RIIO-ED1 Business Plan Commitments Report 2015-2023

Year Five - 2019/20

30 October 2020

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WESTERN POWER DISTRIBUTION

Serving the Midlands, South West and Wales

WPD's Business Plan Commitment Report

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

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

The WPD Business Plan contains 76 outputs (or commitments) established for the RIIO-ED1 period. This document is the Business Plan Commitments Report as required by Standard Licence Condition (SLC) 50. It describes the progress made towards delivering the commitments made within the WPD Business Plan. The report also provides details of further initiatives and new developments since the publication of the Business Plan.

Structure of WPD's Business Plan Commitments reporting

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

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

  yourpowerfuture.westernpower.co.uk/Performance-Snapshot-BP-Commitments-Report-2019-20

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

  yourpowerfuture.westernpower.co.uk/summary-business-plan-commitments-report-2020

- 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, we have included:

- a hyperlinked list of sections below; and
- 'buttons' on the right hand side of every 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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Serving the Midlands, South West and Wales

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RIIO-ED1 Business Plan Commitments Report Year Five – 2019/20

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Foreword

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

Over the course of 2019/20 WPD has overseen a range of exciting new developments as the business continues to evolve and adapt to the challenges posed by the UK's low carbon transition. As the way our customers use and generate energy changes, we are establishing new ways to operate the network and provide enhanced services to achieve a low carbon future.

We are re-examining our approach and delivering change to enable us to undertake Distribution System Operator (DSO) functions alongside our role as a Distribution Network Operator. To this end we have:

- Published details of our roadmap to achieving digitalisation of the energy system and to achieve an 'open data' approach.
- Launched an interactive Energy Data Hub providing easy access to a range of network data.
- Introduced new mechanisms for engaging with Local Authorities to enhance the data used and assumptions for our existing future energy scenarios.
- Significantly expanded the scope of the flexibility services utilised on our network, procuring 220MW of flexible services during 2019/20, impacting over 800,000 customers and achieving £26.4m of deferred/avoided reinforcement.

Against this backdrop of change we continue to work hard to ensure that we provide the highest levels of service possible to our 7.9 million customers.

We made a range of commitments for the current eight-year regulatory price control period and this report provides details of our performance in year five. We continue to be on track to outperform the majority of these targets as well as responding to the changing requirements associated with a smarter, more flexible energy system.

We have reduced the number of customer interruptions and customer minutes lost that customers experience as a result of power cuts, reduced our business carbon footprint, and we have continued to see improvements in our safety record.

Once again we have achieved excellent ratings for customer satisfaction in the Broad Measure of Customer Satisfaction (BMCS) with each WPD licence area achieving higher scores compared to our 2018/19 performance. This performance is achieved through a strong business ethos of customer service and our efforts are demonstrated by our connections results where we achieved an overall score of 9.11 out of 10 for customer satisfaction.

Providing assistance for vulnerable customers continues to be an area of priority. This year we have supported 18,652 fuel poor customers to make enduring annual savings of £10.7m. At the same time we have implemented a number of new initiatives to support our ambition to "ensure that no customer is left behind in a smart future". We have worked with expert stakeholders to understand the ways that customers could be enabled to participate and the reasons why they may be hindered in participating with smart energy offerings and used our findings to update our strategy.

The close of the 2019/20 regulatory year was overshadowed by the impact of the Covid-19. I am immensely proud of the way our staff have adapted to these new challenges and of the fact that our essential services have been delivered with an unwavering focus on customer service. We reacted quickly to adapt and respond to the needs of vulnerable customers, and utilised the Priority Services Register to target local services in need. The challenges associated with the crises have effectively demonstrated the ability of the business to adapt quickly to change and I am confident that WPD will continue to deliver excellent service for our customers over the course of the remainder of RIIO-ED1 and beyond.

Phil Swift, WPD Chief Executive

Performance Snapshot for 2019/20

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	2,498,337	2,665,558	1,142,731	1,628,987
Network Length				
Overhead lines (km)	23,249.5	20,854.1	17,907.7	27,613.8
Underground lines (km)	42,113.7	53,545.7	17,915.5	23,238.3
Other (Subsea cables) (km)	0.4	0.0	8.9	83.7
Total DNO Network Length (km)	65,363.6	74,399.8	35,832.2	50,935.8
Total Expenditure (TOTEX)				
Total Expenditure (£m)	226.0	245.5	120.5	205.4
RIIO-ED1 allowance (£m)	265.5	250.6	136.5	210.7
% of Allowed	85%	98%	88%	98%
Quality of Service (unweighted)				
Customers Interrupted (including exceptional events)	49.4	44.4	47.6	52.6
Customers Minutes Lost (including exceptional events)	26.2	23.7	24.7	37.5
Customers Interrupted (excluding exceptional events)	46.5	42.9	40.5	45.8
Customers Minutes Lost (excluding exceptional events)	24.2	22.7	18.9	31.3
Unrestricted Domestic Tariff (adjusted for typical consumption)				
Tariff Charge (£)	70.1	63.1	88.3	87.2
Connections				
Time to quote (LVSSA) (Days)	2.3	2.2	2.0	3.1
Time to connect (LVSSA) (Days)	28.7	27.5	24.6	26.9
Customer Satisfaction				
Overall Broad Measure of Customer Satisfaction score (out of 10)	9.11	9.13	9.16	9.08
Social Obligations				
Individual stakeholder Engagement and Consumer Vulnerability score (out of 10)	To be confirmed by Ofgem			
Incentive on Connections Engagement (ICE) - penalties incurred under the ICE scheme (£)				
To be confirmed				
Safety - qualitative summary				
In 2019/20 the accident rate for WPD as a whole was 0.75 accidents per 100 staff. The accident rate has continued to improve below the 10% improvement rate set for RIIO-ED1. In 2019/20 there were no improvement notices, prohibition notices or prosecutions from the HSE.				
Environmental impact - qualitative summary				
WPD's business carbon footprint has reduced by 17% in comparison to our benchmark year of 2012/13, we have beaten our in-year target for 2019-20.				
Innovation - qualitative summary				
WPD had 31 innovation projects active during 2019/20. We have seen significant rollout of innovative flexibility initiatives, including procurement of flexibility service via the Flexible Power brand which has procured 220MW of flexible services during 2019/20, impacting over 800,000 customers and achieving £26.4m of deferred/avoided reinforcement. We have published details of our roadmap to achieving digitalisation and launched an interactive Energy Data Hub providing easy access to a wide range of network data.				

*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 2019/20 have been deflated to be comparable to the allowances.
**The values shown are based upon data submitted to Ofgem in table SI1 as part of annual reporting on 31 July 2020. The values in SI1 vary to those stated in other sections of this report. SI1 states the total unweighted impact, whereas in this report we compare performance to targets (which includes application of weighting factors defined by Ofgem). Other differences may arise due to the values used for exceptional event exclusions which are not finalised by Ofgem until after 31 July 2020.

Summary of output performance

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

Safety		
1	HSE Intervention	✓
2	ESQCR clearances	✓
3	Inspection and maintenance	✓
4	Accident frequency	✓
5	Powering Improvement	✓
6	Working with trade unions	✓
7	Investigating accidents	✓
8	Substation security	✓
9	Educational sessions	✓
10	Safety Literature	✓
Reliability		
11	Network performance	✓
12	Speed of restoration	✓
13	12 hour outages	✓
14	Guaranteed standards	✓
15	Worst served customers	✓
16	Flood defences	✓
17	Tree clearance (resilience)	✓
18	Black start resilience	✓
Environment		
19	LCT response time	✘
20	Identifying LCT hotspots	✓
21	Uprating assets – LCT hotspot areas	✓
22	Developing smart solutions	✓
23	Using smart solutions	✓
24	Oversizing transformers for losses	✓
25	Uprating cables for losses	✓
26	Lowering vehicle emissions	✓
27	Energy efficiency – buildings	✓
28	Reducing waste to landfill	✓
29	Reducing BCF	✓
30	Reducing oil leaks from cables	✓
31	Reducing SF_6 leaks	✓
32	Installing bunds	✓
33	Undergrounding lines in AONBs	✓

Key	
✓	Achieved an annual output
✓	Output on track, some aspects require further progress
✘	Not met an annual output

Connections		
34	Time to connect (all market segments)	✓
35	Customer service	✓
36	Customer surveys – distributed generation	✓
37	Online project tracking	✓
38	Online information	✓
39	Connection surgeries	✓
40	Improving processes	✓
41	Guaranteed standards	✓
42	Raising awareness of competition	✓
43	Extending the scope of contestable work	✓
Customer Satisfaction		
44	BMCS	✓
45	CSE certification	✓
46	Telephone response times	✓
47	Abandoned calls	✓
48	Call taker availability	✓
49	Providing restoration times	✓
50	Customer call backs – faults	✓
51	Customer call backs – non faults	✓
52	On demand services	✓
53	Self service options	✓
54	Customer Collaboration panel	✓
55	Stakeholder workshops	✓
56	Stakeholder report	✓
57	One day complaint resolution	✓
58	Ombudsman complaints	✓
59	Power for life	✓
Social Obligations		
60	Understanding of vulnerable customers	✓
61	Training staff to recognise vulnerability	✓
62	Contacting PSR customers	✓
63	Improving PSR data	✓
64	Working with suppliers on PSR issues	✓
65	Publicising the PSR	✓
66	Providing crisis packs	✓
67	Contacting medically dependent customers during faults	✓
68	Practical support during power cuts	✓
69	Feedback from customers	✓
70	Working with local resilience forums	✓
71	Database of referral agencies	✓
72	Fuel poverty website links	✓
73	Awareness campaigns of fuel poverty assistance	✓
74	Fuel poverty training for staff	✓
75	Identification of vulnerable households	✓
76	Outreach services	✓

Executive Summary

Who we are and what we do

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

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

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

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

Our track record

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

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

1.8 Our track record is second to none:

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

Our stakeholders

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

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

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

Our RIIO-ED1 outputs

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

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

Safety

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

1.14 Our accident frequency rate for WPD as a whole during 2019/20 was 0.75 accidents per 100 staff.

1.15 The ratings and feedback from a Safety Climate Survey, undertaken in 2018/19, highlighted a number of areas where our existing approach to safety could be enhanced. These findings have been incorporated into the company 2020 Safety Action Plan. Some actions, such as the implementation of the new lone working system, have already been completed during 2019/20. We are also improving access to policy documents and guidance by the creation of a policy search app on all company mobile devices and further improvements are planned for 2020/21.

1.16 We also focus on ensuring the safety of the public. To date in RIIO-ED1 we have delivered a total of 15,840 educational sessions to 376,686 schoolchildren and delivered safety literature to over 3.8 million customers, 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 continue to invest in the network - maintaining equipment, replacing poor condition assets, providing additional network capacity and undertaking tree clearance to help prevent power cuts. We have also installed remotely controlled equipment that allows us to speed up the restoration of supplies when power cuts do happen.

1.19 Over 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 40% reduction in the number of power cuts and a 50% reduction in the average duration of power cuts. We will continue to work to ensure that this performance is sustained over the remainder of RIIO-ED1.

1.20 WPD recognises the inconvenience of long duration power cuts. Originally we proposed to reduce the number of customers off supply for more than 12 hours by 20% over the course of RIIO-ED1 but we have decided to go beyond this original target. As a result, we have

reduced the number of customers off supply for more than 12 hours from 10,748 in 2012/13 to only 270 in 2019/20.

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 are carrying out projects to reduce the number of customers who are classified as 'worst served' by 20%. Based on 2014/15 performance this requires a reduction of 6,812 customers over the eight year period. To date during RIIO-ED1 we have undertaken projects impacting 12,681 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 increased the volume of resilience tree cutting and we are on track to deliver the higher volumes of activity.

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 already completed 96% of the eight year work programme.

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 used for controlling equipment and communications. We are on track with our work programmes.

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

Environment

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

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

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

1.29 We continue to update and implement our DSO forward plan and have taken a range of important actions during 2019/20 including working with Local Authorities to share our Distribution Future Energy Scenarios, expansion of our Flexible Power product for the procurement of flexibility securing 220MW of flexible services, and development of whole system solutions through our Regional Development Programmes with the Transmission Electricity System Operator (ESO). We have also published our DSO flexibility consultation 'Delivering a Flexibility First Approach' which has been developed to validate our approach to the use of flexibility as an alternative to conventional reinforcement and to ensure these outcomes are transparent, predictable and justified.

1.30 Our extensive innovation programme is providing solutions to adapt the network to changing customer requirements. During 2019/20 we had 31 active innovation projects funded through Ofgem's innovation stimulus. These projects support our aim to provide flexible network solutions that are effective, economic and quicker than the current way of doing things.

1.31 The innovation programme has led to the introduction of alternative connections, which are being utilised to accommodate more generation onto the network and provide lower cost options for connection customers.

1.32 The impact of WPD's activities on the environment is monitored by measuring our business carbon footprint (BCF). We have committed to reducing our BCF by 5% over the course of RIIO-ED1. After establishing this target in 2012/13, our BCF increased during the remainder of the previous price control (DPCR5). Since the start of RIIO-ED1 we have worked to improve performance and have now achieved a 20% reduction in our BCF in comparison to 2012/13.

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

1.34 Power lines can impact on views and the landscape, especially where they pass through iconic areas. We have committed to improving visual amenity in National Parks and Areas of Outstanding Natural Beauty (AONBs) by replacing 55km of overhead lines with underground cables over the course of RIIO-ED1. To date we have completed schemes removing 29.12km of overhead lines across WPD's licence areas. Steering groups established with representatives from AONBs and National Parks are responsible for identifying and prioritising work and the delivery and timing of projects is therefore dependent on the actions of the steering group.

Connections

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

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

1.37 As a result of our engagement with over 17,000 connection stakeholders during 2019/20, we have delivered 38 initiatives on our ICE workplan. We have focussed on a range of new priorities, including acting swiftly to deliver DSO services, strengthening links with local development representatives and updated our guide to electric vehicle charging points, 'Getting Electric Vehicles Moving'.

1.38 We try hard to meet the needs of connection customers and as a result we score highly in customer satisfaction surveys. In 2019/20 we achieved improved performance for each licence area in the section of Ofgem's Broad Measure of Customer Satisfaction (BMCS) for Connections.

1.39 The Guaranteed Standards of Performance (GSOPs) for connections set out the minimum service standards that DNOs must meet under the statutory framework. We have set ourselves the challenging target of achieving zero failures under these standards. In 2019/20 we had only 11 failures.

1.40 Third party connection providers continue to expand their capabilities and we work with them to develop processes that facilitate competition within the connections market. We have continued with trial processes for contestable work covering self-determined points of

connection, self-approved designs and HV connections completed by the Independent Connection Provider (ICP).

Customer satisfaction

1.41 During 2019/20 we continued to be recognised for our excellent levels of customer service. As a DNO group, WPD has achieved one of the highest overall scores for customer satisfaction, derived from combining the three elements of Ofgem's Broad Measure of Customer Satisfaction (supply interruptions, connections and general enquiries).

1.42 We engaged with a range of stakeholders through a variety of events including Customer Collaboration Panels and six annual stakeholder workshops. This engagement helped us to understand and refine our service delivery in line with customer need.

1.43 Our telephone response times are fast. On average fault and emergency calls were answered in 1.91 seconds during 2019/20, beating our ambitious RIIO-ED1 target of two seconds.

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

1.45 When customers call us in relation to a fault we call them back to update them on the progress of the fault and to check if they need any assistance. In 2019/20, we were able to contact 98.64% of customers who had been in contact about a fault and proactively texted over 896,608 customers during HV power cuts. We also provide a range of options for customers to access information on our website.

1.46 We try to get things right, but sometimes things go wrong. When we get complaints we try to resolve them quickly. Our approach has led to us resolving 89% of complaints within one day, beating our RIIO-ED1 target of 70%.

Social obligations

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

1.48 The details of customers in vulnerable situations are held on our Priority Services Register (PSR). Over time this data becomes out of date and we have a team of people contacting vulnerable customers to improve this data and update the records. During 2019/20 the number of people on the PSR has reached 1.9 million and we have proactively contacted 957,000 of those customers.

1.49 We have continued to work with a range of expert partners during 2019/20 in order to improve our understanding of the needs of vulnerable customers. This helps to shape the services that we provide. We have set up 19 new PSR referral networks during 2019/20, taking the total to 106 organisations that we can refer PSR customers to for help and assistance.

1.50 To help customers, especially those that are vulnerable, during power cuts we undertake a range of activities. During 2019/20, we distributed 706 crisis packs (as part of our target of issuing 10,000 packs during RIIO-ED1), made 210,366 calls to PSR customers during power cuts and provided British Red Cross support during 8 prolonged power cuts.

1.51 We consider the factors that can impact vulnerability, including cold homes and energy affordability. WPD works with a range of fuel poverty partners and during 2019/20 supported 18,652 fuel poor customers to save £10.7 million.

Expenditure

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

1.53 To date during RIIO-ED1, WPD expenditure is 2% lower than Totex allowances for costs within the price control.

1.54 Spend on load related capex (expenditure incurred in providing additional capacity on the network) was lower than forecast. All DNOs have seen lower than forecast secondary reinforcement due to lower than forecast impact from low carbon technology. However expenditure associated with the amount of network reinforcement required for new connections was £22.7m against an allowance of £7.5m. The forecast (made in 2012/13) assumed a lower level of higher voltage demand and generation connections than have actually arisen.

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

1.56 Spend on network operating costs (including inspections, repair and maintenance, faults and tree cutting) was higher than forecast. Variations are related to increased spend on repair and maintenance (removing defects from the network), faults and other unplanned repairs, and the costs of tree clearance contractors, which have been higher than forecast.

1.57 Non-operational capex includes the purchase of new IT systems, property, vehicles, and small tools and equipment. Across the four categories expenditure was lower than forecast during 2019/20. There has, however, been investment in management reporting tools, laptop and PC technology refresh, and technology to address internet based cyber threats. There is also an ongoing evaluation of IT requirements as a result of our transition to the role of DSO and work to ensure the security of our systems in the light of cyber security threats.

1.58 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 4.4% higher than forecast. Higher costs were mainly related to expenditure on core labour. There were also increases in expenditure on operational training, which reflects the recruitment of additional engineering trainees.

1.59 Business support (including Human Resources, Finance and Regulation) costs have been 18% lower than forecast.

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

Performance summary of all 76 outputs

Safety

Meeting health and safety law		
1	No improvement notices, prohibition notices and prosecutions from the Health and Safety Executive.*	No improvement notices or HSE prohibition notices were issued during 2019/20.
2	Complete work programmes to meet the Electricity, Safety, Quality and Continuity Regulations (ESQCR) 2002. ESQCR requires that overhead lines are a safe distance from either structures or the ground.	We have completed the programme for clearance distances to structures for all regions. We have completed 100% of the work scheduled in 2019/20 relating to the required ground clearance distances.
3	Complete inspection and maintenance programmes every year.	We completed the nearly all of the work scheduled for completion during the year. A very small number of tasks could not be carried out due to access issues and we put in place appropriate plans to manage these safely until the work was completed.

Reducing accidents		
4	Reduce our overall rate for the frequency of accidents by 10%.*	Our accident rate in 2019/20 is better than the 10% improvement target set for the whole of RIIO-ED1.
5	Continue to play an active part in the ENA's 'Powering Improvement' initiative, which aims to lead to improved safety performance.	We took part in events designed around the ENA 'Powering Improvement' themes, including reviewing progress to date and ensuring last year's recommendations are implemented.
6	Work with our trade unions to improve safety performance, including the use of more 'behavioural safety' initiatives.	During RIIO-ED1 WPD has delivered a wide variety of behavioural safety training to its staff. Using this training as a foundation, during 2019/20 we have continued to reinforce key behavioural safety principles.
7	Investigate all accidents involving members of the public, contractors or our own staff to make sure that learning points are quickly understood and communicated.**	We investigated all 87 incidents that happened during the year (49 staff accidents, 29 contractor accidents and 9 significant incidents involving the public).

Substation security		
8	Improve security measures at 50 substation sites to reduce the number of repeat break-ins.*	The number of repeat break-ins has been lower than predicted. To date in RIIO-ED1, we have upgraded security measures at 19 sites that have had repeat break-ins.

Educating the public		
9	Organise and run over 1,000 educational sessions to provide safety information to over 400,000 schoolchildren.*	So far in RIIO-ED1, we have delivered a total of 15,840 educational sessions to 376,686 schoolchildren.
10	Continue to publish literature on maintaining safety around electrical apparatus and send more than 500,000 copies of this literature to targeted landowners, businesses or leisure operators.*	To date in RIIO-ED1, we have issued over 3.6 million safety leaflets and made these available to targeted groups through social media.

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

Reliability

Network performance		
11	Improve network performance by the end of RIIO-ED1 so that, on average, customers will have 16% fewer power cuts and have their electricity supplies restored 23% quicker. *	Customer interruptions have reduced by 40% and customer minutes lost have reduced by 50% from the underlying performance benchmark.
12	Make sure that at least 85% of customers have their power restored within an hour of a high voltage fault happening.**	88% of customers had their power restored within one hour of a high voltage fault.
Guaranteed Standards of Performance (GSOPs)		
13	Reduce by 20% the number of customers experiencing a power cut which lasts for 12 hours or more.*	The number of customers without electricity for more than 12 hours (where the GSOP applied) was 70, an improvement of over 97.5% on our 2012/13 benchmark performance. Customers received a set payment where we failed to achieve the GSOP.
14	Achieve no failures on all other GSOPs.**	We had no failures against most GSOP categories. However, we failed to notify 14 customers of planned interruptions to their electricity supply and failed to meet the standard for restoring supply following a storm for 12 customers.
Worst served customers		
15	Reduce by 20% the number of customers classified as worst served.*	To date, projects to reduce the number of worst served customers have been put in place for 12,681 customers. Our target for the whole of RIIO-ED1 was 6,812 customers.
Making our network more resilient		
16	Apply flood defences to 75 substations, reducing the risk of both damage to equipment and power cuts due to flooding.*	We are on track to achieve our RIIO-ED1 targets. To date, we have installed flood defences at 72 substations.
17	Speed up the programme of tree clearance (specifically related to storm resilience) by 40%, with the aim of clearing 700km of overhead lines per year (delivering the programme five years earlier than suggested by Government guidelines).*	The programme is ahead of plan. We have completed 65% of the programme of tree clearance for resilience that we committed to for the whole of RIIO-ED1.
18	Improve substation battery life to last for 72 hours if there is a major, network-wide power loss.*	All programmes are ahead of plan. Protection batteries – 85% of eight-year programme complete. SCADA batteries – 81% of eight-year programme complete. Telecommunications sites – 92% 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

Environment

Make it possible for more people to use low carbon technologies (LCTs)		
19	Improve by 20% the time taken to provide a response to customers who want to use LCTs.*	We are receiving increased volumes of notifications which we are addressing quickly, but the volumes of enquiries mean that we have not been able to improve our response times.
20	Identify LCT hotspots using information from smart meters, expert organisations and local authorities, and use this information when making decisions.	The project LCT Detection has proven that a model can be developed to spot unregistered LCTs connected at household level. The data gathered from this project has been used to refresh the LCT hotspot data held in our asset register database and mapping system.
21	Selectively replace assets using larger assets in areas where more LCTs may be connected to our network.	We carried out 27 asset replacement projects using larger assets, as a result of using information about LCT hotspots.
22	Reduce costs for future customers by developing smart solutions to provide alternative and innovative techniques for managing our network.	We had a wide range of innovation projects in progress during the year.
23	Provide additional network capacity by using traditional or 'smart' methods.	We have continued to develop the Flexible Power brand and increased the number of substations utilising flexibility from 71 in 2018/19 to 122 in 2019/20.
Reduce technical network losses		
24	Install oversized transformers when replacing assets in areas where demand for power may become higher than equipment can cope with.	We installed 27 oversized transformers.
25	Use larger cables when installing new network in LCT hotspots.	We installed 2.93km of larger cable in LCT hotspots.
Reduce the carbon footprint of the business		
26	Make sure all replacement vehicles have lower CO_2 emissions than those they are replacing.	WPD operational vehicle emissions have reduced by 11% compared to 2018/19, but there have been increases in vehicle emissions reported to us by our contractors. This means we have slightly missed our target for 2019/20.
27	Make sure all new or substantially refurbished buildings meet, as a minimum, the 'excellent' standard under the Building Research Establishment Environmental Assessment Method (BREEAM).**	We have not completed any depot construction or refurbishment works during 2019/20.
28	Reduce the amount of waste sent to landfill by 20% over the first two years of RIIO-ED1 and 5% per year after this.	We have seen a reduction in the amount of waste sent to landfill, and we have achieved our target for the whole of RIIO-ED1.
29	Reduce our carbon footprint by 5%.*	Our business carbon footprint has reduced by 20% compared with 2012/13. We have beaten our in-year target.
Reduce the environmental risk of leaks from equipment		
30	Reduce by 75% the amount of oil lost through leaks from oil-filled cables.*	The leak volume from oil-filled cables has significantly decreased. We have beaten our in-year target.
31	Reduce by 17% the amount of SF6 gas that is lost from switchgear.*	The amount of SF_6 gas lost as a percentage of the total amount of SF_6 used on our network has reduced from 0.47% in 2015/16 to 0.19% in 2019/20 for the whole of our area. However, we missed our in-year target in the South West.
32	Install effective oil containment 'bunds' around plant containing high volumes of oil.*	We have completed work on 173 new and refurbished bunds so far in RIIO-ED1, going further than our forecast of 104 bunds.
Improve the appearance in National Parks and Areas of Outstanding Natural Beauty (AONBs)		
33	Replace 55km of overhead lines in National Parks and AONBs with underground cables.*	To date during RIIO-ED1, we have replaced 29.12 km of overhead lines with underground cables for visual amenity in AONBs.

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

Connections

Provide a faster and more efficient connections service		
34	Meet Ofgem's targets for the overall 'time to quote' and 'time to connect' for single domestic connections and small commercial connections. Improve the overall time taken to provide a quote for all other customer groups by 20%.*	We outperformed Ofgem's targets for 'time to quote' and 'time to connect' for single domestic connections and small commercial connections. We have also beaten targets for three of the other customer groups.
35	Provide excellent customer service so that customers continue to rank us as the top-performing DNO group in customer satisfaction surveys.**	We are one of the top performing DNOs for the Connections Customer Survey in Ofgem's Broad Measure of Customer Satisfaction, scoring an average of 8.99 out of 10 for our DNO group.
36	Carry out surveys with distributed generation customers to find out if they are satisfied with our service and identify where we could improve.	We achieved a score of 9.44 out of 10 for distributed generation customer satisfaction surveys. We have specified a range of improvements within our work plan for the Incentive on Connections Engagement (ICE).
Improve communication with customers		
37	Develop and improve the way we process online connection applications and make it easier for customers to track the progress of their application online.	We have made amendments to our online connections information in line with stakeholder requirements. These have been published in our ICE work plan.
38	Make sure that the information we provide in documents and online is effective.	We have improved the information we provide in documents and online in line with stakeholder feedback.
Enhance engagement with major customers		
39	Host 'surgeries' every three months to help connection customers to understand our processes.	241 connection surgeries took place across our four licence areas.
40	Work with major customers to identify where our processes can be improved and quickly put in place any changes.	We engaged with over 17,000 stakeholders through events and over 1,700 through customer satisfaction surveys. The actions in our ICE work plan are based on suggestions we received from these events and surveys.
Guaranteed Standards of Performance		
41	Aim to achieve no failures of the connection GSOPs.**	There were only 11 failures against the connection Guaranteed Standards of Performance during 2019/20. We had a further seven failures against Competition in Connection standards, which relate to services we provide that cannot be carried out by competitors.
Further developing a competitive market		
42	Improve customer awareness of other connection providers and regularly check that customers understand the options available to them.	We provide clear information for customers explaining that they can use other connection providers. We carry out a yearly survey to measure customer awareness. The 2019/20 survey showed that 87% of customers who had a new connection were aware of other providers.
43	Work with other connection providers to extend the type of work they can carry out, including high voltage and reinforcement work.	We host a group to focus on the specific needs of other connection providers. Two sessions took place during 2019/20 and we used feedback to improve our processes.

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

Customer Satisfaction

Customer service		
44	Continue to be the top-performing DNO group across all elements of the Broad Measure of Customer Satisfaction.**	WPD is a top-performing DNO group for overall customer satisfaction. The rating combines results of the three surveys for supply interruptions, connections and general enquiries.
45	Maintain certification to show that we meet the Customer Service Excellence standard.**	We were awarded 'Compliance Plus' status for 45 of the 57 standards. We were the highest-scoring organisation out of all those accredited.
Telephone response		
46	Respond to phone calls quickly, answering them within two seconds.**	Our average response time for customer calls was 1.91 seconds for fault and emergency calls.
47	Limit the number of calls that are abandoned before we can answer them to less than 1%.**	Only 0.16% of calls were abandoned.
48	Always provide customers with the option to talk to a member of staff when they call our contact centre.	Our systems allow us to make sure that customers are always provided with the option to talk to a member of staff.
Communication with customers		
49	Provide a restoration time for every power cut.**	All power cuts have an estimated restoration time which is updated as further information is provided by field teams.
50	Contact all customers who have been in contact about a fault.**	We contacted 98.6% of customers who contacted us about a fault.
51	Contact customers within two days of receiving an enquiry which was not about a fault.**	We contacted 99.6% of customers who contacted us with an enquiry which was not about a fault within two days.
52	Provide 'on-demand' messaging through text and social media for customers who want to be kept informed in other ways, rather than a phone call.	We provided on-demand messaging through text and social media. We sent 896,608 text messages during high voltage power cuts.
53	Develop 'self-service' options for customers to find information online.	We hosted 18,561 webchat conversations, our app for reporting power cuts was downloaded 18,078 times and we had 2.4 million hits on our online map showing details of individual power cuts.
Involving stakeholders		
54	Continue to host a customer collaboration panel where our CEO will meet with our expert stakeholders four times a year.	The Customer Collaboration Panel met four times during the year. We continued to work with the new Customer Engagement Group to enable the members to challenge our plans for the next price control period.
55	Continue to host at least six stakeholder workshops each year.	We hosted six general sessions, attended by over 380 stakeholders across our licence areas.
56	Continue to produce a stakeholder report every year providing an update on the actions we have taken as a result of stakeholder involvement.	This yearly Business Plan Commitments summary report and the separate detailed report replace the stakeholder report.
Complaints		
57	Resolve at least 70% of complaints within one day.**	We resolved 89% of complaints within one day.
58	Continue to have a target of no complaints where the Ombudsman has to get involved.**	There were five complaints referred to the Ombudsman. In all cases the ombudsman did not rule against WPD.
Guaranteed Standards of Performance awareness		
59	Continue to send the 'Power for Life' publication to all 7.9 million customers and make sure it promotes the GSOPs.**	We issued 'Power for Life' to all 7.9 million customers in November 2019. It 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

Social Obligations

Improving understanding of vulnerability		
60	Work with expert partners to improve our understanding of the needs of customers in vulnerable situations	We worked with a wide range of expert partners and were certified to the British Standards Institute Standard BS18477, which specifies requirements for responding to customers in vulnerable situations.
61	Train staff to recognise the signs of vulnerability.	We provided specialist training to the Priority Services Register (PSR) teams and contact centre staff. Field staff are trained on registering customers to the PSR.
Improving the data held on the Priority Services Register		
62	Contact vulnerable customers at least once every two years to check the details we hold on the Priority Services Register.	We contacted over 950,000 PSR customers during 2019/20, which allowed us to update 30% of our records.
63	Improve the quality of Priority Services Register data by working with other agencies and sharing information.	We increased the number of referral partners that we work with. We added 19 new partners, with the aim of achieving a better balance in the types of agencies that we work with.
64	Co-ordinate meetings with suppliers to agree criteria for vulnerability.	27 new 'common needs codes' are now in use across the industry.
Improving the services provided for customers in vulnerable situations		
65	Raise awareness of the Priority Services Register.	We worked with a range of organisations, including a mental health organisation and fire and rescue services, to raise awareness of the PSR.
66	Make 10,000 crisis packs available.*	To date we have issued 7,468 crisis packs over the RIIO-ED1 period.
67	Contact all customers who depend on a power supply for medical reasons every three hours during power cuts.**	During power cuts we prioritise contacting customers who depend on a power supply for medical reasons. We called 82% of these customers within one hour of a fault and 97.5% in under two hours.
68	Continue to provide practical support through the British Red Cross and other organisations as appropriate.	We provided British Red Cross support during eight prolonged power cuts, supporting 71 customers in total.
69	Ask for feedback from customers in vulnerable situations about our service.	We achieved customer satisfaction ratings of 9.5 out of 10 from customers on the PSR who had received a routine call to check their personal details.
70	Develop ways of sharing information with local resilience forums.	We worked with 19 forums across our four licence areas. For 2019/20 this included offering the support of our helicopter unit during severe weather.
Reducing fuel poverty by supporting customers to access help		
71	Build a database of regional agencies we can refer customers to for help.	There are fuel poverty projects in all our areas, working with a network of support agencies.
72	Work with partners to develop links to and from our website.	Details on our fuel poverty projects and links to partner organisations are available on our website.
73	Develop joint information and awareness campaigns, and co-ordinate with partners to provide customers with help.	We have six 'Power Up' fuel poverty schemes to support customers who are facing fuel poverty. We supported 8,672 customers to save over £2.6 million a year.
74	Provide fuel poverty training to our staff who have contact with members of the public.	We provide staff in our contact centre with customised training on fuel poverty and customers in vulnerable situations.
75	Use data analysis to help identify areas with a high concentration of vulnerable households.	We use data analysis to identify areas with a high concentration of vulnerable households. During 2019/20 we increased the number of data indicators and vulnerability factors we consider.
76	Develop local outreach services.	'Affordable Warmth' and other outreach services helped 7,975 customers to save over £7.1 million a year.

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

Introduction

RIIO-ED1 Business Plan Commitments Report
Year Five – 2019/20

30 October 2020

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2 Introduction

Who we are and what we do

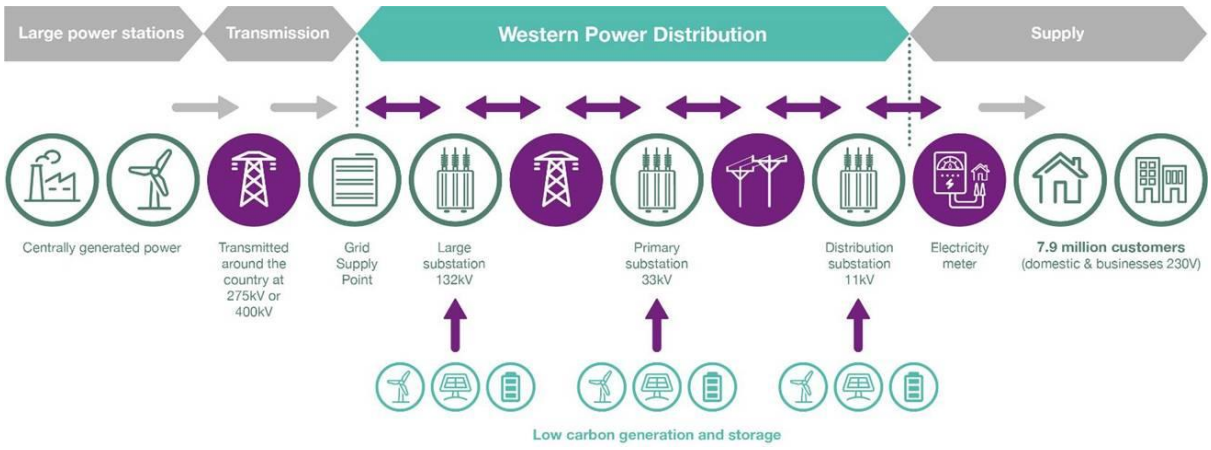
2.1 WPD is a Distribution Network Operator (DNO) and distributes electricity to 7.9 million customers across the Midlands, South Wales and the South West. Our role is to:

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

2.2 All of these tasks are carried out with the highest regard for the safety of our staff, contractors and members of the public.

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

2.4 This network sits between what was traditionally known as the National Grid transmission network and customers. More recently the drive towards a low carbon economy has led to increasing levels of generation directly connected to the distribution network and rapid growth of new forms of electricity demand such as electric vehicles and battery storage.



2.5 These changes mean that we will need to change the way that we operate our network. We will have a greater need to forecast energy production and usage, and actively manage energy flows across the network. This will require a transition from the relatively passive role

of DNO to a more active role as a Distribution System Operator (DSO) with greater responsibility for balancing sources of energy and demand.

2.6 The WPD network comprises:

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

*WPD total may not reconcile due to rounding.

2.7 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.

2.8 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.

2.9 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.

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

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

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

2.12 Even though we are actively 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).

2.13 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.

2.14 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.

2.15 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.

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

WPD's RIIO-ED1 Business Plan

2.17 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.

2.18 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.

