf and hard of hearing customers to enable two-way conversations to register power cuts and seek updates. To promote this new service, we wrote to 98,000 deaf customers. We combined this with a request for customers to update their details on the PSR and achieved a 25% response rate, updating nearly 23,950 records.





## Working with other agencies and sharing information

**8.61** Our aim is to ensure that everyone who is eligible for the PSR is given the opportunity to register. We use the PSR categories, agreed by the industry, to identify and assist those vulnerable customers who are in greatest need of support, providing tailored services based upon vulnerability.

**8.62** As a result 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 to
- improve the quality of existing data records held.

## Informed consent and data sharing

- 8.63** Where customers have joined the PSR via their supplier they are often unaware that their data has been shared and the benefits of being registered have not necessarily been explained.
- 8.64** We are therefore working hard to increase direct registrations with WPD, as this improves the quality and completeness of data and we have the opportunity to explain the services that WPD can provide.
- 8.65** In 2015/16 we introduced a new initiative (referred to as informed consent). We work with a network of partner organisations that have access to a wider range of customers groups who can discuss the PSR with customers and identify whether the customer is happy for the agency to add them to the PSR.
- 8.66** We have partnerships in place with 23 organisations including local authorities, energy advice/consumer bodies, and emergency resilience services. Examples of large national partners who we are working with include the British Red Cross, Age Cymru/UK, Citizens Advice and the Energy Saving Trust. We also work with local schemes such as Cardiff Care and Repair, Nottingham City Homes and the Papworth Trust.
- 8.67** For example, in 2015, we worked with other utility companies within our geographic area (National Grid Gas and Wales and West Utilities), to trial mutual promotion of the PSR and data sharing. A pilot partnership, initially in Cardiff, Torquay and Gloucester, where engineers signed up customers identified during gas field works resulted in 613 new PSR registrations in two months.
- 8.68** We also have formal agreements in place with the major oxygen provider in our region. They promote the PSR to customers when they take receipt of an oxygen concentrator and send us the details of customers for inclusion on the PSR every quarter.
- 8.69** WPD has a number of fuel poverty outreach projects in place. Whilst the primary driver of these projects is to provide support for energy affordability, we ensure that projects also address power cut vulnerability, giving resilience advice and promoting the PSR. For example, WPD's Affordable Warmth project, which offers fuel poverty support via a consortium of partner organisations, includes making vulnerable customer aware of the PSR. Out of the 665 customers supported by a pilot scheme in the West Midlands 75% were eligible to be added to the PSR.

### *(64) Working with suppliers (and others)*

- 8.70** As members of the Energy Networks Association (the industry body for UK electricity transmission and distribution) WPD has been working with other DNOs, Suppliers, Ofgem, charities and consumer bodies to agree a new, common set of PSR needs codes. The 'Safeguarding Customers Working Group' meets at least six times a year.

We are playing a leading role in these industry changes to improve data sharing between suppliers and networks. WPD has written and submitted an industry change proposal to implement the new codes from June 2017. The change will also make two-way data-flows automatic so DNOs can send data to, as well as receive it from, suppliers. This change ensures companies are addressing common factors causing vulnerability in relation to energy, working to the same definitions, and offering consistent services across the industry. To enable these changes WPD have also written a privacy impact assessment for all industry parties to adopt and implement.

## Improve the services provided for vulnerable customers

**8.72** The RIIO-ED1 business plan contained six outputs within this theme:

### Improve the services provided for vulnerable customers

- (65) Raise awareness of the Priority Service Register.
- (66) Make 10,000 crisis packs available.
- (67) Contact all medically dependent customers every three hours during power cuts.
- (68) Continue to provide practical support via the RVS and British Red Cross.
- (69) Seek feedback from vulnerable customers to improve service.
- (70) Develop mechanisms for sharing information with local resilience forums.

**8.73** Work has been undertaken during 2015/16 to develop and improve the services provided for vulnerable customers. 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
- Services available to vulnerable customers during a power cut
- Services available to customers during an emergency

### (65) Raising awareness of the PSR

**8.74** 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.

**8.75** WPD's annual newsletter 'Power For Life' was sent to all 7.8m customers in February 2015 promoting the PSR, who is eligible and how to register.

