



2015-2023

Business Plan Consultation with stakeholders

Have your say

Who we are

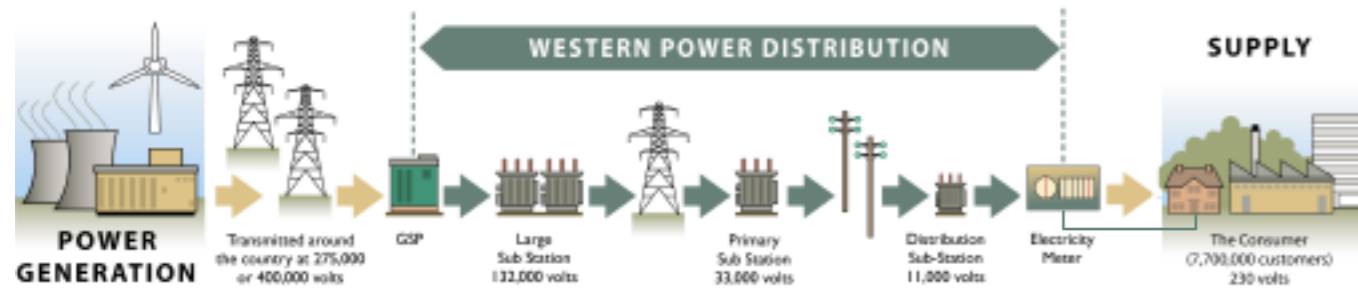
Western Power Distribution (WPD) owns and operates the electricity distribution networks in the Midlands, South West England and South Wales. It's our job to keep the lights on for over 7.7 million customers.

We maintain the power network of poles and pylons, cables, wires and substations. We repair it when faults occur, extend it to connect new customers and reinforce it to cope with changes in electricity demand.

What we do

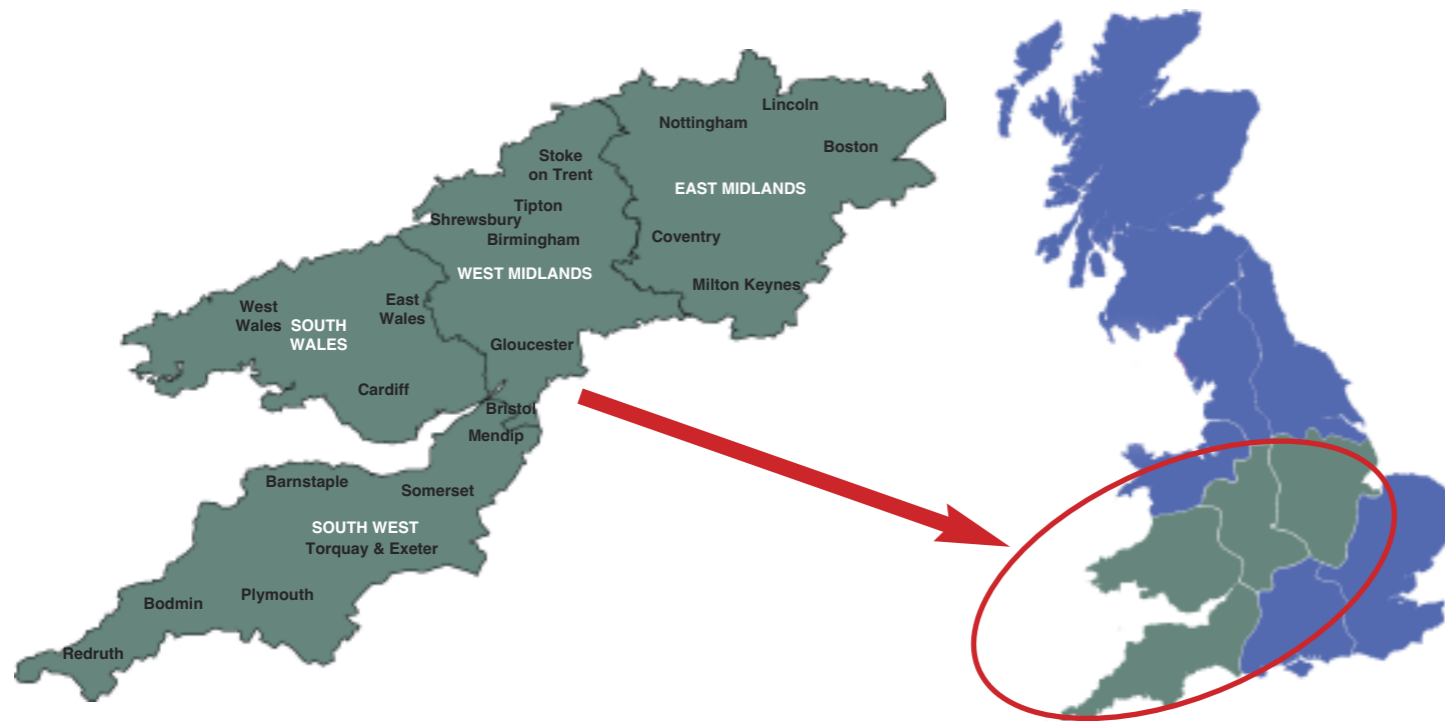
We deliver electricity to you through our network. We do not make or sell electricity.