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

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

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

Forecast expenditure

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

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

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

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

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

2.30 Following our 2017 workshops we listened to stakeholders and enhanced the existing expenditure information that we provided and simplified the technical explanations included within our detailed reporting.

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

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

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

Useful links

- WPD's 2019/20 submissions for the Incentive on Connections Engagement.

yourpowerfuture.westernpower.co.uk/our-engagement-groups/connection-customer-engagement/incentive-for-connections-engagement

- Competition in Connections Code of Practice.

www.westernpower.co.uk/connections-landing/competition-in-connections/competition-in-connections-code-of-practice

- WPD's Competition in Connections webpage.

www.westernpower.co.uk/connections-landing/competition-in-connections

- WPD's 2019/20 submissions for the Stakeholder Engagement and Customer Vulnerability Incentive.

yourpowerfuture.westernpower.co.uk/ofgems-secv-incentive

- WPD's Environment Report.

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

- WPD's Losses Strategy.

www.westernpower.co.uk/our-network/losses/electrical-losses

- WPD's Innovation Strategy.

www.westernpower.co.uk/innovation/innovation-strategy

- WPD's RIIO-ED1 Business Plan.

yourpowerfuture.westernpower.co.uk/our-future-business-plan/our-riioed1-business-plan

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

www.westernpower.co.uk/customers-and-community/guaranteed-standards

- Link to our video guides for Community Energy Schemes.

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

- Link to our Regional Strategic Investment Options reports

www.westernpower.co.uk/our-network/network-strategy/strategic-investment-options-shaping-subtransmission

- Link to information on our DSO strategy

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

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

Meeting health and safety law		
1	No improvement notices, prohibition notices and prosecutions from the Health and Safety Executive.*	No improvement notices or HSE prohibition notices were issued during 2019/20.
2	Complete work programmes to meet the Electricity, Safety, Quality and Continuity Regulations (ESQCR) 2002. ESQCR requires that overhead lines are a safe distance from either structures or the ground.	We have completed the programme for clearance distances to structures for all regions. We have completed 100% of the work scheduled in 2019/20 relating to the required ground clearance distances.
3	Complete inspection and maintenance programmes every year.	We completed the nearly all of the work scheduled for completion during the year. A very small number of tasks could not be carried out due to access issues and we put in place appropriate plans to manage these safely until the work was completed.
Reducing accidents		
4	Reduce our overall rate for the frequency of accidents by 10%.*	Our accident rate in 2019/20 is better than the 10% improvement target set for the whole of RIIO-ED1.
5	Continue to play an active part in the ENA's 'Powering Improvement' initiative, which aims to lead to improved safety performance.	We took part in events designed around the ENA 'Powering Improvement' themes, including reviewing progress to date and ensuring last year's recommendations are implemented.
6	Work with our trade unions to improve safety performance, including the use of more 'behavioural safety' initiatives.	During RIIO-ED1 WPD has delivered a wide variety of behavioural safety training to its staff. Using this training as a foundation, during 2019/20 we have continued to reinforce key behavioural safety principles.
7	Investigate all accidents involving members of the public, contractors or our own staff to make sure that learning points are quickly understood and communicated.**	We investigated all 87 incidents that happened during the year (49 staff accidents, 29 contractor accidents and 9 significant incidents involving the public).
Substation security		
8	Improve security measures at 50 substation sites to reduce the number of repeat break-ins.*	The number of repeat break-ins has been lower than predicted. To date in RIIO-ED1, we have upgraded security measures at 19 sites that have had repeat break-ins.
Educating the public		
9	Organise and run over 1,000 educational sessions to provide safety information to over 400,000 schoolchildren.*	So far in RIIO-ED1, we have delivered a total of 15,840 educational sessions to 376,686 schoolchildren.
10	Continue to publish literature on maintaining safety around electrical apparatus and send more than 500,000 copies of this literature to targeted landowners, businesses or leisure operators.*	To date in RIIO-ED1, we have issued over 3.6 million safety leaflets and made these available to targeted groups through social media.

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

Meeting health and safety law

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

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

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

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

3.7 During 2019/20 there have been no improvement notices, prohibition notices or prosecutions from the HSE.

3.8 We are awaiting the outcome of our appeal against a prohibition notice that was issued by the HSE during 2016/17.

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

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

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

3.10 Work programmes for regulation 18 are complete.

3.11 For Regulation 17 (clearance to ground), WPD has established a risk based assessment process that measures the existing clearance height and assesses locational risk. The results determine the timescales for rectification of low ground clearance defects and therefore provide ongoing deadlines for the forward workplan (between 3 and 13 years). Initial assessments were completed in 2016, leading to a programme of defect rectification. The required timeframes for resolving defects can extend up to thirteen years and as a result there will be activity that continues into RIIO-ED2.

3.12 The achievement of resolving defects within the required timeframes is monitored through key performance indicators. At the close of 2019/20 there were no regulation 17 defects that had not been rectified within the timeframes indicated by the risk assessment process.

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

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

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

3.15 In addition to the weekly reports, managers can use an online 'dashboard' system for monitoring progress in carrying out operational tasks. This provides a high level view of progress and the ability to drill down into the underlying data, which is updated automatically on a daily basis.

3.16 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. A risk assessment, including any planned remedial action, is completed for every instance where maintenance arrears arise. All risk assessments are reviewed by the Network Services Manager who has responsibility for all operational activities within the licence area.

3.17 Condition assessments are carried out during inspection and maintenance work. The results are recorded as either condition statuses, test results or 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.

3.18 All field teams are issued with iPads for recording of information. We continue to introduce new bespoke applications and develop existing ones to enhance the variety of records available, improve ease of access, and allow for automatic information updates from site. In 2019/20 this included:

- improving risk assessment processes through the introduction of a Project Risk Register app designed to identify and manage potential issues at an earlier stage; and
- the revision of oil leak assessment on distribution plant, such as transformers or switchgear. This assessment now includes a multi-level rating system which, if the leak is deemed more than slight, systematically notifies the responsible local Manager so that repairs can be arranged.

3.19 Enhancements such as these ensure that our mechanisms for capturing information about the current status of the network are efficient and effective.

Reducing accidents

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

3.20 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.

3.21 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.

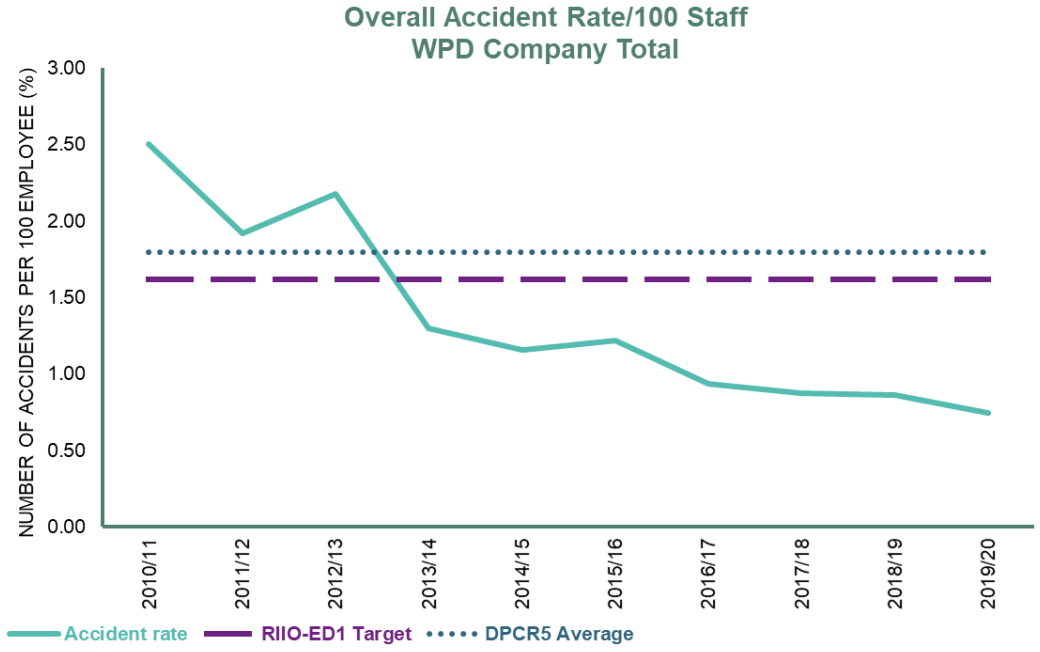
3.22 Each year, a safety action plan is produced based on recent accident reports, near misses, industry incidents and any legal, regulatory or industry wide initiatives.

3.23 In 2019/20 a range of initiatives were used to promote improving safety including:

- The expansion of the Safety and Training Media site to provide tailored information to operational staff
- A new lone working system 'LOST' has been developed and implemented across the business to improve communication and awareness of staff working in lone situations.
- Actions to reduce vehicle accidents: including installation of dashboard cameras and a Driver Behavioural System (DBS) trial. The DBS trial results are currently being evaluated.

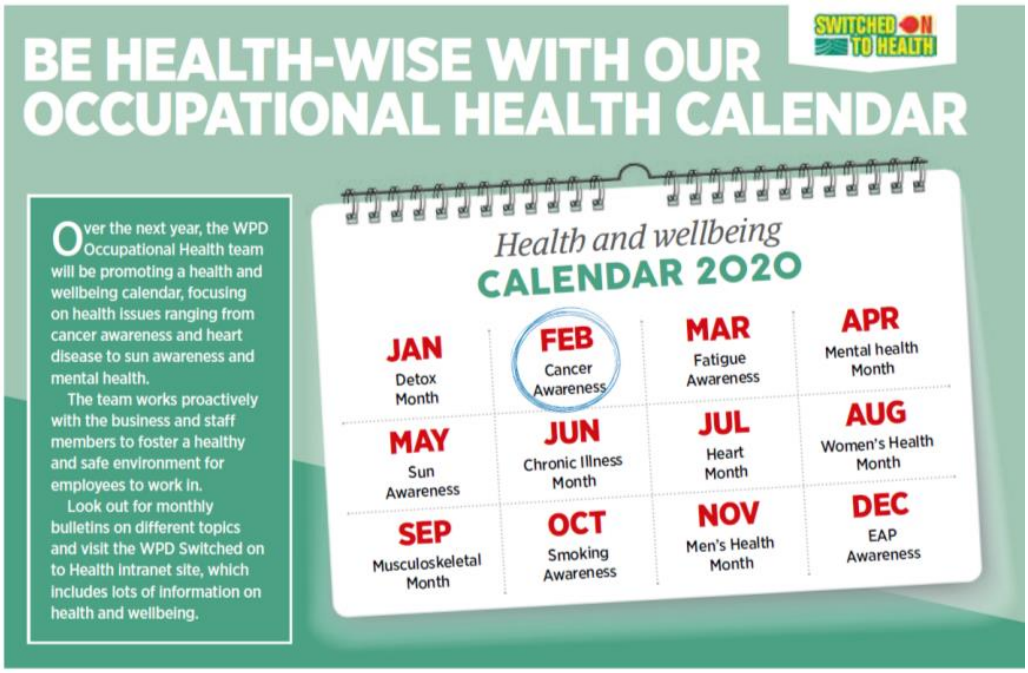
3.24 Accident frequency rate is derived from the number of annual accidents and the number of staff, and is expressed as 'accidents per 100 members of staff'. This allows performance to be compared across differently sized teams and organisations. The accident rate includes both accidents which have resulted in lost time absence and those where the individual has been able to continue to work despite the accident.

3.25 In 2019/20 the accident rate for WPD as a whole was 0.75 accidents per 100 staff. This was an improvement on the 2018/19 accident rate of 0.86 and better than the RIIO-ED1 target. The improving trend in safety performance is shown in the following chart.



3.26 Our employee well-being initiative 'Switched on to Health' also continued through 2019/20. Below is a summary of some of the actions taken during 2019/20.

- Following on from the success of previous years, WPD continued to use WellPoint Health Kiosks which through a series of interactive questions and measurements help to automatically identify a number of potential health concerns such as high blood pressure, obesity, or heart age greater than the user's actual age. These devices were moved around all major depots within WPD giving staff across the business an opportunity to monitor their health.
- The appointment and training of Mental Health First Aiders. These individuals have attended training sessions including a Mental Health First Aid (MHFA) certificated course. All the current MHFAs are also union representatives so have a wider knowledge of workplace practices and procedures, which means that they are in a good position to advise and support employees with mental health concerns.
- WPD's Occupational Health team continued to expand the resources available to staff through the intranet, and promoted different health and wellbeing topics, such as cancer awareness and impact of fatigue, in monthly themes.



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

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

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

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

3.29 The Powering Improvement theme for 2019 was Review of progress and developing the next phase of 'Powering Improvement'. The theme for 2020 is to complete the Human Factors work that was started in 2019 and to begin preparing for an Occupational Health initiative, but unfortunately due to COVID-19 the launch of the remaining initiatives has been delayed. The third phase of Powering Improvement will run from 2020 to 2025.

3.30 During 2018/19 WPD appointed an external specialist to undertake a Safety Climate Assessment. The feedback from surveys and workshops led to recommendations in the following areas:

- Policies and Standards
- Safety interaction
- Trade union communication and engagement
- Manager development
- Risk Assessment
- Safety engagement

We have used our annual staff safety conferences to discuss some of the issues that were raised through the survey, inviting groups to have input on potential solutions.

3.31 Based on the feedback from the Safety Climate Assessment, over 30 recommendations have been incorporated into the company Safety Action Plan for 2020. Some actions include:

- implementing a new lone working application (LOST) to improve communication and awareness of staff working in lone situations
- improving access to policy documents by the creation of a policy search app on all company mobile devices. With further improvements planned for 2020/21; and
- launched the Project Risk Assessment application which enhances communication between planners and operational staff.

We will continue to monitor the implementation of the actions and their impact.

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

3.32 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.

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

3.34 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
- a review of specific accidents and operational incidents in order to understand the causes and share learning.

3.35 Additional topics covered in local forums for 2019/20 included the following:

- planning for and subsequent feedback on staff safety conferences;
- actions arising from the results of the Safety Climate survey;
- environmental updates;
- Mental Health First Aiders; and
- discussions around specific tools, equipment and Personal Protective Equipment.

3.36 In addition, annual safety conferences are held across the licence areas, attended by trade union appointed safety representatives. The conferences provide an opportunity for additional representatives to discuss safety performance beyond those who attend the regular forum meetings.

3.37 A standard agenda was agreed for the company as a whole and additional agenda items were added dependent on the local requirements of each licence area. For 2019/20 sessions included:

- a review of safety performance;
- an update on the developments as a result of the Safety Climate Survey; and
- a hazards and consequences session introduced by an external key note speaker, followed by scenario based discussions of risk management.

3.38 Due to the restrictions enforced as a result of the COVID-19 pandemic, only one of the four safety conferences was able to take place in January 2020. If possible, these missed conferences will be rescheduled for later in the year. In the meantime, information has been disseminated via safety bulletins.

3.39 We also hold a Trainee Safety Conference, where all new trainees attend and cover a range of safety topics including an introduction to the theme of behavioural safety and learning from past incidents. The event includes a session with our Chief Executive, underlining the importance of safety and following training and standard techniques. Our CEO also provides his mobile phone number to encourage individuals to report any concerns they have directly to him.

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

Behavioural safety

3.41 Behavioural safety is a key theme in the delivery of the company Safety Action Plan. Behavioural safety goes beyond setting rules and enforcing compliance; it focusses on changing attitudes so that staff assume responsibility for their own safety and the safety of others by acting on training, following instructions and challenging others when they see safety rules about to be broken.

3.42 During RIIO-ED1 WPD has delivered a wide variety of behavioural safety training to its staff. Using this training as a foundation, during 2019/20 we have continued to reinforce these key principles in a multitude of ways including:

- guest speakers at conferences covering topics such as the need to change the culture to improve behavioural safety;
- using team briefing sessions to disseminate safety messages;
- continuing to develop safety and training media and make it available via the WPD safety video website; and
- undertaking a Driver Behaviour System trial.

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

3.43 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.

3.44 During 2019/20 there were 49 staff accidents, 29 contractor accidents and 9 significant incidents involving the public. All 87 were investigated.

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

- Safety articles are regularly featured within the company's staff magazine (Powerlines).
- When an incident occurs the local Team Manager produces an investigation report identifying learning points, a summary of these reports is emailed on a monthly basis to line managers for cascade and discussion in team brief meetings.
- Where incidents could have more significant consequences a Safety Bulletin is issued and cascaded. Within 2019/20, 10 Safety Bulletins were issued – each bulletin provides an explanation of the issue, relevant learning points and the actions required by individuals for the future.

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

3.47 In 2019/20, 88 near misses were reported and 52 safety suggestions were submitted. All reports were collated centrally by the Safety Team and then submitted to local management teams to review and action as appropriate; no actions were outstanding for the regulatory year. 'Near miss' incidents were discussed as part of trade union and contractor safety conferences in order to ensure that learning is shared.

Substation security

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

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

Increasing primary substation security in the West Midlands and East Midlands

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

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

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

3.52 WPD are on track to deliver the forecast volumes for both licence areas. To date in the West Midlands we have completed 66% of the post site survey and risk assessment targets for ED1. In the East Midlands we have completed 67%. The original targets, revised 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 completed during RIIO-ED1	121	222

Monitoring repeat break-ins to substations

3.53 WPD has committed to enhancing substation security measures at locations where thieves regularly attempt to break in.

3.54 Analysis of repeat break-ins commenced in 2015/16 and in 2019/20 there was only one occasion where a specific substation was targeted more than once during the year. Enhanced substation security work, including new security fencing, has been undertaken at this site.

3.55 Since the start of RIIO-ED1 we have undertaken permanent upgrading works at 19 sites that were the subject of repeat break-ins.

Educating the public

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

3.57 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.

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

3.59 Since the start of RIIO-ED1 we have delivered a total of 15,840 sessions to 376,686 schoolchildren across our four licence areas making excellent progress towards our RIIO-ED1 target.

3.60 The breakdown of sessions delivered during 2019/20 is as follows:

Educational sessions delivered 2019/20		
Area	**No. sessions**	**No. children benefitted**
West Midlands	685	16,849
East Midlands	697	18,428
South Wales	1,022	18,528
South West	709	16,970
Total	3,113	70,775

3.61 Sessions are delivered in a variety of ways, including the following:

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

3.62 In addition to the provision of formal sessions, WPD makes electricity and safety resources available to schools via the Power Discovery Zone – an interactive, curriculum-linked website.

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

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

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

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

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

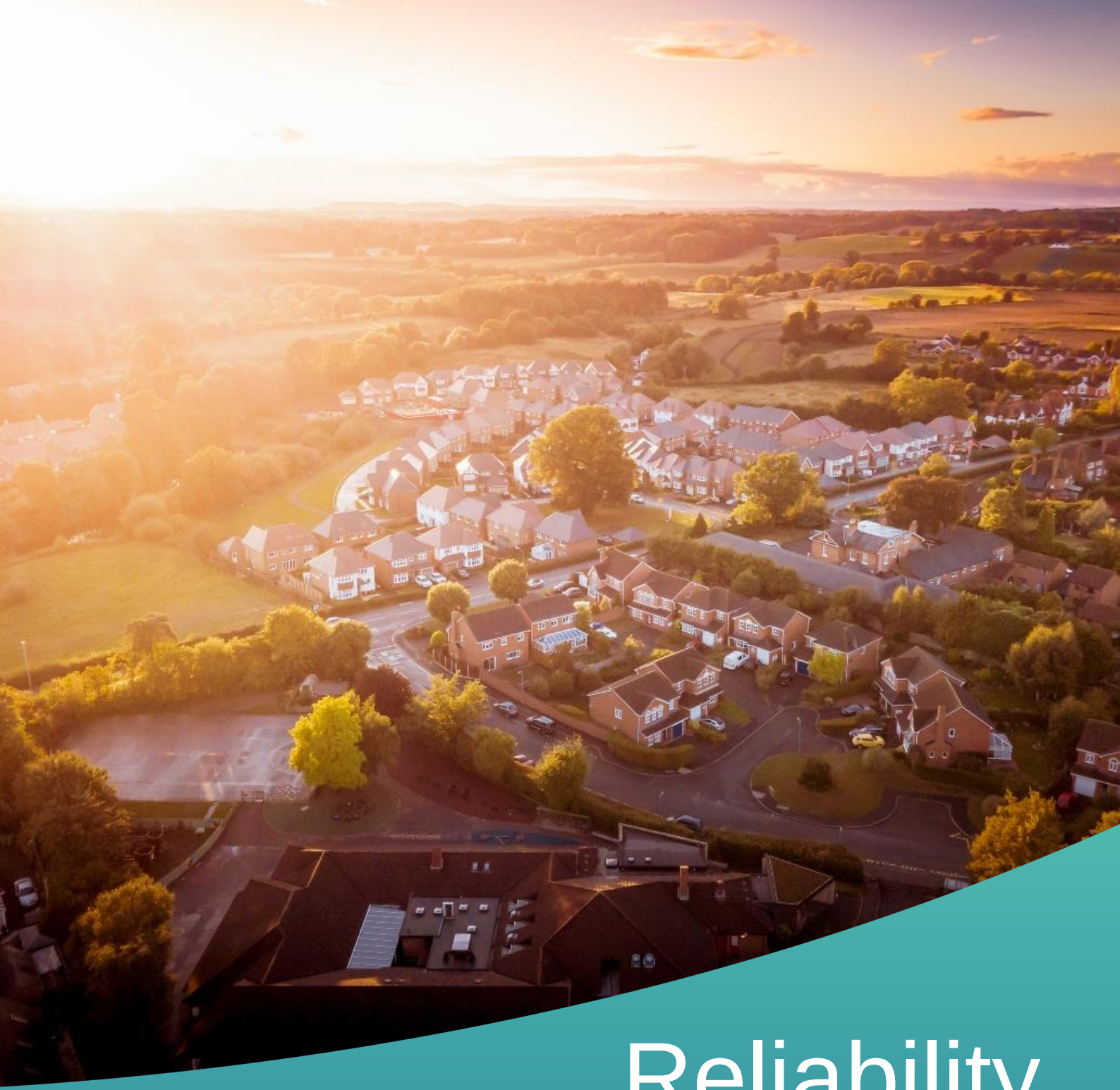
3.67 In 2019/20 a total of 1,036,890 safety 'leaflets' were issued or made visible to customers. Our cumulative total for the RIIO-ED1 period is 3,633,681 leaflets issued.

3.68 During 2019/20 information was distributed in a variety of ways as detailed below.

- Facebook campaigns promoting electrical safety which appeared in the newsfeed of 585,268 Facebook users. This reach consisted of posts promoted to those in the agricultural industry and participants in leisure activities such as angling, sailing and flying drones.
- 263,624 individuals were targeted through promotional articles placed in a variety of publications and programmes for events
- 183,848 landowners with WPD equipment on their land were sent literature as part of the wayleaves process associated with these assets.
- 4,150 individuals received information through a direct mailing campaign, aimed at farmers, construction companies, farm machinery retailers and commercial vehicle retailers.

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

3.70 As in previous years, WPD supported the latest 'Look Up Look Out' national safety initiative which was aimed at construction and road haulage workers. Our Facebook promotion alone reached an additional 350,264 people on top of those reached by WPD specific initiatives. Further details regarding 'Look Up Look Out' can be found here: www.westernpower.co.uk/docs/social-responsibility/Health-Safety/Public-Safety/Previous-Safety-Advice/WPD-Clearance-Gudie-(1).aspx



Reliability

RIIO-ED1 Business Plan Commitments Report
Year Five – 2019/20

30 October 2020

WESTERN POWER DISTRIBUTION

Serving the Midlands, South West and Wales

Contents

4 Network reliability

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

4.2 Network Reliability outputs are in four themes.

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

Regulatory framework:

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

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

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

Overview of network performance outputs

Network performance		
11	Improve network performance by the end of RIIO-ED1 so that, on average, customers will have 16% fewer power cuts and have their electricity supplies restored 23% quicker. *	Customer interruptions have reduced by 40% and customer minutes lost have reduced by 50% from the underlying performance benchmark.
12	Make sure that at least 85% of customers have their power restored within an hour of a high voltage fault happening.**	88% of customers had their power restored within one hour of a high voltage fault.
Guaranteed Standards of Performance (GSOPs)		
13	Reduce by 20% the number of customers experiencing a power cut which lasts for 12 hours or more.*	The number of customers without electricity for more than 12 hours (where the GSOP applied) was 70, an improvement of over 97.5% on our 2012/13 benchmark performance. Customers received a set payment where we failed to achieve the GSOP.
14	Achieve no failures on all other GSOPs.**	We had no failures against most GSOP categories. However, we failed to notify 14 customers of planned interruptions to their electricity supply and failed to meet the standard for restoring supply following a storm for 12 customers.
Worst served customers		
15	Reduce by 20% the number of customers classified as worst served.*	To date, projects to reduce the number of worst served customers have been put in place for 12,681 customers. Our target for the whole of RIIO-ED1 was 6,812 customers.
Making our network more resilient		
16	Apply flood defences to 75 substations, reducing the risk of both damage to equipment and power cuts due to flooding.*	We are on track to achieve our RIIO-ED1 targets. To date, we have installed flood defences at 72 substations.
17	Speed up the programme of tree clearance (specifically related to storm resilience) by 40%, with the aim of clearing 700km of overhead lines per year (delivering the programme five years earlier than suggested by Government guidelines).*	The programme is ahead of plan. We have completed 65% of the programme of tree clearance for resilience that we committed to for the whole of RIIO-ED1.
18	Improve substation battery life to last for 72 hours if there is a major, network-wide power loss.*	All programmes are ahead of plan. Protection batteries – 85% of eight-year programme complete. SCADA batteries – 81% of eight-year programme complete. Telecommunications sites – 92% 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

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

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

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

4.7 Since establishing the targets we have achieved improvements in network performance. In comparison to a 2012/13 baseline reference the number of power cuts has reduced by 40%. The average duration of power cuts has reduced by 50%. This performance already exceeds the targets for the end of RIIO-ED1 and the challenge for the future will be maintaining these improvements for the remainder of RIIO-ED1.

Performance for Customer Interruptions

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

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

Unplanned Customer Interruptions actual (excluding exceptional events)											
	Baseline reference	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	Percentage improvement to-date
West Midlands	93.7	73.6	67.6	63.1	56.1	53.2	52.8	46.2	-	-	-	51%
East Midlands	58.8	48.7	45.0	41.7	43.2	46.0	38.9	37.2	-	-	-	37%
South Wales	55.5	45.8	52.6	45.0	38.0	44.9	37.9	40.6	-	-	-	27%
South West	57.4	49.3	47.9	48.5	48.3	58.2	48.0	42.7	-	-	-	26%
WPD Total	69.1	56.3	53.9	50.4	47.6	50.6	45.0	41.7	-	-	-	40%

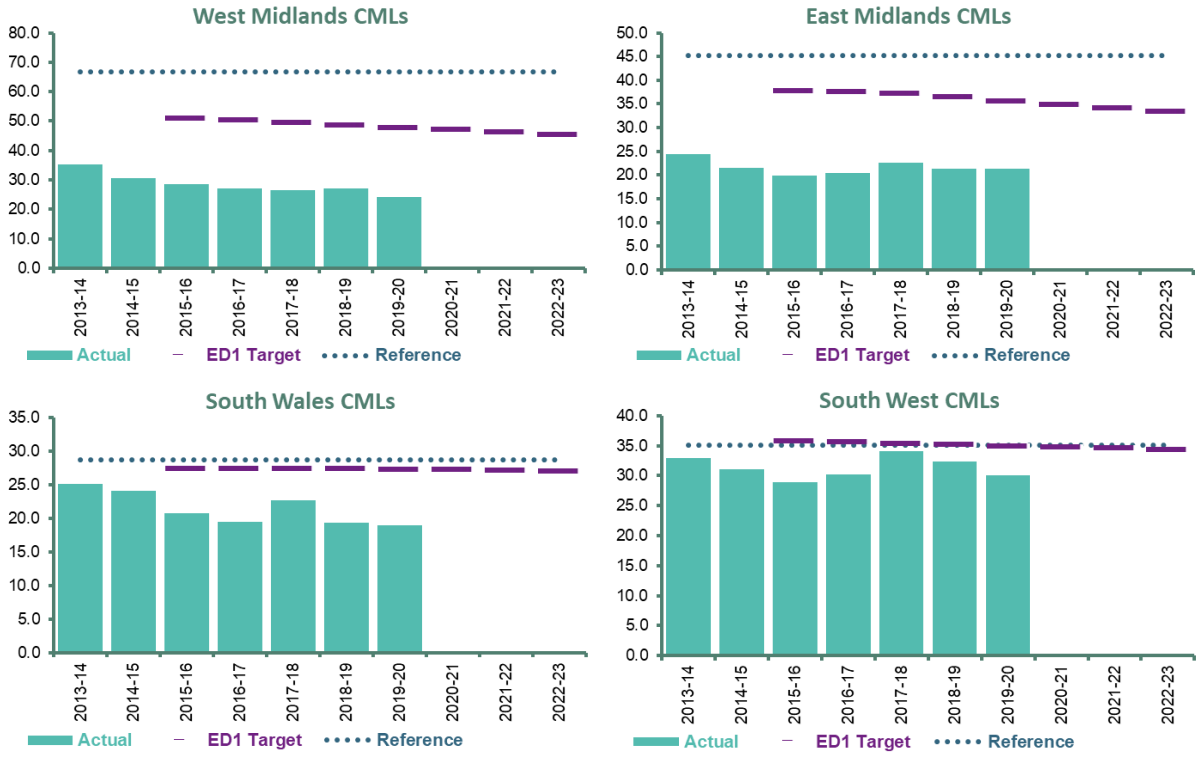
4.9 For 2019/20 performance for Customer Interruptions is better than the overall RIIO-ED1 improvement target and beats the in-year regulatory target in every licence areas.

Performance for Customer Minutes Lost:

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

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

Unplanned Customer Minutes Lost actual (excluding exceptional events)											
	Baseline reference	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	Percentage improvement
West Midlands	66.7	35.3	30.7	28.4	27.1	26.6	27.0	24.2	-	-	-	64%
East Midlands	45.2	24.4	21.5	19.9	20.4	22.7	21.3	21.3	-	-	-	53%
South Wales	28.7	25.1	24.2	20.7	19.5	22.7	19.4	19.0	-	-	-	34%
South West	35.1	32.9	31.1	29.0	30.1	34.1	32.4	30.1	-	-	-	14%
WPD Total	47.7	29.7	26.7	24.5	24.4	26.2	25.1	23.6	-	-	-	50%



4.12 For 2019/20 performance for Customer Minutes Lost is better than the overall RIIO-ED1 improvement target and beats the in-year regulatory target in every licence area.

Our approach to improving network performance

4.13 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.

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

Reducing the number of faults

Completing inspection and maintenance programmes

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

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

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

Removing defective poles

4.18 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.

4.19 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.

4.20 We use key performance indicators to ensure that defective poles are removed within 12 months of being identified. During 2019/20 each WPD licence area achieved 100 per cent completion against these indicators.

Using technology to locate faults before they occur

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

4.22 We continued to invest in this equipment and smart devices are installed on intermittent faults where fuses operate. The benefit of installing the devices is measured by considering the number of customer interruptions that have been avoided as a result of installation.

4.23 During 2019/20 we have increased the number of low voltage reclosing units currently deployed by 20%. There are now a total of 2,124 units available for use across the four licence areas. During 2019/20 these units have operated 2,099 times, which benefited approximately 40,000 customers, and avoided the need to dispatch resources to restore supplies following a permanent fault. We continue to explore the possibilities of these devices and potential future development.

Replacing assets

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

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

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

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

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

4.28 The targets are specified as overall RIIO-ED1 targets. The table below shows both risk points delivered during 2019/20 and our performance towards the overall targets for RIIO-ED1. All four licence areas are delivering ahead of plan at the end of the fifth year of the price control.

Network asset indices performance					
	West Midlands	East Midlands	South Wales	South West	WPD Total
RIIO-ED1 total target	-17,228,200	-12,530,218	-9,816,502	-16,310,684	-55,885,603
Risk points reduction delivered to date during RIIO-ED1	-15,331,891	-10,844,552	-8,037,164	-12,299,687	-46,513,294
2019-20 delivered risk points reduction*	-2,616,153	-1,669,076	-1,253,247	-2,180,194	-7,718,670
Percentage of RIIO-ED1 target delivered to date	89.0%	86.5%	81.9%	75.4%	83.2%

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

Reinforcing the network to provide enough network capacity

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

4.30 This intervention can be through:

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

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

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

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

4.34 For 2019/20 LI risk is lower than forecast in West Midlands and East Midlands, but broadly in line with predictions for South Wales and South West.

4.35 During 2019/20, we started a comprehensive update and review of the data used in EHV and 132kV network analysis, replacing generic assumptions used for certain equipment types with actual data. This work has been completed for South Wales and has resulted in the reduction of firm capacity at around 8% of substation sites. Two substations are now classified as LI5, leading to the increase in risk points in comparison to 2018/19. Reinforcement options for both of these sites are in development.

P2 compliance

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

4.37 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.

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

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

4.40 At the close of 2019/20, there are no Ofgem derogations to standard P2 and one self-derogation. Each of self-derogation has an action plan and a target completion date in place.

P2 derogations					
	West Midlands	East Midlands	South Wales	South West	WPD Total
Ofgem derogations	0	0	0	0	0
Self-derogations	0	1	0	0	1

Completing routine tree clearance programmes

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

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

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

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

4.45 During 2019/20 the following volumes of spans were cut.

Routine tree cutting (number of spans cut) in 2019/20					
	West Midlands	East Midlands	South Wales	South West	WPD Total
LV (spans)	16,185	13,106	7,983	30,303	67,577
HV (spans)	23,537	12,512	15,102	19,195	70,346
EHV (spans)	828	661	547	1,094	3,130
132kV (spans)	337	250	493	257	1,337

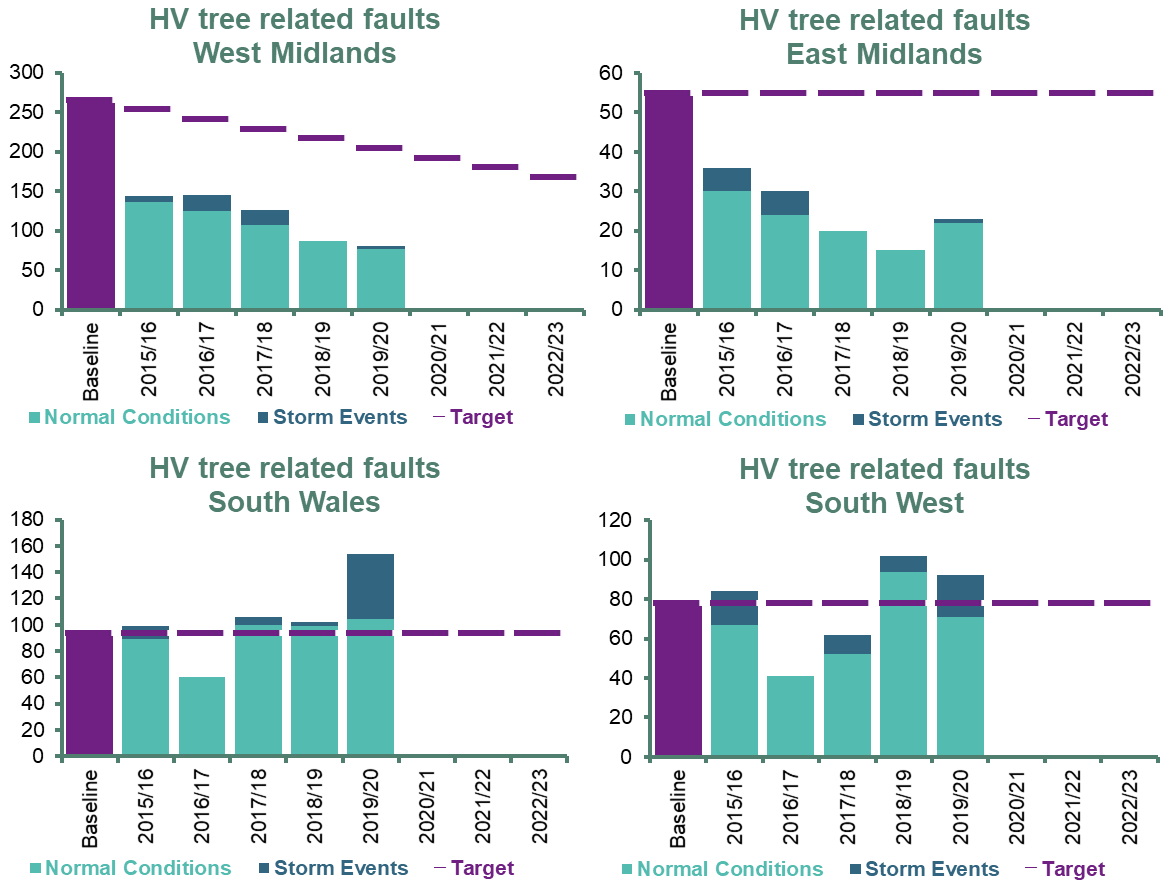
4.46 Effective tree clearance assists in the reduction of tree related faults and within RIIO-ED1 WPD targeted an overall 20% reduction in both high voltage (HV) and low voltage (LV) tree related faults. A 20% improvement in LV tree related faults was targeted in each licence area. At HV a 37% improvement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

HV tree related faults

4.47 Performance in 2019/20 shows a 29% improvement in the number of HV tree related faults for WPD as a whole compared to our baseline performance; the performance for each licence area against target can be seen below.