**8.76** 18,000 leaflets promoting the PSR and containing a free-post tear-away registration form were distributed via various community events (such as the Royal Bath and West Country Show and Age UK events) and partner organisations (such as Citizens Advice Bureaux offices and British Red Cross support centres).

**8.77** In December 2015 a Parliamentary reception hosted by WPD focussed on "cutting the risk to vulnerable customers". More than 40 MPs and key stakeholders from Ofgem and DECC attended. The purpose of the event was to get the MPs to promote the PSR to vulnerable customers by showing the MPs data on the number of customers currently on the PSR versus those eligible in each constituency. To help them with the promotion, the MPs were sent a bespoke press release that they could use. An additional 21,652 customers joined WPD's PSR in the 2 months after the MP event – a 38% increase on the same period the previous year.



**8.78** WPD staff are a valuable resource for promoting awareness of the PSR. Training has already been undertaken with Contact Centre teams and from 2016 training will commence for field staff to identify, register and support PSR customers. The training will be provided to all 4,500 field staff and it will cover what the PSR is, who can register, how to register, the various types of welfare support that can be offered through partners such as the British Red Cross and how to arrange for a crisis pack to be sent to a customer.

## *(66) Providing crisis packs*

- 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 2015/16 we distributed 965 packs.
- 8.81** Crisis packs include a flask, torch with batteries, 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. 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 request packs to be sent 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 an outage lasts longer than six hours.

## *(67) Contacting medically dependent customers during a power cut*

- 8.82** 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.
- 8.83** 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.

## *(68) Providing practical support during power cuts*

- 8.84** In 2015/16 we proactively contacted 123,866 vulnerable customers on the PSR to offer reassurance, advice and the latest restoration information about power cuts without them needing to contact us.
- 8.85** 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 has ceased to provide the support we require. Our plans have been revised and we have established a new arrangement with the Nationwide Caterers Association.
- 8.86** Contact Centre staff have the facility to contact the British Red Cross to assist with the provision of warm meals, drinks, crisis packs and general welfare checks during an outage. The British Red Cross provided support at 5 prolonged power cut incidents during 2015/16.
- 8.87** The new agreement with the Nationwide Caterers Association provides hot food and drinks for communities impacted by prolonged power cuts but there have been no occasions where this has been needed in 2015/16. Since there was no call for the service, a trial exercise was

undertaken to check the processes for initiating assistance and the effectiveness of the arrangement.

- 8.88** 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 systems use 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 determine if the individual will require additional support.

### Providing assistance during system emergencies

- 8.89** System emergencies such as damage caused by severe weather can leave vulnerable customers without power for prolonged periods of time.

- 8.90** 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.

- 8.91** In 2015/16 the key capabilities of the Helicopter Unit were extended to include:

- Delivery of provisions to remote customers who are without power
- Customer evacuation
- Delivery of high volume pumps and generation

- 8.92** Elements of this revised remit were actioned in January 2016 when severe flooding in Tewkesbury left engineers unable to access a number of substations. The Helicopter Unit was used to fly over the circuit and pinpoint the location of the problem. A boat and trained staff were used to get to the location to assess the damage and restore power to the majority of affected customers. However two properties were left without power and emergency generators were therefore delivered to the customers by boat to provide a temporary supply. When flood waters failed to abate it became necessary to arrange for larger generators and fuel tanks to be flown in by the helicopter unit. The generators were used until the power lines could be repaired.

- 8.93** These additional capabilities require staff to be trained to prepare them for the challenges associated with severe weather. During 2015/16 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	3	27	38	19	87
Flood Rescue Boat Operator	4	0	0	0	4
Off Road Driver Training	32	11	16	32	91
Water First Responder – operating safely in or near flood water	5	0	0	0	5