Our network receives electricity from the National Grid at 132,000 Volts. We then carry it to cities, towns and villages using overhead lines and underground cables. We operate at a number of voltages but most of our network operates at 11,000 Volts. Distribution substations then transform the voltage to 230 Volts which is the voltage at which it enters your home or business.



Where we operate

Our network covers densely populated residential areas and widely dispersed rural communities. We operate from the Lincolnshire coast in the East Midlands, through to Gloucestershire in the West Midlands, to Cardiff and Swansea, and down into the South West to the counties of Somerset, Devon and Cornwall.



Introduction



We hope you will take this opportunity to help shape our investment plans for the future.

Our business is simple. Our purpose is to make sure that the electricity network of poles and pylons, cables, wires and substations – the

infrastructure that we all rely on – safely delivers power in the areas we serve around the clock.

Yet we face many challenges – like safeguarding network security and reliability at a reasonable cost, delivering on a range of environmental obligations, especially as we move towards a low carbon society, and continuing to push forward the boundaries of customer service excellence.

Between 2015 and 2023 our plan is to invest almost £6.8 billion on our network. We will deliver the best standards of service in the UK whilst providing the best value for money. **The options in this document represent an average increase of 4% to customers' bills, to fund increased annual expenditure on the network of nearly 6%.**

The best standards of customer service, coupled with technical excellence and innovation, have helped to make WPD the best UK electricity distribution business.

With the on-going input and involvement of all our stakeholders we can continue to be the standard bearer for our industry.

We believe our record of listening to stakeholders, as part of our stakeholder engagement activity, and of then delivering on our promises, stands us in good stead. This document provides another opportunity for customers to have their say.

So please spare a moment to tell us which aspects of our service matter most to you and how you would like us to improve – and help us to shape our business plan for 2015-2023.

Later this year (July 2013), we will be asking our industry regulator, Ofgem, to agree our spending plans – but first we want to hear your views, so please take the time to have your say.

We look forward to hearing from you.

Robert Symons
Chief Executive, WPD



Purpose of the document

WPD is regulated by Ofgem. Periodically, Ofgem carries out a review to establish how much money distribution businesses like ours should have to run the network.

The current regulatory period ends on 31st March 2015 and is called Distribution Price Control Review 5 (DPCR5). We are now planning for the next period that will run for 8 years from 2015 to 2023. This regulatory period is called RIIO-ED1.

In July 2013 we will submit our plans to Ofgem. Before that, we will share our business plans with you, to explain the outputs and services we plan to deliver.

This document is an opportunity for you to influence our business plan before we publish it in full. We have been engaging with our stakeholders about RIIO-ED1 since 2011. That's given us a clear view of our customers' priorities.

In each of these priority areas, this document presents:

- **Options for investment and the costs.**
- **The service improvement each investment option would deliver.**
- **The impact on the average domestic electricity bill.**

What is 'RIIO-ED1'

Ofgem have proposed a new approach for regulating network companies, called RIIO – where “Revenue = Incentives + Innovation + Outputs”. ED1 stands for “Electricity Distribution 1”, as it is the first distribution price control period where the RIIO framework has been used.

The RIIO framework places strong emphasis on building a more sustainable energy sector, innovation, and delivering value for money.

Who should read this document

Anyone who is interested in how we distribute electricity in our region and wants to understand and influence our plans for the future.

What we'd like you to do

We have asked some specific consultation questions that we would like responses to, but any views are welcome. You may want to comment on all the topics in this document, or just the ones that are most important to you.

Our next steps

Over the next few months we will continue to develop our business plan, taking into account all the views we receive. When we publish an overview of our plan, we'll indicate how the views of our stakeholders have influenced our plans.

We will also be running a series of workshops to discuss our business plan in April 2013. If you would like to be involved, please let us know.



Top Stakeholder Priorities - What you've told us so far

To date we have engaged with over 2,200 individual stakeholders. In 2012, we held quarterly customer panels attended by our Chief Executive, 17 stakeholder workshops on a range of topics, and telephone interviews with 1,600 customers.

We are approaching our stakeholder engagement programme in three stages. For more details, including all the findings from our consultations so far, visit: www.westernpower.co.uk/stakeholder-engagement.

We are now in the third stage of our consultation:

Stage 1 – Identifying our priorities

Engagement to identify stakeholders' interest areas and key investment priorities for the future.

Stage 2 – How to improve our service

Research to identify specific service improvements customers would like us to deliver, in the priority areas identified in stage one.

Stage 3 – Business Plan consultation

The actual costs and options for investment, to deliver the improvements customers said they wanted to see with respect to:

1. **Keeping the lights on - Maintaining current levels of service** **Page 7**
2. **Building a smarter electricity network** **Page 9**
3. **Reducing power cuts** **Page 11**
4. **Improving network resilience to severe weather** **Page 13**
5. **Protecting substations against flooding** **Page 15**
6. **Reducing oil and gas leaks from equipment** **Page 17**
7. **Improving service for remote customers** **Page 19**
8. **Undergrounding overhead lines to improve visual amenity** **Page 21**
9. **Improving our new connections service** **Page 23**
10. **Introducing new communication channels** **Page 25**



How to respond to this consultation

The rest of this document summarises our investment proposals. We have included questions at the end of each section and summarised them below. You may wish to answer all of them, or just those that you feel most strongly about. You can respond via:

Email: awilkes@westernpower.co.uk

Write to:
 Alex Wilkes
 Stakeholder Engagement Officer
 Western Power Distribution, Pegasus Business Park
 Herald Way, Castle Donington, DE74 2TU

This consultation closes on Friday 8th March 2013.