HV tree related fault targets					
	West Midlands	East Midlands	South Wales	South West	WPD Total
Underlying performance (4 year average from 2009/10 to 2012/13)	226	55	94	78	493
Target - end RIIO-ED1	168	55	94	78	395
Percentage improvement - target	37%	0%	0%	0%	20%

HV tree related fault actual					
	West Midlands	East Midlands	South Wales	South West	WPD Total
Underlying performance (4 year average from 2009/10 to 2012/13)	226	55	94	78	493
2019/20 performance	80	23	155	92	350
Percentage improvement - actual	70%	58%	-65%	-18%	29%



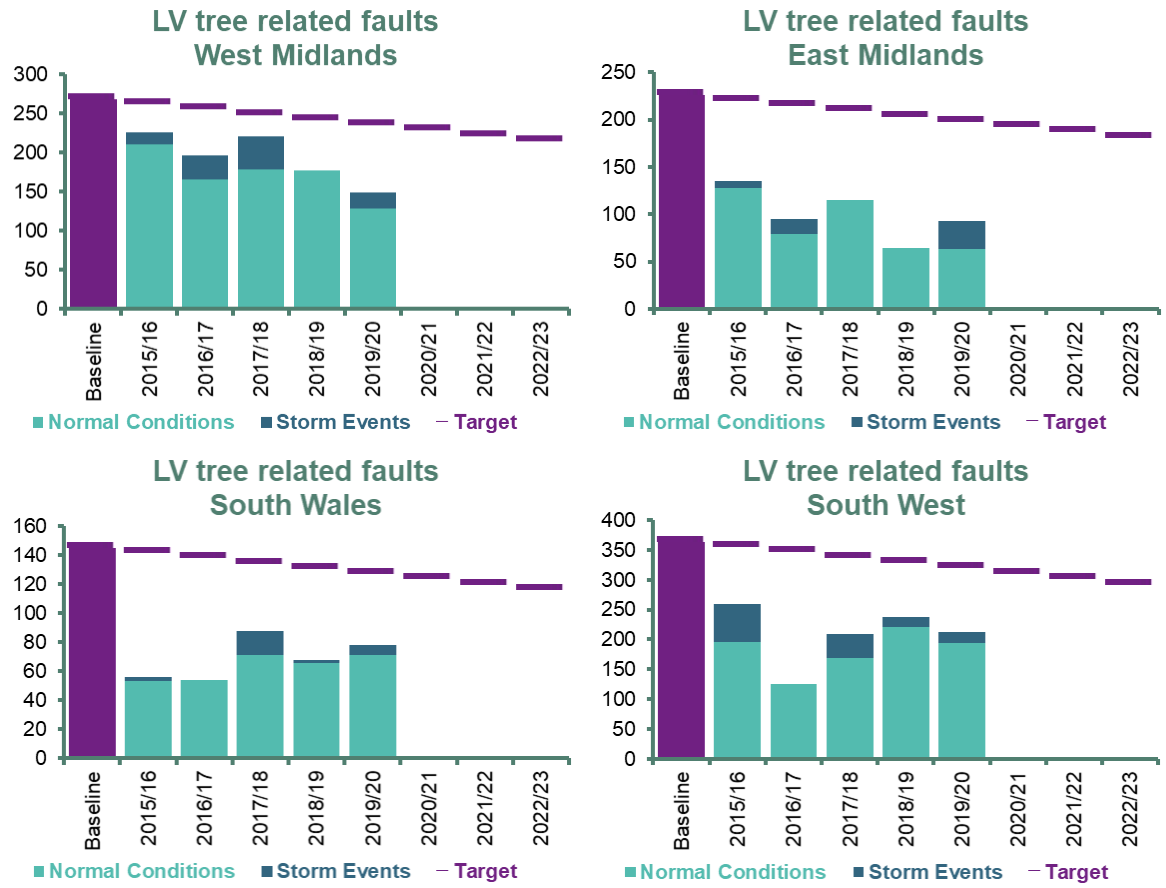
4.48 Performance in the West Midlands and East Midlands licence areas shows a significant improvement during RIIO-ED1; however we have seen increases in the number of HV faults due to trees in South Wales and South West during 2019/20. This is can be mostly attributed to three storm events in South Wales, which accounted for 48% of tree related faults in this licence area, and 8 storm events in the South West, which accounted for 30% of tree related faults in this area, during 2019/20.

LV tree related faults

4.49 Performance during 2019/20 shows a 48% improvement in the number of LV tree related faults for WPD as a whole; the performance for each licence area against target can be seen below.

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

LV tree related fault actual					
	West Midlands	East Midlands	South Wales	South West	WPD Total
Underlying performance (4 year average from 2009/10 to 2012/13)	272	229	147	369	1,017
2019/20 performance	149	93	78	213	533
Percentage improvement - actual	45%	59%	47%	42%	48%



4.50 All licence areas are already beating the target to reduce LV tree related faults by 20% by the end of RIIO-ED1; however we have seen an increase in the number of faults in the East Midlands and South Wales licence area during 2019/20, compared to the previous year.

Reducing the number of customers affected by power cuts

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

Network automation

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

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

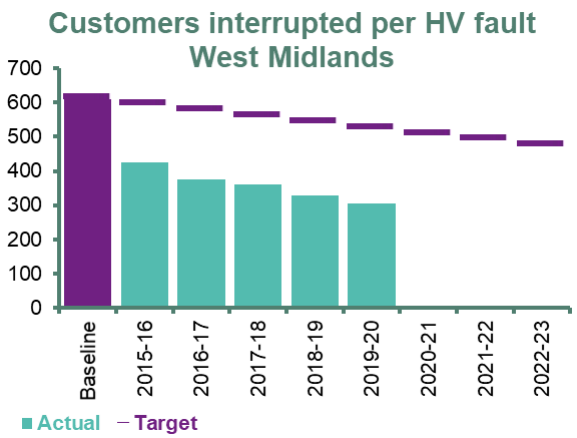
4.54 Additional equipment which protects the network, such as circuit breakers and intelligent fuses, enable circuits to be subdivided into smaller zones reducing the number of customers that are affected by a fault.

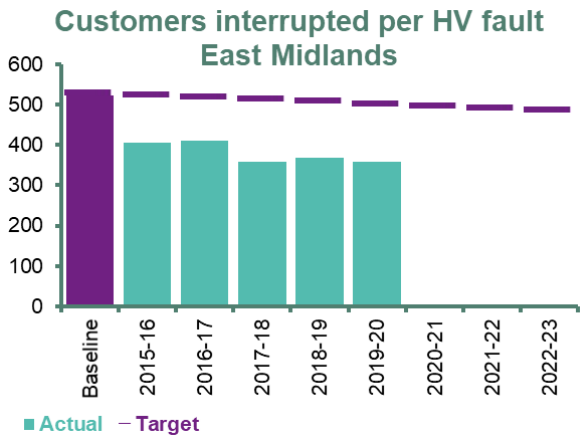
4.55 The development of automatic switching algorithms allows switching actions to take place without the intervention of a Control Engineer. The algorithms use information from fault passage sensors to indicate which section of the network contains the fault and then communicate with remotely controlled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

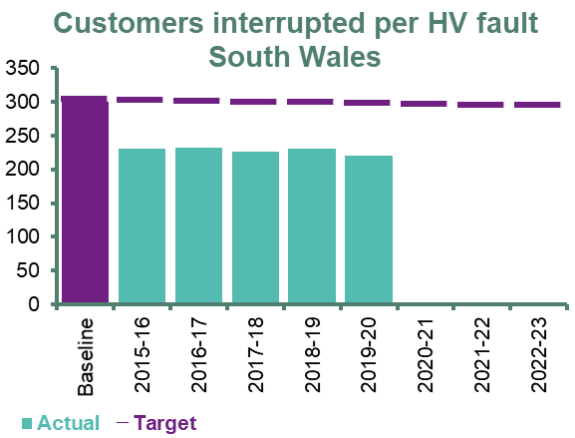
4.56 The application of this technology results in an improvement in the average number of customers affected by faults. The table below shows performance in 2019/20.

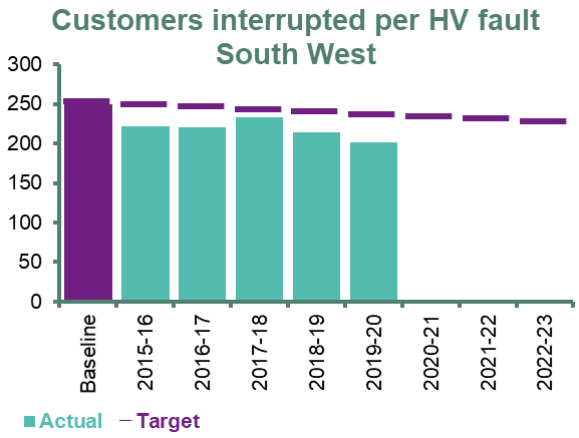
Average number of customers interrupted per unplanned HV incident				
	West Midlands	East Midlands	South Wales	South West
Benchmark performance (five year average 2008/09 to 2012/13)	617	531	304	253
Target performance – end of RIIO-ED1	480	487	295	228
2019/20 performance	306	358	221	201

4.57 All licence areas have achieved our overall target for the end of RIIO-ED1.









Reducing the time it takes to restore supplies

4.58 WPD has a clear focus on restoring supplies quickly.

Managerial focus

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

4.60 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.

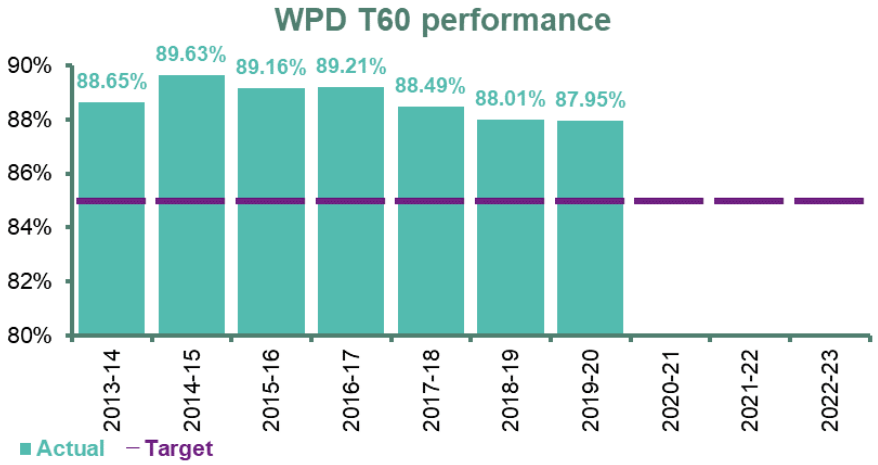
4.61 This focus is applied to all faults, irrespective of whether the fault affects a single customer or thousands of customers.

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

4.62 An internal initiative called 'Target 60' measures the percentage of customers who are restored within one hour of when a high voltage (HV) fault occurs. During RIIO-ED1 WPD committed to achieving a Target 60 performance that exceeds 85%. The following table shows WPD overall performance exceeded this target in 2019/20.

Target 60 - restoration within one hour of an HV fault (% of customers)					
	West Midlands	East Midlands	South Wales	South West	WPD Total
Performance 2019/20	90.09%	89.38%	87.38%	82.24%	87.95%

4.63 This result continues our track record of outperformance against the target as shown below.



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

Guaranteed Standards of Performance (GSOPs)

4.65 Statutory regulations set guaranteed standards of performance that DNOs must meet in relation to network reliability. Customers are entitled to payments where DNOs fail to meet the standards.

Output (13) Reduce by 20% the number of customers experiencing a power cut which lasts for 12 hours or more.

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

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

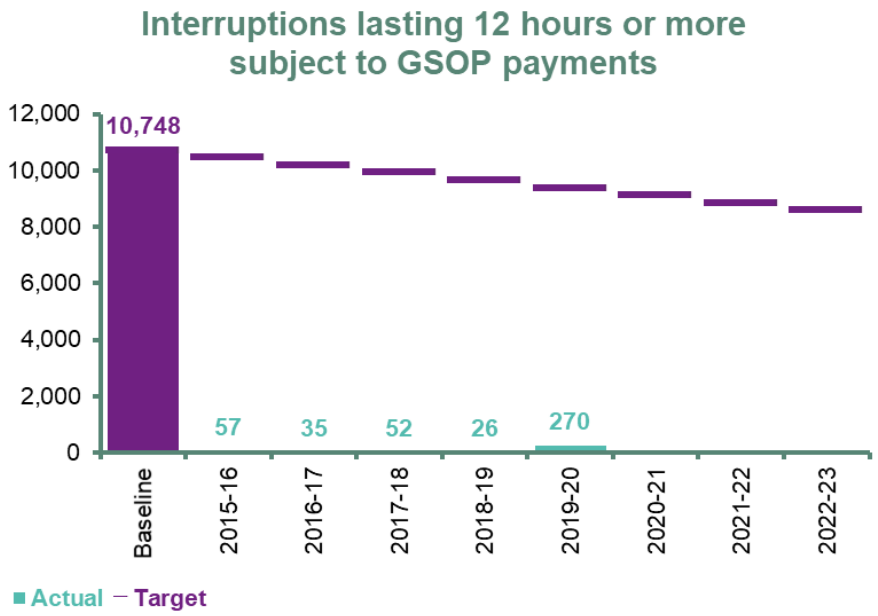
4.68 As part of the RIIO-ED1 Business Plan, WPD committed to reduce by 20% on average the number of customers experiencing interruptions lasting 12 hours or more.

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

4.70 The targets and actual performance for 2019/20 are shown in the table below. The process for calculating the length of an outage allows exemptions in certain circumstances – for example where there is no access to the customer property or where the customer themselves requests a delay in the works required to restore supplies. Where an exemption is applied and the clock is stopped, the DNO is not required to make a GSOP payment to the customer if the 12 hour standard is not met. In the table below we have shown performance both with and without exemptions for 2019/20.

Customers affected by interruptions lasting 12 hours or more					
	West Midlands	East Midlands	South Wales	South West	WPD Total
Reference performance in 2012/13 (after exemptions applied).	5,080	3,367	272	2,029	10,748
Target performance - end of RIIO-ED1 (after exemptions applied)	4,064	2,694	218	1,623	8,599
2019/20 performance (total after exemptions – GSOP payments made)	74	164	0	32	270
2019/20 performance (total before exemptions)	271	790	68	148	1,277

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



4.72 There has been a slight increase in the volume of GSOP payments during 2019/20. However, 109 of the payments can be attributed to a single incident in East Midlands.

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

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

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

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

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

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

4.76 During 2019/20 there were only 30 occasions where we didn't meet these standards. We failed to notify 14 customers of planned interruptions to their electricity supply and failed to meet the standard for restoring supply following a storm for 12 customers. We aim to learn from each failure in order to achieve our target of zero in the remaining years of RIIO-ED1.

Guaranteed Standards of Performance failures in 2019/20 (excluding restoration of supply within 12 hours)					
	West Midlands	East Midlands	South Wales	South West	WPD
Main fuse failure	-	-	-	-	-
Multiple interruptions	-	-	-	-	-
Major incident	-	-	-	-	-
Rota disconnection	-	-	-	-	-
Planned interruptions	3	3	1	7	14
Voltage enquiries	-	-	-	-	-
Missed appointments	-	-	-	-	-
Missed payments	-	3	-	1	4
Storm supply restoration	-	-	-	12	12

4.77 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.

Making improvements for worst served customers

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

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

4.79 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.

4.80 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.

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

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

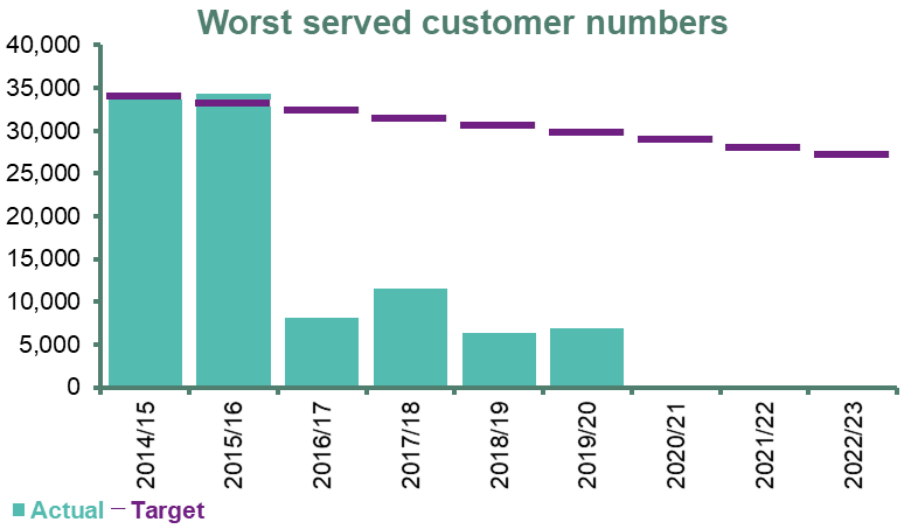
4.83 The targets have been revised using actual worst served customer numbers from 2014/15 as a reference. This leads to the following target volumes.

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

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

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

4.85 The number of worst served customers has reduced during 2019/20and is significantly lower than the targets set for the end of RIIO-ED1. Performance since the reference year is illustrated below.



4.86 The following table shows both the number of worst served customers but also the number of customers targeted by the projects carried out during RIIO-ED1.

Worst served customer numbers					
	West Midlands	East Midlands	South Wales	South West	WPD Total
Customers classified as worst served in 2019/20	2,498	69	1,511	2,792	6,870
Customers targeted for worst served customer work in ED1 to date	6,198	921	2,401	3,161	12,681

Making our network more resilient

4.87 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. Network resilience is monitored in three areas.

- Flooding
- Resilience tree cutting
- Black start

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

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

4.89 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.

4.90 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).

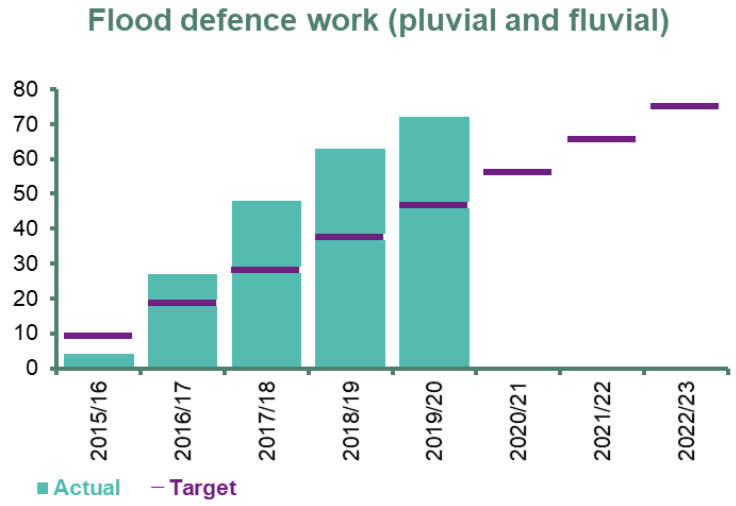
4.91 Data provided by the Environment Agency has been used to identify substation sites that are at risk of fluvial flooding and during RIIO ED1 WPD committed to installing flood defences at 27 sites. Work undertaken for fluvial sites during RIIO-ED1 is shown below.

Fluvial flood defences installed (sites)					
	West Midlands	East Midlands	South Wales	South West	WPD Total
Total number of sites to be protected during RIIO ED1 – risk of fluvial flooding	0	14	12	1	27
Flood defences installed during RIIO-ED1	5	16	4	4	29

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

Pluvial flood defences installed (sites)					
	West Midlands	East Midlands	South Wales	South West	WPD Total
Total number of sites to be protected during RIIO ED1 – risk of pluvial flooding	13	16	8	11	48
Flood defences installed during RIIO-ED1	9	9	15	10	43

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



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

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

4.95 Overhead line fault rates are influenced by the following:

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

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

Resilience tree clearance

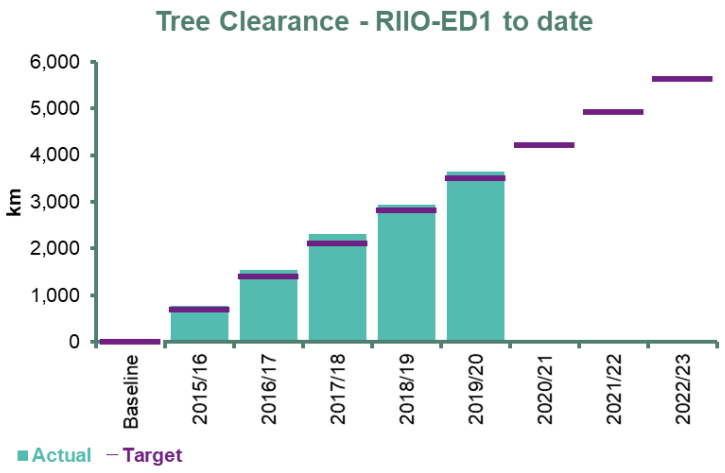
4.97 Severe storms can cause network faults and lead to interruptions in supply for large numbers of customers. In particular strong winds can lead to overhead lines being damaged by trees.

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

4.99 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 during RIIO-ED1 to date is shown below.

Tree clearance – resilience cutting					
	West Midlands	East Midlands	South Wales	South West	WPD Total
Target for RIIO-ED1 (km)	1,448	1,296	1,192	1,688	5,624
Actual – RIIO-ED1 to date(km)	910	909	750	1,076	3,644
Percentage of programme complete	63%	70%	63%	64%	65%

4.100 Progress against target for WPD as a whole is demonstrated below.



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

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

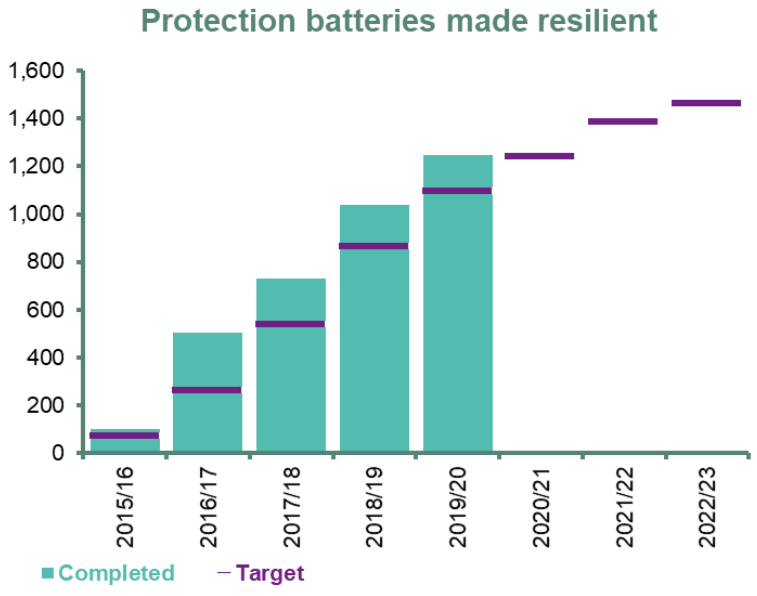
4.102 The electricity industry has developed a standard which requires major substations to have the resilience to enable safe re-energisation following either a full or partial shutdown of the electricity network lasting up to 72 hours. The main consideration is the length of time that battery systems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

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

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

Protection batteries

4.104 To make protection batteries resilient to 72 hours we install load disconnection schemes – which in the event of a prolonged loss of power to the substation will disconnect the battery load to prevent battery drainage. So far during RIIO-ED1 we have delivered 85% of the required programme to make protection batteries resilient and we are ahead of the delivery profile specified in the RIIO-ED1 Business Plan.



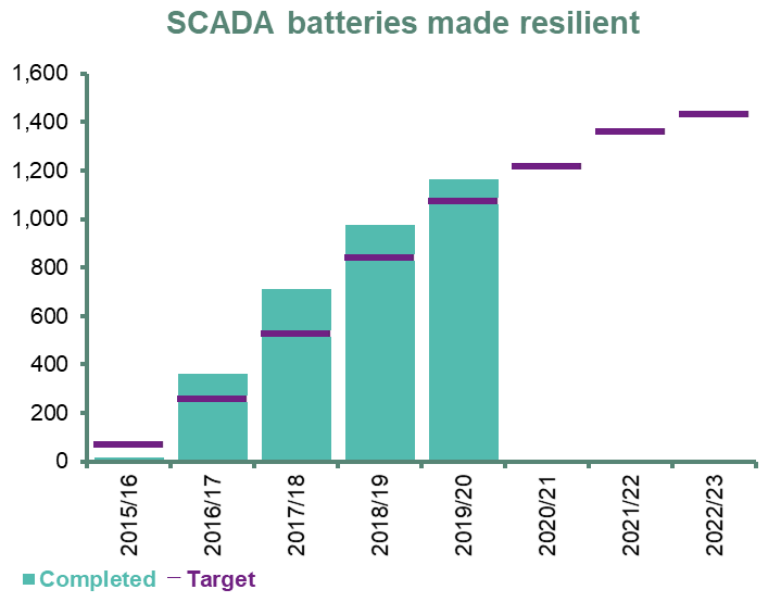
4.105 Performance in each licence area is shown below.

Resilience of protection batteries					
	West Midlands	East Midlands	South Wales	South West	WPD Total
RIIO-ED1 target (includes both EHV and 132kV protection batteries)	240	621	236	366	1,463
Protection batteries made resilient during RIIO-ED1	238	525	224	262	1,249

SCADA batteries

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

4.107 During the first five years of RIIO-ED1 we completed 81% of our overall programme and have declared 1,166 batteries resilient to the 72 hour standard. We are on target to achieve our commitment for RIIO-ED1.



4.108 Performance in each licence area is detailed below.

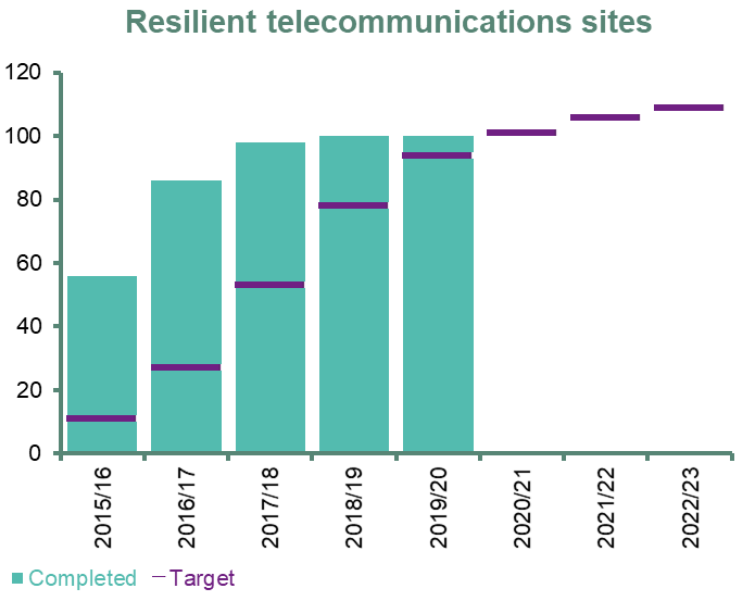
Resilience of SCADA batteries					
	West Midlands	East Midlands	South Wales	South West	WPD Total
RIIO-ED1 target (includes both EHV and 132kV protection batteries)	254	586	190	403	1,433
SCADA batteries made resilient during RIIO-ED1	223	510	94	339	1,166

Telecommunication sites

4.109 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.

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

4.111 Progress against the RIIO-ED1 target has been positive with 92% of the original programme already complete – 100 out of 109 sites in the East Midlands and West Midlands. An additional 83 sites have been completed in South Wales and the South West.



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

4.112 Performance in each licence area is detailed below.

Resilience of telecommunication sites					
	West Midlands	East Midlands	South Wales	South West	WPD Total
Sites identified as part of the RIIO ED1 business plan	43	66	0	0	109
Sites made resilient during RIIO-ED1	45	55	50	33	183

Non-operational sites

4.113 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.

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

4.114 The magnitude, frequency and impact of digital 'cyber' attacks on computer networks and information systems is increasing. The UK's National Cyber Security Centre (NCSC) was founded in 2016 and reports that since the centre became operational there have been over 2,000 security threats.

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

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

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

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

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

4.120 Since the introduction of the NIS regulations we have:

- implemented a holistic risk management framework for our IT/Operational Technology (OT) environments;
- expanded our capability for managing software vulnerabilities to include our OT environments;
- segregated our Critical National Infrastructure systems from our Corporate network;
- increased our logging and monitoring capabilities to capture possible cyber events;
- increased our threat intelligence sources to provide greater insight and fast response into current treats and risks;
- developed an holistic incident response process; and
- expanded our program for managing software updates to ensure we maintain a high level of system security.

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

Environment

RIIO-ED1 Business Plan Commitments Report
Year Five – 2019/20

30 October 2020

WESTERN POWER DISTRIBUTION

Serving the Midlands, South West and Wales

Contents

5 Environment

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

5.2 Environment outputs are in five themes.

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

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

Regulatory framework

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

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

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

Overview of environmental outputs

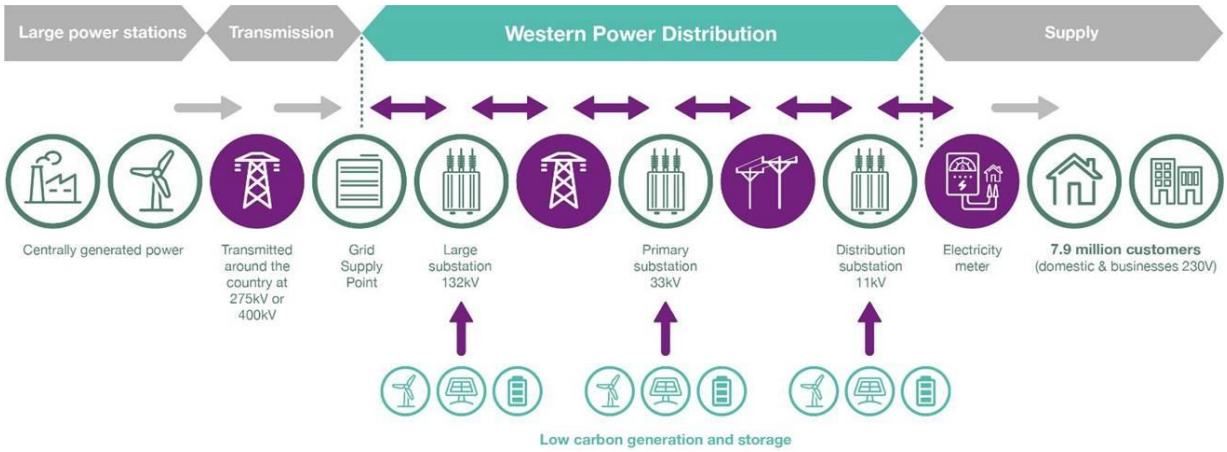
Make it possible for more people to use low carbon technologies (LCTs)		
19	Improve by 20% the time taken to provide a response to customers who want to use LCTs.*	We are receiving increased volumes of notifications which we are addressing quickly, but the volumes of enquiries mean that we have not been able to improve our response times.
20	Identify LCT hotspots using information from smart meters, expert organisations and local authorities, and use this information when making decisions.	The project LCT Detection has proven that a model can be developed to spot unregistered LCTs connected at household level. The data gathered from this project has been used to refresh the LCT hotspot data held in our asset register database and mapping system.
21	Selectively replace assets using larger assets in areas where more LCTs may be connected to our network.	We carried out 27 asset replacement projects using larger assets, as a result of using information about LCT hotspots.
22	Reduce costs for future customers by developing smart solutions to provide alternative and innovative techniques for managing our network.	We had a wide range of innovation projects in progress during the year.
23	Provide additional network capacity by using traditional or 'smart' methods.	We have continued to develop the Flexible Power brand and increased the number of substations utilising flexibility from 71 in 2018/19 to 122 in 2019/20.
Reduce technical network losses		
24	Install oversized transformers when replacing assets in areas where demand for power may become higher than equipment can cope with.	We installed 27 oversized transformers.
25	Use larger cables when installing new network in LCT hotspots.	We installed 2.93km of larger cable in LCT hotspots.
Reduce the carbon footprint of the business		
26	Make sure all replacement vehicles have lower CO_2 emissions than those they are replacing.	WPD operational vehicle emissions have reduced by 11% compared to 2018/19, but there have been increases in vehicle emissions reported to us by our contractors. This means we have slightly missed our target for 2019/20.
27	Make sure all new or substantially refurbished buildings meet, as a minimum, the 'excellent' standard under the Building Research Establishment Environmental Assessment Method (BREEAM).**	We have not completed any depot construction or refurbishment works during 2019/20.
28	Reduce the amount of waste sent to landfill by 20% over the first two years of RIIO-ED1 and 5% per year after this.	We have seen a reduction in the amount of waste sent to landfill, and we have achieved our target for the whole of RIIO-ED1.
29	Reduce our carbon footprint by 5%.*	Our business carbon footprint has reduced by 20% compared with 2012/13. We have beaten our in-year target.
Reduce the environmental risk of leaks from equipment		
30	Reduce by 75% the amount of oil lost through leaks from oil-filled cables.*	The leak volume from oil-filled cables has significantly decreased. We have beaten our in-year target.
31	Reduce by 17% the amount of SF6 gas that is lost from switchgear.*	The amount of SF_6 gas lost as a percentage of the total amount of SF_6 used on our network has reduced from 0.47% in 2015/16 to 0.19% in 2019/20 for the whole of our area. However, we missed our in-year target in the South West.
32	Install effective oil containment 'bunds' around plant containing high volumes of oil.*	We have completed work on 173 new and refurbished bunds so far in RIIO-ED1, going further than our forecast of 104 bunds.
Improve the appearance in National Parks and Areas of Outstanding Natural Beauty (AONBs)		
33	Replace 55km of overhead lines in National Parks and AONBs with underground cables.*	To date during RIIO-ED1, we have replaced 29.12 km of overhead lines with underground cables for visual amenity in AONBs.

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

Developments in the energy system

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

5.8 The changes are summarised in the diagram below.



Many large power stations are closing as they come to the end of their lives.

Intermittent renewables (e.g. wind farms) and other forms of electricity generation are now directly connected to the local distribution network. The generation patterns of these types of technology are often much more complex to predict.

We expect rapid adaptation to new forms of electricity demand. Electric vehicles are quickly becoming mainstream and new technologies (e.g. battery storage, heat pumps and electric heating) could further disrupt traditional energy use.

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

5.10 In 2019/20 we published our updated DSO strategy and our DSO Forward Plan which details the benefits of DSO transition from a customer and stakeholder perspective. Both of documents and a range of further information can be found at the link below.

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

The DSO transition programme

5.11 The implementation of our DSO strategy will affect the entire network, utilising a mixture of hardware enablers and process enhancements to deliver outputs as customer need dictates.

5.12 Our strategy for transition focusses on enhancing and developing competences in three core business areas:

Assets	Customers	Network operations
Investment in technology to ensure the network operates at high performance levels. Roll out of Active Network Management by 2021. Active Network Management zones are areas of the network equipped with control systems which allow us to automatically manage the power flows of generation and demand connected to the network. Telecommunications readiness and strategic investment in fibre networks will deliver more visibility and controllability.	Development of Demand Side Response (DSR) services for specific customer groups, prioritised in regions and customer segments as the need arises. Provision of data that will demonstrate where there is congestion or capacity on the network, informing localised tariffs and supporting the development of a Local Energy Market. Alternative connection products will be extended to all WPD areas and extended to include demand and storage connections.	Invest in technology to give us unprecedented visibility and monitoring of the network. Use complex data analytic tools to forecast requirements and ensure the network is proactively managed. Upgrading business areas to facilitate flexibility services such as DSR. Continue to develop and update regional energy scenarios that will establish future network needs and inform strategic investment in the network.

5.13 Our existing innovation programme enables us to develop and test new solutions before deploying them as business as usual. We have developed significant competence in a number of key areas, assisting our transition to DSO. Further details of our innovation programme can be found in our Innovation Strategy. The priorities for DSO transition are also reflected within our connections activities as detailed within our workplan for the Incentive on Connections Engagement (ICE).