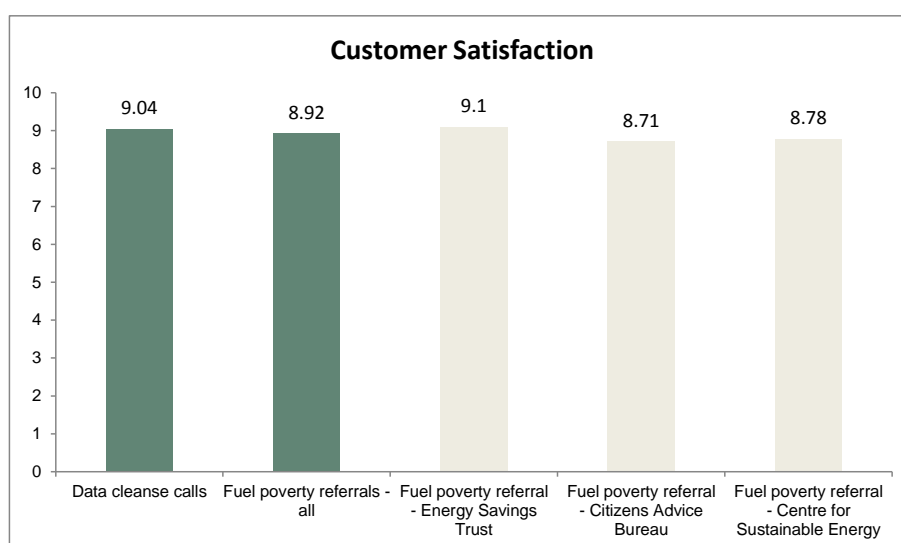
## (69) Feedback from vulnerable customers

**8.94** 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.

**8.95** 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.

**8.96** In 2015/16 we introduced a new survey specifically for vulnerable customers. This measures the impact of the PSR data cleanse team, and the views of customers who have been referred to a partner agency for fuel poverty advice.

**8.97** Results for 2015/16 are as follows:



**8.98** 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.



## (70) Local resilience forums

**8.99** 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 2015/16 WPD worked with 19 forums across the four licence areas, developing external partnerships as a result. Work in 2015/16 includes:

- Establishing partnerships with various Fire and Rescue Services, including South Wales, East Wales and Avon & Somerset to identify and sign-up eligible PSR customers, share data and align our services.
- Developing new incident impact reports and information sharing agreements for emergency services.
- Fire and Rescue Services gaining informed consent to add customers to WPDs PSR via their annual home fire safety checks (South Wales Fire & Rescue Service conduct 25,000 checks a year).



**8.100** We have established seven formal agreements with LRFs for secure, two-way vulnerable customer data sharing in major incidents.

**8.101** WPD continues to be committed to taking an active part with Gold Command arrangements for emergency response during severe weather conditions, working with the emergency services. However, during 2015/16 these arrangements were not activated at any point.

**8.102** In January 2016, WPD participated in a training exercise instigated by the Nottingham and Nottinghamshire Local Resilience Forum. The exercise used a simulated emergency scenario to test the readiness of members to respond without notice.

## Providing information during an emergency

**8.103** 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.

**8.104** When a storm is forecast we increase staffing and provide more communication.

**8.105** As an example the following describes what we did during Storm Imogen in February 2016.

**8.106** Having received weather forecasts several days in advance we arranged for additional staff to be available in call centres and to answer social media and web chat queries.

**8.107** In advance of the storm, tips were posted on Twitter and Facebook on preparing for a power cut (which included a short film) and customers were reminded of WPD contact details and Met Office forecasts.





**8.108** During the storm itself, a 'Power cut alerts' banner was posted on the website home page appearing in red at the top of the page for both desktop and mobile devices. This provided contact information, summary information about the impact of the storm and what we were doing. It also signposted customers to the live online power cut map for details of specific incidents (which was updated every ten minutes) and linked to Twitter where we were posting regular newsfeeds.

**8.109** The website received a record 113,296 web hits in a 24 hour period.

**8.110** As well as providing summary data though the website, the Press Office was available 24 hours a day and handled 31 media enquiries including BBC, ITV, Sky, Radio 5 Live, Radio Wales, Radio Plymouth, Radio Cornwall and Radio Devon.

**8.111** During severe weather regular updates are provided to DECC and Ofgem - 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.



## Address fuel poverty by supporting customers

**8.112** The RIIO-ED1 business plan contained six outputs within this theme:

### Address fuel poverty by supporting customers to access key information

- (71) Build a database of regional agencies we can refer customers to for assistance.
- (72) Work with partners to develop links to/from WPD's website.
- (73) Develop joint information, awareness campaigns and co-ordinate assistance with partners.
- (74) Provide bespoke training to WPD front line staff.
- (75) Use data analysis to help identify localities with high concentration of vulnerable households.
- (76) Develop local outreach services.

**8.113** Some customers struggle to afford electricity and to effectively heat their properties. WPD has contact with over 1 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.