Summary of our consultation questions

Keeping the lights on - Maintaining current service levels

1. Do you agree that WPD's investment programme should, as a minimum, aim to maintain its current levels of service until 2023?

Building a smarter electricity network

2. Are our assumptions about the uptake of low carbon technologies reasonable for our current 'best view' scenario? Which of the scenarios do you think is most likely?

Reducing power cuts

3. Are you satisfied with the current reliability of your electricity supply?
4. Do you agree that WPD should focus on reducing the overall level of power cuts? Do you support the investment options proposed?

Improving network resilience to severe weather

5. Do you agree that WPD should increase investment in tree trimming to improve the networks' resilience to severe weather? Which of the investment options do you support?

Protecting substations against flooding

6. Do you agree that WPD should invest more on flood defences for substations? Which of the investment options do you support?

Reducing oil and gas leaks from our equipment

7. Do you agree that WPD should reduce the risk of oil and SF₆ gas leaks from equipment, compared to current leakage rates? Which of the investment options do you support?

Improving service for remote customers

8. Do you agree that WPD should invest to improve service to our most remote customers? Which of the investment options do you support?

Undergrounding overhead lines to improve visual amenity

9. If you have had experience working with WPD to deliver a scheme, how did you find the experience?
10. Do you agree that WPD should continue to invest at the current rate? Which of the investment options do you support?

Improving our new connections service

11. What aspects of the new connections process would you most like WPD to focus on improving?
12. Connections process speed: Which improvement option do you support?
13. Connections communication methods: Which improvement option do you support?

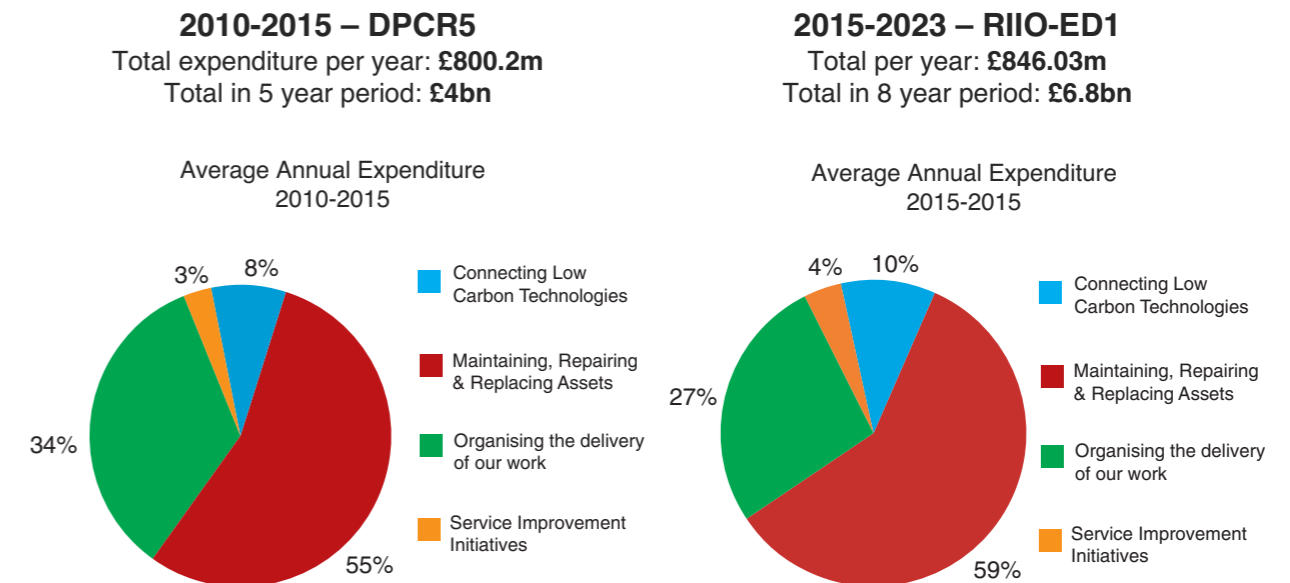
Introducing new communication channels

14. How can we make it easier for our customers to communicate with us? Which of the improvement options do you support?

In summary – what we intend to spend to deliver up to 2023

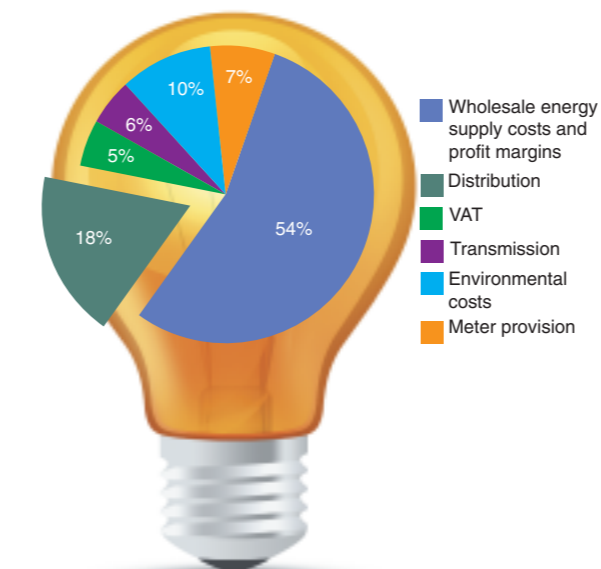
We currently propose to invest around £6.8 billion from 2015 to 2023, which is an increase on our current levels of investment. The following charts break this down into the major cost categories.