Our actions during 2019/20 towards DSO transition

5.14 During 2019/20 we published our updated DSO forward plan detailing our activities in eight core areas.

5.15 We continue to implement our DSO forward plan and have taken a range of important actions during 2019/20 including the following:

- working with Local Authorities to shape our Future Energy Scenarios;
- expansion of Flexible Power, resulting in the procurement of 220MW of flexible services; and
- development of whole system solutions through our Regional Development Programmes with the ESO.

Flexibility

5.16 Electricity networks require generation and consumption to be balanced in real time. When power is mainly produced by large power stations connected to the transmission system, this balancing is carried out by the Transmission Electricity System Operator. The flexibility products and programmes traditionally used by the Transmission Electricity System Operator include actions such as generators increasing or curtailing output.

5.17 As more generation connects to the distribution networks there is greater potential for smaller connected generation and demand customers to provide flexibility services. As a DSO, WPD will need to utilise these new sources of flexibility to manage its own network, as well as accommodating sources of flexibility which could be used by the Transmission Electricity System Operator. Facilitating new markets for customer provided flexibility is a key objective of WPD's DSO strategy.

5.18 During RIIO-ED1 we have committed to assessing 90% of our load related reinforcement investment for more economic delivery by flexibility services. The remaining 10% will be investigated through innovation projects, widening the application of flexibility to lower voltage levels.

Signposting

5.19 In April 2018 we consulted with stakeholders on how we provide the market with information on the performance characteristics of our network ahead of requesting tenders for flexibility. We now publish 'signposting' information describing constraints that may trigger significant load related reinforcement. This signposting directs flexibility providers to the different distribution system needs that may develop.

5.20 We have launched a new Network Flexibility Map to display where WPD's network is currently seeking flexibility, or is likely to do so in the future.

5.21 Further information on signposting can be found at the following links.

www.westernpower.co.uk/our-network/network-strategy/signposting

www.westernpower.co.uk/network-flexibility-map

Flexible Power

5.22 WPD has committed to test the market to compare traditional reinforcement and market flexibility solutions. To this end we have launched 'Flexible Power' to deliver the procurement of demand response services – putting in place commercial agreements with customers who can reduce their load and have agreed to do so under the instruction of the DNO. This enables WPD to accommodate increasing demand for electricity whilst managing the requirement to reinforce the network.

5.23 During 2019/20 we have continued to see the development of Flexible Power. We have procured 220MW of flexible services during 2019/20, impacting over 800,000 customers and deferring £26.4m of reinforcement in areas where flexibility has been successfully implemented. We have further developed the information available to customers on where flexibility is required and likely to be needed in the future. We have revised the terms for flexibility services to maximise participation and reduce complexity by ensuring that there are no penalties for non-delivery, introducing performance-based payment mechanisms to incentivise participation and removing the obligation to provide availability

An example of a smarter more flexible network - Alternative Connections

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

5.25 One example of distribution flexibility is alternative connections which incorporates both Smart Grid flexibility and DER.

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

5.27 There are parts of the network where high volumes of connected distributed generation lead to insufficient capacity available to provide further generators with standard generation connection agreements without undertaking costly and time consuming network reinforcement. Alternative connections were developed through our innovation programme and provide a lower cost alternative.

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

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

Developments in alternative connections

5.29 The implementation of ANM requires changes to be made to control systems. The rollout of ANM is therefore prioritising the higher voltage networks where benefits are most likely to be seen. We plan to deploy Active Network Management zones to all Grid Supply Points by 2021.

5.30 To date, the majority of alternative connections have been for the connection of generation, however the principles of alternative connections can also be used for demand connections and storage.

5.31 During 2019/20 we have had the following enquiries in relation to alternative connections for energy storage.

Alternative Connections – energy storage 2019/20		
Type	**Quotes issued**	**Quotes accepted**
ANM	30	14
Intertrip	3	0
Time Profiled	2	1
Export/Import Limiting	30	12
Total	65	27

5.32 Over the course of RIIO-ED1, we have seen an increase in the proportion of total alternative connection offers accepted by customers in comparison to conventional quotes from 2.5% in 2015/16 to 9.5% in 2019/20.

5.33 Following consultation with stakeholders in January 2019 we are trialling a new option for alternative connections. Instead of constraining the connecting customer, we utilise the flexibility services rolled out as part of Flexible Power to maintain the customer's full capacity. The cost of providing this service is passed on to the customer. We estimate the required flexibility volumes, allowing us to estimate the cost for operating the flexibility, which is passed back to the customer.

5.34 During 2019/20, a methodology for forecasting the cost of using flexibility to accelerate connections has been developed in consultation with customers and we are in the process of procuring flexibility to reduce the time to connect within certain areas.

Distribution Future Energy Scenarios (DFES)

5.35 Understanding the impact of distributed generation and emerging technology growth on the network will be an ongoing requirement for both RIIO-ED1 and our transition to DSO. We have therefore worked with environmental consultants Regen to inform strategic network planning and investment. This work has considered future energy scenarios, which are aligned to those used by the Transmission Electricity System Operator (ESO), to forecast volumes of low carbon technologies and the energy resources that may be available on the network in the future.

5.36 The scenario projections are mapped geographically to our network to derive a regionally specific outlook for each of our licence areas. WPD has been publishing DFES reports since 2016 on a six monthly basis on a biennial programme per licence area and have completed reports for all licence areas. Our second programme most recently finished in 2019, with the publication of the West Midlands DFES in December.

5.37 To help provide more update to date regional information on future energy scenarios to our stakeholders, WPD is now moving to an annual cycle of DFES publications where all four licence areas will be updated simultaneously and aligned to the latest ESO Future Energy Scenarios. Publication of the next DFES, covering the entire WPD area will be in November/December 2020.

5.38 We have shared these studies, and the underlying data, with Local Authorities and Local Enterprise partnerships to help inform their regional energy strategies.

Regional Strategic Investment Options Reports

5.39 We use these studies to inform strategic network investment. In addition we use feedback from stakeholders to update our network modelling assumptions and to predict the behaviour of distribution connected energy storage.

5.40 Distribution Future Energy Scenarios and Regional Strategic Investment Options reports can be found on our website at the link below.

www.westernpower.co.uk/our-network/network-strategy/distribution-future-energy-scenarios

Whole system outcomes

5.41 Customer feedback to our DSO transition consultation identified that stakeholders rank 'efficient whole system outcomes' as a high priority and whole systems is therefore one of the work streams of our DSO forward plan.

5.42 We participate actively with the Energy Network Association's (ENA) Open Networks project, which seeks to understand the requirements and effects of moving to a more active distribution system.

5.43 To understand the impact of such changes on the electricity network as a whole, in the WPD area, we are working with the ESO to develop Regional Development Programmes (RDP) for each of our four licence areas. These strategic studies will take a whole system approach to ensuring that future capacity requirements across both transmission and distribution networks can be managed.

5.44 We have put in place RDPs for the South West and West Midlands licence areas. These programmes increase understanding of the interaction between transmission and distribution networks and will ultimately enable an increased number of connections at lower costs to customers and reduced risk to network reliability.

5.45 During 2019/20 we have undertaken further RDP activities as detailed below:

- A study looking at the issue of demand constrained networks due to the connection of energy storage. This study concluded that although energy storage could increase demand at times of high demand, it was unlikely to do so and that flexibility would be a more economical solution than conventional reinforcement.
- The accelerated loss of mains change project (ALoMCP) is an industry led project delivered by National Grid ESO, Distribution Network Operators (DNOs), and Independent Distribution Network Operators (IDNOs) to accelerate compliance with new requirements in the Distribution Code. The aim being to reduce the risk of inadvertent tripping and reduce system balancing issues by giving National Grid ESO greater latitude with regards to system Rate of Change of Frequency (RoCoF) limits, reducing ESO costs through having to contract for less frequency response. WPD processes and verifies ALoMCP applications submitted by generation customers (via a 3rd party portal). This involves verifying applications and ensuring they adhere to the programme requirements, arranging witnessing of works, facilitating payments and post-work sample audit visits. The ESO reimburse WPD for all associated project costs.
- Roll out of Appendix G Statement of Works (SoW) trial across the whole of WPD. Generators wishing to connect to WPD's distribution system may have an impact on the National Electricity Transmission System (NETS). WPD is required (under the Connection and Use of System Code) to make a request for a SoW to National Grid Electricity Transmission in relation to the potential impact of generation connections on the NETS. Due to the cumulative impact of connecting large volumes of new generation to the distribution system and the lengthy SoW process, a new SoW process was trialled by WPD, known as Appendix G. WPD has been instrumental in developing this new process and is the first DNO to have the Appendix G process in place across all areas. The introduction of the Appendix G has reduced the time customers have to wait for the outcome of the SoW process from around four months to an immediate route for connection.

Further information can be found on our website at the following link.
www.westernpower.co.uk/our-network/network-strategy/regional-development-programmes

5.46 The implementation of the South West and West Midlands RDPs has resulted in the launch of a deep "connect and manage" approach with National Grid. This approach utilises WPD's Active Network Management (ANM) system to assist with managing constraints on the transmission system. We have amended connection offers made by WPD to enable quicker, lower cost connections, removing delays from the connection process that could have resulted from the time taken to resolve transmission constraints. Rather than carrying out reinforcement, National Grid includes the application of ANM in their contract with customers. Collaborative work between WPD and National Grid has resulted in an alternative solution that will reduce costs and timescales for connection.

5.47 We are continuing to work with National Grid on how RDP solutions found in the South West and West Midlands can be adopted to provide economic whole electricity system solutions

across the whole of the UK. Facilitation of wider discussion and collaboration is key to achieving whole systems progress and as a result we publish and disseminate information via stakeholder groups and our website. Our Distribution System Operability Framework (DSOF) raises awareness of technical issues and challenges facing network and system operators.

5.48 We will share our learning and discussions with other DNOs and Independent Distribution Network Operators (IDNOs), with a particular focus on collaboration through the ENA Open Networks programme.

5.49 In 2018 we refreshed the DSOF, reconfiguring the document into standalone articles for each key topic. Each article provides an introduction, background and supplementary information explaining the purpose and key themes of the DSOF. We periodically host dissemination events facilitated by our Network Strategy team, which also provide an introduction to our Innovation Strategy and the process we follow for inviting third parties to participate with project development for Ofgem's Network Innovation Allowance (NIA) funding. Further information can be found on our website at the following link.
www.westernpower.co.uk/our-network/network-strategy/dsof

The impact of changing demand - electric vehicles

5.50 One example of the changing nature of demand is the growth of electric vehicles (EVs). EVs are quickly becoming mainstream with many manufacturers developing new electric models or electric versions of existing models. Across a year, a typical electric car uses a similar amount of electricity as an average domestic home. Growth in electric vehicles therefore has potential to significantly alter daily load profiles and increase the amount of power used.

5.51 In anticipation of this large scale change in energy usage we have developed strategies which include details on forecast growth scenarios, planning and design considerations, capacity availability, and the provision of information for customers.

5.52 In March 2019 WPD published an EV strategy, detailing our plans to support the development of EV charging infrastructure, ensuring that drivers of EVs are able to charge their vehicles in a manner convenient to them.

5.53 The EV strategy is accompanied by targeted guidance documents for Local Authorities and in 2019/20 we hosted four dedicated electric vehicle events for Local Authorities. We also took part in five EV Energy Taskforce meetings responding to government questions on mandating of smart charging. In addition, we promoted our EV strategy and Electric Nation innovation project results at two Hybrid and EV conferences.

5.54 Our EV strategy was developed using learning gained from recent innovation projects. Electric Nation, an innovation project registered under the RIIO-ED1 Network Innovation Allowance funding mechanism, has been designed to enable DNOs to identify which parts of their networks are likely to be affected by Plug-in Vehicle (PIV) uptake and domestic charging. It is also being used to investigate whether smart chargers can be used to avoid or defer reinforcement on the network, whilst still providing sufficient charge for users of EVs.

5.55 The project has demonstrated that EV owners do not necessarily charge every day, that customers are able to accommodate managed charging (allowing remote control of charging by network operators to optimise when charging occurs to avoid the need for network reinforcement) and that customers often 'graze' charge little and often.

5.56 During 2019/20 WPD has been working on other projects to meet the challenges of growth in EVs. This has included developing a novel packaged substation solution, which is in the process of being manufactured, that can be used in car parks and petrol forecourts. We have also worked with Moto Hospitality and Ecotricity, in tandem with the Office of Low Emission Vehicles and Department of Transport, to understand requirements at motorway service areas. As a result we have partnered with Brush Transformers to collaboratively

create a compact solution for providing dedicated electric vehicle charging supplies to motorway services areas, which will be further developed during 2020/21.

5.57 Further information on the Electric Nation project and our EV strategy can be found on our website at the following link.www.westernpower.co.uk/smarter-networks/electric-vehicles

Making it possible for more people to use low carbon technologies

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

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

5.59 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.

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

5.61 In 2017/18 we introduced reporting to enable us to track response time for customers wishing to install small-scale embedded generation (domestic solar panels, small-scale wind and hydro projects), electric vehicle charging and domestic heat pump heating systems.

5.62 The table below shows the 20% improvement target to be achieved by the end of RIIO-ED1 and the intermediate annual targets. During 2019/20 we have seen an increase in the time it takes to respond to customers. This has been driven by an increase in the volume of notifications we are receiving; while we are responding to these notification quickly, the volumes of enquiries has impacted our ability to improve our response times.

Time to respond to connect low carbon technologies						
	Benchmark performance	2018/19	2019/20	2020/21	2021/22	2022/23
Target for low carbon technology response time (working days)	2.93	2.81	2.69	2.58	2.46	2.34
Performance to date	-	2.83	3.66	-	-	-
Number of notifications received	3,451	8,950	11,264			

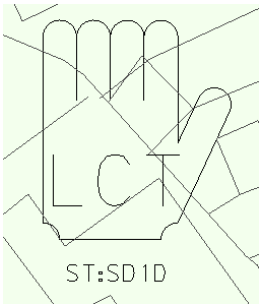
5.63 We seek improvement by undertaking analysis of the time it takes to respond to each category of technology and type of enquiry. Typically less complex notifications and connection requests, such as those for domestic solar panels and electric vehicle charge points, are resolved quickly. More unusual connection projects such as new connections for combined heat and power systems have taken longer.

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

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

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

5.66 WPD has obtained information from the Centre for Sustainable Energy which uses data on social demographics and housing stock types to determine the likelihood of LCTs being adopted. This has been used to determine which distribution substations were considered likely to be LCT hotspots.



5.67 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.

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

5.69 In 2018/19 we introduced the LCT Detection innovation project (funded via the Network Innovation Allowance) which uses industry data, from the Data Transfer Service operated by Electralink, and analytical tools to provide improved visibility of electric vehicles and photo-voltaics (solar panels) connected to the network. The data gathered from this project was used to refresh the data held in our asset register database and mapping system during 2019/20. This project has proven the concept that a model can be developed to spot unregistered LCTs connected at household level.

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

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

5.71 A new WPD policy for the use of LCT hotspot data was introduced in May 2015 and this data has progressively influenced asset replacement project planning. In 2019/20, 27 asset replacement projects used larger capacity assets.

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

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

5.73 WPD's Innovation Strategy provides details of our ongoing programme of innovation. The strategy is reviewed and re-issued on an annual.

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

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

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

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

5.76 There are two regulatory sources of funding for innovation projects: the Network Innovation Allowance (NIA) provides funding for smaller projects and the Network Innovation Competition (NIC) is a competitive tendering process where projects are assessed by an expert panel and selected projects win funding. During 2019/20 we introduced a number of new NIA projects.

5.77 The full range of NIA projects active during 2019/20 are detailed below.

Name	Project aim
Losses Investigation	Understanding technical losses on the LV & HV distribution network and determining the minimum information required to accurately predict network losses.
CarConnect (Electric Nation)	To enable DNOs to identify which parts of their network are likely to be affected by uptake of Plug in Vehicles (PIV) and whether demand control (optimising the timing of charging the PIV) is a cost effective solution to avoiding or deferring reinforcement on heavily loaded parts of the network.
Project ENTIRE	To identify and address the key commercial challenges that a DNO/DSO will be presented with when developing mechanisms for demand side response. This might include developing new systems to provide visibility of capacity and establishing contracts with commercial customers.
LV Connect and Manage	To demonstrate and prove that Active Network Management can be used on the low voltage network as a short term measure to allow new connections whilst network reinforcement takes place. Active Network Management requires the deployment of communication and control infrastructure to allow LCTs to be managed remotely.
Visibility Plugs and Sockets	WPD is participating in a much larger EU initiative led by Centrica. The project will develop a platform to enable suppliers, aggregators and communities to inform the network operator of planned changes to assumed electricity profiles.
Primary Networks Power Quality Analysis	To evaluate how harmonics and power quality can be monitored and analysed in a cost effective way across wide areas of the network.
Smart Energy Isles	WPD is part of a consortium awarded EU funding to build and operate a renewable energy micro grid on the Isles of Scilly.

CADET	To develop customer behaviour models for all types of demand, generation and storage. These will be used as an input to energy turn up/turn down estimation techniques that WPD is developing.
EDGE_FCLi	Investigate the integration of Fault Current Limiting interrupter (FCLi) technology into the WPD network. Connection of additional generation sources and connection requests by independent power producers can be rejected due to lack of fault current headroom in their networks, integrating FLCi technology could provide a way to connect new generation sources efficiently and rapidly.
Next Generation Wireless Telecoms Analysis	Establish a radio network design for the WPD licence areas of West Midlands and South West, providing enhanced operational communications capability to service initiatives such as Active Network Management whilst also enabling increasing embedded generation on the network.
Network Islanding Investigation	Investigate the technical and commercial options, challenges and potential benefits of operating parts of the LV, 11kV and 33kV distribution network in islanded mode under different conditions. Management of loads and generation in islands may provide a new flexibility solution for network operators.
OHL Power Pointer	Trial of a device capable of self-power operation to provide real-time voltage, current and power flow information. This information will be used to more accurately assess network operation.
Visual Statcom	Studies to determine the potential to improve network voltages and release network capacity by controlling the power factor of generators already connected to the 11kV and 33kV networks.
Multi Asset Demand Execution (MADE)	The MADE project is looking to better understand the feasibility and value of managing and aggregating multiple Low Carbon Technology (LCT) assets within a single home affordably.
Future Flex	This project aims to understand current process limitations with regards to domestic flexibility providers with the aim to demonstrate and test solutions to those limitations.
PCB Sniffer	To develop and trial in a laboratory environment a solution to non-intrusively identifying PCB's in overhead assets, principally oil-filled transformers.
Harmonic Mitigation	To review existing literature on solutions for managing network harmonics and create algorithms to control the network's harmonics.
Virtual Monitoring Data (VM-Data)	To validate and enhance models developed as part of the LCT Detection NIA project; and develop a set of domestic half hourly consumption profiles which can be aggregated and used for virtual network monitoring at feeder level, as well as enabling enhanced network planning and demand prediction.
IntraFlex	To develop learning on the operability of short term flexibility markets, the value of increased information at the day-ahead stage to suppliers, and the value of an integrated link for rebalancing in the intra-day market.
Automatic Location of Arc-faults through Remote Monitoring (ALARM)	Test the feasibility of a technical alternative and lower cost fault locating device and derive insight into the potential to more widely and cost-effectively deploy such monitoring equipment to feeders showing early indications of damage.
Electric Nation – PoweredUp	To explore and report on the impact of V2G charging on the LV network utilising end-user trial charging data and analysis, to model the extent V2G can assist with management of LV network demand, and provide recommendations for policy and commercial frameworks on V2G services.
LTE Connecting Futures	To develop learning on many aspects of LCT including confirming suitability, bandwidth requirements, and confirming training requirements and test equipment for staff.
Presumed Open Data (POD)	The POD project is looking to review data held by WPD to understand the extent that it can be shared with third-parties. An Open Data Hub will be delivered to facilitate the hosting and sharing of the data.
Net Zero South Wales – Cross Vector Scenarios	To develop a process and methodology by which both gas and electricity network operators can conduct local level joint scenario planning in a region or licence area, and to understand the impacts of a set of net zero carbon pathways on the distribution network.

5.78 The projects below are collaborative NIA projects.

Name	Project aim
ARC AID	To trial the Metrysense 500 fault indicator and demonstrate how the unit can be utilised to improve the fault location in the case of Arc Suppression Coil earthing configurations to reduce operational costs and improve safety.
Wildlife Protection	To understand how wildlife behaves and interacts with overhead lines to establish which assets are most susceptible to inadvertent wildlife contact and develop mitigation measures.
System HILP Event Demand Disconnection (SHEDD)	To design and test a new Low Frequency Demand Disconnection (LFDD) scheme to maximise future performance as the networks continue to decarbonise, Distribution Generation (DG) integration increases, and system inertia continues to decrease.
Optimal Coordination of Active Network Management (ANM) Schemes and Balancing Services Market	To identify and define different optimal Transmission & Distribution coordinated ANM schemes, their associated technical and commercial requirements as well as compatibility with existing industrial codes and regulatory frameworks.

5.79 In 2019/20 we had three active NIC projects:

Name	Project aim
OpenLV	To look at ways of encouraging communities to understand network load patterns and how consumers can impact demand to avoid reinforcement. This exploration of the potential for embedding demand side response within local communities builds on existing projects and will complement Project Entire.
Electricity Flexibility and Forecasting System (EFFS)	To explore the additional functionality required as a DSO. To evaluate the potential options and implement systems that will provide the new functionality required to transition to DSO. Actions include evaluating the suitability of flexibility services to resolve constraints and communicating flexibility services to the market.
DC Share	To assist in the facilitation of rapid EV charging equipment by providing appropriate network connections where they are needed, whilst making optimal use of the available network capacity. DC Share will facilitate rapid charging in constrained areas using available latent capacity across a number of substations.

5.80 Prior to the introduction of NIA and NIC, funding was provided through the DPCR5 Low Carbon Network Fund (LCNF) mechanism. The project below was instigated through LCNF and was completed in June 2019.

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

5.81 We also contribute to projects independently of Ofgem's innovation stimulus. One example of this is for a project called Regional Energy System Operators (RESO). Working with a range of partners through Innovate UK, this project will investigate the detailed design of a smart energy system for the West Midlands Region. A local market-making model will focus on driving effective integration of new energy technologies into the existing energy, transport and economic infrastructure of the region, with energy infrastructure providers (both gas and electricity) working in partnership with all the local authorities and strategic planning authorities across the region.

5.82 Further detail on the impact of our Innovation Strategy can be found in our annual Environment report and our Losses Strategy.

Smart meters

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

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

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

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

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

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

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

5.89 The UK's electricity system is undergoing a rapid period of change as distribution network customers invest in generation and alter their consumption behaviours to influence a lower carbon future. To enable a greater volume of demand, generation and storage to be connected, our networks are becoming smarter and more active.

5.90 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. Whilst traditional methods of reinforcement will continue to be used, increasing use is being made of smarter interventions.

Flexible Power

5.91 Flexible Power was created by WPD and the brand was first used in February 2019 to announce a procurement cycle for demand response. There are three different types of flexibility services that can be provided. These are:

- Secure – managing peak demand
- Dynamic – supporting the network during planned maintenance
- Restore – supporting the network following unplanned faults i.e. as a result of equipment failure

5.92 We have continued to develop the Flexible Power brand and increased the number of substations utilising flexibility from 71 in 18/19 to 122 in 19/20 with 220MW of flexibility services contracted so far.

Alternative Connections

5.93 We offer new connection customers alternative connection agreements which contain some form of curtailment arrangements that enable connections to be made where a standard connection might not be possible due to capacity constraints.

5.94 The uptake of alternative connections is shown below.

Alternative connections – uptake during RIIO-ED1						
	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Quotations issued	212	232	126	174	157	65
Quotations accepted	44	42	5	27	64	27
Sites energised**	4	11	17	5	37	22

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

Innovative techniques

5.95 Innovation projects have provided additional options for the provision of network capacity as shown below.

Innovation projects which allow us to utilise capacity more effectively
Voltage reduction Learning from the Low Carbon Network Fund (LCNF) tier 2 project Low Voltage Network Templates and the NIA Voltage Reduction Analysis project has led to a revision to our policies and the implementation of voltage reduction across our networks. Reducing network voltage in certain circumstances reduces the maximum demand.
Dynamic line ratings Dynamic line ratings for EHV lines are available as an option to provide additional capacity without changing the conductor in overhead lines. Overhead line ratings are a measure of the amount of power that can be distributed through them based on how hot conductors can be allowed to get. Traditionally, standard day and night ratings are applied, but dynamic line ratings allow for a real time assessment based on ambient weather conditions (for example when the wind is blowing across the overhead lines, the cooling effect is increased and therefore the capacity of the overhead line can be increased beyond the standard ratings). Whilst dynamic line ratings are available to customers, uptake has been limited to trial projects as the required conditions for usage have not matched customer connection requirements.
The LV templates project Data from 800 distribution substations within South Wales collected through the LV Templates project allowed revisions to planning assumptions. A key finding of the project was that domestic PV (solar panels) generate only 80% of their installed capacity. Planning assumptions have been revised to allow 20% more availability for installations without the need for reinforcement.
Network Equilibrium The Network Equilibrium LCNF tier 2 project designed, implemented and successfully trialled novel ways of power flow and voltage control with the aim to increase the capacity of the network for the connection of Low Carbon Technologies (LCTs). As part of this, a centralised intelligent voltage control system called System Voltage Optimisation (SVO) was created and demonstrated. SVO controls the network's voltages in ways that we could never do before, by optimising them in real time based on the actual network operating conditions. The trials of the technology proved that SVO can successfully increase the network capacity by optimising the network's voltages and work is now in progress to roll-out of the technology into business as usual.
Virtual Statcom The Virtual Statcom Network Innovation Allowance project explored the network capacity benefits that could be achieved through the coordinated control and optimisation of the reactive power output of generators connected to the distribution network. As part of this project, an algorithm was created to simulate this control and a number of power system studies were run to evaluate the estimated capacity release benefits in each scenario analysed. The project has shown that through the control of the reactive power output of generators, significant capacity for load connections can be released. The project also made recommendations for a further project to demonstrate and test the concept in actual network operation which is now being planned.

Reduce technical network losses

5.96 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'.

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

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

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

5.100 Further detail on these innovation projects can be found in the Losses Strategy which is updated annually and published on the company's website.

Ofgem's Losses Discretionary Reward

5.101 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.

5.102 In July 2016 WPD was awarded a total of £160,000 as part of tranche 1 (12% of the maximum reward available). During 2017/18 we provided our submission for the second tranche of the Losses Discretionary Reward, new developments included considering the impact of electric vehicle charging on losses and encouraging collaboration between DNOs. Ofgem confirmed in September 2018 that they would not make an award to any of the DNOs for tranche 2. Submissions for tranche 3, which will predominantly review actions undertaken by DNOs during ED1 were made to Ofgem in March 2020.

Current strategy

5.103 Our Losses Strategy to date has been based on achieving loss reduction through asset replacement by taking the opportunity to replace assets with lower-loss or more highly rated assets rather than replacing on a like-for-like basis.

5.104 During 2019/20 we have built IT systems to use and analyse data from SMETS2 smart meters being rolled out by Suppliers. The analysis of this data will allow us to more effectively manage network losses by influencing how the network is designed and informing active network control measures to achieve loss reductions.

5.105 Losses are also being considered as part of our Electric Vehicle strategy, where we are proposing to install three-phase supply cables in all new build developments which will both provide losses benefits and enable quicker EV charging.

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

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

5.107 As well as providing additional capacity, oversizing transformers in anticipation of future load growth provides a losses benefit until the additional capacity of the transformers is used up.

5.108 The volumes of oversized transformers installed during 2019/20 are shown in the table below.

Installing oversized transformers		
	Forecast (per annum)	Actual 2019/20
Distribution transformers	109	18

5.109 Whilst the numbers of oversized transformers are lower than forecasted we continue to undertake a range of other activities to reduce technical network losses.

Discontinuation of small sized transformers

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

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

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

Volume of small size transformers no longer used	
Transformers	WPD total (units)
Discontinuation of 315kVA ground mounted transformers	1,337
Discontinuation of 16kVA single phase pole mounted transformers	2,715
Discontinuation of 25kVA three phase pole mounted transformers	55

Replacement of pre-1958 transformers

5.113 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.

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

Output (25) Use larger cables when installing new network in LCT hotspots.

5.115 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.

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

Installing oversized cables		
	Forecast (per annum)	Actual 2019/20
LV cables	75km	2.93km

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

Discontinuation of small sized cables

5.118 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.

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

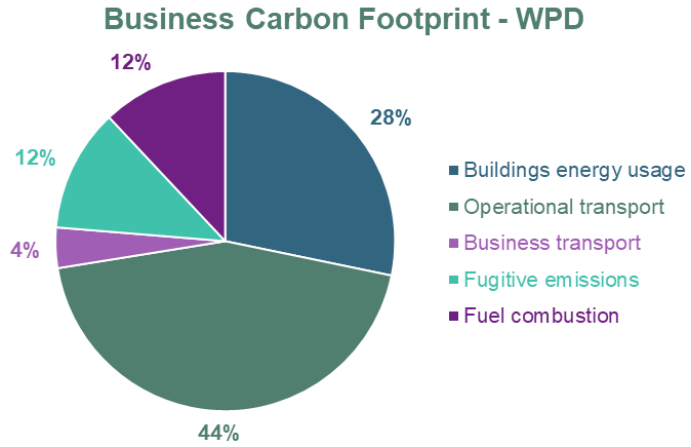
Length of small size cable no longer used	
Cable type	WPD total (km)
Discontinuation of 95mm^2 11kV cable	932
Discontinuation of 95mm^2 LV cable	1,501
Discontinuation of 16mm^2 service cable	1,925

Reduce the carbon footprint of the business

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

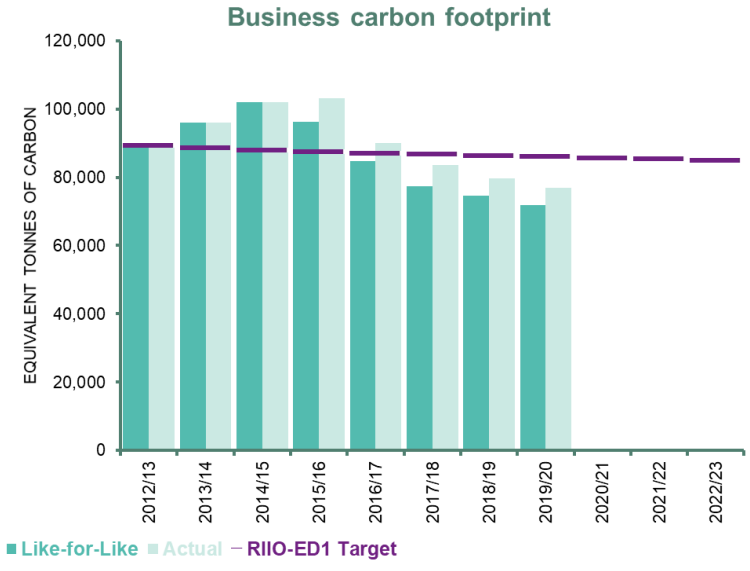
5.120 Business Carbon Footprint (BCF) represents the impact on the environment from operational activities and is measured and reported using equivalent tonnes of carbon dioxide (tCO_2e). It takes account of building energy usage (including substation electricity usage), emissions from vehicles, fuel combustion and release of greenhouse gases (fugitive emissions). Consequently WPD has initiatives in all these areas to reduce their contribution to the overall measure.

5.121 As illustrated in the chart below, the main contributors to WPD's BCF are operational transport and buildings energy usage.



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

5.123 During 2017/18 we enhanced the data we collect for SF_6 by also including the volume of gas 'missing' from scrapped equipment. This data is only available for the ED1 period and was not included in the original baselines or targets so we have provided additional comparisons that show performance on a like-for-like basis. The below chart shows our actual BCF performance alongside BCF performance on a like-for-like basis (i.e. excluding new data for SF_6). Our BCF performance under both measures is below target for 2019/20, achieving a 20% improvement compared to 2012/13 (on a like-for-like basis).



Output (26) Make sure all replacement vehicles have lower CO_2 emissions than those they are replacing.

5.124 Our network is spread over an area of 55,500 km^2 and consequently we need to operate a large fleet of vehicles to allow our staff to serve this territory effectively.

5.125 When operational vehicles reach the end of their useful lives we are committed to replacing them with more efficient models; decisions have typically been influenced by emissions data from the vehicle registration certificate.

5.126 During 2018/19 there were changes to the process used for testing vehicle emissions. New emissions tests (known as the World Harmonised Light Vehicles Test Procedure) are based on real life driving data and are designed to eliminate the discrepancy between previous laboratory based testing and on road performance. The new emissions testing was introduced in September 2018 for passenger vehicles and September 2019 for commercial vehicles. We are already seeing changes to stated emissions from manufacturers due to more stringent testing procedures and the pressure this places on manufacturers.

5.127 Details of replacements for some of our most commonly used operational vehicles is shown below, the emissions for some equivalent vehicles have increased.

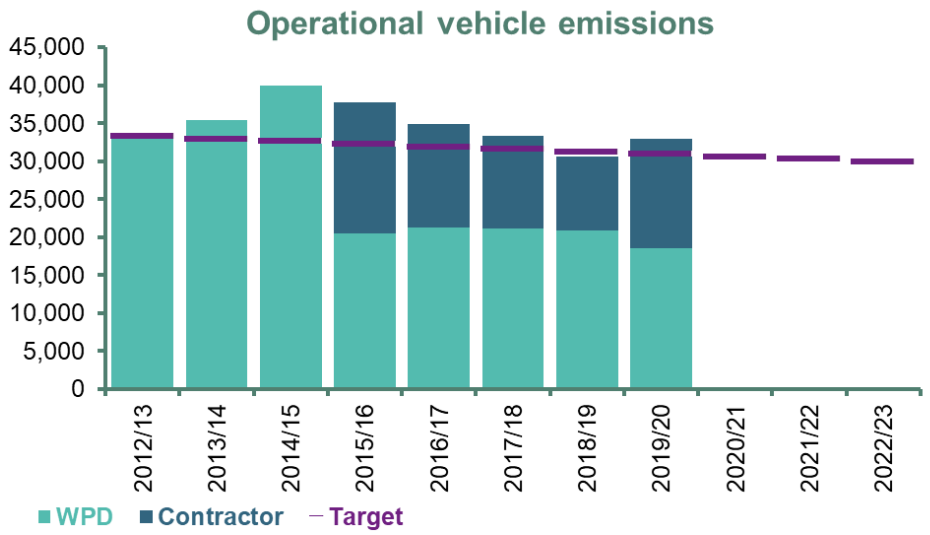
Emissions – operational vehicle replacements			
Previous vehicle	CO_2 emissions (grams per km)*	Current vehicle (2019)	CO_2 emissions (grams per km)
Vauxhall Corsa	94	Ford Fiesta Van 1.5 Euro 6	82
		Nissan ENV200 40kW	0
Transit Connect SWB	115	Transit Connect SWB Euro 6	118
		Nissan ENV200 40kW	0
Transit Connect LWB	115	Transit Connect LWB Euro 6	122
		Nissan ENV200 40kW	0
Isuzu DMAX	183	Isuzu DMAX Euro 6	183
		Ford Ranger Euro 6	182
Isuzu DMAX MEWP	183	Isuzu DMAX MEWP Euro 6	183
Transit 350 MWB RWD (Current Euro 6 model)	197	Iveco Daily 35S14V RWD	195
		Transit 320 Custom Euro 6	159
Transit 350 MWB FWD Euro 6	185	New Transit 350MWB FWD Euro 6	179
Transit 350 MWB AWD Euro 5	255	New Transit 350 MWB AWD Euro 6	250

*Emissions based upon previous testing arrangements.

5.128 We expect that emissions values will continue to change as the new testing procedures are implemented, making direct comparisons more difficult.

5.129 We submit emissions data to Ofgem based on mileage information, calculated in line with Defra guidance on conversion factors. WPD operational vehicles and contractor operational vehicles accounted for 44% of overall BCF reported in 2019/20. WPD continues to look at alternative fuel vehicles for the internal fleet as well as looking at driver behaviour to reduce fuel consumption.

5.130 Our performance in 2019/20 for operational vehicle emission is slightly above target. While there have been reductions in the emissions from the internal fleet, there have been increases from our contractors, so we are working with them to improve monitoring and reduce operational vehicle emissions.



5.131 To support our commitment to lower emissions, WPD is trialing vehicles that utilise alternative fuels.

5.132 At present WPD is continuing to evaluate electric operational vehicles. Criteria such as range between charging, payload (the weight capacity of the vehicle) and usage are being reviewed to identify the appropriateness of these vehicles for future WPD needs.