**8.114** 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 influence of stakeholder engagement.

### *(71) Building a database of regional agencies to assist customers with fuel poverty*

**8.115** WPD uses the expertise of other organisations to provide support for fuel poverty. Two different approaches are used:

- WPD referring customers to our partners for fuel poverty support.
- Partners referring customers they have worked with to WPD for registration on the PSR

**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:

- Income maximisation e.g. debt management
- Energy tariffs 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, fire safety checks, etc.

**8.117** To deliver this full range of capabilities, a framework of multiple partners is established 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 manage a network of regional expert partners.

**8.118** Our lead partner organisations are Citizens Advice (two licence areas), Energy Saving Trust and Centre for Sustainable Energy.

**8.119** To enhance our awareness of potential partners we commissioned an assessment of the fuel poverty services across our licence areas. We identified 177 existing services run by organisations such as local authorities and charities. Further surveys were undertaken with 85 of these organisations to develop a more detailed understanding of their services. The exercise also enabled us to identify providers who could offer new types of support within WPD's existing schemes.

## *(72) Working with partners to develop links to/from WPD's website*

**8.120** 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](http://www.westernpower.co.uk/About-us/Priority-Services/Addressing-fuel-poverty.aspx)

## *(73) Developing joint information, awareness campaigns and co-ordinating assistance with partners*

**8.121** The "Power Up" initiative is WPD's referral service where customers identified as requiring fuel affordability help are assisted by a partner organisation.





**8.122** Evolving from a single pilot scheme in 2014, we established three partnerships in 2014/15 and, following further stakeholder engagement, a fourth partnership in February 2016. WPD now has a "Power Up" scheme in each licence area.

**8.123** Each scheme is administered by one lead agency, who then manage a network of local partners to provide comprehensive support.

**8.124** Our lead agencies are Citizens Advice (two licence areas), Energy Saving Trust and Centre for Sustainable Energy.

**8.125** Performance of each scheme is reviewed monthly, which includes tracking the outcome for every referral. Quantitative savings (for the customers) are recorded only when the outcome is confirmed (e.g. following a tariff switch or benefit entitlement changes), alongside qualitative outcomes (e.g. free stair lift installations or subsidised connections to the gas network).

**8.126** In total WPD's "Power Up" schemes supported 5,197 fuel poor customers, who saved a combined £958,000. The outcomes achieved by the individual schemes are summarised below:

Outputs:			
			
Targets: 750+ referrals per scheme. Maximum referral cost £120. Minimum cost benefit of £20 more saved by customer than referral cost			
<b>144 referrals in 2 months*</b>	<b>1,866 referrals</b>	<b>1,900 referrals</b>	<b>1,287 referrals</b>
<b>Saving £127k a year</b>	<b>Saving £322k a year</b>	<b>Saving £81k a year</b>	<b>Saving £428k a year</b>
<b>8.71/10 customer satisfaction</b>	<b>9.10/10 customer satisfaction</b>	<b>8.78/10 customer satisfaction</b>	<b>8.71/10 customer satisfaction</b>
Average referral cost = £104	Average referral cost = £37	Average referral cost = £40	Average referral cost = £93
Average referral saving = £141	Average referral saving = £173	Average referral saving = £43	Average referral saving = £333

## *(74) Providing bespoke training to WPD front line staff*

**8.127** 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.

## *(75) Using data models to identify vulnerability hotspots*

**8.128** 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 target partnership projects to those areas with the greatest need. We propose to refresh the data during 2016/17.

**8.129** In 2015/16 we commissioned an assessment of existing community-based outreach projects (run by organisations including charities and local authorities) in our licence areas. This enabled us to identify new partner organisations with the ability to help to increase direct sign ups to the PSR.

### *(76) Local outreach services*

**8.130** To ensure that we capture the widest possible scope of vulnerable customers we also support fuel poverty outreach schemes.

**8.131** The “Affordable Warmth” project was introduced in November 2014 to provide fuel poverty support via existing community support schemes already working in deprived areas.

**8.132** In the West Midlands we brought together Warm Zones (project leader), Beat the Cold and Marches Energy Agency for an initial six month pilot that supported 665 customers (between November 2014 and May 2015) and delivered £127k total annual savings (£191 per customer, versus an average cost of £75).

**8.133** In addition to providing fuel poverty support, partners are funded to provide power cut resilience advice and to promote WPD’s PSR. Around 75% of those customers supported in the initial pilot were eligible to be placed on WPD’s PSR.