We are now in a 5 year investment period (2010-2015) and are moving to an 8 year period (2015-2023). The costs below are therefore an average per year, ignoring inflation, to allow for a fair comparison.



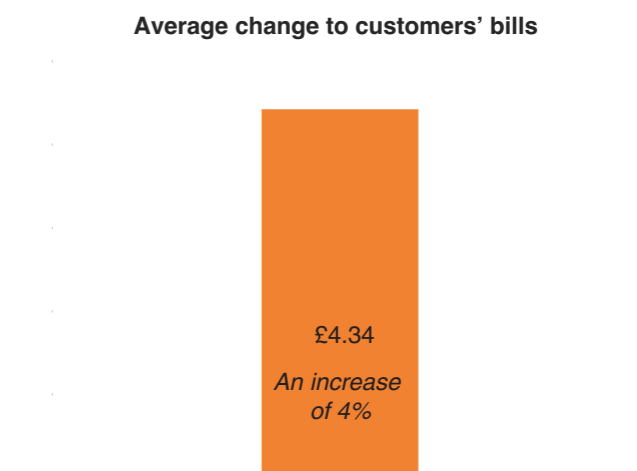
A typical electricity bill today

Electricity distribution accounts for approximately 18% of an average domestic customer's bill. This works out at an average of around £100 per year.



Impact on domestic customer bill

The details behind these potential bill increases can be found in the rest of this document.



Keeping the lights on - Maintaining current levels of service

WPD currently provides the highest levels of service in the UK. Our customers have told us they are not prepared to accept any deterioration in current service standards.

With 185,000 transformers, 128,000 km of underground cables and 92,400 km of overhead lines, we have enough electricity network to go around the world 5½ times. Given that much of the network was first installed between 1950 and 1970, investment in maintaining the network and keeping it in good working condition forms a big part of our plans. We must:

- Connect new commercial and domestic customers
- Inspect and maintain existing equipment
- Repair equipment when it goes wrong
- Replace equipment due to age and condition
- Ensure we meet our legal and licence obligations
- Ensure the network can cope with future challenges we may face

The need for increased investment is largely to update our network by replacing ageing equipment that is not as reliable as it should be.

The costs to carry out routine inspection and maintenance, tree trimming and to comply with legal and licence obligations is not expected to change dramatically between 2015 and 2023.

Forecast investment for each region

The total investment required to maintain current levels of service in the 8 years between 2015 and 2023 will be over £4bn for WPD. Average annual expenditure will increase by 14%, from £441m to £503.7m. In each of our regions this expenditure will be broken down as follows:

West Midlands	DPCR5 (2010-15) Average per year	RIIO-ED1 (2015-23) Average per year
Maintaining the network		
Operating Costs (Inspection, maintenance and routine tree cutting)	27.4	21.6
Asset Replacement	69.1	91.8
Real Time Control Systems and Telecommunications	5.2	8.7
Diversions	9.5	8.1
Responding to and repairing faults	19.3	19.5
Purchase of Vehicles, Engineering Equipment, IT & Property	9.8	12.0
Other	2.0	3.1
TOTAL	142.3	164.8

East Midlands	DPCR5 (2010-15) Average per year	RIIO-ED1 (2015-23) Average per year
Maintaining the network		
Operating Costs (Inspection, maintenance and routine tree cutting)	23.4	18.0
Asset Replacement	60.2	70.2
Real Time Control Systems and Telecommunications	6.4	11.7
Diversions	8.2	8.4
Responding to and repairing faults	20.7	22.2
Purchase of Vehicles, Engineering Equipment, IT & Property	9.3	11.2
Other	3.6	3.6
TOTAL	131.8	145.3

South Wales	DPCR5 (2010-15) Average per year	RIIO-ED1 (2015-23) Average per year
Maintaining the network		
Operating Costs (Inspection, maintenance and routine tree cutting)	12.4	12.1
Asset Replacement	30.5	36.4
Real Time Control Systems and Telecommunications	1.4	7.4
Diversions	2.9	2.9
Responding to and repairing faults	10.8	11.6
Purchase of Vehicles, Engineering Equipment, IT & Property	5.8	6.1
Other	2.8	1.4
TOTAL	66.6	77.9

South West	DPCR5 (2010-15) Average per year	RIIO-ED1 (2015-23) Average per year
Maintaining the network		
Operating Costs (Inspection, maintenance and routine tree cutting)	15.4	15.0
Asset Replacement	49.9	60.2
Real Time Control Systems and Telecommunications	2.3	6.0
Diversions	4.1	4.1
Responding to and repairing faults	16.1	17.2
Purchase of Vehicles, Engineering Equipment, IT & Property	7.9	9.9
Other	4.6	3.3
TOTAL	100.3	115.7

Impact on customer bills

Whilst investment to replace ageing equipment will increase by 14% overall for WPD, the impact on the distribution portion of an electricity bill is an increase of 3%.