5.133 As a result of the work conducted so far, WPD has been able to begin working towards a transition to electric vehicles. During 2019/20 we have:

- started to install rapid electric vehicle chargers at depots and plan to have charge points installed at all offices and depots by 31 March 2023; and
- delivered EV pool cars to main depots to avoid the needs for short-term hire vehicles.

5.134 We have also had two vehicles converted to dual fuel hydrogen and diesel usage, these became operational in April 2018. Analysis of the project (in conjunction with the University of South Wales) is likely to continue for the operational life of the vehicles which is expected to be around six years. To date there have been some issues with sourcing the hydrogen fuel caused by a technical problem with the fueling system at the supply facility and the vehicles have therefore had to operate in diesel mode at times. The technical problem with the fueling systems has now been rectified.

5.135 During 2018/19 we participated in a study by an external contractor working with Nottingham City Council to help Nottingham become a global leader in low carbon mobility. The review determined that approximately 10% of WPD's Nottingham based fleet can be considered for pure EV replacement, and this will now provide the basis for modelling suitable vehicles. In 2019/20 we began to implement this strategy, delivering 8 electric vehicles for the Nottingham region so far. From this we hope to develop new approaches to working in Clean Air Zones across our region.

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

5.137 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.

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

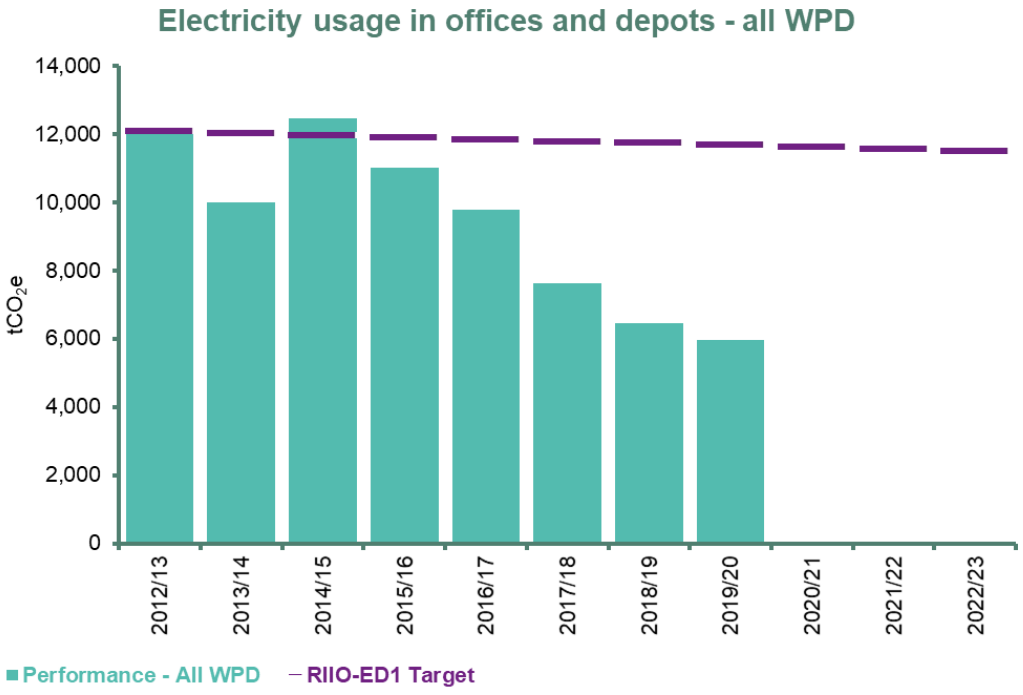
5.139 There were no new building or refurbished building during 2019/20, but all previous building refurbished during RIIO-ED1 have achieved the maximum rating.

Reducing electricity usage in offices

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

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

5.142 Overall progress in relation to the RIIO-ED1 targets for a reduction in electricity usage is shown below. We have achieved a 50.9% reduction in comparison to our benchmark year of 2012/13.



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

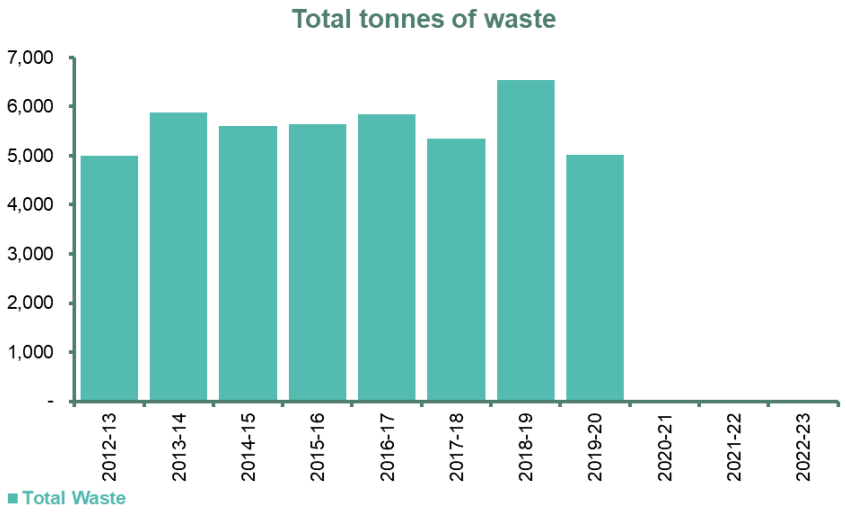
5.143 WPD's business activities create waste. This includes metal from overhead lines, cables and redundant switchgear; wood from wooden poles; packaging from new components; paper from offices and various forms of plastic.

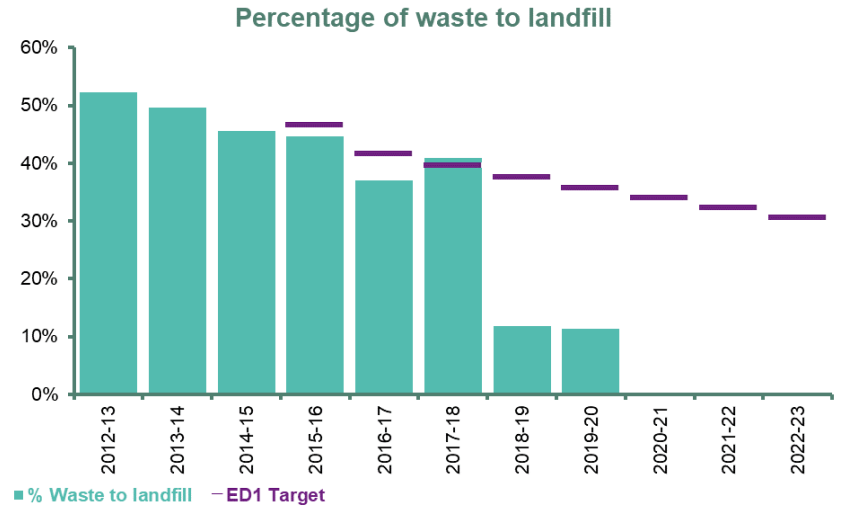
5.144 WPD has for a number of years, segregated and recycled waste, where possible, to limit the amount being sent to landfill.

5.145 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 for the amount sent to landfill is expressed as the percentage of overall waste.

5.146 We work closely with all of our waste contractors to ensure that, where possible, waste is diverted from landfill. During 2019/20 the total tonnage of waste produced has decreased by 23% compared to the previous year. The proportion of this waste sent to landfill has been significantly below the target for the second year.

5.147 Our performance can be seen below:





Environment Standard ISO 14001 (2015)

5.148 We are committed to demonstrating effective and responsible environmental management and since 2011 WPD has been certified to ISO14001 (2004) Environmental Management Systems standard. In May 2017 WPD successfully transitioned to the new standard version ISO14001 (2015).

5.149 During 2019/20 we had one ISO14001 surveillance visit by our newly appointed external certification body, NQA. No major non-conformances were raised during the visit and the minor non-conformances which were raised identified have all been closed out and accepted by the auditors. We will seek recertification in May 2020.

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

Reduce the environmental risk of leaks from equipment

5.152 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.

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

Output (30) Reduce by 75% the amount of oil lost through leaks from oil-filled cables.

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

5.155 WPD has committed to reduce the volume of oil escaping from fluid filled cables by 75% over the 8 year RIIO-ED1 period through the use of PFT tagging and the replacement of poor condition fluid filled cables.

5.156 There were 42 oil mitigation schemes reported for 2019/20, of which 16 were in West Midlands, 10 in East Midlands, 13 in South Wales, and 3 in the South West.

Application of PFT tagging

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

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

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

Replacing poor condition fluid filled cable

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

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

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

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

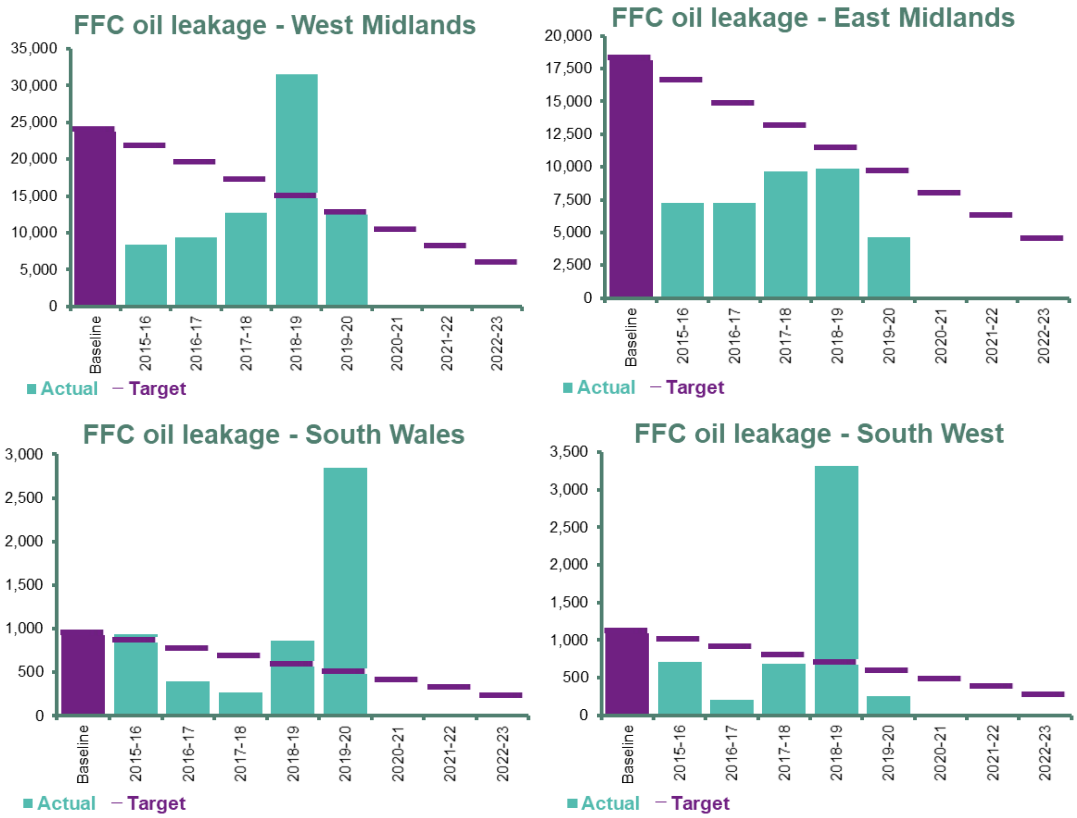
5.164 During the course of RIIO-ED1 we have decommissioned a total of 44.8km of fluid filled cables, representing a total reduction of 5.8% of our overall population of this asset type. 25.5km relate specifically to condition related disposals. We have already achieved our RIIO-ED1 target of removing 1% of fluid filled cables as shown below.

Fluid filled cable removals (km)					
	West Midlands	East Midlands	South Wales	South West	WPD Total
Population 2014/15	315.6	277.4	60.8	115.8	769.5
Forecast 1% removals (total RIIO-ED1)	3.2	2.8	0.6	1.2	7.7
Disposals during RIIO-ED1 – condition	21.7	3.6	0.2	0.0	25.5
Disposals during RIIO-ED1 – other	7.2	6.7	2.1	3.3	19.2
Disposals during RIIO-ED1 – total	28.9	10.3	2.3	3.3	44.8

* WPD total may not reconcile due to rounding

5.165 During 2019/20 there has been a significant decrease in the volume of oil leaked from fluid filled cables during compared to 2018/19 and the leakage rate was less than half of that in the reference year. In 2019/20, across the whole of WPD, 57% of the amount of fluid leaked can be attributed to five circuits.

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



5.167 The only licence area to not beat the target for this period was South Wales. This was caused by leaks occurring on two circuits, which accounted for 85% of leakage volumes in this licence area. In both cases due to previous PFT tagging were able to locate the sources of the leaks quickly. The first was caused by a failure at a cable joint. In the second case it was discovered a family of squirrels had nested within a cable guard around the cable fixed to wood pole terminal structure. The squirrels had chewed through the outer sheath and lead sheath of the cable causing the leak.

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

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

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

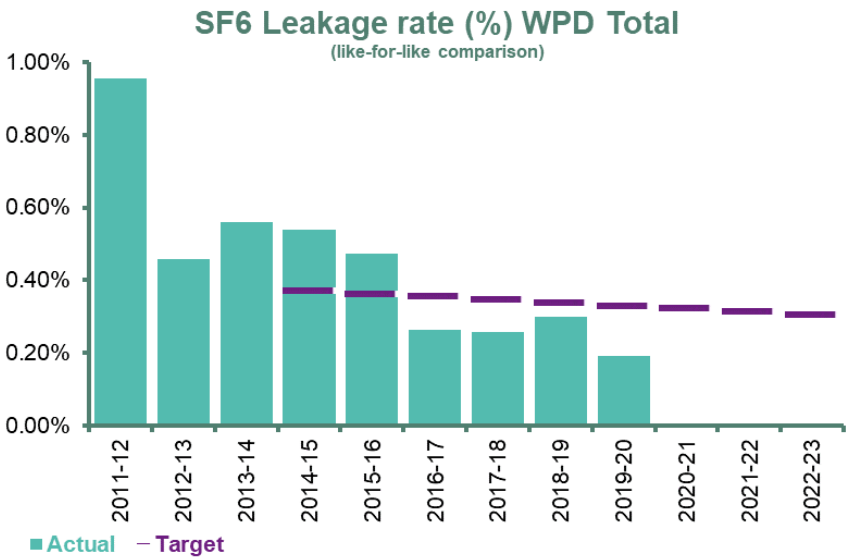
5.170 Leaks are identified by either a low gas alarm being triggered via control systems or from a low gas reading on a gauge being identified during a switching operation or a routine substation inspection. When a leak becomes apparent the source of the leak is located so that a strategy can be developed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

5.171 During RIIO-ED1, WPD has committed to reducing the rate of SF_6 leakage by 17% based upon a four year average of emissions between 2009/10 and 2012/13. During this time we have undertaken 21 SF_6 mitigation schemes of these 5 have been in West Midlands, 1 in East Midlands and 15 in the South West.

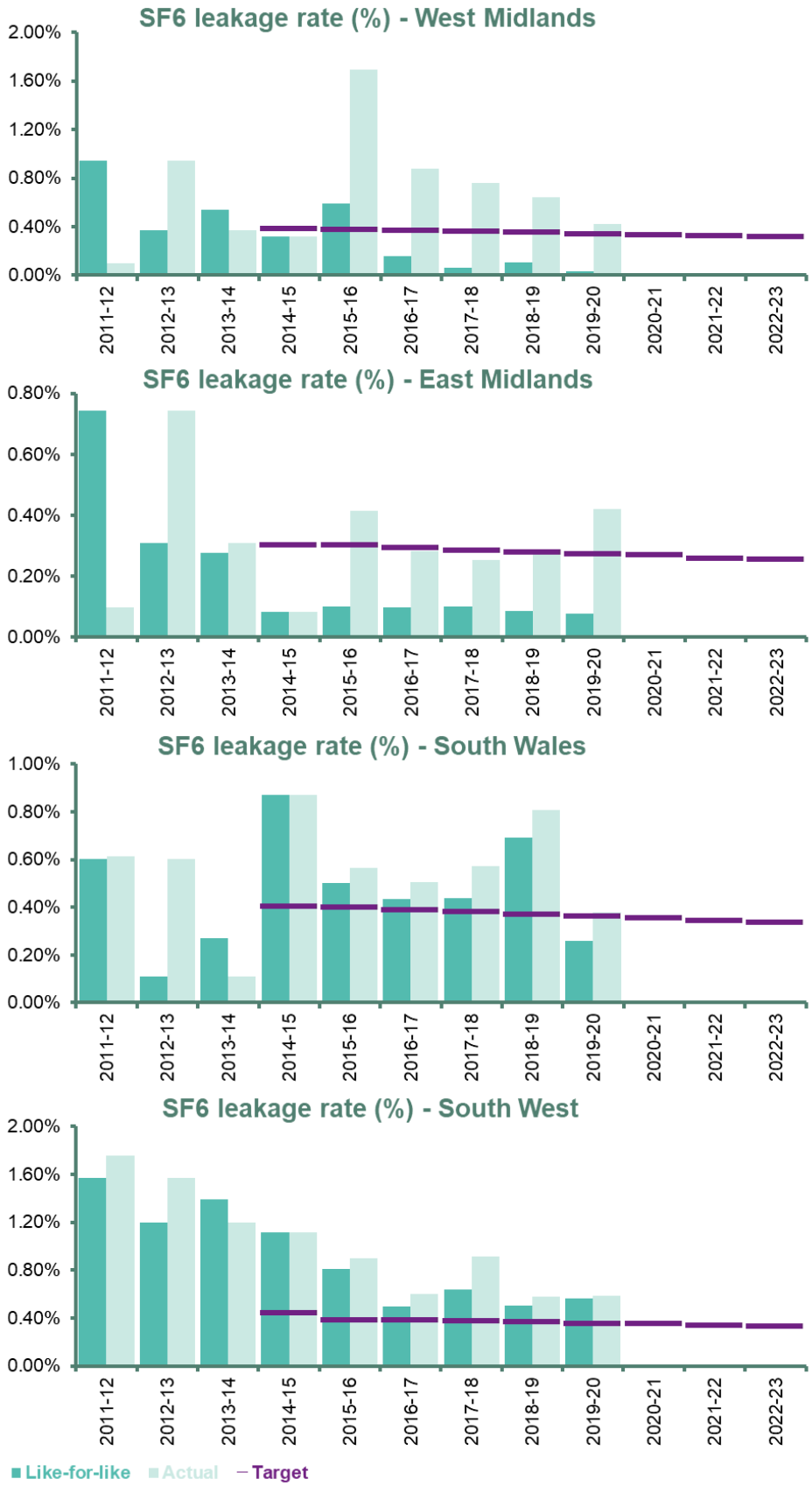
5.172 The amount of SF_6 lost is expressed as a percentage of the overall 'bank' of switchgear containing SF_6 as this will vary over the period of RIIO-ED1 as new equipment is added and old equipment decommissioned.

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

5.174 In 2019/20 we have beaten our overall target to reduce by 17% the amount of SF_6 gas that is lost from switchgear. (The following chart does not include the additional data gathered from scrapped equipment).



5.175 Our like-for-like and reported performance against the RIIO-ED1 target for each licence area is shown below. On a like-for-like basis targets have been beaten in the West Midlands, East Midlands, and South Wales but emissions in the South West are higher than target. When the new additional data from scrapped equipment is included in the totals the original targets (which did not include this data) have not been met.



5.176 WPD continues to work towards improving performance and to achieving the target reductions in SF_6 emissions. In 2016/17 we acquired leak detection equipment, which enables us to pinpoint the location of leaks once a leaking item of equipment is identified.

5.177 In September 2017 WPD launched the NIA project SF_6 Alternatives with the aim of evaluating alternative insulating mediums in place of SF_6. A methodology for testing alternative gases in switchgear was developed and potential gases have been tested. At present the options that were put forward by suppliers were not viable but we will test further options when they become available.

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

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

5.179 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.

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

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

5.182 Positive progress has been made across all licence areas; to date we have completed work on 173 bunds as detailed below, exceeding our target of 104 for the price control.

Oil containment bunds completed during RIIO-ED1					
	West Midlands	East Midlands	South Wales	South West	WPD Total
New bunds	1	15	3	3	22
Refurbished bunds	32	10	33	76	151
Total bunds	33	25	36	79	173

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

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

5.184 WPD operates 90,000km 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.

5.185 The main method of improving visual amenity, whilst maintaining supplies, is to replace the overhead lines with underground cables. Following stakeholder engagement WPD committed to undergrounding 55km of overhead line during RIIO-ED1 by working with representatives from AONBs and National Parks.

5.186 Each licence area has a steering group consisting of WPD staff and representatives from AONBs and National Parks. These groups are responsible for identifying projects 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 acceptance and delivery of projects is dependent on the views of the steering group and the timescales to develop and implement schemes can vary.

5.187 To date during RIIO-ED1 we have undergrounded 29.1km of overhead lines at a cost of over £4 million. A range of further projects have been assessed and accepted for delivery. These projects will progress during the remainder of RIIO-ED1, and there is additional funding available dependent on further projects proposals from the steering groups.

Undergrounding in National Parks and AONBs (km)					
	West Midlands	East Midlands	South Wales	South West	WPD Total
Target for RIIO-ED1	14	10	10	21	55
Performance during RIIO-ED1	14.0	8.5	1.4	5.2	29.1

5.188 The visual impact of work undertaken is significant, a case study is provided below.

Cannock Chase, West Midlands AONB

During 2019/20 work was undertaken to remove overhead power lines around Marquis Drive Visitor Centre.

Approximately 3.5km of overhead lines and 48 wooden poles from White House to Moors Gorse have been removed over a period of approximately 16 weeks. The programme of work was designed to minimise disruption to this sensitive area.

Further work is planned here for a scheme proposed jointly by the AONB and the National Trust, which will see overhead wires at Shugborough Park removed to restore the historic character of this iconic Grade I listed park.

Before:

After:

Connections

RIIO-ED1 Business Plan Commitments Report
Year Five – 2019/20

30 October 2020

WESTERN POWER DISTRIBUTION

Serving the Midlands, South West and Wales

Connections
Contents

6 Connections

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

6.2 During RIIO-ED1 there has also been growth in the number of customers interested in energy storage connections. Energy storage is considered to be a demand when consuming power and a generator when releasing power.

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

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

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

Regulatory framework

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

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

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

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

Overview of connections outputs

Provide a faster and more efficient connections service		
34	Meet Ofgem's targets for the overall 'time to quote' and 'time to connect' for single domestic connections and small commercial connections. Improve the overall time taken to provide a quote for all other customer groups by 20%.*	We outperformed Ofgem's targets for 'time to quote' and 'time to connect' for single domestic connections and small commercial connections. We have also beaten targets for three of the other customer groups.
35	Provide excellent customer service so that customers continue to rank us as the top-performing DNO group in customer satisfaction surveys.**	We are one of the top performing DNOs for the Connections Customer Survey in Ofgem's Broad Measure of Customer Satisfaction, scoring an average of 8.99 out of 10 for our DNO group.
36	Carry out surveys with distributed generation customers to find out if they are satisfied with our service and identify where we could improve.	We achieved a score of 9.44 out of 10 for distributed generation customer satisfaction surveys. We have specified a range of improvements within our work plan for the Incentive on Connections Engagement (ICE).
Improve communication with customers		
37	Develop and improve the way we process online connection applications and make it easier for customers to track the progress of their application online.	We have made amendments to our online connections information in line with stakeholder requirements. These have been published in our ICE work plan.
38	Make sure that the information we provide in documents and online is effective.	We have improved the information we provide in documents and online in line with stakeholder feedback.
Enhance engagement with major customers		
39	Host 'surgeries' every three months to help connection customers to understand our processes.	241 connection surgeries took place across our four licence areas.
40	Work with major customers to identify where our processes can be improved and quickly put in place any changes.	We engaged with over 17,000 stakeholders through events and over 1,700 through customer satisfaction surveys. The actions in our ICE work plan are based on suggestions we received from these events and surveys.
Guaranteed Standards of Performance		
41	Aim to achieve no failures of the connection GSOPs.**	There were only 11 failures against the connection Guaranteed Standards of Performance during 2019/20. We had a further seven failures against Competition in Connection standards, which relate to services we provide that cannot be carried out by competitors.
Further developing a competitive market		
42	Improve customer awareness of other connection providers and regularly check that customers understand the options available to them.	We provide clear information for customers explaining that they can use other connection providers. We carry out a yearly survey to measure customer awareness. The 2019/20 survey showed that 87% of customers who had a new connection were aware of other providers.
43	Work with other connection providers to extend the type of work they can carry out, including high voltage and reinforcement work.	We host a group to focus on the specific needs of other connection providers. Two sessions took place during 2019/20 and we used feedback to improve our processes.

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

Provide a faster and more efficient connections service

6.8 As part of the RIIO ED1 business plan WPD committed to providing a faster and more efficient connections service. Three outputs were identified to measure our performance against this commitment, including a commitment to improve the overall time taken to deliver a connection by 20%.

6.9 As connection processes have evolved, it has become clear that some customers do not necessarily require a faster service; they require an appropriate and timely service. This means that they want clarity on their connection costs prior to commencing their development and require the connection works to be delivered in line with their project timescales rather than simply as quickly as possible. Whilst WPD remains focused on improving the time to provide a quote, we consider that the measure to improve connection timeframes by 20% is now no longer a priority for all customer groups.

6.10 Around 60% of the connections that we made during the regulatory year were 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). For these customers we recognise that speed of overall connection remains important and we are committed to meeting the targets set as part of Ofgem's Time to Connect incentive.

6.11 For all other market segments we will continue to work to achieve our commitment to improve the overall time to quote by 20%. We will also measure customer satisfaction with our connections service using Ofgem's Broad Measure of Customer Satisfaction and our own surveys for Major Connections customers and Distributed Generation customers, aiming to achieve Ofgem's target of 8.2 out of 10 and our own stretching target of 8.8 out of 10. We are committed to responding to customer requirements to improve connections processes and our actions in line with this commitment are detailed for outputs 37 to 40. Our progress is measured by our performance in line with Ofgem's Incentive on Connections Engagement (ICE).

6.12 Output 34 of our RIIO ED1 business plan has been reworded as follows.

Output (34) Meet Ofgem targets for time to quote and time to connect for single domestic connections and small commercial connections. Improve the overall time to provide a quote (for all other market segments) by 20%.

2019/20 performance for the Time to Connect incentive

6.13 The following table shows WPD's performance against the Ofgem Time to Quote and Time to Connect targets for LVSSA and LVSSB market segments in 2019/20. All targets have been beaten.

	Time to Quote (average number of days)		Time to Connect (average number of days)	
	LVSSA	LVSSB	LVSSA	LVSSB
West Midlands	2.27	2.81	28.68	34.81
East Midlands	2.20	3.46	27.55	33.98
South Wales	1.98	3.66	24.58	30.35
South West	3.12	3.66	26.91	32.45
Ofgem target	**4.84**	**7.84**	**39.28**	**47.94**

2019/20 Time to Quote performance for all other connections

6.14 For all other market segments, WPD has set specific targets with the aim of achieving 20% improvement on benchmark performance for time to quote (derived from an average of 2013/14 and 2014/15) by the end of RIIO-ED1. We have a specific target for each year of RIIO-ED1 which will ensure that we meet our target for the end of the price control.

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
2019/20 target	7.4	9.8	10.0	32.1	32.5
2019/20 performance	8.2	11.1	20.1	25.6	34.5

6.15 There are a number of factors that can influence the time to provide a quote, including fluctuations in the volumes of requests received and the complexity of the analysis and design work required.

6.16 WPD regularly reviews processes to ensure that timescales are as short as possible and that feedback from customers is incorporated.

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

6.18 Targets for 2019/20 have been beaten for the DGHV category.

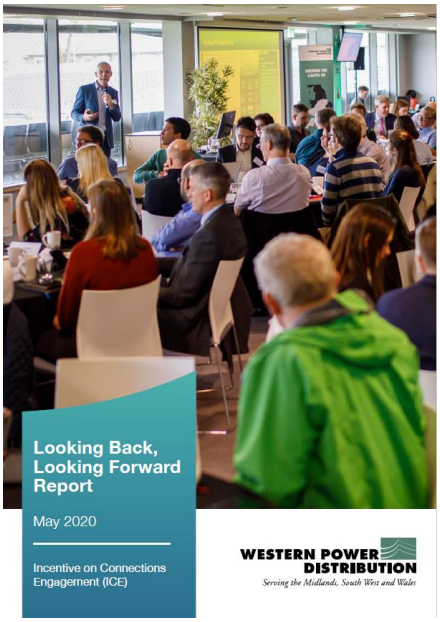
Output (35) Provide excellent customer service so that customers continue to rank us as the top-performing DNO group in customer satisfaction surveys.

Output (36) Carry out surveys with distributed generation customers to find out if they are satisfied with our service and identify where we could improve.

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

6.20 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.

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



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

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

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

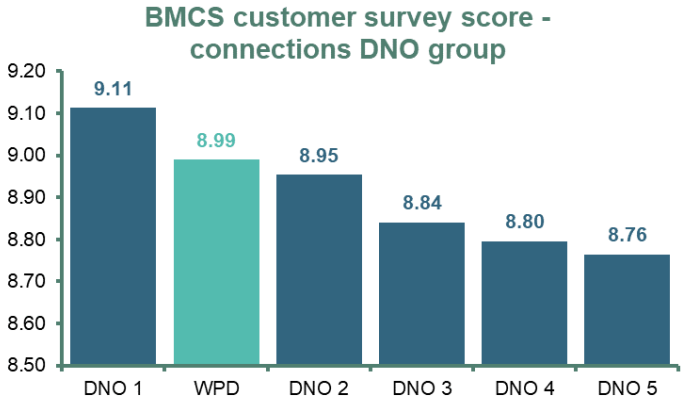
2019/20 performance in customer satisfaction surveys

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

6.25 WPD's 2019/20 performance for the three different customer groups is shown in the following table. We have a stretching internal target of 8.8, we are beating this target for Minor Connections and work is ongoing to achieve this for the Major Connections and Distributed Generation customer surveys. We will continue to seek feedback from stakeholders in each customer group in order to improve our processes and identify best practice.

Connection customer satisfaction survey results 2019/20			
Customer Groups	**Ofgem target**	**Internal Target**	**Result**
Minor Connections (LVSSA and LVSSB)	8.2	8.8	8.99
Major Connections	n/a	8.8	8.73
Distributed Generation	n/a	8.8	8.59

6.26 The BMCS customer survey score for LVSSA and LVSSB connections provides a method of comparing DNO performance. The chart below shows the results by DNO group for 2019/20, customers have rated WPD a top-performing DNO group but performance across the industry is improving and continues to be increasingly competitive.



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

Improve communication with connections customers

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

6.28 Customers are able to either apply for a new connection online or download a version of the application form to be completed on paper.

6.29 Some connection customers also prefer to carry out transactions and track progress online. To facilitate this, WPD committed to enhancing online connections processing and progress tracking.

6.30 We continue to develop the systems and processes available to customers.

The Connection Portal

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

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

6.33 During 2019/20 we have made several improvements to our Connections Portal including expanding the scope for attaching electronic documents, enabling a grid reference to be entered for sites without an allocated postcode, and producing a summary of the application at the end of the process (which the customer can save and refer back to). In addition, we have improved the guidance provided throughout the online application process.

CIRT

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

6.35 We committed to an ICE initiative to provide customers with on-line access to information about the status of the legal process relating to their connection. Customers are now able to track the legal and consents process from initial landowner contact to the point where we instruct our lawyers. A second stage of communication is completed by our lawyers who have now given customers, their legal representatives and ICPs access to their case management system, allowing customers to track progress in relation to the purchase of land and/or rights over land for connection.

A new ICP online portal

6.36 Whilst some ICPs use CIRT, others prefer to use the online application process or email. We therefore developed an on-line portal with access via a registration process. The new system was discussed at stakeholder events in order to gather feedback and was user tested by nominated ICPs prior to implementation. All ICPs have been notified and invited to register for access. We are monitoring the number of registrations and continue to work with ICPs as they utilise the service so that we can obtain further feedback. The method complements existing application processes. The new portal allows customers to submit applications, self-connection requests and commissioning documents.

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

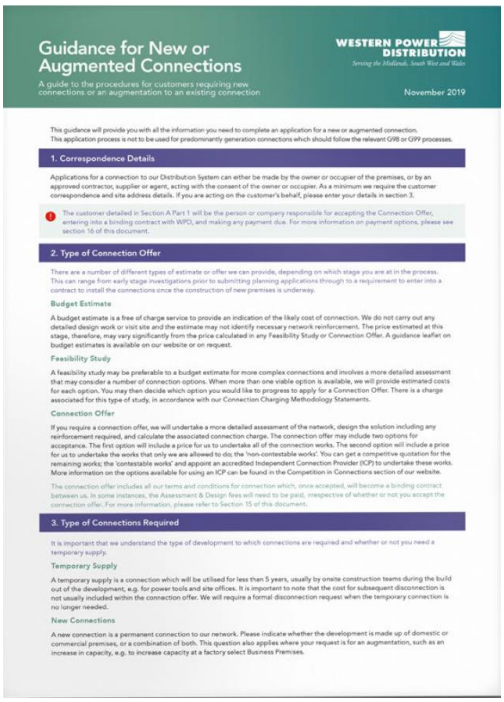
6.38 WPD has committed to ensuring that customers requiring a connection receive clear information on the process. Information is provided to customers online via our website, through our contact centre staff or by direct contact with local planners. We regularly update the information provided to customers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

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

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

6.41 Some of the improvements introduced during 2019/20 are detailed below.

- We updated and published WPD's Electric Vehicle (EV) guide 'Getting Electric Vehicles Moving' to provide clearer information for stakeholders and launched the EV Capacity Map to show stakeholders the potential capacity for EV chargers. The guide has been downloaded 1,652 times and the EV Capacity Map has received 3,855 hits during 2019/20.
- The Distribution Future Energy Scenarios (DFES) map was launched to improve stakeholder access to information on future energy scenarios which contain forecasts of the uptake of different technology types up to 2032. This site was completed during March 2020 and has received 2,976 hits/downloads of DFES data during so far.
- We hosted four webinars on flexibility and associated contractual arrangements. These sessions had a total of 82 participants and are available to stream from WPD's website.
- To further improve the information available to stakeholders in July 2019 we launched an interactive Energy Data Hub. This portal provides simple access to the range of data resources that are shared with the industry, Ofgem and customers.
- In addition we have hosted four webinars for Local Authorities to improve their understanding of our forecasting information and scenario planning which included using the Energy Data Hub.
- We have updated and published WPD's DSO Forward Plan to keep customers informed on the latest steps in our DSO transition.
- We have improved the guidance available on our website regarding the option for Connection Surgery appointments to make it easier for customers to talk to us prior to making an application for larger projects. This was completed in September 2019 and has resulted in an increase in the number of surgeries held compared to 2018/19.
- We enhanced the functionality and design of the Network Capacity Map to include additional criteria and improve ease of understanding for users. The changes have received positive feedback and yielded a 28% increase in the number of hits.
- We have also produced a clear guidance leaflet to assist customers through the connection application process. This guidance can also be viewed via our website at the below link. www.westernpower.co.uk/downloads-view-reciteme/79789


Guidance for New or Augmented Connections

WESTERN POWER DISTRIBUTION

A guide to the procedures for customers requiring new connections or an augmentation to an existing connection

November 2019

1. Correspondence Details

2. Type of Connection Offer

Budget Estimate

Feasibility Study

Connection Offer

3. Type of Connections Required

Temporary Supply

New Connections

Improve our engagement with major customers

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

6.42 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.

6.43 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.

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

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

6.46 WPD's ICE submission for 2019/20 provides further detail on WPD's connections engagement and the actions this has led to. The submission can be found at the link below.

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

6.47 The main principle of the stakeholder engagement that we undertake is that it must lead to action. During 2019/20 we delivered 38 initiatives through our ICE workplan, including substantially increasing the information available to customers, enhancements to our capacity map and the publication of a range of new guidance documents.

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

Customer Connections Steering Group

6.49 During 2019/20, 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 directors and senior managers.

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

6.51 The CCSG directly influences ICE initiatives, for example we reviewed the accuracy and transparency of assumptions that are made within a quotation to ensure connection quotations are clear, accountable and concise. The initial measure of the success of this action was via feedback from the CCSG to ensure the changes met stakeholder expectations.

Stakeholder workshops

6.52 On an annual basis WPD holds generic stakeholder workshops across a variety of locations. These workshops are available for all stakeholders to attend, but they also include specific elective sessions dedicated to connections activity – including community energy and EVs. The sessions enable stakeholders to participate in round table discussions, ask questions and provide feedback.

6.53 The feedback from our 2019/20 workshops enabled us to validate our proposed ICE workplan outputs and rank these according to stakeholder priorities.