**8.134** In 2015/16, we renewed and expanded the project to support 1,000 customers and introduced the process of partners gaining informed consent to sign up eligible customers to WPD’s PSR directly. In the first three months of this project (January – March 2016) 497 customers were supported, 176 of whom were added to the PSR.

**8.135** Stakeholders have requested that the West Midlands project be replicated across the East Midlands, South Wales and South West and we will be developing “Affordable Warmth” projects in these areas during 2016.

**8.136** A range of potential existing energy affordability schemes within these areas have been identified, however it is not practicable to work with every scheme identified. To identify organisations that can help to tackle fuel poverty in new and innovative ways we have created a £60k “Affordable Warmth Local Action” support fund where schemes bid for funding during 2016. There are two tiers (£5k and £15k) and an assessment mechanism has been devised with the assistance of the Centre for Sustainable Energy.

2015-2023

# RIIO-ED1 BUSINESS PLAN

## Business Plan Commitments Report 2015-16

31 October 2016

### Expenditure

# Expenditure Contents

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# 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 are directly remunerated by customers and 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:
- Load Related Capex
  - Non-Load Related Capex
  - Network Operating Costs
  - Non-Operational Capex
  - Closely Associated Directs
  - Business Support
  - Other Costs Within the Price Control
  - Activity Based Costs Outside the Price Control
  - Non Activity Based Costs (Outside the Price Control)
- 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 2015 to 31 March 2016.
- 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 2015/16 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. Indirect activities have been allocated across activities within and outside the price control.



## Expenditure Summary

- 9.7** In 2015/16, WPD expenditure was 2% higher than Totex allowances for costs within the price control.
- 9.8** 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.
- 9.9** The allowed levels of expenditure for worst served customers and visual amenity are zero because the funding mechanism for these is ex-post (after the expenditure has been incurred) up to an overall cap for the RIIO-ED1 period.