Maintaining service levels				
	Average expenditure per year DPCR5	Average expenditure per year RIIO-ED1	Increase / change	Impact on customer bill
West Midlands	£142.3m	£164.8m	£22.5m	£3.38
East Midlands	£131.8m	£145.3m	£13.5m	£2.03
South Wales	£66.6m	£77.9m	£11.3m	£3.95
South West	£100.3m	£115.7m	£15.4m	£3.85



Consultation Questions:

1. Do you agree that WPD's investment programme should, as a minimum, aim to maintain its current levels of service until 2023?

Building a smarter electricity network

We're building an electricity network that can react to changes in demand and supply as they occur and we are continuously innovating to meet the future needs of our customers. This will reduce the cost to customers in the long term by enabling us to use the current network more flexibly and to avoid some traditional network reinforcement.

We have the most innovation trials of any UK distribution company. As part of Ofgem's Low Carbon Networks Fund, we have 5 large-scale projects and 11 smaller demonstrations. Our projects cover all voltage levels and range from building future network design templates to battery storage and demand side management trials.

Connecting Distributed Generation and emerging technologies

The UK has a target to reduce CO₂ emissions by 80% by 2050. This will require more local energy production and decarbonised heating and travel. Increases in the distributed generation connecting to local networks, electric vehicles and electrically-based heating, may increase demand and put pressure on the current system. This means we will need to use innovations and smart network reinforcement to provide more capacity.

The Government's Department of Energy and Climate Change (DECC) have set out 4 illustrative scenarios for how the UK's carbon reduction targets can be met:

DECC Scenario 1 <i>High emissions reductions due to low carbon heat</i>	High levels of insulation	5 million solid wall insulations nationally
	High levels of renewable heat	8 million installations nationally
	Medium levels of fuel efficiency	Average fuel efficiency of 60g CO ₂ /km
DECC Scenario 2 <i>High emissions reductions due to transport</i>	High levels of insulation	5 million solid wall insulations nationally
	Medium levels of renewable heat	7 million installations nationally
	High levels of fuel efficiency	Average fuel efficiency of 50g CO ₂ /km
DECC Scenario 3 <i>High emissions reductions due to low carbon heat and transport</i>	Low levels of insulation	2.5 million solid wall insulations nationally
	High levels of renewable heat	8 million installations nationally
	High levels of fuel efficiency	Average fuel efficiency of 50g CO ₂ /km
DECC Scenario 4 <i>More than one technology under-delivers, and carbon credits are purchased</i>	Medium levels of insulation	4.5 million solid wall insulations nationally
	Low levels of renewable heat	1.6 million installations nationally
	Low levels of fuel efficiency	Average fuel efficiency of 70g CO ₂ /km

WPD's current view

Our stakeholders have told us that making sure the electricity network is ready for the future is a very high priority but that our plan must strike a balance by increasing expenditure in areas where we have confidence the need exists, but not to go too far ahead of need in case the uptake is slower than expected.

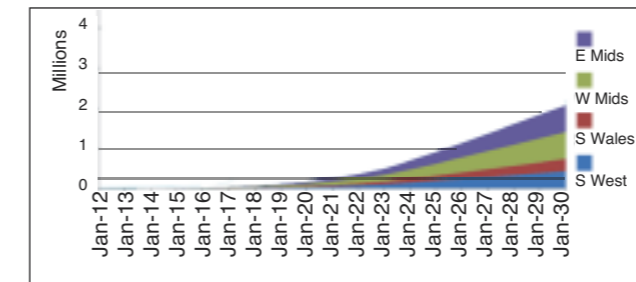
To help us build a plan that will deal with the uncertainty by being flexible to meet different outcomes, we have devised a 'best view' of the future, based on DECC's scenarios. WPD's initial view, as presented to stakeholders, was in line with 'DECC Scenario 1'. However, based on their feedback we have slightly scaled back our views on heat pumps and electric vehicle uptake.

WPD's current 'best view'	High levels of insulation	5 million solid wall insulations nationally
	Medium levels of renewable heat	7 million installations nationally
	Low levels of fuel efficiency	Average fuel efficiency of 70g CO ₂ /km

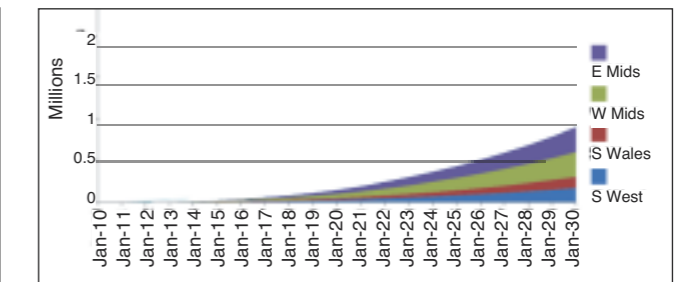
Low carbon technologies

Working jointly with other UK distribution companies we have developed an industry model, to project the location and uptake rate of low carbon technologies. Our current projections for WPD, as per our 'best view' are:

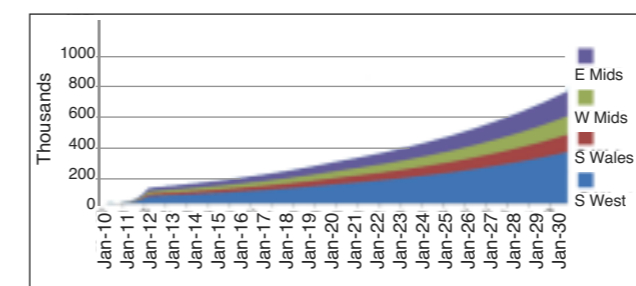
Heat Pumps



Electric Vehicles



Solar Panels



Changes in electricity demand

We forecast electricity demand based on economic conditions, the number of new homes and businesses being connected and likely changes in energy usage in a low carbon economy. We currently expect peak demand (MW) to increase as follows:

	2011/12	2022/23	
West Midlands	4,751	5,643	18.8% increase
East Midlands	5,248	5,916	12.7% increase
South Wales	2,100	2,339	11.4% increase
South West	2,831	3,394	19.9% increase

Impact on customer bills

Reinforcement for Low Carbon Technologies				
	Average expenditure per year DPCR5	Average expenditure per year RIIO-ED1	Increase / change	Impact on customer bill
West Midlands	£0.0m	£4.2m	£4.2m	63p
East Midlands	£0.0m	£4.2m	£4.2m	63p
South Wales	£0.0m	£2.8m	£2.8m	98p
South West	£0.0m	£2.8m	£2.8m	70p



Consultation Questions:

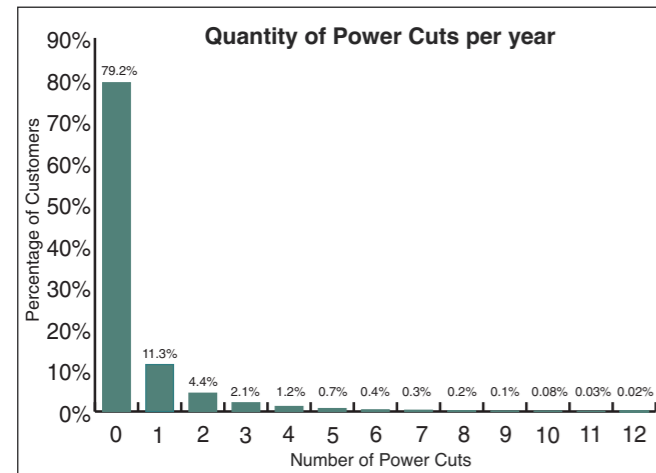
2. Are our assumptions about the uptake of low carbon technologies reasonable for our current 'best view' scenario? Which of the scenarios do you think is most likely?

Reducing power cuts

Reducing power cuts is one of our key goals. Stakeholders have told us that our number one priority should be to keep the lights on and that our current performance is very good, but they would like us to do even better.

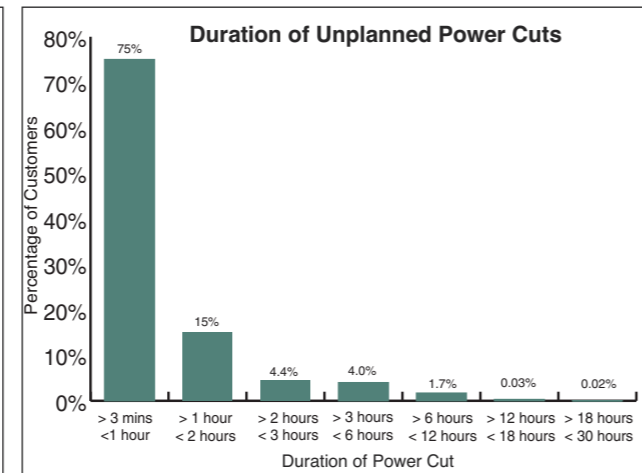
Frequency of power cuts

A measure of supply reliability is the average number of times that a customer experiences a power cut of more than 3 minutes in a year. The graph below shows that, during normal weather conditions, over 90% of WPD customers experience a very low number of power cuts. However, around 9.5% of customers have power cuts more than once a year.



Duration of power cuts

The graph below shows that, during normal weather conditions, the majority of WPD customers who experience a power cut, do so for less than 1 hour. However, 10% of customers have a power cut lasting 2 hours or more.



In order to ensure that both the frequency and duration of power cuts do not increase, it is necessary to continue with our programmes of tree trimming, inspection and maintenance of equipment and replacing assets that have reached the end of their operational life.

The reductions we have made so far are largely due to state-of-the-art automatic systems on our high voltage network. They enable us to remotely isolate a fault on the network, and re-route supplies to as many customers as possible, via other parts of the network. We currently have over 1,100 automated circuits, and believe that further improvements can be made by increasing this number.

Options for investment

WPD presented initial options for investment for all interruptions (planned and unplanned) on the network in November 2012. At the time, average power cut frequency was around 8 interruptions in 10 years, and average power cut duration was 60 minutes. Stakeholders told us that they would like to see continued improvements on these levels, but at a low cost to the customer. We have since taken into account even more recent performance data, whilst Ofgem have also now indicated more challenging targets for our performance.