6.54 Further detail of the sessions can be found at the following link.

yourpowerfuture.westernpower.co.uk/workshops-and-events

Community Energy workshops

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

6.56 Our activities are designed to ensure that the benefits of the DSO transition can be shared by all WPD customers and that Community Energy stakeholders are not left behind or disadvantaged when seeking entry to potential new markets. We aim to increase awareness, build knowledge and the ability to participate.

Examples of community energy projects:

Southern Staffordshire Community Energy (SSCE)

SSCE has installed eight solar PV systems on hospitals throughout the Midlands, helping them to save money and using the income to provide energy advice to patients suffering poor health due to fuel poverty.

They reduced the number of readmissions to the Royal Stoke University Hospital by 13.5%, saving them £400,000 while providing enough solar power for 10,645 MRI scans a year.

Bristol Energy Cooperative

Bristol Energy Cooperative's two solar farms and multiple rooftop solar sites generate 9,105 MWh annually, enough to power around 2,200 homes. Every year income from these sites is redistributed to local community projects taking action on climate change and fuel poverty.

In 2020 they teamed up with Low Carbon Gordano, awarding £40,000 in grants to 20 local projects.

6.57 In March 2020 we ran community energy engagement events in Birmingham, Leicester, Carmarthen and Bristol as these aligned to the areas where flexibility services were being procured during 2020. These events were aimed at community energy organisations, local authorities, local energy hubs, academics and other local energy stakeholders to increase awareness of smart energy, flexibility, innovation projects and new community energy models. Discussions were facilitated on the role of communities in smart energy, how more local groups can access flexibility services, and what else is needed to encourage wider participation.

6.58 Overall during 2019/20 we hosted 8 Community Energy Workshops across our licence areas engaging with 182 stakeholders, focusing on flexibility and the smart energy revolution.

6.59 We also ran a social media campaign to raise awareness of the materials and information made available by WPD to support Community Energy Groups. This ran throughout 2019/20 and resulted in a 180% increase in views/downloads of our Community Energy material.

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

6.61 Further initiatives are planned for our 2020/21 ICE workplan including the implementation of a Community Energy Strategy and Action Plan, production of a Community Energy and Innovation Jargon Buster, and providing Community Energy Surgeries so that stakeholders can request bi-lateral meetings with a local multi-disciplinary team to support community energy projects.

Distributed generation owner operator (DGOO) forum

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

6.63 We held three DGOO meetings during 2019/20, attended by companies representing a significant proportion of WPD's connected DG.

6.64 The forum provides input into the development of the ICE workplan, prompting new initiatives throughout the year. During 2019/20 we published the DG post energisation guide, available on the Distributed Generation Online Portal, which details the WPD process for network outages and constraints.

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

www.westernpower.co.uk/connections-landing/guidance-for-connecting-generation-or-energy-storage/distribution-generation-owner-operator-forum

Local investment workshops

6.66 WPD host investment workshops to provide local stakeholders with an update on the investment being made in their local network over the following year. Topics covered include:

- The transition to Distribution System Operator;
- Investment on the network;
- Network constraints; and
- Electric Vehicle charging.

6.67 During 2019/20 we hosted 11 local investment workshops across all four licence areas for stakeholders involved in growth agendas, such as Council Officers and Developers.

6.68 The sessions provide opportunity for WPD to disseminate information and for stakeholders to provide feedback about their priorities in relation to electricity network.

Senior manager contact for major customers

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

6.70 The role of the senior manager contact is to liaise with the customer to understand the range and scope of works they propose to undertake with WPD and act as a senior escalation point of contact to resolve issues. We have continued to offer this contact to major customers and extended the availability of this service to local government authorities and local enterprise partnerships to support long-term planning for connections growth. There were 83 customers choosing this option during 2019/20.

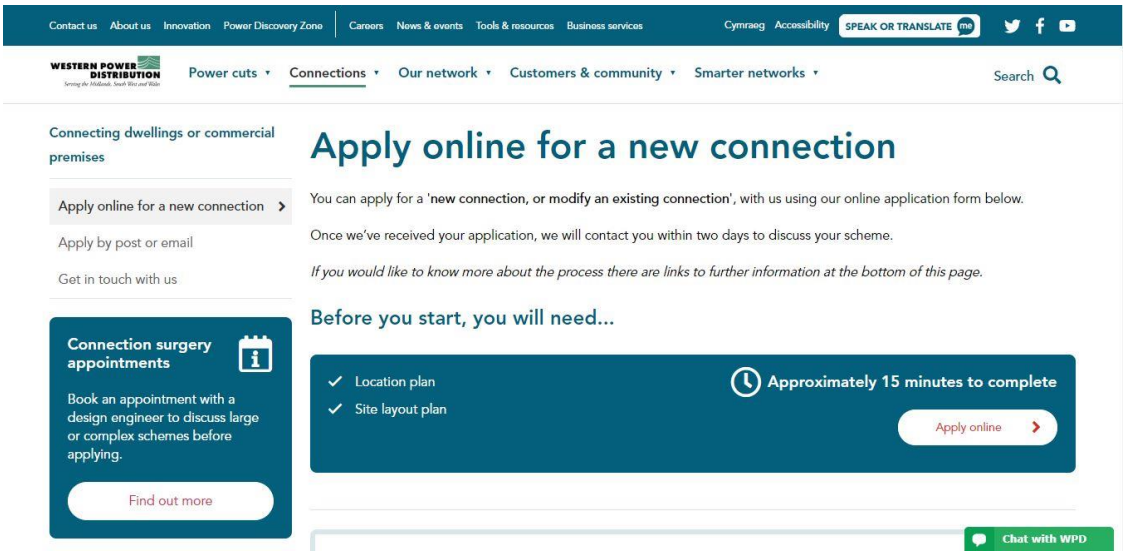
Output (39) Host ‘surgeries’ every three months to help connection customers to understand our processes.

6.71 Local ‘surgeries’ for connections customers continue to be promoted.

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

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

6.74 During 2019/20 we revised our website to raise the profile of this service, including advertising connection surgery appointments on the same page as customers can submit an application. This has led to an increase in surgeries from the previous year with a total of 241 connection surgeries held.



Guaranteed Standards of Performance

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

6.75 During 2019/20 WPD provided 76,658 budget estimates and quotations, 43,985 connections and 9,098 street furniture service fault repairs for local authorities.

6.76 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.

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

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

6.79 During RIIO-ED1, WPD committed to a tough challenge, targeting zero failures against all of the connection guaranteed standards. In 2019/20 we have had only 11 failures against the connection GSOPs. We had a further seven failures against Ofgem's Competition in Connection standards.

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

Further developing a competitive market

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

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

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

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

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

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

6.86 Awareness continues to increase and the 2019/20 results of the survey show that awareness is high with 87% of customers aware that they can use an alternative provider to deliver their new connection.

Raising awareness of the Code of Practice

6.87 WPD contributed to the development of the industry's Competition in Connections (CIC) Code of Practice and has implemented internal policies and procedures to ensure compliance. Information and guidance is also published on our website.

Output (43) Work with other connection providers to extend the type of work they can carry out, including high voltage and reinforcement work.

6.88 WPD actively assists competition by developing processes and systems to allow third party connection providers to extend the scope of what they can do.

Working with connection providers

6.89 We carry out specific engagement with Competition in Connection (CIC) stakeholders to ensure that we receive detailed feedback to enable us to make improvements in this area.

6.90 During 2017/18 we created a new forum to focus on the specific needs of CIC stakeholders; the CIC group. During 2019/20 two CIC group meetings have taken place attended by WPD senior management and stakeholders covering a range of market segments. The group provides feedback on our CIC services, reviewing proposals for improvement initiatives and informing the development of the ICE workplan. Details of the meetings, including minutes can be found at the following link.

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

6.91 The number of attendees has reduced since the forum was created and we have therefore agreed with stakeholders that future meetings will take place twice yearly. Stakeholders felt that the group was important but that fewer meetings were required, particularly as attendees have the ability to discuss specific issues with their WPD senior point of contact where requried.

Extending contestable work

6.92 Since 2013, WPD has been developing processes that allow third parties to carry out work on the HV network. Initially this focused on HV jointing, allowing third party jointers to carry out physical connection work on site. This was followed by the introduction of processes to allow third parties to carry out their own switching, testing and commissioning.

6.93 The scope of work that can be undertaken by competitors has gradually increased and this has been facilitated further by WPD's response to the implementation of the CIC Code of Practice. We have been working with CIC stakeholders to develop processes for the determining the point of connection to the network, approving the design of the connection and the delivery of connection work on site.

6.94 In response to CiC feedback we have updated policy to enable ICP connections to the overhead HV network and expanded the scope of LV disconnections associated with developments. At this point ICPs have not undertaken these expanded scope activities but we will keep them open as an option to trial if ICPs wish to do so.

6.95 We have published guidance for new ICP entrants providing an overview of working in WPD's region.

Design of Points of Connection

6.96 We have implemented processes that allow ICPs to self-determine the point of connection to the existing network (for the majority of straightforward connections).

6.97 These processes were implemented in September 2015 and we have seen the following volumes during 2019/20.

Determined points of connection (all voltages)		
	Volumes	%
Self-Determined POC by ICP	33	0.56
WPD Determined POC	5,818	99.4
Total POC's	5,851	

6.98 In addition ICPs have the option to design the network connection without the need for design approval from WPD. Processes and procedures for authorised ICPs to carry out self-approval have been developed to facilitate competition in connections.

Approval of ICP designs (all voltages)		
	Volumes	%
ICP Self-Approved Design	179	21
WPD Design Approval	680	79
Total POC's	859	

6.99 Implementation has been assisted by the ICE initiatives delivered during 2019/20 which enhanced the policy and procedures for self-design by ICPs, but the proportions of activity carried out by ICPs remain broadly the same as 2018/19.

Delivery of physical connection work

6.100 During 2013 HV jointing trials were initiated, allowing third party jointers to carry out physical connection work on site, this was followed by the introduction of processes to allow third parties to carry out their own switching, testing and commissioning.

6.101 We work with stakeholders to support the development of competition in connections work. In 2016/17 stakeholders indicated that our processes for HV self-connection could be simplified and we trialed a new option for safety authorisation. This involved an agreement that switching could be undertaken under WPD's safety rules whilst the associated jointing work could be undertaken under the ICP's safety rules. This hybrid option (referred to as Option 4) was implemented in July 2017 and communicated to ICPs.

6.102 There is a progressive year-on-year increase in the volumes of HV connections completed by a third party ICP. The volumes are shown in the table below. Of the 36 connections completed by third parties 33 were carried out under 'option 4'.

HV connections completed										
	2015/16		2016/17		2017/18		2018/19		2019/20	
	Volumes	%	Volumes	%	Volumes	%	Volumes	%	Volumes	%
HV connected by ICP	10	4	15	7	19	8	36	13	74	30
HV for ICP connected by WPD	214	96	213	93	225	92	233	87	174	70
Total POC's	224		228		244		269		248	

6.103 Within the RIIO-ED1 business plan, WPD committed to facilitating the extension of contestable work to allow third parties to undertake network reinforcement. Network reinforcement is required where there is limited capacity on the existing network to

accommodate the load of new connections. It may result in upstream assets being increased in size or additional circuits being provided. To date there has been no take up of this option by third party providers; we are reviewing the existing trial application criteria with the aim of broadening the range of potentially interested parties.

6.104 We have previously improved the administrative processes surrounding our LV jointing processes. ICPs indicated that efficiency could be improved, particularly for high volume activities such as work on unmetered supply projects. We surveyed ICPs using the live jointing processes and undertook a process review. We created a new portal which enables ICPs to log in and populate live jointing notifications. The speed of the process has been improved and we have had positive feedback, we will continue to work with ICP users to identify further improvements.

6.105 Our stakeholders asked us to provide improved reporting on the inspection activity that is undertaken for both ICPs undertaking work to be adopted by WPD, and WPD's own works. We have therefore developed monthly reporting to enable ICPs to view their performance in relation to their peers, including WPD. This information can be found at the following link.

www.westernpower.co.uk/connections-landing/competition-in-connections/icp-inspection-reports

Customer Satisfaction

RIIO-ED1 Business Plan Commitments Report
Year Five – 2019/20

30 October 2020

WESTERN POWER DISTRIBUTION

Serving the Midlands, South West and Wales

Contents

7 Customer satisfaction

7.1 The provision of excellent customer service for WPD's 7.9 million customers is a core business objective.

7.2 WPD has committed to a range of outputs to improve customer satisfaction.

7.3 The Customer Satisfaction outputs are in six themes.

- Customer service
- Telephone response
- Communication with customers
- Stakeholder engagement
- Complaints
- Guaranteed Standards of Performance awareness

Regulatory framework:

7.4 Ofgem assesses customer service using the Broad Measure of Customer Satisfaction (BMCS). BMCS is an incentive mechanism that provides rewards or penalties in three areas of customer service – customer satisfaction, complaints and stakeholder engagement.

7.5 Customer satisfaction is assessed through a survey and deals separately with three types of interaction.

- Customers requesting a connection (minor connections only).
- Customers experiencing a supply interruption.
- Customers making a general enquiry.

7.6 The complaints element of the BMCS results in penalties where DNOs do not meet specified target performance. The measure is subdivided into four components with greater weighting applied to repeat complaints and complaints that take longer than 31 days to resolve.

7.7 The final part of the BMCS considers stakeholder engagement with rewards available for DNOs that engage well and use the information obtained to improve the service provided to customers. This incentive has been strengthened to encourage DNOs to focus more on issues relating to vulnerable customers.

Overview of customer satisfaction outputs

Customer service		
44	Continue to be the top-performing DNO group across all elements of the Broad Measure of Customer Satisfaction.**	WPD is a top-performing DNO group for overall customer satisfaction. The rating combines results of the three surveys for supply interruptions, connections and general enquiries.
45	Maintain certification to show that we meet the Customer Service Excellence standard.**	We were awarded 'Compliance Plus' status for 45 of the 57 standards. We were the highest-scoring organisation out of all those accredited.
Telephone response		
46	Respond to phone calls quickly, answering them within two seconds.**	Our average response time for customer calls was 1.91 seconds for fault and emergency calls.
47	Limit the number of calls that are abandoned before we can answer them to less than 1%.**	Only 0.16% of calls were abandoned.
48	Always provide customers with the option to talk to a member of staff when they call our contact centre.	Our systems allow us to make sure that customers are always provided with the option to talk to a member of staff.
Communication with customers		
49	Provide a restoration time for every power cut.**	All power cuts have an estimated restoration time which is updated as further information is provided by field teams.
50	Contact all customers who have been in contact about a fault.**	We contacted 98.6% of customers who contacted us about a fault.
51	Contact customers within two days of receiving an enquiry which was not about a fault.**	We contacted 99.6% of customers who contacted us with an enquiry which was not about a fault within two days.
52	Provide 'on-demand' messaging through text and social media for customers who want to be kept informed in other ways, rather than a phone call.	We provided on-demand messaging through text and social media. We sent 896,608 text messages during high voltage power cuts.
53	Develop 'self-service' options for customers to find information online.	We hosted 18,561 webchat conversations, our app for reporting power cuts was downloaded 18,078 times and we had 2.4 million hits on our online map showing details of individual power cuts.
Involving stakeholders		
54	Continue to host a customer collaboration panel where our CEO will meet with our expert stakeholders four times a year.	The Customer Collaboration Panel met four times during the year. We continued to work with the new Customer Engagement Group to enable the members to challenge our plans for the next price control period.
55	Continue to host at least six stakeholder workshops each year.	We hosted six general sessions, attended by over 380 stakeholders across our licence areas.
56	Continue to produce a stakeholder report every year providing an update on the actions we have taken as a result of stakeholder involvement.	This yearly Business Plan Commitments summary report and the separate detailed report replace the stakeholder report.
Complaints		
57	Resolve at least 70% of complaints within one day.**	We resolved 89% of complaints within one day.
58	Continue to have a target of no complaints where the Ombudsman has to get involved.**	There were five complaints referred to the Ombudsman. In all cases the ombudsman did not rule against WPD.
Guaranteed Standards of Performance awareness		
59	Continue to send the 'Power for Life' publication to all 7.9 million customers and make sure it promotes the GSOPs.**	We issued 'Power for Life' to all 7.9 million customers in November 2019. It 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

Output (44) Continue to be the top-performing DNO group across all elements of the Broad Measure of Customer Satisfaction

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

7.9 There are three separate customer satisfaction surveys that are carried out covering connections, supply interruptions and general enquiries.

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

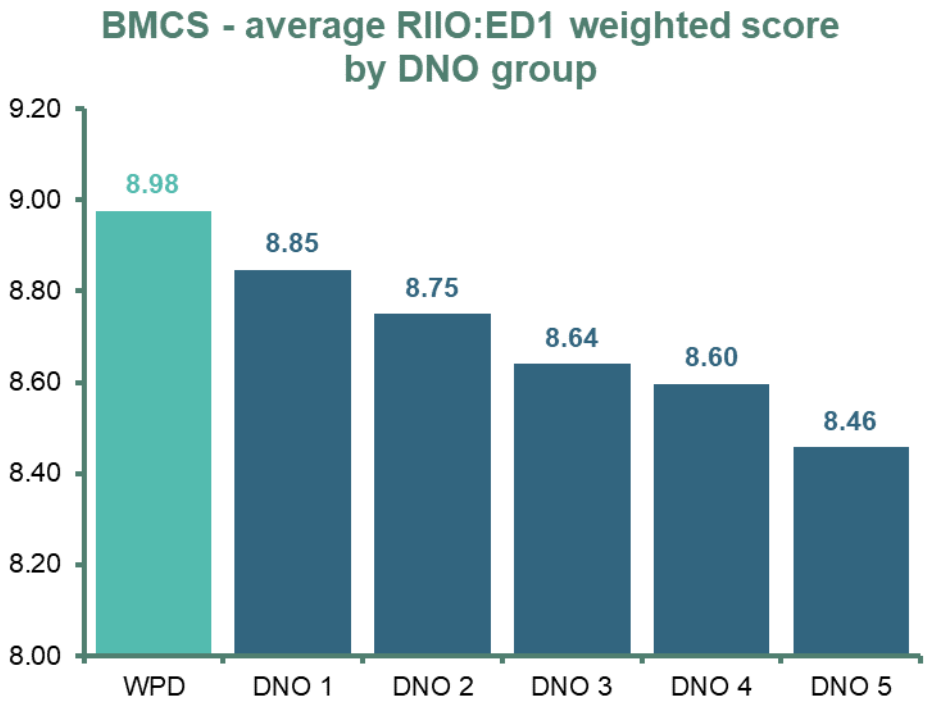
Relative weighting of customer satisfaction survey	
Connections	50%
Supply interruptions	30%
General enquiries	20%

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

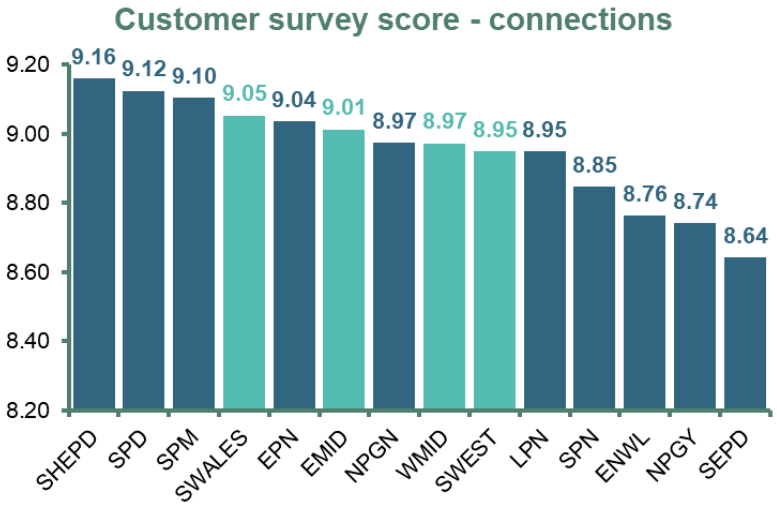
Overall customer satisfaction

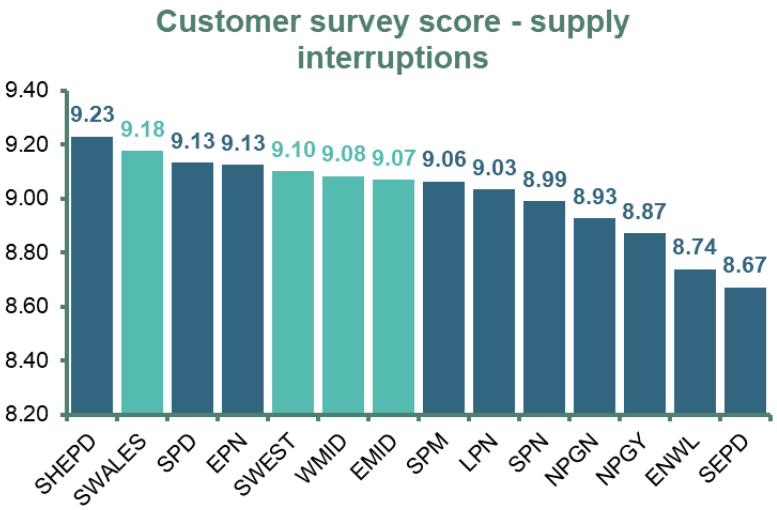
7.12 WPD was a top-performing DNO group in 2019/20 for overall customer satisfaction (amalgamating results for the three surveys for connections, supply interruptions and general enquiries) when compared with the other DNOs.

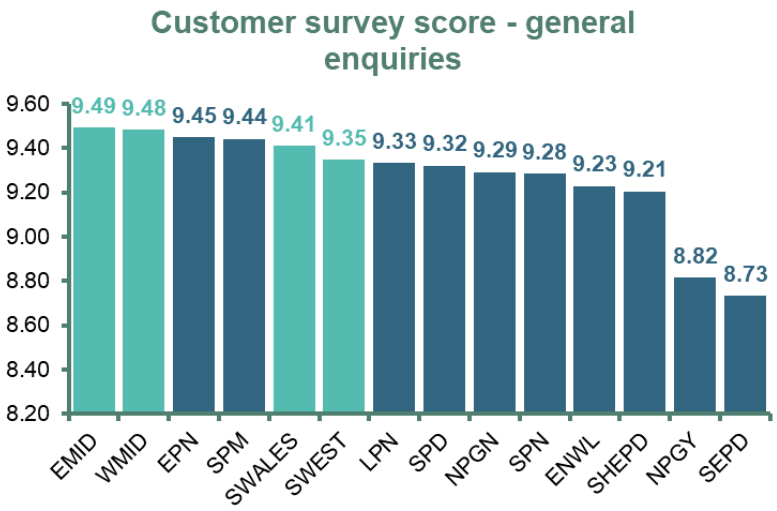
7.13 WPD remains the top performing DNO group compared with other DNOs for the RIIO ED1 period, as shown below.



7.14 The 2019/20 performance in the three separate components is shown below for each licence area.







7.15 Improvements to customer service have been implemented by acting on the feedback customers provide when contacted by WPD staff. This process involves senior managers reviewing individual comments to identify specific business changes that will lead to improved performance.

Output (45) Maintain certification to show that we meet the 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 2019/20 WPD increased the number of 'Compliance Plus' ratings from 44 to 45, out of a total of 57 standards (receiving a compliance rating for all others). WPD was the highest scoring organisation out of 600 companies.

Telephone response

Output (46) Respond to phone calls quickly, answering them within two seconds.

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

7.21 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. We also provide facilities for contact centre and other trained staff to take calls at home, should bad weather prompt this need.

7.22 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.

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

7.24 For 2019/20 average response times for fault and emergency calls were as follows.

Average response time for customer calls					
	West Midlands	East Midlands	South Wales	South West	WPD total
Average time taken for response by an agent (seconds)	2.15	2.25	1.50	1.75	1.91

Output (47) Limit the number of calls that are abandoned before we can answer them to less than 1%.

7.25 Abandoned calls arise when customers decide to hang up before they speak to a call taker. This typically arises when customers are being kept on hold for a long time. WPD's approach of answering calls quickly results in very few abandoned calls. During RIIO-ED1 we have committed to a target of having less than 1% of our inbound calls being abandoned. Within 2019/20 only 0.16% of fault and emergency calls were abandoned.

Output (48) Always provide customers with the option to talk to a member of staff when they call our contact centre.

7.26 When a customer calls about a fault, WPD uses recorded messages to provide information relating to the area where the incoming call is placed. These messages are updated as more information about supply interruptions becomes known.

7.27 Whilst providing recorded messaging is adequate for some customers, many prefer to speak to a call taker to find out further information or to get reassurance about when supplies will be restored. The telephony systems used by WPD always provide customers with the option to talk to a call taker.

Communication with customers

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

7.29 WPD uses a variety of methods to ensure that communication remains effective and appropriate for our broad customer base. During RIIO-ED1, we have committed to developing new channels of communication beyond the traditional telephone and written methods – including online, e-mail, text, smart phone and social networks.

Output (49) Provide a restoration time for every power cut.

7.30 When supplies are interrupted, customers require information about when they will be back on supply. In the RIIO-ED1 Business Plan, we stated that we would be obtaining regular progress updates from field staff in order to be able to provide a restoration time for every outage.

7.31 During RIIO-ED1 we have introduced a process whereby an estimated restoration time (ETR) is automatically populated into our incident management systems. The initial ETR estimates are based on an analysis of the details of the fault – i.e. whether it affects the high or low voltage network, and typically how long it takes for specific fault types to be resolved.

7.32 All contact centre staff have access to the data and can ensure that customers are kept well informed in relation to the likely timeframes for restoration of supply.

7.33 During the course of a fault, dispatch teams gather information from field staff at regular intervals to update the ETR. The incident management system automatically reviews the ETR status of each fault every five minutes and uses an algorithm to prompt members of the dispatch team to update these in advance of the ETR expiring.

7.34 The data about ETRs is linked to the WPD website and to our Power Cut app which provides automatic alerts to customers. This enables customers to keep track of the ETR without having to contact WPD directly.

Output (50) Contact all customers who have been in contact about a fault.

7.35 When customers contact WPD because they are off supply the main thing they want to know is when the power will be restored. While we provide an estimated time of restoration when the customer calls, it may become necessary to revise the estimate as the fault progresses. For these situations WPD has implemented a process of proactively contacting customers to keep them updated.

7.36 When a customer calls about a power outage their details are logged and automatically added to a call back list. When not taking inbound calls, contact centre staff progressively work through the call back list during the course of the fault. Customers who are medically dependent on electricity are given priority.

7.37 The call back process can result in a contact centre team member speaking to the customer, leaving a message or sending a text message. Where there is no reply or an engaged tone the customer's details will be returned to the call back queue.

7.38 A small proportion of customers refuse a call back or do not provide contact details and on occasion we also receive calls from third parties who are not able to provide the customer's contact details.

7.39 During 2019/20 call backs (or another form of contact) were made to 98.64% of customers who were in contact about a fault.

Output (51) Contact customers within two days of receiving an enquiry which was not about a fault.

7.40 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.

7.41 During RIIO-ED1 WPD has committed to contacting customers with non-fault enquiries within two working days. During 2019/20 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	56,305	58,327	27,358	50,641	192,631
Percentage contacted within 2 working days	99.91%	99.12%	99.79%	99.69%	99.59%

7.42 In order to achieve these levels of performance WPD uses a more challenging internal target of contacting customers within one day. Where contact has not been made within one working day of the enquiry, an automated email is sent to the local manager, which is repeated daily until the contact is made.

7.43 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.

Output (52) Provide 'on-demand' messaging through text and social media for customers who want to be kept informed in other ways, rather than a phone call.

7.44 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

7.45 WPD started to use Twitter to interact with customers in July 2013. The number of Twitter followers has grown year on year, increasing from 13,666 in 2015/16 to 34,411 in 2019/20. Our Twitter feed provides updates on outages (using the handle #powercut) and enables customers to interact with us, ask questions and provide information. We proactively tweet on all faults where over 500 customers are off supply and on faults that have prompted a number of social media queries or calls. We also use Twitter to promote WPD information campaigns such as public safety.

7.46 We seek to use Twitter innovatively to raise awareness of the business and to interact with our customer base on various electricity related issues – often reaching customers who might be less likely to engage via more traditional methods.

Facebook

7.47 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'.

7.48 We look to post on Facebook once a day, on average, providing engaging content with regular features, latest news updates, business/industry information and key messages promoting who we are and what we do.

LinkedIn

7.49 We launched a WPD LinkedIn page in February 2017 page, LinkedIn is used to provide business news and to promote general campaigns as well as information on careers within WPD. We use the page as a forum to generate discussion on our business and the wider industry.

Text messaging

7.50 In 2015/16 we introduced a system to send proactive text message updates to customers affected by power cuts. In 2016/17 it was developed into a two way text messaging service so that customers could respond to our messages with queries; this was initially introduced for deaf/hard of hearing customers but we have expanded usage to include all customers.

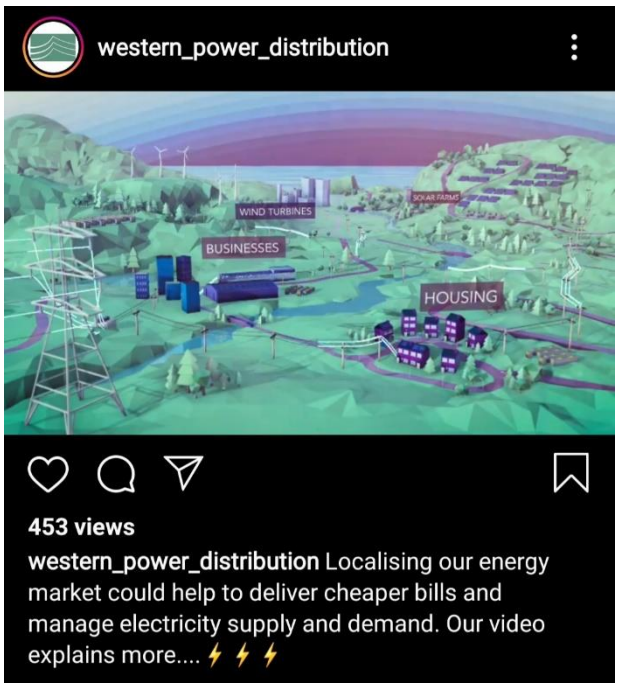
7.51 Customers who have contacted us regarding a power cut are automatically added to a list to receive a proactive call back to provide them with updates regarding the fault. While call backs are generally made by phone a number of customers prefer receiving them via a text message.

7.52 There are exceptions to using text messages – for example we will always call customers on our Priority Services Register and if customers have experienced a supply interruption within the last week we will also ensure that they receive a phone call rather than a text message. Customers are given the opportunity to respond by text and we answer queries and provide further information in this way.

7.53 During 2019/20 we sent 896,608 proactive texts to customers during HV outages and the two way messaging service was used to send 121,427 text messages.

Instagram

7.54 In August 2018 we expanded our social media portfolio by launching a WPD Instagram account. Instagram enables us to promote WPD to a new, potentially younger, audience. We aim to post interesting and eye-catching imagery, relevant to the business, while using hashtags to generate a following.



Output (53) Develop 'self-service' options for customers to find information online.

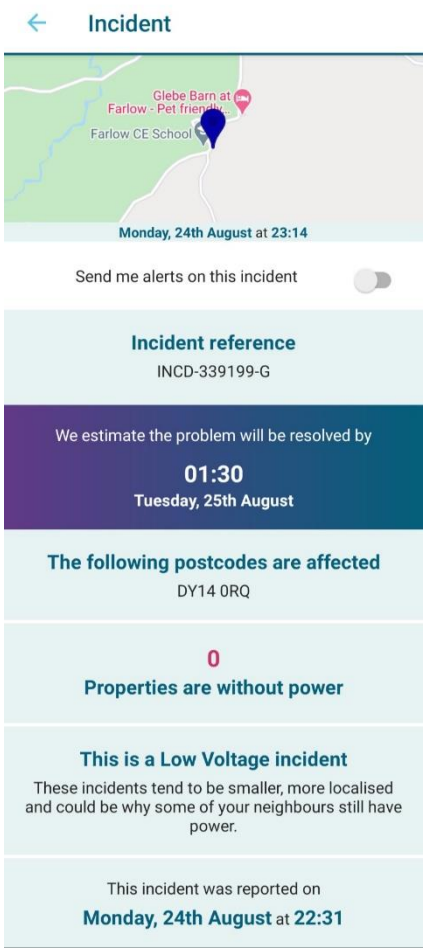
7.55 We ensure that our website is accessible to all customers, supporting individuals with a range of needs such as impaired vision, dyslexia or customers for whom English is a second language. A dedicated 'accessibility' page is clearly signposted on every page of the website. The page provides guidance on a range of options including adjusting font size, altering background colour and the availability of free software to support our customers.

7.56 We have a number of mechanisms designed to enhance the accessibility of the website. This includes the following.

- 'ReciteMe' which has the ability to convert to speech, reading out content to the user. The function allows translation into 103 languages, provision of text to speech and larger font. The function has been used 4,735 times in 2019/20
- 'Robobraille' allows customers to quickly convert information or documents on our website into audio books, braille or another format, the function has been used 1,115 times in 2019/20
- Animated videos on a variety of topics with British Sign Language make sure that deaf and hard of hearing customers can access key advice, the videos have been downloaded 2,626 times in 2019/20.

7.57 There are a number of 'self-service' options made available on the WPD website including the following.

- Webchat functionality allows visitors to the website to communicate online in real time with a WPD advisor 24 hours a day. Usage of the functionality is high, 18,561 took place during 2019/20 with customers indicating 94.2% satisfaction.
- A Power Cut app that can be downloaded, enabling individuals to register a post code so that they receive an automatic alert if a power cut occurs. The app also allows customers to report power cuts, register for the Priority Services Register and self-diagnose problems such as a fuse box trip or a pre-payment meter issue. During 2019/20 the app was downloaded 18,078 times.
- A power cut map with integrated Twitter feed messages is available on our website, allowing quick and easy reporting of power cuts and access to live and updated fault information. The map had 2.4m hits during 2019/20.
- A network capacity map which allows users to quickly view the capacity status at each of our substation sites – including storage, capacity headroom and reinforcement cost information. The map enables potential connection customers to assess the feasibility of schemes without the need for a formal application and was accessed 33,011 times this year.
- A Flexibility Map, enabling customers to determine where flexibility services are currently required and likely to be needed in the future to aid their planning. The map was published on our new Flexible Power website which saw 37,734 hits in 2019/20. The website includes a Flexibility Valuation tool which allows customers to estimate value of providing flexibility services. This tool has been used 1,414 times.



- In 2018/19 we introduced a 'storm mode' for our website – in the event of a storm a simplified homepage permanently displays our power cut map, provides a link to PSR information and live power cut storm reports. This provides customers with vital information during widespread disruption.

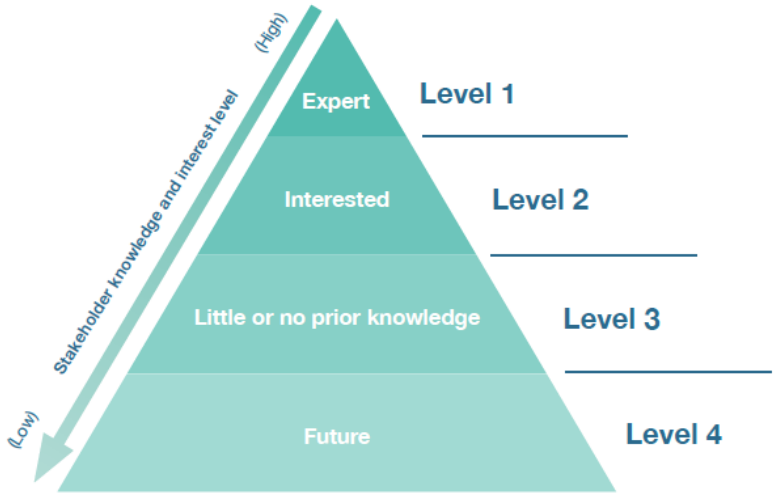
7.58 Usage of our self-service options has grown in most areas since 2014/15; a snapshot of the usage of some of our services is shown below.

Usage of 'self-service' online information		
Self-service option	**2014/15**	**2019/20**
Power cut map	323,837 hits	2,439,114 hits
Post code search	575,533 hits	369,590 hits
Online connection applications	2,811 applications received	9,629 applications received
Find your distributor	85,150 hits	29,134
Who is my supplier (*went live in Jan '15)	31,803 enquiries	1,731,174 enquiries
Priority Services Register applications (online)	1,555	14,778

Involving stakeholders

7.59 Regular stakeholder engagement is used to improve day to day operations and inform business priorities. WPD has a database of approximately 5,500 stakeholder contacts, categorised into customer segments, allowing targeted engagement on specific issues.

7.60 We engage with stakeholders on a variety of levels, dependent upon their knowledge and level of interest as demonstrated in the diagram below.