2015/16 Expenditure vs Allowance (2012/13 prices)										
	West Midlands		East Midlands		South Wales		South West		WPD Total	
	Allow'd	15/16	Allow'd	15/16	Allow'd	15/16	Allow'd	15/16	Allow'd	15/16
Connections Related Reinforcement	2.2	5.3	2.0	20.1	1.1	1.2	1.1	2.9	6.4	29.5
General Reinforcement	21.5	27.0	50.6	25.0	3.0	4.7	4.7	5.5	79.8	62.2
<b>LOAD RELATED CAPEX</b>	<b>23.7</b>	<b>32.3</b>	<b>52.7</b>	<b>45.1</b>	<b>4.0</b>	<b>5.9</b>	<b>5.8</b>	<b>8.4</b>	<b>86.2</b>	<b>91.8</b>
Asset Replacement and Refurbishment	66.6	67.2	55.6	58.6	36.6	33.9	58.1	47.3	216.9	207.1
Diversions	10.0	7.4	13.9	11.3	18.1	5.7	14.0	8.2	55.9	32.6
Operational IT and Telecoms	9.2	3.0	11.2	3.7	4.0	1.6	4.2	2.0	28.5	10.2
Quality of Supply	2.7	5.6	1.5	3.9	0.5	1.6	0.5	2.0	5.3	13.1
Worst Served Customers *	0.0	0.1	0.0	0.2	0.0	0.1	0.0	0.0	0.0	0.4
Safety and Overhead Line Clearances	3.4	6.3	3.5	6.5	1.5	4.0	8.6	11.4	17.1	28.2
Flood Defences	0.0	0.1	1.4	1.0	3.8	0.1	0.1	0.4	5.3	1.6
Environmental	0.9	0.6	0.8	0.9	0.5	0.7	0.7	1.3	2.8	3.5
Visual Amenity *	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.7
<b>NON-LOAD RELATED CAPEX</b>	<b>92.8</b>	<b>91.0</b>	<b>87.8</b>	<b>86.0</b>	<b>64.9</b>	<b>47.5</b>	<b>86.2</b>	<b>72.9</b>	<b>331.8</b>	<b>297.4</b>
Faults and other unplanned repairs	29.7	44.2	33.9	38.0	13.7	13.7	24.6	28.1	101.9	124.0
Tree cutting	8.2	14.2	6.4	10.0	7.9	9.9	11.0	13.7	33.4	47.8
Inspections	2.7	3.9	2.8	3.6	2.0	2.6	2.9	3.5	10.4	13.6
Repair and Maintenance	6.6	10.3	5.6	10.5	2.8	4.5	3.8	5.8	18.8	31.1
Other operating costs	3.4	2.0	4.1	2.4	1.6	1.2	2.4	1.9	11.5	7.4
<b>NETWORK OPERATING COSTS</b>	<b>50.6</b>	<b>74.6</b>	<b>52.7</b>	<b>64.4</b>	<b>27.9</b>	<b>31.8</b>	<b>44.7</b>	<b>53.0</b>	<b>176.0</b>	<b>223.8</b>
<b>NON-OPERATIONAL CAPEX</b>	<b>12.8</b>	<b>9.4</b>	<b>10.4</b>	<b>8.0</b>	<b>6.4</b>	<b>6.8</b>	<b>13.0</b>	<b>10.0</b>	<b>42.5</b>	<b>34.2</b>
<b>CLOSELY ASSOCIATED INDIRECTS</b>	<b>53.3</b>	<b>64.8</b>	<b>53.1</b>	<b>65.3</b>	<b>29.1</b>	<b>31.0</b>	<b>42.3</b>	<b>48.8</b>	<b>177.9</b>	<b>210.0</b>
<b>BUSINESS SUPPORT</b>	<b>27.4</b>	<b>25.0</b>	<b>28.5</b>	<b>25.1</b>	<b>14.8</b>	<b>13.6</b>	<b>23.5</b>	<b>21.9</b>	<b>94.3</b>	<b>85.6</b>
<b>OTHER COSTS WITHIN THE PRICE CONTROL</b>	<b>0.2</b>	<b>1.2</b>	<b>0.1</b>	<b>1.6</b>	<b>0.0</b>	<b>0.3</b>	<b>0.0</b>	<b>1.5</b>	<b>0.3</b>	<b>4.5</b>
<b>PRICE CONTROL ADJUSTMENTS</b>	<b>-0.5</b>	<b>-4.2</b>	<b>-0.2</b>	<b>-5.2</b>	<b>-0.2</b>	<b>-2.8</b>	<b>-0.4</b>	<b>-6.1</b>	<b>-1.3</b>	<b>-18.3</b>
<b>TOTAL COSTS WITHIN PRICE CONTROL</b>	<b>260.3</b>	<b>294.1</b>	<b>285.1</b>	<b>290.4</b>	<b>147.1</b>	<b>134.2</b>	<b>215.1</b>	<b>210.4</b>	<b>907.6</b>	<b>929.1</b>
<b>ACTIVITY COSTS OUTSIDE PRICE CONTROL</b>	<b>10.3</b>	<b>15.6</b>	<b>14.9</b>	<b>3.9</b>	<b>5.8</b>	<b>7.2</b>	<b>9.5</b>	<b>10.0</b>	<b>40.5</b>	<b>36.6</b>
<b>NON ACTIVITY BASED COSTS</b>	<b>66.2</b>	<b>68.8</b>	<b>71.9</b>	<b>75.5</b>	<b>52.7</b>	<b>53.3</b>	<b>70.2</b>	<b>60.9</b>	<b>261.0</b>	<b>258.5</b>
<b>TOTAL COSTS</b>	<b>336.8</b>	<b>378.6</b>	<b>372.0</b>	<b>369.8</b>	<b>205.5</b>	<b>194.6</b>	<b>294.8</b>	<b>281.3</b>	<b>1209.1</b>	<b>1224.2</b>

\* Allowances for Worst Served Customers and Visual Amenity are shown as zero because there is an ex-post allowance adjustment for these activities

### Load Related Capex

- 9.10** 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.
- 9.11** In 2015/16 expenditure across the whole of WPD was £91.8m against an allowance of £86.2m. Higher than forecast expenditure in West Midlands, South Wales and South West was balanced against lower than forecast expenditure in East Midlands.
- 9.12** The most significant variation is associated with the amount of network reinforcement required for new connections. Expenditure is almost five times higher at £29.5m compared to a forecast of £6.4m. The forecast (made in 2012/13) assumed 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 £20.1m against an allowance of £2.0m.

- 9.13** 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.