	Average frequency	Average duration
Option 1: Ofgem proposed target	6.5 in 10 years	46mins
Option 2: WPD proposed target	6 in 10 years	38mins

West Midlands		
	Average power cut frequency	Average power cut duration
Current underlying performance	9.5 in 10 years	67mins
WPD target performance	7.5 in 10 years	50mins

East Midlands		
	Average power cut frequency	Average power cut duration
Current underlying performance	6 in 10 years	45mins
WPD target performance	5 in 10 years	35mins

South Wales		
	Average power cut frequency	Average power cut duration
Current underlying performance	5.5 in 10 years	29mins
WPD target performance	5 in 10 years	27mins

South West		
	Average power cut frequency	Average power cut duration
Current underlying performance	6 in 10 years	35mins
WPD target performance	5.5 in 10 years	33mins

Benefit of WPD's proposed option

By 2023 our customers:

- Will be off supply no more than 38 minutes each year on average
- Will not be interrupted on average more than 6 times in 10 years

Impact on customer bills

In DPCR5 (2010-2015) there was no Ofgem allowance for power cut reduction measures. For the RIIO-ED1 period (2015-2023) the impact of our proposed investment options are as follows:

Reducing power cuts	Option 1 - Ofgem targets		Option 2 - WPD proposed targets	
	Expenditure per year in RIIO-ED1	Impact on customer bill	Expenditure per year in RIIO-ED1	Impact on customer bill
West Midlands	£0.7m	11p	£1.9m	29p
East Midlands	£0.9m	14p	£1.0m	15p
South Wales	£0.1m	4p	£0.4m	14p
South West	£0.2m	5p	£0.4m	15p



Consultation Questions:

3. Are you satisfied with the current reliability of your electricity supply?
4. Do you agree that WPD should focus on reducing the overall level of power cuts? Do you support the investment options proposed?

Network resilience to severe weather

During periods of severe weather that include high winds, our overhead lines can be damaged by falling trees and other wind-borne debris. This damage can cause supplies to our customers to be affected.

Since 2009 WPD have had a tree cutting programme to ensure that our critical high voltage overhead lines are less at risk from falling trees during severe weather. This programme ensures that within 25 years, approximately 20% of the most strategically important overhead lines on our network will not have trees within a falling distance.

Our stakeholders have told us that the current programme is working and on the whole WPD have a good track record of restoring supplies quickly following severe weather. However, the topic of 'preparing for major emergencies', including resilience tree cutting to address this, has continued to increase in importance to stakeholders throughout our consultation programme.

Options for investment

All distribution companies are currently working to a 25 year resilience tree trimming programme. If WPD were to continue with the current programme there would be no additional impact on customer bills, as this is already agreed with Ofgem and included in our plans.

We are proposing the following options during 2015-2023. In line with stakeholder feedback, where the majority have indicated that they would like us to do more in this area, these options include accelerations to the current programme.

	Duration of resilience tree trimming programme
Option 1: Continue as now (WPD initial view)	25 year
Option 2: WPD current view	Accelerate to 20 years
Option 3:	Accelerate to 15 years



Impact on customer bills

Network resilience to severe weather							
	Option 1 - 25 years	Option 2 - 20 years			Option 3 - 15 years		
	Expenditure per year in RIIO-ED1	Expenditure per year in RIIO-ED1	Increase /change	Impact on customer bill	Expenditure per year in RIIO-ED1	Increase /change	Impact on customer bill
West Midlands	£1.3m	£1.8m	£0.5m	8p	£2.7m	£1.4m	21p
East Midlands	£1.2m	£1.6m	£0.4m	6p	£2.5m	£1.3m	20p
South Wales	£1.8m	£2.2m	£0.4m	14p	£3.0m	£1.2m	42p
South West	£1.5m	£2.2m	£0.7m	18p	£3.3m	£1.8m	45p

Benefit of WPD's proposed option

We will:

- Accelerate our resilience tree trimming programme to complete it within 20 years. This will mean more of the network is protected against the risk of severe weather sooner, which will reduce the risk of power cuts.



Consultation Questions:

5. Do you agree that WPD should increase investment in tree trimming to improve the networks' resilience to severe weather? Which of the investment options do you support?

Protecting substations against flooding

Over the last few years the issue of protecting our substations against flooding has increased significantly in importance to stakeholders. A flooded substation could interrupt electricity supplies for a long period to a large numbers of customers, including customers whose homes and businesses are not flooded themselves but who are supplied by the flooded substation.

Flood protection measures

We work with the Environment Agency to assess the degree of risk to our substations. Protection against flooding can include building permanent flood defences, such as concrete barriers, or in some cases raising the substations so that flood water can pass beneath without affecting electricity supplies. All key substations that are at risk of flooding are fitted with flood level indicators which alert our control centre about rising water levels.

We have purchased portable flood defences and several specialist flood response vehicles. The vehicles are fitted with a pump that can remove over 6,500 litres of water per minute. They are also equipped with important safety gear including waders, life jackets, radios and lighting, as well as sandbags.

Steps we've taken so far

We have already made significant investments to defend our equipment from the risk of flood, and we have protected 23 major substations in the last 3 years. Whilst we have over 62,000 ground mounted substations in total across our regions, 1,400 are considered to be major substations (providing power to large numbers of customers) and of critical strategic importance to electricity supplies.

Options for investment

Stakeholders have told us that protecting major substations against flooding is very important. We have agreed with Ofgem that we intend to protect a further 100 substations most at risk of flooding. This is already included in our plans and there would therefore be no additional impact on customer bills.