Stakeholder Level	Engagement methods:	
Level 1: Expert Stakeholders we work closely with to build their knowledge to an 'expert' level, or those who already have an in-depth knowledge of connections activities.	• CCSG • Stakeholder workshops • Consultations • Bilateral meetings	• Industry working group • External industry events
Level 2: Interested Stakeholders who interact regularly with WPD for connections activities and have a sizable knowledge and interest in this area.	• Stakeholder workshops • Consultations • Bilateral meetings • DG Survey	• Connection Surgeries • Community energy events
Level 3: Little or no prior knowledge Stakeholders who may only interact once or occasionally for connections activities and have little knowledge of WPD or this area.	• DG & customer surveys • Connection Surgeries • Annual stakeholder & ICE reports	• Website • Media awareness campaign • Social Media
Level 4: Future Stakeholders who may want connections in the future and may have no knowledge of WPD or this area.	• Connections Surgeries • Annual stakeholder & ICE reports • Community energy events & guide	• Media awareness campaign • Social media • Website

7.61 Part of the Broad Measure of Customer Satisfaction relates to stakeholder engagement. For RIIO-ED1, Ofgem has placed a greater emphasis on service for vulnerable customers as part of the assessment of DNO performance.

7.62 Under Ofgem's Stakeholder Engagement and Consumer Vulnerability (SECV) incentive, all DNOs provide information to an Ofgem expert panel about their stakeholder engagement activities and consumer vulnerability programme and the panel score each company's performance. Ofgem has deferred the assessment of WPD's submission for 2019/20 due to an outstanding related investigation.

Output (54) Continue to host a customer collaboration panel where our CEO will meet with our expert stakeholders four times a year.

Customer Engagement Group

7.63 In preparation for the next price control, RIIO-ED2, Ofgem has set expectations for enhanced engagement, requiring DNOs to design, establish and resource Customer Engagement Groups (CEG) to scrutinise their business plans. During 2018/19 WPD appointed an independent Chair, agreed terms of reference and membership role descriptions, confirmed contracts with 14 members and held initial meetings.

7.64 During 2019/20 there have been regular CEG meetings every two months addressing a range of business plan topics. A number of CEG sub-groups have been established to make better use of the knowledge of CEG members to provide more focused assessment of business plan proposals. A member of the CEG chairs each sub-group at which business experts provide details of RIIO-ED2 proposal. The CEG chair produces a summary of the discussions and records any CEG challenges. Closed CEG meetings (where only members of the CEG attend) are used by the CEG to freely discuss their observations, which are in addition to open meetings where WPD joins the discussions.

7.65 WPD values the input of the CEG and agrees with the CEG chair who has stated "The CEG will fulfil a vital role to ensure customers are placed at the hearth of WPD's plans for the future and that actions and decisions made by the company are truly positioned to deliver the long-term interests of consumers".


CEG Chair Duncan McCombie

7.66 There is a dedicated website for the WPD CEG where there are more details about the CEG members and minutes from the meetings. This can be found at:

customerengagementgroup.westernpower.co.uk

Customer Collaboration Panel

7.67 In anticipation of the appointment of the CEG, WPD has worked to redefine the role of its established customer panel. This has included the following.

- The group has been renamed as the Customer Collaboration Panel (CCP).
- A new independent CCP leader has been appointed to chair member-only closed sessions and to coordinate with members to set agendas.
- The introduction of 12 new members with expertise in low carbon technologies, DSO transition, Local Enterprise Partnerships representing regional concerns, consumer representatives and wider stakeholders from key segments including businesses, utilities, charities and the health sector.

7.68 The CCP continues to meet quarterly, led by a WPD Director or the CEO. It critically reviews WPD's current performance, provides strategic steer on WPD's priorities for the future and acts as a sounding board for new ideas. To enable members to do this, the CCP is provided with full transparency regarding WPD's performance and early sight of its plans for the future.

7.69 The Panel exists to provide expert advice and opinions and to work collaboratively with WPD to devise effective solutions and improvements for customers. The CCP debates a broad range of activities - from the impact of EVs in the future, to power cut response times. Members provide steer throughout the lifecycle of a project - raising areas of customer concern; providing advice and collaborative input to help WPD devise actions to address them, and finally; reviewing the impact post-delivery and suggesting further refinements.

7.70 Each meeting of the CCP includes a session focusing on a different strategic priority. The topics covered during 2019/20 included the following:

- Staff Safety Climate Survey Results
- Electric Vehicle charging
- DSO (smart networks)

7.71 The CCP provides independent challenge with the aim of improving service delivery for all customers. The CCP has produced a report which explains the role of the panel and some of the key highlights of their work with WPD during 2019/20. This report can be found on our website at the following link.

yourpowerfuture.westernpower.co.uk/our-engagement-groups/customer-collaboration-panel

Output (55) Continue to host at least six stakeholder workshops each year.

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

7.73 In February/March 2020 we hosted six sessions in locations across the WPD licence areas. Over 380 stakeholders attended from a range of backgrounds, covering all customer groups. We used the sessions to explore stakeholder priorities for the next price control, RIIO-ED2, which will establish the focus of our activities from 2023 onwards.

7.74 A summary report detailing the output of these sessions can be found on our website. To view these documents please use the following weblink.

yourpowerfuture.westernpower.co.uk/workshops-and-events

7.75 During the sessions we introduced the concept of agreeing a 'social contract' as part of our commitment to operate responsibly. Stakeholders agreed that WPD should deliver a 'social contract' as part of RIIO-ED2 and identified key aspects that they believe should be included in such a document, these included the following:

- Transparent reporting (with clarity on returns and profits)
- Demonstrating WDP is a diverse, responsible employer
- Evidencing the legitimacy of our operations for the future
- Playing an active role regionally and supporting vulnerable customers

7.76 We committed to building and testing our first 'social contract' with wider stakeholders in 2019/20. We progressed this by undergoing a rigorous external accreditation to assess WPD's performance in relation to environmental, social and governance (ESG) activities by Institutional Shareholder Services (ISS). The ISS rating is widely regarded as one of the highest quality and standard-setting measurements. WPD achieved a fantastic result in being awarded the prestigious ESG Prime status. The award recognises WPD's achievement of ambitious performance targets for global network operators, including its commitment to issues such as sustainability and managing social impact, and is only given to companies with an ESG performance above the ambitious threshold for the sector.

Output (56) Continue to produce a stakeholder report every year providing an update on the actions we have taken as a result of stakeholder involvement.

7.77 A detailed and summary report will continue to be produced every year providing an update of progress toward delivering RIIO-ED1 output measures.

7.78 The summary report will be produced concurrently with this detailed report and will focus on the key areas of interest indicated by stakeholders. The 2019/20 summary report is published on WPD's website; this can be found at the following link.

yourpowerfuture.westernpower.co.uk/summary-business-plan-commitments-report-2020

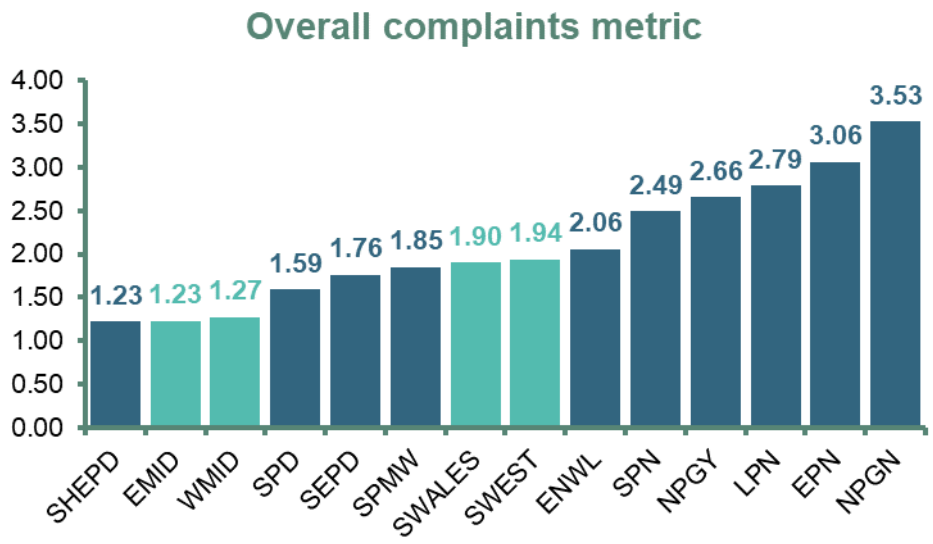
Complaints

7.79 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 contacting customers, visiting them where necessary, to understand what can be done to put things right.

7.80 Performance in relation to complaints is measured within Ofgem's Broad Measure of Customer Satisfaction (BMCS) in four categories.

- Complaints resolved in day 1
- Complaints remaining unresolved after 31 days
- Repeat complaints
- The number of Energy Ombudsman decisions that go against the DNO

7.81 WPD aims to have leading performance in each of these categories, avoiding penalties from Ofgem. For 2019/20 West Midlands, East Midlands and South Wales have improved (reduced) their overall complaints scores compared to 2018/19.



Our performance against the four categories is detailed in the following sections.

Output (57) Resolve at least 70% of complaints within one day.

7.82 WPD has committed to resolving at least 70% of complaints within one day. This target has been achieved in each of the four WPD licence areas.

Complaints resolved in one day (%)					
	West Midlands	East Midlands	South Wales	South West	WPD Total
Percentage of complaints resolved in day 1 – 2019/20	91.49%	91.98%	83.01%	85.45%	88.69%

Complaints resolved within 31 days

7.83 WPD's focus on dealing with complaints quickly means that over 98% are resolved within 31 days.

Complaints resolved within 31 days (%)					
	West Midlands	East Midlands	South Wales	South West	WPD Total
Percentage of complaints resolved within 31 days – 2019/20	99.15%	99.29%	98.30%	97.77%	98.65%

Repeat complaints

7.84 A repeat complaint occurs where a customer returns to WPD at a later date to complain about the same issue. There were no repeated complaints during 2019/20.

Output (58) Continue to have a target of no complaints where the Ombudsman has to get involved.

7.85 Where customers are dissatisfied with a DNO's response to a complaint they have the option to raise their complaint with the industry Ombudsman. During RIIO-ED1 WPD has committed to ensuring that every complaint is adequately dealt with by WPD staff with zero complaints needing to be investigated by the Ombudsman.

7.86 The WPD output is subtly different to the Ofgem measure which forms part of the BMCS: Ofgem measures when an Ombudsman decision is made against a DNO, whereas the WPD output aims to prevent complaints being referred to the Ombudsman in the first place.

7.87 During 2019/20 there were five complaints raised with the industry Ombudsman. In all cases the ombudsman did not rule against WPD.

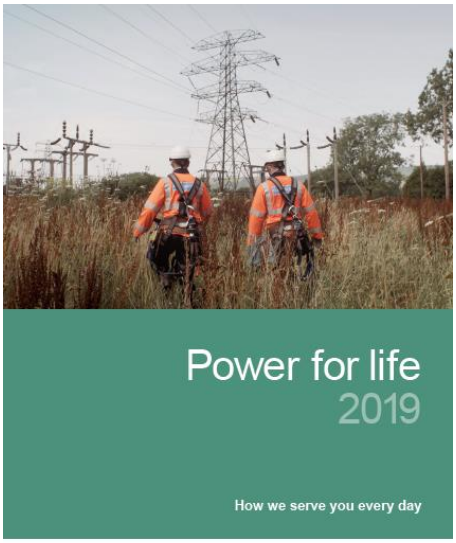
Guaranteed Standards of Performance awareness

Output (59) Continue to send the 'Power for Life' publication to all 7.9 million customers and make sure it promotes the GSOPs.

7.88 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.

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

7.90 WPD has committed to publicising GSOPs in our annual customer newsletter 'Power for Life'. The newsletter was issued in November 2019 to all customers and included information on GSOPs – directing customers to find out more on the company's website.



Social Obligations

RIIO-ED1 Business Plan Commitments Report
Year Five – 2019/20

30 October 2020

WESTERN POWER DISTRIBUTION

Serving the Midlands, South West and Wales

Contents

8 Social obligations

8.1 In delivering electricity to 7.9 million customers, we provide a range of services to fulfil our social obligations.

8.2 WPD broadly defines 'social obligations' as the role we have as a Distribution Network Operator to help customers in vulnerable circumstances.

8.3 In RIIO-ED1, WPD's social obligations outputs are in four themes.

- Improve understanding of vulnerability.
- Improve the data held on the Priority Services Register.
- Improve the services provided for vulnerable customers.
- Address fuel poverty by supporting customers to access key information.

Regulatory framework:

8.4 For RIIO-ED1 Ofgem introduced the Stakeholder Engagement and Consumer Vulnerability – referred to as SECV. The incentive aims to encourage network companies to engage proactively with stakeholders in order to anticipate their needs and deliver a consumer focused, socially responsible and sustainable energy service. Rewards are available to network companies who can demonstrate high quality activities against set criteria.

8.5 WPDs SECV submissions from previous years can be found via the following weblink, our 2019/20 submissions will be published here in due course.

yourpowerfuture.westernpower.co.uk/ofgems-secv-incentive

8.6 The submissions provide information explaining WPD's approach to social obligations as well as broader information on stakeholder engagement and consumer vulnerability and the positive outcomes that we have delivered for customers.

8.7 Our 2019/20 submission will show how we delivered 328 key outputs and positive outcomes for customers, all of which will be detailed in the submission. We invested £6.1 million delivering these outcomes, an increase of 25% from 2018/19. We have also undertaken collaborative social value measurement research to verify that customers place significant value on the improvements that we deliver.

8.8 Ofgem has deferred the assessment of WPD's submission for 2019/20 due to an outstanding related investigation.

Overview of social obligations outputs

Improving understanding of vulnerability		
60	Work with expert partners to improve our understanding of the needs of customers in vulnerable situations	We worked with a wide range of expert partners and were certified to the British Standards Institute Standard BS18477, which specifies requirements for responding to customers in vulnerable situations.
61	Train staff to recognise the signs of vulnerability.	We provided specialist training to the Priority Services Register (PSR) teams and contact centre staff. Field staff are trained on registering customers to the PSR.
Improving the data held on the Priority Services Register		
62	Contact vulnerable customers at least once every two years to check the details we hold on the Priority Services Register.	We contacted over 950,000 PSR customers during 2019/20, which allowed us to update 30% of our records.
63	Improve the quality of Priority Services Register data by working with other agencies and sharing information.	We increased the number of referral partners that we work with. We added 19 new partners, with the aim of achieving a better balance in the types of agencies that we work with.
64	Co-ordinate meetings with suppliers to agree criteria for vulnerability.	27 new 'common needs codes' are now in use across the industry.
Improving the services provided for customers in vulnerable situations		
65	Raise awareness of the Priority Services Register.	We worked with a range of organisations, including a mental health organisation and fire and rescue services, to raise awareness of the PSR.
66	Make 10,000 crisis packs available.*	To date we have issued 7,468 crisis packs over the RIIO-ED1 period.
67	Contact all customers who depend on a power supply for medical reasons every three hours during power cuts.**	During power cuts we prioritise contacting customers who depend on a power supply for medical reasons. We called 82% of these customers within one hour of a fault and 97.5% in under two hours.
68	Continue to provide practical support through the British Red Cross and other organisations as appropriate.	We provided British Red Cross support during eight prolonged power cuts, supporting 71 customers in total.
69	Ask for feedback from customers in vulnerable situations about our service.	We achieved customer satisfaction ratings of 9.5 out of 10 from customers on the PSR who had received a routine call to check their personal details.
70	Develop ways of sharing information with local resilience forums.	We worked with 19 forums across our four licence areas. For 2019/20 this included offering the support of our helicopter unit during severe weather.
Reducing fuel poverty by supporting customers to access help		
71	Build a database of regional agencies we can refer customers to for help.	There are fuel poverty projects in all our areas, working with a network of support agencies.
72	Work with partners to develop links to and from our website.	Details on our fuel poverty projects and links to partner organisations are available on our website.
73	Develop joint information and awareness campaigns, and co-ordinate with partners to provide customers with help.	We have six 'Power Up' fuel poverty schemes to support customers who are facing fuel poverty. We supported 8,672 customers to save over £2.6 million a year.
74	Provide fuel poverty training to our staff who have contact with members of the public.	We provide staff in our contact centre with customised training on fuel poverty and customers in vulnerable situations.
75	Use data analysis to help identify areas with a high concentration of vulnerable households.	We use data analysis to identify areas with a high concentration of vulnerable households. During 2019/20 we increased the number of data indicators and vulnerability factors we consider.
76	Develop local outreach services.	'Affordable Warmth' and other outreach services helped 7,975 customers to save over £7.1 million a year.

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

Emerging strategy

8.9 Our approach to our social obligations is continuously refined informed by an annual review where we consider the feedback from our stakeholders and work with them to co-create detailed actions to ensure we respond to changes in requirements and provide fit for purpose services.

8.10 Throughout 2019/20 we engaged over 10,400 stakeholders on our approach to consumer vulnerability, seeking direct input and building actions with them. This approach has led to significant additions to our strategy, with the following new objectives:

Apply the 'one-stop-shop' principle to WPD's whole social obligations programme

- Reducing complexity for customers, delivering joined-up support services bringing providers together

Build strong foundations to be adaptive to crises

- Ensuring the accuracy of our PSR data and extensive network of support services are continually improved so they are available when our customers need our help most.

Maximise efficiency through collaborative delivery

- WPD should always seek to collaborate so funding goes further, more customers are assisted and deeper levels of support are provided.

Enable customers to participate in smart energy services

Ensuring a fair and just energy transition with five areas of focus:

- Understanding and removing the barriers that stop vulnerable customer adopting new technologies and services;
- Helping to build resilient local communities;
- Improving affordability for consumers;
- Exploring how to reduce the financial impact of Net Zero on vulnerable consumers; and
- Improving engagement/education with vulnerable consumers about smart networks.

Supporting our customers during the Covid-19 pandemic

8.11 The Covid-19 pandemic has shown how WPD's established approaches to consumer vulnerability has proven invaluable, enabling us to support those most in need.

8.12 As the Covid-19 pandemic emerged in the UK in February 2020 we were able to use our experience, PSR data and extensive long-term partnerships to rapidly respond to support vulnerable people impacted by the virus.

8.13 The core reason we promote and maintain the data held on the PSR is to ensure we know about our most vulnerable customers, so we can tailor our services and offer proactive support. Recognising that this data could help community support services as the pandemic took hold, WPD created a robust GDPR compliant process to enable us to share data with key support agencies and local Government bodies. The data share process allowed support agencies to temporarily hold PSR data for a defined period, with clear rules for the deletion of records and set justifications for the use of data to provide assistance, explicitly excluding marketing or promotions.

Improving understanding of vulnerability

8.14 WPD's consumer vulnerability strategy was developed through extensive engagement with stakeholders and focusses primarily on enhancing the ability of customers to cope during power cuts and developing an increasingly sophisticated understanding of the dynamic and multi-dimensional nature of vulnerability.

8.15 We recognise our responsibility to a wide range of customers in vulnerable situations, including those who may be temporarily vulnerable (e.g. customers who have recently left hospital) and customers struggling with energy affordability.

8.16 We have varied interactions with customers and consequently as part of our routine work we may identify individuals that are vulnerable or have social issues. To help these customers we have developed a range of services.

8.17 Central to WPD's consumer vulnerability strategy is the Priority Services Register (PSR). The PSR is a free, confidential, register of customers who require priority assistance, for reasons including:

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

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

Output (60) Work with expert partners to improve our understanding of the needs of vulnerable customers.

8.19 WPD uses input from a variety of social groups, through stakeholder engagement and partnership projects, to enhance our understanding of vulnerability. During 2019/20 WPD engaged with 10,400 stakeholders specifically on our approach to consumer vulnerability.

8.20 Working with a variety of third parties ensures that we:

- consider a variety of viewpoints;
- are aware of evolving issues impacting vulnerable customers;
- overcome areas where we lack core expertise; and
- improve customers' awareness of the services WPD can provide.

8.21 Some of the initiatives that support our understanding of the needs of customers in vulnerable situations are detailed in the following sections but further information can be found within our 2019/20 SECV submission.

The Customer Collaboration Panel

8.22 The Customer Collaboration Panel is hosted by a WPD Director or our CEO and is a key part of our engagement programme. The panel brings together expert representatives from the major stakeholder groups and entrusts them with full transparency in relation to WPD's performance and future plans. This enables them to critically evaluate our performance, make informed decisions about our activities and provide strategic steer.

8.23 At the close of 2019/20 the panel consisted of 30 permanent members who meet quarterly. The group consists of subject matter experts, consumer representatives and wider stakeholders from key areas including businesses, utilities and vulnerable customers. The

diversity of the Customer Collaboration Panel ensures that we are provided with a balanced representation of views across a range of stakeholders. In 2019/20 the panel introduced three new members bringing in expertise from Rural England Network, Bristol NHS Trust and South East Water.

8.24 The Customer Collaboration Panel continues to advise, evaluate and co-create solutions with WPD. During 2019/20 members helped develop 21 outputs, including the co-creation of an online PSR hub (a portal for Priority Services Register customers and partners) and the development of the format and content of our annual social obligations workshops.

Stakeholder workshops

8.25 WPD hosts annual general stakeholder workshops which provide the opportunity to gain feedback on activities and proposals from a range of interested stakeholders, which includes ensuring that our approach to vulnerability is aligned to customer requirements.

8.26 The workshops held in February/March 2020 were attended by over 380 individuals representing stakeholder groups that included local authorities, domestic customers, consumer bodies, businesses, developers, utilities and other DNOs.

8.27 The agenda for these workshops included a specific surgery on our approach to social obligations, testing stakeholder views on our proposals.

8.28 Summary findings reports from the workshops can be found at the link below.

yourpowerfuture.westernpower.co.uk/workshops-and-events

Working with partner organisations

8.29 We work with a range of partners to identify vulnerable customers, to examine the social issues facing them and to co-deliver projects.

8.30 Working with partner organisations allows us to share knowledge and explore alternative approaches, whilst extending our reach beyond those customers who contact us directly. The approach is cost effective because we utilise the expertise of partners rather than duplicating the activity of existing organisations.

8.31 We now have a network of 106 referral partners for our Priority Services Register, an increase of over 20% since 2018/19. We have used social indicator mapping to match areas of PSR eligibility with current low uptake in order to establish new partnerships in under-represented areas.

8.32 We work with fuel poverty partners, using a ‘hub’ model where a lead agency uses a pool of sub-partners, each with differing core expertise, to ensure that customers receive a range of support via a single point of contact.

8.33 We continue to hold an annual consumer vulnerability conference with stakeholders from a range of consumer groups including charities, community groups, local authorities and emergency services. During the sessions we outlined our plans to ensure that no one is left behind, particularly those in fuel poverty and in vulnerable situations, as we move from a traditional network to a ‘smart network’. In addition we conducted a round-table exercise, where stakeholders were given a blank sheet of a paper and asked to identify their priorities in terms of consumer vulnerability and fuel poverty for the RIIO-ED2. A report from the event is available on the WPD website.

8.34 The session enabled us to introduce attendees to our web based social indicator mapping tool, identify key challenges for vulnerable customers and service providers and seek views on WPD’s role in addressing these challenges.

External validation of our approach

8.35 Our success in continuing to develop our understanding of vulnerability has been measured with external validation, as follows.

Customer Service Excellence Standard

8.36 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.

8.37 In 2019/20, we were successfully reaccredited against the Customer Service Excellence Standard and achieved one additional 'Compliance Plus' rating. In total we increased our 'Compliance Plus' ratings to 45 out of the 57 standards (achieving compliance in the rest).

8.38 The final assessment reported that 'WPD has an in-depth understanding of its customers that has enabled it to design and provide services that meet the needs of the full range of customer groups'. The 'Partnership arrangements and wider community activities are outstanding. 'Power Up' schemes for existing Priority Service Register (PSR) customers provide holistic support for those in fuel poverty. In addition, a number of partners are funded by WPD to provide 'Affordable Warmth' schemes to identify and support hard-to-reach customers not already known to WPD.'

Certification for inclusive service provision

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

8.40 WPD uses assessment against the standard to improve the ability to recognise and address the broad and complex nature of consumer vulnerability, and as a result provide flexible and inclusive services. We put forward all key, new projects developed over the previous 12 months for the BSI to assess in terms of project effectiveness and inclusivity.

8.41 In 2019 the BSI assessor undertook a robust three day audit of WPD, assessing our processes against 36 elements in the standard. The audit critically evaluated whether WPD's services effectively address consumer vulnerability, which included demonstrating that:

- we meet individual vulnerability needs;
- we provide improved services and accessibility as a result of engagement;
- we undertake partnership working; and
- that we provide customer satisfaction.

8.42 WPD maintained full compliance with the standard for the seventh consecutive year.

Output (61) Train staff to recognise the signs of vulnerability.

8.43 WPD has a dedicated team of staff focused on updating and maintaining WPD's Priority Services Register (PSR). This team is at the forefront of our work with vulnerable customers and it has the objective of contacting PSR customers to:

- update customer records;
- remind customers about WPD and how to contact us;
- offer power cut resilience advice; and
- offer referrals for practical fuel poverty support.

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

8.45 The PSR team is based within our contact centres in the East Midlands and South Wales. The call handlers receive specialist empathy skills training and attend a range of training and development events to build their understanding of the needs of vulnerable customers.

8.46 All our other contact centre staff also receive specialist training on a regular basis. Training events undertaken during 2019/20 have including sessions on the implications of power cuts for dialysis patients.

8.47 Refresher training is provided to all contact centre staff each year, which includes an update on the PSR process and the activities of the PSR team. This training is held in advance of the busy winter months to ensure that staff are prepared for taking calls from vulnerable customers during cold weather and storms.

8.48 We have provided training to field based staff and all depot based customer facing teams on our PSR, including how to identify potentially vulnerable customers. These teams are now trained in recognising vulnerability, how to access support for customers through the British Red Cross and how to add a customer to the PSR.

Improving the data held on the Priority Services Register

Output (62) Contact vulnerable customers at least once every two years to check the details we hold on the Priority Services Register.

8.49 It is important that the data held on WPD's Priority Services Register (PSR) is accurate so that advice and practical support can be effectively deployed to those customers most in need.

8.50 We undertake a range of activities to improve the data we hold on the PSR including extensive data cleansing, working with suppliers, using data models to identify vulnerable customers and working with other agencies.

8.51 We have 37 staff working in two dedicated teams who undertake calls to check the details that we hold for individuals on the PSR and our general contact centre staff are trained to assist with this activity when the volumes of other calls are low.

8.52 Our systems prompt us to contact vulnerable customers every two years. In 2019/20 we proactively contacted 957,309 PSR customers, successfully updating 30% of records as a result of this contact. 746,943 customers were contacted via WPD's data cleanse teams, and 210,366 were contacted via proactive calls to individuals on the PSR during power cuts. We have also removed 22,373 out-of-date records.

8.53 We contact customers to update their details but also take the opportunity to offer advice to assist customers to improve their resilience to a power cut should such an event occur. Priority is placed on the quality, rather than quantity, of calls. There are no time limits for a conversation. We treat calls with sensitivity and we listen.

8.54 In order to ensure we are getting it right, we carry out annual, independent satisfaction research to measure the effectiveness of our engagement and identify improvements. In 2019/20 PSR customers who undertook a survey continued to rate our service as 9.5 out of 10.

Output (63) Improve the quality of Priority Services Register data by working with other agencies and sharing information.

8.55 We actively work with other agencies to:

- promote the PSR;
- share information with others already working with vulnerable customers where those customers may be eligible to join the PSR; and
- improve the quality of the data that we currently hold.

Informed consent

8.56 The processes we follow are designed to ensure that customers join the PSR with informed consent. We work with third parties to register vulnerable customers on the PSR and, more recently, to share the customer data with other utilities, where the customer agrees.

8.57 We work with a network of partner organisations that have access to a range of customer groups. These partner organisations are well placed to discuss the PSR with customers directly and to identify whether the customer is happy for the agency to add them to the PSR. We hold best practice events for partners and use an e-learner tool to provide guidance on the process for adding customers to the register.

Collaborating with others already working with vulnerable customers

8.58 Stakeholders have identified that working with existing, trusted agencies to identify vulnerable customers has a greater impact than just using direct outreach methods.

8.59 During 2019/20 we have continued to use data mapping to identify areas of high PSR eligibility but low current take up. We use this information to guide our recruitment of new agencies. We aim to achieve a better balance in the types of referral agencies we work with (between charities, local authorities and health services). These agencies tend to work with different demographics of customers, so we aimed to reduce the risk of overlap and broaden the range of customers with whom we engage.

8.60 We have co-developed an online PSR Hub with our Customer Collaboration Panel, providing referral partners with a one-stop-shop to learn about the PSR, and to access data maps, user guides and training videos.

8.61 We have successfully added 19 new PSR referral partners, each one identified to address an area of vulnerability within WPD's region. We now work with a total of 106 PSR referral network partners. In 2019/20 these schemes led to 43,856 direct sign-ups to WPD's PSR, an increase of over 50% over the previous year.

8.62 WPD also has a number of fuel poverty outreach projects in place. Whilst the primary driver of these projects is to provide support to customers struggling to afford their energy, we ensure that projects also address power cut vulnerability, the provision of resilience advice and promoting the PSR. For example, WPD's 'Affordable Warmth' projects, which offer fuel poverty support via a consortium of partner organisations, include a remit to gain customers' informed consent to directly sign them up to the PSR on WPD's behalf.

8.63 To support our partners we have published our social indicator data mapping, which reveals areas with potentially high levels of power cut vulnerability and/or fuel poverty in a downloadable format so that groups are able to better target their own services.

Data sharing

8.64 The UK Regulator's Network has called on utilities to collaborate and securely share non-financial vulnerability data. An industry working group was set up to progress data sharing between networks and all water companies by 2020.

8.65 To date meetings have taken place with water companies to plan data sharing processes and the agreement of new priority need codes for data sharing.

8.66 WPD's Customer Collaboration Panel encouraged us to take a lead by ensuring that we have processes in place to share and receive data, and proactively engage utilities in our region to initiate data sharing. When we register new PSR customers we also capture their informed consent to share data with other utilities. We have agreements in place with six of the eight water companies in our area (Welsh Water, Bristol, Wessex, South West, Anglian Water, and Severn Trent). We are currently waiting for the remaining companies to implement internal systems capable of receiving this data.

8.67 We have formal agreements in place with the three gas networks in our region to sign-up customers to the PSR on our behalf and for this data to be automatically shared with WPD.

8.68 We continue to pursue other utilities to engage in such data collaborations as it can produce widespread benefits. We also launched an online 'PSR Hub' portal which, among other benefits, encourages innovative joint work to utlise WPD's open-sourced social indicator data.

8.69 During 2019/20 over 600,000 PSR records were sharing between WPD and Severn Trent Water (STW) during the Covid-19 outbreak. This enabled STW to provide bottled water to self-isolating and unwell customers classed as vulnerable and/or of pensionable age.

8.70 In addition, during this time, we also proactively contacted 673 relevant organisations to offer PSR data to assist them to support those most in-need. This included 482 community groups and 105 Local Authorities.

Output (64) Co-ordinate meetings with suppliers to agree criteria for vulnerability.

8.71 As members of the Energy Networks Association (the industry body for UK electricity transmission and distribution) WPD worked with other DNOs, Suppliers, Ofgem, charities and consumer bodies to implement a new, common set of PSR needs codes.

8.72 The Safeguarding Customers Working Group agreed 27 new common needs codes to be used by all parties nationally to identify and register customers. The new codes recognise the multi-dimensional nature of vulnerability and replace categorisations which were over 15 years old.

8.73 The introduction of automated two-way data flows between DNOs and suppliers in July 2017 allows WPD to send accurate, complete customer records to suppliers.

Improving the services provided for vulnerable customers

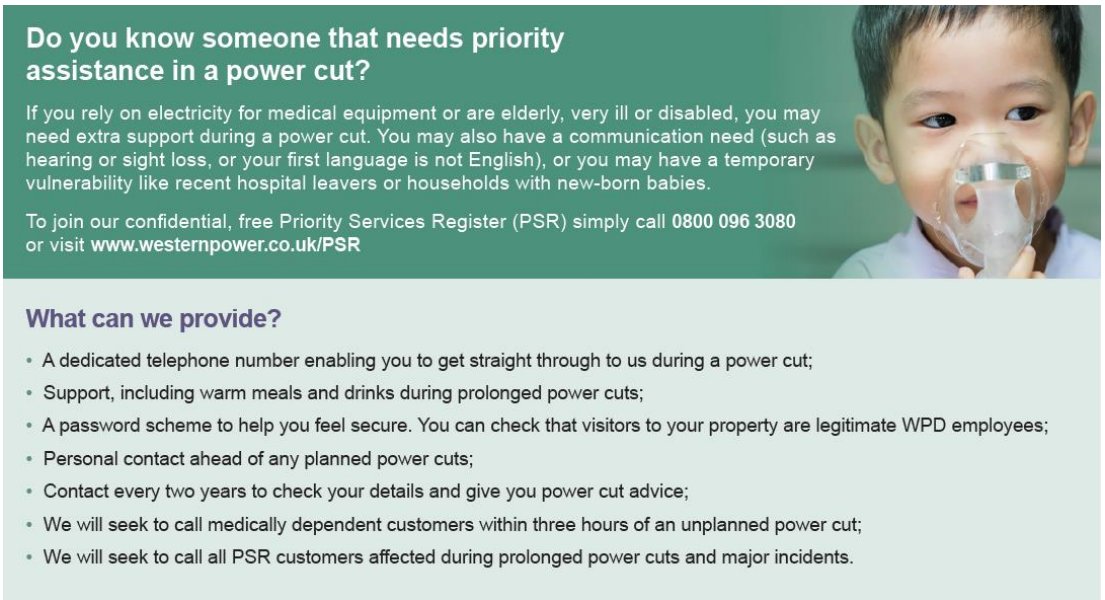
8.74 We continue to develop and improve the services provided for customers in vulnerable situations. This includes:

- raising awareness of the PSR and the services available to those who are registered;
- assisting vulnerable customers to be prepared for a power cut;
- assisting vulnerable customers during a power cut; and
- assisting vulnerable customers during an emergency.

Output (65) Raise awareness of the Priority Services Register.

8.75 In addition to the proactive work that we undertake with partners to identify vulnerable customers we also take steps to raise awareness of the PSR via a variety of mechanisms, as detailed below.

- WPD's annual newsletter 'Power for Life' was sent to all 7.9m customers in November 2019 promoting the PSR, who is eligible and how to register.
- We established partnerships with twelve Fire and Rescue Services to promote the PSR and resilience advice, in turn WPD refers PSR customers to Fire and Rescue teams to receive a free home fire safety check.
- Our #YouAreOurPriority social media campaign reached 60,000 people.
- Collaboration with Wessex Water led to joint PSR adverts and distribution of a leaflet to 4,000 properties in targeted hotspot areas.
- A digital PSR campaign with Anglian Water and Health Watch Lincolnshire reached 23,000 customers.
- PSR animation adverts shown in GP surgeries reached 46,500 patients.
- Collaboration with Cadent led to a joint billboard campaign in high eligibility, low registration areas of Nottingham, Stoke on Trent, Birmingham and Northampton. This campaign will continue into the 2020/21 regulatory year.



Output (66) Make 10,000 crisis packs available.

8.76 Direct assistance for customers is made available (as required) through the distribution of crisis packs.

8.77 WPD committed to distributing 10,000 crisis packs during RIIO-ED1. In 2019/20 we distributed 706 packs, with a cumulative total so far for the RIIO-ED1 period of 7,468 packs.

8.78 Crisis packs include items such as a flask, a torch, gloves, a hat, a reusable hand-warmer and information leaflets. Digital phones reliant upon mains power may not work during a power cut so we also provide analogue telephones to vulnerable customers who need them. In 2018/19 we reviewed the contents of our crisis packs with our Customer Collaboration Panel, where the panel recommended the removal of a foil blanket, replacement of a battery torch with a wind up torch and replacement of a non-recyclable carrier bag with an eco-friendly canvas bag.

8.79 Crisis packs are distributed in a range of ways.

- Field staff can distribute packs as a result of a site visit and discussion with customers.
- Partners such as the British Red Cross and Age UK are provided with stocks of crisis packs to distribute to customers where they identify a requirement.
- Local distribution teams are provided with stocks of crisis packs that can be distributed as required during a power cut.

8.80 Staff are trained to identify signs of vulnerability in the customers they interact with and can provide crisis packs, arrange for the customer to join the PSR or activate support from the British Red Cross.

Output (67) Contact all customers who depend on a power supply for medical reasons every three hours during power cuts.

8.81 For unplanned outages, WPD committed to contacting medically dependent customers within the first three hours of a prolonged power cut to provide updates on power restoration times and to identify if additional support or further contact is required. It is not always clear from the start of an outage that a power cut will be prolonged. To avoid contacting customers unnecessarily, when power may be restored in a short time period, contact centre staff are prompted (via an automated system) to call medically dependent customers three hours into the power cut. Calls are only made between 9am to 8pm to avoid disrupting customers during unsocial hours, however we have introduced a mechanism to allow PSR customers to specify individual preferences if they wish to receive phone calls outside of our usual 9am to 8pm sociable hours policy.