### *Non-Load Related Capex Expenditure*

- 9.14** Non-load related capex is other 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.
- 9.15** In 2015/16, total WPD expenditure for non-load related capex was 10% lower than allowances.
- 9.16** £207.1m was spent on asset replacement and refurbishment against an allowance of £216.9m, with the main underspend being in the South West licence area. Diversion costs were also lower because of delays to rail electrification projects.
- 9.17** 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 £13.1m in this area; more than double the amount forecast.
- 9.18** 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 forecast and higher levels of activity will continue for a number of years.

### *Network Operating Costs*

- 9.19** 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 £223.8m against an allowance of £176.0m.
- 9.20** 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.
- 9.21** 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 forecast.
- 9.22** WPD uses contractors for tree clearance activities. RIIO-ED1 cost forecasts were based upon historical costs, but market conditions have changed. Across utilities and rail companies, there is a higher demand for skilled tree clearance operatives driving contract prices higher. Whilst contract negotiations have sought to minimise cost increases, a balance has to be struck between the quality of workmanship, effectiveness of the contractors and the prices being paid.

## *Non-operational Capex*

- 9.23** Non-operational capex includes the purchase of new IT systems, property, vehicles and small tools and equipment. Expenditure was £34.2m against a forecast of £42.5m with the main variation being due to the timing of IT system refreshes.

## *Closely Associated Indirects*

- 9.24** 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.
- 9.25** Expenditure of £210.0m was incurred in 2015/16, which is 18% higher than forecast.
- 9.26** This increase reflects the additional indirect costs required to support recent increases in levels of connection and reinforcement work. There have also been increases in Operational Training, reflecting additional recruitment of resource into engineering trainee roles.

## *Business Support*

- 9.27** Business support costs include a number of corporate activities that are provided by central functions including human resources, finance and regulation.
- 9.28** Expenditure in these areas was approximately 10% lower than forecast at £85.6m.

## *Other Costs within the Price Control*

- 9.29** Other costs within the price control include atypical activity costs and costs associated with innovation activity which are not funded by the Totex allowance.
- 9.30** The nature of these activities meant that minimal expenditure was included in the 2012/13 business plan. Actual expenditure of £3.2m was incurred on atypical activity and £1.4m on innovation projects in 2015/16.

## *Price Control Adjustments*

- 9.31** Adjustments are made to specific costs within the price control in line with guidance provided by the regulator.

## *Activity Costs outside the Price Control and Non Activity Based Costs*

- 9.32** There are some costs that do not form part of 'regulated' expenditure because they are either directly remunerated by customers or form costs that DNOs do not have control over and are therefore treated as 'pass through' costs. These costs (£295.1m) were broadly in line, albeit slightly lower, than forecast levels.

2015-2023

# RIIO-ED1 BUSINESS PLAN

## Business Plan Commitments Report 2015-16

31 October 2016

### Glossary

# 10 Glossary

## A

### Accident Frequency Rate

The number of accidents that occur annually divided by the number of people employed (allowing 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 network capacity to enable additional connections without further reinforcement.

## B

### Behavioural Safety

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

### Broad Measure of Customer Satisfaction (BMCS)

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

### Building Research Establishment Environmental Assessment Method (BREEAM)

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

### Bund

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

### Business Carbon Footprint (BCF)

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

## C

### Capacity

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

### Capital expenditure (Capex)

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

### Centre for Sustainable Energy (CfSE)

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

### CIRT (Crown Internet Routing & Tracking)

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

### Closed Circuit Television (CCTV)

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

### Common Network Asset Indices Methodology (CNAIM)

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

### Competition in Connections

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

### Condition Based Risk Management (CBRM)

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

### Connections Portal

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

### Cost Benefit Analysis (CBA)

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

### Crisis Packs

A crisis pack can be distributed to customers impacted by power outages, often vulnerable customers who are more likely to suffer a detriment as a result of a prolonged outage. The packs contain a flask,

torch with batteries, gloves, a hat, a reusable hand-warmer, a foil blanket and information leaflets, and 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 Government Department of Energy and Climate Change.

### Demand Response

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

### Distributed Generation (DG)

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

### Distribution Network Operators (DNOs)

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

### Distribution Price Control Review 5 (DPCR5)

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

### Distribution 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.

### Energy Networks Association (ENA)

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

### ENMAC™

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

### Extra High Voltage (EHV)

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

### Exceptional events

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

## F

### Feeder Cable

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

### Fluvial flooding

Flooding related to river or coastal sites.