8.82 During 2019/20 we contacted all medically dependent customers affected by a power cut that lasted more than three hours. This includes customers where contact was attempted but the customer did not answer a phone call.

8.83 In response to a request from the Customer Collaboration Panel, we have improved our reporting on calls to medically dependent customers and this allows us to report the timings of when calls were made. In 2019/20, 82% of customers were called in the first hour of a power cut and 97.5% within two hours.

8.84 In total, WPD made 210,366 proactive calls to PSR customers (all categories) during power cuts.

8.85 Where an outage is planned for pre-arranged work 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 communication 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 to provide alternative power supplies.

Output (68) Continue to provide practical support through the British Red Cross and other organisations as appropriate.

8.86 During prolonged outages we request assistance from partner organisations to provide support to customers. For RIIO-ED1 we proposed to continue to work with the British Red Cross and the Royal Voluntary Service for these services, but the Royal Voluntary Service ceased to provide the support we require, we therefore established a new arrangement with the Nationwide Caterers Association.

8.87 Contact centre staff have the facility to request that the British Red Cross assist with the provision of warm meals, drinks, crisis packs and general welfare checks during an outage. Use of the British Red Cross can also be prompted by field staff who are concerned about customers and in 2019/20 they provided support during eight prolonged power cuts, supporting 71 customers in total.

8.88 Our agreement with the Nationwide Caterers Association enables us to provide hot food and drinks for communities impacted by prolonged power cuts. During 2019/20 we utilised this service once during an outage in South Gloucestershire.

8.89 WPD liaises with oxygen providers to obtain postcode data of individuals who are reliant on oxygen supplies. In the event of a power cut, WPD uses this information to automatically flag that these customers are affected so that a proactive call can be made to provide information on restoration times and to check if the individual will require additional support.

Providing assistance during system emergencies

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

8.91 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.

8.92 The key capabilities of the Helicopter Unit have been extended to include:

- delivery of provisions to remote customers who are without power;
- customer evacuation; and
- delivery of high volume pumps and generation.

8.93 Providing these options requires staff to be trained to prepare them for the challenges associated with severe weather. During 2019/20 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	163	36	68	35	302
Off road driver training	7	22	8	4	41
Water first responder – operating safely in or near flood water	2	12	9	0	23

Output (69) Ask for feedback from vulnerable customers about our service.

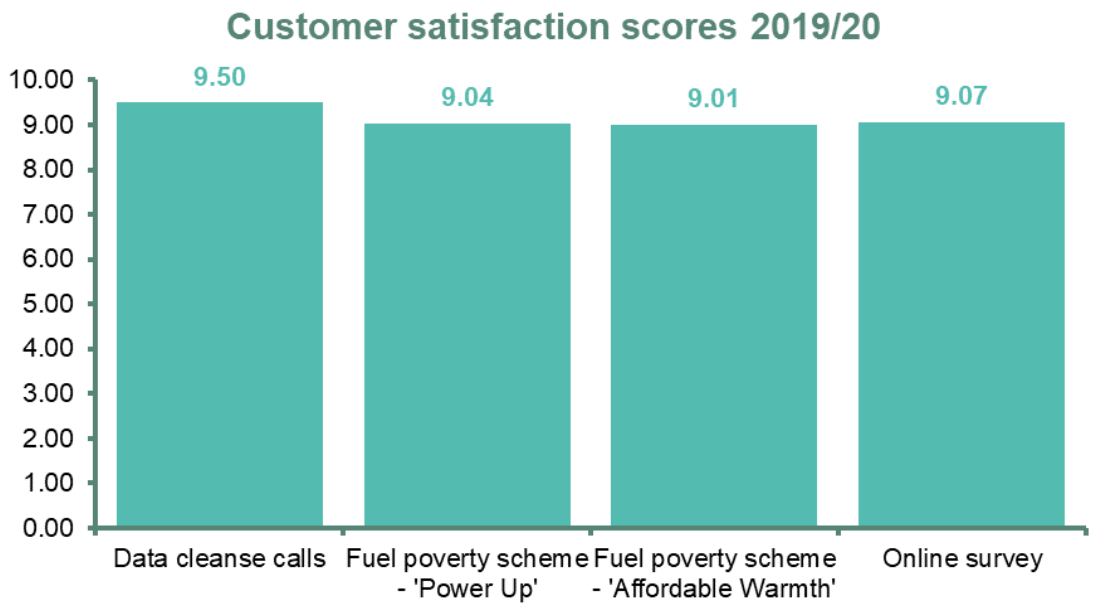
8.94 Feedback from customers is invaluable in assisting us to make sure that we are supporting customers effectively and that the service we provide is appropriate.

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 We undertake surveys to understand the views of vulnerable customers in the following groups:

- PSR customers contacted by WPD's PSR data cleanse team to update their details and to offer power cut advice
- Customers who have been referred to a 'Power Up' partner agency for fuel poverty advice
- Customers who have been identified by one of our four Affordable Warmth fuel poverty outreach schemes
- Customers who have viewed our PSR and accessibility pages. This is a online survey introduced in 2018/19 to enable us to check satisfaction with the information we provide online in relation to the PSR and accessibility.

8.97 Customers are asked to rate our service out of ten and the results of these surveys are shown below.



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 and the information that we provide.

Output (70) Develop ways of sharing information with local resilience forums.

8.99 We work with local resilience forums on an ongoing basis to ensure that we are able to provide a range of services during emergencies. During 2019/20 WPD continued to work with 19 forums across the four licence areas. Examples of the types of activities we undertake are detailed below.

- We offer the support of our helicopter unit to local resilience forums for food drops or support to customers who are isolated as a result of severe weather.
- We have formal data agreements with seven local resilience forums, enabling improved emergency response processes.

8.100 WPD continues to be committed to working with the emergency services and taking an active part with Gold Command arrangements for emergency response during severe weather conditions. We were involved with various Gold Command incidents throughout 2019/20 including flooding in Wainfleet, Lincolnshire and the protracted interruption to gas supplies in Wirksworth, Derbyshire. In addition all local resilience forums reverted to Gold Command arrangements and have continued to operate in this mode throughout the Covid-19 crisis.

Providing information during an emergency

8.101 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.

8.102 When a storm is forecast we increase staffing and provide more communication. We also produce storm bulletins which are emailed to customers who have registered their interest. There are three categories of bulletin – one sent in advance of a predicted event, one during a storm and one post event. The thresholds for triggering a bulletin have been agreed with the Customer Collaboration Panel. The bulletins inform stakeholders of the latest weather conditions, areas affected, the number of customers off supply and key steps we are taking to restore power.

8.103 During 2018/19 we launched a new 'storm mode' for our website. During a storm a simplified homepage on the website permanently displays our power cut map, a link to PSR information and live power cut storm reports e.g. the number of customers off supply. This improves access to vital information during widespread disruption.

8.104 In the event of a storm we open up additional 'ramp-up' contact centres to allow our main contact centres to prioritise outbound calls, particularly those made to vulnerable customers.

8.105 During severe weather, regular updates are provided to the government and industry regulator - detailing contingency planning arrangements before the event, the number of customers affected during the event, advising on risks to the electricity network and information on restoration times after the event. WPD produces an extensive closedown report for key stakeholders such as Ofgem, BEIS, local resilience forums and the media, with statistics for specific regions, actions taken and lessons learnt.

Reducing fuel poverty by supporting customers to access help

8.106 Some customers struggle to afford their energy and to effectively heat their properties. WPD has contact with over 2 million customers each year, which provides an opportunity to identify customers in fuel poverty and offer assistance. Contact centre staff are trained to recognise the signs of fuel poverty and can arrange referrals to our partner organisations where required.

8.107 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 ongoing stakeholder engagement.

8.108 We have an extensive programme of support schemes, working with expert agencies including Citizens Advice and the Energy Saving Trust, to provide practical support for customers living in fuel poverty. This includes help with switching energy tariffs and arranging funds for enduring energy efficiency measures. In the last year our range of programmes helped 18,652 customers who were facing fuel poverty save £10.7m.

Programme	No. of Customers	Savings
'Power Up'	8,672	£2.6m
'Affordable Warmth'	7,975	£7.1m
Energy Affordability Fund	1,402	£0.6m
Other projects	603	£0.3m
Total	**18,652**	**£10.7m**

Output (71) Build a database of regional agencies we can refer customers to for help.

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

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

8.110 We regularly undertake 'horizon scan' activities to identify and map existing vulnerable customer support agencies and schemes in our region and to identify partnership opportunities that help us to target hard-to-reach customers via trusted agencies. We select organisations that we work with based on matching the services they can provide with the customer needs revealed by the social indicator mapping that we undertake.

8.111 The 'horizon scan' process helps WPD to tackle consumer vulnerability to power cuts and fuel poverty in a cost-effective and strategic way. We work with partners rather than duplicating their activities. Performing this exercise regularly is vital as the types of agencies and the support provided regularly changes.

8.112 We have worked extensively with stakeholders to define WPD's role in tackling fuel poverty. They tell us projects must deliver a holistic service dealing with a range of issues that could be contributing to fuel poverty. To ensure comprehensive support, we have therefore defined criteria that every WPD project must be capable of delivering. These are:

- Income maximisation e.g. debt management
- Energy tariff advice e.g. switching energy providers
- Energy efficiency measures e.g. home insulation schemes
- Heating solutions e.g. boiler replacement schemes
- Behavioural changes e.g. effective use of heating systems
- Health & wellbeing e.g. mobility aids and fire safety checks
- Managed referrals to water company social tariffs

8.113 To deliver this full range of criteria, we have established a framework of multiple partners, each of which is capable of delivering support to customers over the phone and face-to-face. Working with multiple agencies has the risk of the customer having to interact with too many agencies, so we work with one lead agency (responsible for supporting the customer throughout the process and reporting on outcomes) who then manages a network of regional expert partners.

Output (72) Work with partners to develop links to and from our website.

8.114 Further details on our fuel poverty projects, and links to our partner organisations, can be found on WPD's website together with contact details for our Social Obligations team.

www.westernpower.co.uk/customers-and-community/priority-services/addressing-fuel-poverty

Output (73) Develop joint information and awareness campaigns, and co-ordinate with partners to provide customers with help.

8.115 The 'Power Up' initiative is WPD's referral service where customers identified as requiring help with fuel affordability are provided assistance. Evolving from a single pilot scheme in 2014, we now have a 'Power Up' scheme in each licence area. Each scheme is administered by one lead agency, who then manages a network of local partners to provide comprehensive support.

8.116 Our lead agencies for 'Power Up' initiatives are Auriga, Citizens Advice Coventry, Energy Savings Trust, Centre for Sustainable Energy, Nottingham Energy Partnership (Health), and Citizens Advice Derbyshire Districts (Smart).

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

8.118 We aim to continually improve our approach and host annual Vulnerability Conferences to help identify new opportunities. As a result of feedback in 2019/20 WPD has launched 'Power Up Smart' which aims, with the help of some of our partners, to avoid vulnerable customers being left behind in a smart future. During 2019/20 this new initiative supported 458 customers make a total saving of £502,000. Moving forward we plan to extend support to the social housing sector, working with social housing provider Future Housing to provide tenants with this service.

8.119 In total, WPD's 'Power Up' schemes supported 8,672 fuel poor customers during 2019/20; these customers saved a combined £2.6m.

8.120 In 2017/18 we launched a 'Power Up Health' scheme. Air Liquide provides medical equipment to almost every oxygen user in our region. As part of their interactions they identify customers who may be vulnerable to fuel poverty. A successful trial in our South West area saw Air Liquide refer customers for practical fuel poverty support covering the seven interactions outlined in output 71, but with a particular focus on warmth and affordability. The trial supported 239 customers to save £139,000 and has now been rolled out across the West Midlands and East Midlands licence areas too.

Output (74) Provide fuel poverty training to our staff who have contact with members of the public.

8.121 Every member of our PSR team has received bespoke training on fuel poverty through expert agencies such as the Energy Savings Trust and Citizens Advice. Contact centre staff receive regular updates.

Output (75) Use data analysis to help identify areas with a high concentration of vulnerable households.

8.122 We conduct extensive data mapping to target outreach projects to areas of the highest vulnerability or deprivation.

8.123 We have worked with the Centre for Sustainable Energy to develop social indicator maps that identify geographic areas with high concentrations customers in vulnerable circumstances and use this data to identify partners working in those local areas. As a result we target our projects to areas of greatest need whilst working with the most appropriate agencies.

8.124 Since 2017/18 WPD has published the data in a downloadable format to help agencies to better target their services.

8.125 Stakeholders have identified that smaller organisations have found the data we initially provided too complex to drive improvements. We therefore enhanced the accessibility of our data and launched a new interactive web based facility which presents the analysis in an easy-to-view format. During 2018/19 we ran workshops with 20 existing partner agencies to understand their requirements and to enhance the website. The website now includes:

- Maps with a zoom in feature – allowing the user to view data down to street level
- Regional view options via local authority area
- Optional overlay to show the gas connection status – showing electricity-only areas
- The ability to filter on a wide variety of criteria, including fuel poor householders and distance from key services

8.126 We have promoted the tool to 156 existing agencies and stakeholders tell us that the new site helps them to better identify vulnerable customers and target their services. It can be found at the following link.

www.westernpower.co.uk/customers-and-community/priority-services/social-indicator-mapping

8.127 During 2019/20 we have continued to increase the number of data indicators and vulnerability factors considered in our analysis and to refine the criteria against which we identify potentially vulnerable households. Our latest update to the mapping included the following:

- PSR: Total number of customers eligible and gaps in WPD's coverage;
- Fuel Poverty: Households finding it difficult to affordable heat their homes;
- Resilience: Community resilience levels to inform local network investment; and
- Community energy: Location of schemes to potentially protect/involve the interests of the most vulnerable in the smart energy transition.

8.128 We also co-developed an online PSR hub with our Customer Collaboration Panel, providing referral partners with a one-stop-shop to learn about the PSR, access data maps, user guides, and training videos. So far there have been 1,456 views of WPD's social indicator data and the PSR referral networks have contributed 43,856 direct sign-ups to WPD's PSR.

Output (76) Develop local outreach services.

8.129 As well as having our own referral networks, we also support fuel poverty outreach schemes.

8.130 Stakeholder feedback identified that non-financial concerns, such as well-being during emergencies, often go hand-in-hand with financial issues such as debt or fuel poverty. In 2017 we commissioned research into the correlation between power cut vulnerability and fuel poverty. This identified that of the total customers in fuel poverty, 43% were eligible for the PSR. This suggests that around half of the customers in fuel poverty are likely to be vulnerable to power cuts. This has led us to develop schemes that target fuel poor customers to identify if they are eligible for PSR services.

8.131 WPD's 'Affordable Warmth' projects were initiated to provide funding for fuel poverty advice to be given via existing community support schemes already working in deprived areas.

8.132 As with 'Power Up' we work with one lead agency who then co-ordinates with a number of smaller agencies and we have established schemes in all four licence areas.

8.133 In addition to providing fuel poverty support, partners are funded to provide power cut resilience advice, to promote WPD's PSR and gain informed consent to sign up eligible customers to WPD's PSR directly. During 2019/20, 7,975 customers were supported to save £7.1m a year through 'Affordable Warmth'.

8.134 We provided partners with our social indicator mapping and mandated that each project specifically targeted the top ten areas of highest fuel poverty deprivation. This has led to dramatic increases in savings. During 2019/20 we have added Community Energy scheme locations to our mapping system to highlight the location of schemes to protect and/or involve the most vulnerable in the smart energy transition.

8.135 We seek to innovate and consider new options for supporting customers. During 2019/20, in partnership with South Somerset Citizen Advice Assist Pathway project, we created a new innovation to support to customers dealing with mental ill health who are also struggling with debt and energy costs. We funded the creation of a specialist advisor role and, following engagement at our vulnerability conferences, created a referral pathway with MIND Somerset. The project provided new insights on how to deliver more meaningful, long-term positive outcomes and has so far yielded savings of £203,000 for 78 customers.

8.136 A smart energy future, built on a whole-system approach to services, will require us to take a holistic approach to vulnerability. We are building new relationships and trialling new approaches as a result. In 2019/20 we launched the 'Power Up Smart' scheme which, working together with network of local agencies, delivers follow-up support to customers who have recently had smart meters installed. The scheme will be expanded in 2020 to social housing tenants by working with Future Housing.

Expenditure

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WESTERN POWER DISTRIBUTION

Serving the Midlands, South West and Wales

Expenditure

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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 DNOs do not have control over such as rates, licence fees and transmission charges that are 'passed through' to the charges we make to electricity suppliers.

9.2 The expenditure covers all aspects of running a distribution network including the following.

- Load related capex
- Non-load related capex
- Network operating costs
- Non-operational capex
- Closely associated indirects
- Business support
- Other costs within the price control
- Activity costs outside the price control – not included in Totex
- Non activity based costs (outside the price control) – not included in Totex

9.3 Each year, we report the expenditure across all these areas to Ofgem in line with Standard Licence Obligation 46, which has an extensive set of rules and definitions called Regulatory Instructions and Guidance. The data shown in this section is based upon the data reported for the period 1 April 2019 to 31 March 2020.

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 2019/20 have been deflated to be comparable to the allowances.

9.5 Allowed costs include the forecast level of above inflation cost increases known as 'real price effects'.

9.6 Costs are shown after the deduction of customer contributions and other cost recoveries.

9.7 Indirect activities have been allocated across activities within and outside the price control.

Expenditure summary

9.8 In 2019/20, WPD Totex expenditure was lower than allowances for total costs within the price control. We forecast that costs will be within our overall allowance for the eight year RIIO-ED1 period as a whole. At the close of 2019/20, expenditure is 2% below Totex allowances for RIIO-ED1 to date.

ED1 to date expenditure vs allowance (2012/13 prices) £million					
Licence area	West Midlands	East Midlands	South Wales	South West	WPD Total
Totex actual costs ED1 to date (£million)	1,293.3	1,314.0	644.0	1,055.5	4,306.8
Totex allowance ED1 to date (£million)	1297.9	1316.9	721.4	1066.3	4402.5
% of allowance spent	99.6%	99.8%	89.3%	99.0%	97.8%

9.9 The following table summarises all the areas of expenditure showing the allowed values and actual values in the year 2019/20 for all four licence areas and WPD as a whole.

2019/20 expenditure vs allowance (2012/13 prices) £million										
	West Midlands		East Midlands		South Wales		South West		WPD Total	
	Allow'd	2019/20	Allow'd	2019/20	Allow'd	2019/20	Allow'd	2019/20	Allow'd	2019/20
Connections related reinforcement	2.5	3.5	2.4	14.8	1.4	1.0	1.3	3.5	7.5	22.7
General reinforcement	27.6	7.2	23.4	11.4	8.2	1.9	13.4	3.3	72.6	23.9
LOAD RELATED CAPEX	30.1	10.7	25.7	26.2	9.6	2.9	14.7	6.8	80.1	46.6
Asset replacement and refurbishment	68.7	53.2	57.2	47.0	39.6	28.8	59.6	49.2	225.2	178.2
Diversions	10.4	6.9	9.1	15.8	3.9	2.4	8.1	20.7	31.4	45.9
Operational IT and telecoms	2.3	2.5	3.2	2.7	1.6	0.9	2.5	1.6	9.6	7.7
Quality of supply	2.8	0.8	1.5	1.1	0.5	0.9	0.5	0.5	5.3	3.3
Worst served customers *	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1
Safety and overhead line clearances	3.4	4.2	3.5	3.0	1.5	3.8	2.8	2.8	11.1	13.9
Flood defences	0.2	0.1	0.2	0.3	0.2	0.1	0.1	0.0	0.7	0.5
Environmental	0.6	0.8	0.6	0.3	0.3	0.2	0.3	0.4	1.8	1.6
Visual amenity *	0.0	0.4	0.0	0.3	0.0	0.0	0.0	0.2	0.0	1.0
NON-LOAD RELATED CAPEX	88.3	69.0	75.3	70.5	47.6	37.2	73.9	75.6	285.1	252.2
Faults and other unplanned repairs	29.3	32.4	33.7	37.3	13.4	12.9	24.3	25.5	100.7	108.1
Tree cutting	8.3	11.0	6.5	8.9	8.0	7.9	11.2	11.8	34.0	39.7
Inspections	2.7	2.7	2.8	2.7	2.0	1.9	2.9	2.4	10.4	9.8
Repair and maintenance	6.6	7.2	5.6	7.2	2.8	3.8	3.8	5.1	18.8	23.4
Other operating costs	4.9	3.7	5.4	4.9	2.3	2.7	3.3	3.4	15.9	14.7
NETWORK OPERATING COSTS	51.9	57.0	54.0	61.0	28.5	29.3	45.4	48.2	179.8	195.6
NON-OPERATIONAL CAPEX	13.9	8.0	12.6	8.9	6.2	10.1	9.4	8.4	42.0	35.4
CLOSELY ASSOCIATED INDIRECTS	53.6	57.5	53.3	57.9	29.8	28.6	43.7	44.4	180.4	188.3
BUSINESS SUPPORT	27.6	22.7	28.6	22.7	14.8	12.0	23.7	19.9	94.7	77.3
OTHER COSTS WITHIN THE PRICE CONTROL	0.0	4.3	0.0	2.8	0.0	2.9	0.0	4.7	0.0	14.6
PRICE CONTROL ADJUSTMENTS		-2.8	1.1	-4.0		-2.2	-0.1	-3.7	1.1	-12.8
TOTAL COSTS WITHIN PRICE CONTROL	265.5	226.4	250.6	246.0	136.5	120.8	210.7	204.3	863.3	797.4
PRICE CONTROL ADJUSTMENTS	0.0	2.8	0.0	4.0	0.0	2.2	0.1	3.7	0.1	12.8
ACTIVITY COSTS OUTSIDE PRICE CONTROL	18.3	15.6	17.9	15.6	5.9	10.2	9.0	23.4	51.1	64.8
NON ACTIVITY BASED COSTS	81.8	67.9	92.0	68.7	57.0	43.6	76.9	60.8	307.6	241.0
TOTAL COSTS	365.5	312.6	360.5	334.3	199.3	176.8	296.6	292.2	1222.0	1115.9

* The allowed levels of expenditure for worst served customers and visual amenity are subject to an ex-post (after the expenditure has been incurred) adjustment up to an overall cap for the RIIO-ED1 period.

** The values shown may show small differences to the values stated in the performance snapshot provided in section one of this report as a result of rounding. The performance snapshot is based on data submitted to Ofgem in table SI1 as part of annual reporting on 31 July 2020. Totals may not reconcile as a result of rounding.

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. Work may also be required to accommodate more distributed generation.

9.11 In 2019/20 expenditure across the whole of WPD was £46.6m against an allowance of £80.1m. Expenditure was lower than forecast in three licence areas but East Midlands is 1.8% over the 2019/20 allowance.

9.12 Expenditure associated with the amount of network reinforcement required for new connections was three times higher at £22.7m compared to an allowance of £7.5m. The allowance (based on forecasts in 2012/13) assumed a lower level of higher voltage demand and generation connections than have actually arisen.

9.13 High levels of customer driven reinforcement, especially in the East Midlands, have impacted the amount of general reinforcement that has been carried out. In addition during 2019/20, WPD has significantly expanded the use of flexibility and has made arrangements for 220MW of flexible services offsetting £22.2m (2012/13 prices) of conventional reinforcement.

9.14 All DNOs have seen lower than forecast secondary reinforcement expenditure due to lower than forecast impact from low carbon technology.

Non-load related capex expenditure

9.15 Non-load related capex is capital investment in the network, of which two thirds is on replacement and refurbishment of poor condition assets. Other large areas of expenditure are diversions and network safety work including removal of overhead line clearance issues.

9.16 In 2019/20, total WPD expenditure for non-load related capex was lower than allowance; £252.2m was spent against an allowance of £285.1m with variances across a number of categories.

9.17 £178.2m was spent on asset replacement and refurbishment against an allowance of £225.2m. Expenditure varies across the licence areas but some trends are identifiable. For instance there were lower volumes of pole replacements as fewer poles were found in poor condition and lower volumes of overhead line replacement.

9.18 Operational IT and telecoms costs were lower than allowance for WPD as a whole. Across all areas £7.7m was spent against an allowance of £9.6m. This is due to ongoing re-evaluation and re-phasing of requirements as a result of the transition to DSO, digitalisation developments, and cyber resilience requirements.

Network operating costs

9.19 Network operating costs include inspections, repair and maintenance, faults and tree cutting. The majority of these areas are incurring higher costs than forecast with the total WPD expenditure being £195.6m against an allowance of £179.8m.

9.20 WPD uses contractors for tree clearance activities. RIIO-ED1 cost allowances were based upon historical costs, but market conditions have led to higher contract costs.

9.21 Whilst WPD carries out routine cyclical maintenance ensuring that all maintenance is completed in the year it is due, there has been a focus on remedial actions to remove defects from the network, this has led to higher than forecast costs.

Non-operational capex

9.22 Non-operational capex includes the purchase of new IT systems and equipment, property, vehicles and small tools and equipment. Expenditure was £35.4m against a forecast of £42.0m.

9.23 There has been investment in management reporting tools, technology refresh, and technology to address internet based cyber threats. There is also an ongoing evaluation of IT requirements as a result of our transition to the role of DSO and work to ensure the security of our systems in the light of cyber security threats.

Closely associated indirects

9.24 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 £188.3m was incurred in 2019/20, which is 4.4% higher than forecast.

9.26 Higher costs mainly relate to expenditure on core labour and this will continue to be reviewed as RIIO-ED1 progresses. There are also increases in expenditure on operational training, which includes recruitment of engineering trainees and craft apprentices, as well as more refresher training for existing operational staff.

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 18% lower than forecast at £77.3m.

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 funded by the Totex allowance.

9.30 The nature of these activities meant that minimal expenditure was included in the 2012/13 business plan.

9.31 Costs within this area in 2019/20 again include significant volumes of claims for network apparatus in gardens. A number of agents have been active in this arena, increasing the volume of claims. We have dedicated resources to this activity to ensure that claims are resolved at minimum cost.

Price control adjustments

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

Activity costs outside the price control – not included in Totex

9.33 These costs relate to work funded directly by customers and not through the price control, for example some types of connections work.

Non-activity based costs outside of the price control – not included in Totex

9.34 There are some costs that do not form part of 'regulated' expenditure because they form costs that DNOs do not have control over, some of which are treated as 'pass through' costs. Non activity based costs were lower than forecasted with expenditure of £241.0m against an allowance of £307.6m.

Forecast for RIIO-ED1

9.35 As part of regulatory reporting requirements we provide a forecast for the expenditure out-turn for the whole price control. The forecast submitted for the end of 2019/20 takes into account actual expenditure from 2015/16 to 2019/20 together with potential developments and known challenges for the remainder of RIIO-ED1 such as changing activity volumes, responding to Covid-19, DSO transition, and developments in UK energy policy.

9.36 The following table summarises revised forecasts for load and non-load related investment on the network within the price control:

ED1 Forecast Expenditure vs Allowance (2012/13 prices) £million										
	West Midlands		East Midlands		South Wales		South West		WPD Total	
	Allow'd	F'cast	Allow'd	F'cast	Allow'd	F'cast	Allow'd	F'cast	Allow'd	F'cast
Connections Related Reinforcement	20.0	28.6	18.8	126.6	9.5	8.6	9.4	25.1	57.7	188.9
General Reinforcement	203.3	160.4	278.4	125.4	45.4	41.5	86.5	59.3	613.6	386.7
LOAD RELATED CAPEX	223.2	189.0	297.2	252.0	55.0	50.1	95.9	84.4	671.3	575.6
Asset Replacement and Refurbishment	547.6	492.6	459.4	414.0	311.5	270.8	474.6	415.3	1793.1	1592.6
Diversions	75.1	62.8	80.8	87.4	32.8	33.4	75.1	86.0	263.9	269.7
Operational IT and Telecoms	35.6	40.8	43.2	39.3	27.1	16.8	29.9	26.7	135.9	123.7
Quality of Supply	16.5	14.1	9.2	12.7	3.1	9.4	3.1	7.9	31.9	44.1
Worst Served Customers *	0.0	0.4	0.0	0.6	0.0	1.6	0.0	0.7	0.0	3.3
Safety and Overhead Line Clearances	26.9	35.6	28.1	36.8	11.6	27.0	38.6	47.7	105.3	147.1
Flood Defences	1.2	0.7	5.1	2.9	7.9	2.4	1.2	1.0	15.5	7.0
Environmental	4.5	7.8	5.0	3.9	2.3	3.4	2.5	5.0	14.3	20.1
Visual Amenity *	0.0	2.8	0.0	1.0	0.0	1.3	0.0	2.9	0.0	8.0
NON-LOAD RELATED CAPEX	707.5	657.6	630.9	598.7	396.3	366.1	625.0	593.1	2359.7	2215.6

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

9.37 Our 2019/20 forecast suggests that load related expenditure will be around 14% lower than we anticipated within the RIIO-ED1 Business Plan in light of the lower impact of low carbon technologies such as heat pumps for domestic heating; we will continue to review these assumptions as the use of electric vehicles and other low carbon technologies changes.

9.38 We have forecasted an underspend of 6% in non-load capex for the remainder of RIIO-ED1 which takes into account expenditure to date; it anticipates that output targets will be met within these levels with efficiencies being made.

9.39 As we continue the transition from DNO to DSO there is likely to be additional expenditure across operational IT, telecoms and indirect activities. Some additional expenditure has been included in the 2020 forecast and requirements will continue to be re-evaluated throughout RIIO-ED1 as the transition work progresses.

Glossary

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10 Glossary

A

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

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

Automation
Computer controlled decision making linked to remotely controlled devices which allows electricity supplies to be quickly rerouted without the need to send a person to the site.

B

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

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

Broad Measure of Customer Satisfaction (BMCS)
An incentive scheme made up of a customer satisfaction survey, an assessment of how complaints are dealt with and a review of stakeholder engagement. It was introduced for DPCR5 and is designed to drive improvements in the quality of the overall customer experience by capturing and measuring customers' experiences of contact with their DNO across the range of services and activities the DNOs provide.

Building Research Establishment Environmental Assessment Method (BREEAM)
A methodology used by the building industry to assess the environmental aspects of building construction and refurbishment.

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

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

C

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

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

Centre for Sustainable Energy (CSE)
An independent national charity that helps people and organisations from the public, private and voluntary sectors meet the twin challenges of rising energy costs and climate change.

CIRT (Crown Internet Routing & Tracking)
An online system specifically designed for ICPs and IDNOs, the system allows the online submission of connection applications and progress tracking of those applications.

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

Common Network Asset Indices Methodology (CNAIM)
A standard, points based mechanism for DNOs to report risk levels associated with network assets.

Competition in Connections
Historically, the incumbent DNO would have provided new connections. Over recent price controls, Ofgem has promoted greater involvement of third parties in both the design of connections and on-site delivery of connections work. This means that third party connection providers compete for the business of providing new connections in a competitive market.

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

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

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

Customers Interruptions (CIs)
The number of customers whose supplies have been interrupted per 100 customers per year over all incidents, where an interruption of supply lasts for three minutes or longer, excluding re-interruptions to the supply of customers previously interrupted during the same incident.

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

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

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

D

DECC
The former Government Department of Energy and Climate Change. Replaced by the Department for Business, Energy and Industrial Strategy.

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

Distributed Energy Resources (DER)
Smaller power sources embedded in the distribution network that can be used to provide the power to meet demand.

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

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

Distribution Price Control Review 5 (DPCR5)
The price control period which preceded RIIO-ED1. DPCR5 ran from 1 April 2010 until 31 March 2015.

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

Distribution Use of System (DUoS) charges
These are the charges levied to electricity suppliers for DNO costs that can be recovered from customers. The amount is determined through price control reviews.

E

Electricity, Safety, Quality and Continuity Regulations 2002 (ESQCR)
The ESQCR specify safety standards, which are aimed at protecting the general public and customers from danger. In addition, the regulations specify power quality and supply continuity requirements. The regulations were amended in 2006 to include a requirement for resilience tree clearance.

Electricity System Operator (ESO)
An organisation that controls the flow of electricity ensure a balance between supply and demand across the network.

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

Energy Networks Association (ENA)
The industry body for UK transmission and distribution network operators for gas and electricity in the UK and Ireland.

Energy Storage
The term energy storage encompasses a varied range of technologies which allow the capture of energy for subsequent release. Technology ranges from small scale domestic batteries to large scale industrial systems. Energy storage has the potential to play an important role in the future of energy networks allowing supply and demand to be balanced at times when generation exceeds network capacity or generation is insufficient to meet customer demand.

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

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

Extra High Voltage (EHV)
Voltages over 20kV up to, but not including, 132kV.

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

F

Fluvial flooding
Flooding related to river or coastal sites.

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

G

Guaranteed Standards of Performance (GSOPs)

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

H

Health and Safety Executive (HSE)

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

Health Index (HI)

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

Heat Pump

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

High Voltage (HV)

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

I

Improvement Notice

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

Incentive on Connections Engagement (ICE)

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

Independent Distribution Network Operator (IDNO)

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

Independent Connections Provider (ICP)

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

Innovation projects

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

Inspections and Maintenance (I&M)

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

Interruption Incentive Scheme (IIS)

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

ISO 14001

This is an international standard for environmental management systems.

L

Load

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

Load Index (LI)

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

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

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

Low Voltage (LV)
This refers to voltages up to, but not including, 1kV.

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

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

M
Medically dependent customers
Customers who rely on electricity as a result of a health condition.

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

Net zero
The UK's Climate Change Act (2008) sets out how the UK tackles climate change. The act says that by 2050 the UK Government must reduce greenhouse gas emissions by at least 100% compared with 1990 levels.

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

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

O
Office of Gas and Electricity Markets (Ofgem)
Ofgem is responsible for regulating the gas and electricity markets and network monopolies in the UK to ensure customers' needs are protected.

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

Perfluorocarbon Tracer (PFT)
A chemical that is injected into fluid filled cables, used to speed up the location of leaks.

Pluvial flooding
Flooding related to excessive rainwater (flash flooding).

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

Priority Services Register (PSR)
A database that records details about customers in vulnerable circumstances so that additional support can be provided if needed.

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

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

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

R
Real Price Effects (RPE)
Increase in prices of materials, direct staff or contract labour, over and above increases in the Retail Price Index.

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

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

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

Revenue = incentives + innovation + outputs (RIIO)
The current regulatory framework, introduced for electricity distribution in 2015/16. It places emphasis on incentives to drive the innovation needed to deliver a sustainable energy network at value for money to existing and future consumers.

RIIO Electricity Distribution 1 (RIIO-ED1)
The eight year price control period that runs from 1 April 2015 to 31 March 2023. It is the first electricity distribution price control that uses the RIIO framework for setting allowances.

RIIO Electricity Distribution 2 (RIIO-ED2)
The electricity distribution price control period that will run from 1 April 2023 and is assumed to end on 31 March 2028. Ofgem has determined that the RIIO-ED2 price control will be five years in length.

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 standard industry specified distances from equipment.

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

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

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

Smart Grid
A generic term for a range of measures that are used to operate electricity networks more flexibly, allowing more generation or demand (load) to be connected and managing the associated power flows.

Smart Meters
Smart meters record the energy consumed within a property and are capable of being read remotely. The government originally mandated that by 2020 every home in Great Britain will be offered a smart electricity and gas meter, but the timescales have been extended to 2024. Smart meters have the capability to allow WPD much greater visibility of the operational state of the low voltage network.

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

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

Sulphur Hexafluoride (SF_6)
A gas widely used as an insulating medium in transmission and distribution equipment. It has excellent insulating properties but is a potent greenhouse gas. It continues to be used because there are no alternatives available.

Supervisory Control and Data Acquisition (SCADA)
This is the term used for the system that monitors and controls distributed assets. It comprises the remote terminal units, communication infrastructure and human interface within central control rooms. SCADA batteries provide the power for system communication between remote sites and central control rooms.

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

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

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

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

Transformer
Converts electricity from one voltage to another.

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

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

U
Uprating Assets
Using larger capacity network equipment rather than replacing like-for-like.

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

V
Vulnerable Customers
Vulnerable customers include those customers who are medically dependent upon electricity, have special communication requirements, have other special needs with a dependence upon electricity (e.g. stair lift), are elderly, have a transient vulnerability to a power cut (e.g. such as those who have recently left hospital) or need assistance with energy affordability.

W
Western Power Distribution (WPD)
The electricity distribution network operator that holds four distribution licences for West Midlands, East Midlands, South Wales and South West.

Whole system outcomes
Transmission system operators and distribution network operators coordinating their activities in order ensure that networks as a whole are managed efficiently and in the best interest of consumers.

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