### Fuel poverty

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

## 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 set by Ofgem, the industry regulator. 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 solar 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 up to, but not including, 22kV.

## I

### Improvement Notice

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

### Incentive on Connections Engagement (ICE)

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

### Independent Distribution Network Operator (IDNO)

A company that can construct electricity networks, arrange connection to the DNOs network, retain ownership of and be responsible for the operation of a new network.

### Independent Connections Provider (ICP)

A company that can construct electricity network for adoption by the DNO.

## Innovation projects

We seek to find better ways of working through innovation projects. Projects can focus on network performance and efficiency, low carbon networks, smart grids and meters, reducing our impact on the environment and developing our approach to customer service. We issue a new Innovation Strategy on a yearly basis detailing our approach to Innovation and the projects that are active within the year.

## 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 and 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

### 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.

### LVA SSA

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

## LVA SSB

Connections customers are categorised by Ofgem according to a range of factors. LVA SSB customers are those seeking two to four domestic connections or one-off commercial connections at low voltage.

## M

### Medically dependent customers

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

### MPAN

Meter point administration number – a way to identify each point of connection to the distribution system.

## N

### National Grid

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

### Network Innovation Allowance (NIA)

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

### Network Innovation Competition (NIC)

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

## O

### Office of Gas and Electricity Markets (Ofgem)

Ofgem is responsible for regulating the gas and electricity markets 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 are therefore regulated by Ofgem to make sure that we provide a high level of service for the money we are allowed to charge. The revenues that can be earned are set for a specific period of time referred to as a price control. The current price control period RIIO-ED1 runs from 1 April 2015 to 31 March 2023.

## Priority Service Register (PSR)

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

## Prohibition Notice

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

## Protection batteries

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

## Q

### Quality of Service (unweighted)

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

## R

### Real Price Effects (RPE)

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

## Reinforcement

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

## Remote Terminal Unit (RTU)

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

## Resilience 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)

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

## RIIO Electricity Distribution 1 (RIIO-ED1)

The price control period that will run from 1 April 2015 to 31 March 2023. It is the first electricity distribution price control that will use 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 to 31 March 2031.

## Routine Tree Cutting

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

## RPI-X

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

## S

## Self-approved designs

In line with the requirement to facilitate competition in connections WPD has initiated a trial for self-approved designs for new connections. The trial includes the development and publication of a set of designs and guidance for simple HV and LV connections to allow ICPs to progress with connections without the need for approval of designs by WPD.

## Self-determined point of connection

In line with the requirement to facilitate competition in connections WPD has initiated a trial that allows ICPs to determine the point at which a connection is made to the distribution network.

## 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 have a smart electricity and gas meter. The smart meter programme will allow WPD much greater visibility of the operational state of the low voltage network.

## Stakeholder Engagement and Consumer Vulnerability Strategy (SECV)

An incentive mechanism introduced for the first year of RIIO-ED1. The incentive is designed to encourage network companies to engage proactively with stakeholders and to deliver a consumer focussed, 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 component by interrupting supplies when there is a fault. Substations vary in size from bulk supply points that supply tens of thousands of customers to pole mounted substations that may supply a single property.

## Sulphur Hexafluoride (SF6)

A potent greenhouse gas widely used in transmission and distribution equipment.

## Supervisory Control and Data Acquisition (SCADA)

This is the term used for the systems used to monitor and control distributed assets. It comprises the remote terminal units, communication infrastructure and human interface within central control rooms.

## Switches

Switches on the network can be turned on or off and are used to alter the routing of electricity, often during a fault scenario. Some switches 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. Time to Connect and Time to Quote targets are expressed in days.

### Third Party Connection Providers

Some elements of connections work are contestable in that they can be carried out by independent providers. 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.

## 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 WPD network is connected to the National Grid 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.

## U

### Uprating Assets

Using larger sized transformers or cables 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 were initially defined as those customers who are medically dependent upon electricity, have special communication requirements or have other special needs with a dependence upon electricity (e.g. stair lift). The definition of vulnerability has been broadened and may include customers who are vulnerable for reasons ranging from permanent and transient vulnerability to a power cut, to energy affordability and fuel poverty.

## W

### Western Power Distribution (WPD)

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

## Worst Served Customers

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

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