We are proposing the following options during 2015-2023. In line with stakeholder feedback, where the majority have indicated that they would like us to do more in this area, these options increase the number of substations protected.

	Number of major substations protected	Number of customers no longer at risk power cut due to flooding
Option 1: WPD initial view	100	1,000,000
Option 2: WPD current view	150	1,300,000
Option 3:	200	1,500,000



Option 1: The 100 major substations most at risk of flooding			
	Number of sites protected	Number of customers supplied	Expenditure over 8 years
West Midlands	4	30,000	£1.5m
East Midlands	31	340,000	£10.1m
South Wales	20	120,000	£10.0m
South West	45	510,000	£11.9m

Option 2: The 150 major substations most at risk of flooding			
	Number of sites protected	Number of customers supplied	Expenditure over 8 years
West Midlands	6	39,000	£2.3m
East Midlands	47	442,000	£15.2m
South Wales	30	156,000	£15.0m
South West	67	663,000	£17.9m

Option 3: The 200 major substations most at risk of flooding			
	Number of sites protected	Number of customers supplied	Expenditure over 8 years
West Midlands	8	45,000	£3.0m
East Midlands	62	510,000	£20.2m
South Wales	40	180,000	£20.0m
South West	90	765,000	£23.8m

Benefit of WPD's proposed option

By 2023 we will:

- Protect a further 150 major substations from the risk of flooding, securing supplies to 1.3 million customers.

Impact on customer bills

	Protection against flooding						
	Option 1* - Protect 100 substations	Option 2 - Protect 150 substations			Option 3 - Protect 200 substations		
	Expenditure per year in RIIO-ED1	Expenditure per year in RIIO-ED1	Increase /change	Impact on customer bill	Expenditure per year in RIIO-ED1	Increase /change	Impact on customer bill
West Midlands	£0.2m	£0.3m	£0.1m	2p	£0.4m	£0.2m	3p
East Midlands	£1.3m	£1.9m	£0.6m	9p	£2.5m	£1.2m	18p
South Wales	£1.3m	£1.9m	£0.6m	21p	£2.5m	£1.2m	42p
South West	£1.5m	£2.2m	£0.7m	18p	£3.0m	£1.5m	37p

*Expenditure in DPCR5 (2010-2015) was higher than is forecast for RIIO-ED1 (2015-2023) because the largest, most at risk substations were protected, therefore at the highest cost. As per agreement with Ofgem, it was always our intention to protect the next 100 substations most at risk of flooding, hence investment to do so will not lead to an increase in customer bills.



Consultation Questions:

6. Do you agree that WPD should invest more on flood defences for substations? Which of the investment options do you support?

Reducing oil and gas leaks from our equipment

Much of our equipment was installed at a time when there were few concerns about the possible impact on the environment and few technological alternatives. We have identified some areas where early replacement of equipment would significantly reduce the risk of environmental damage.

Oil-filled cables

The design of very high voltage underground cables has evolved over many years and our new cables use a solid plastic insulation. Old designs of 33kV and higher voltage cables used insulating oil inside the cable. Whilst these cables are normally very reliable, if they are damaged this oil may leak out. The oil is biodegradable in the long-term, but leaks can cause immediate environmental damage to land and to water courses.

WPD works to an operating code agreed with the Environment Agency, and assesses both the condition and the environmental risk posed by the oil filled cables we own.

WPD currently has 1.3m litres of insulating oil in service, and around 4% of this leaks each year (50,000 litres). Over time, we are replacing oil-filled cables with modern plastic-insulated cables.

In the meantime, we are using new innovative techniques to help us to pinpoint leaks more quickly, thereby reducing the amount of oil lost in the environment before the cable is repaired. We have been trialling a new technique called PFT technology (perfluorocarbon tracer). A tiny amount of tracer is injected into the cable, and if a leak occurs it can be detected. This helps to locate the leak to within a few metres. These trials have had a significantly reduced the total annual fluid losses. For example:

South West England and South Wales oil leakage:

	Fluid losses (litres)	
2009/10	9,225	
2010/11	2,463	73% reduction from 2009/10
2011/12	1,559	83% reduction from 2009/10

SF₆ gas

Some of our equipment contains an insulating greenhouse gas called SF₆ (sulphur hexafluoride). It is securely contained within sealed switchgear and leakage rates are very low. When equipment deteriorates through age or it is damaged by a third party, gas can however leak, so we monitor our SF₆ equipment on a regular basis. SF₆ does not present any risk to the public as it is non-flammable and non-toxic, but it is damaging to the environment. SF₆ has a global warming potential 23,000 times greater than CO₂ (carbon dioxide).

WPD has approximately 50,000 kg of SF₆ in service, and around 0.6% of this leaks each year (300 kg). This is a very small amount, but it currently accounts for around 7% of WPD's total carbon emissions.

Options for investment

Oil-filled cables: Our programme of cable replacement, as well as the full roll-out of PFT tracers that allow leaks to be located more quickly, will reduce annual oil leakage from 4% to 1%, by 2023.

Equipment containing SF₆ gas: Although there are very few alternatives to the use of SF₆ in our equipment, manufacturers now design switchgear to use very low volumes of SF₆. We can therefore reduce annual leakage rates by carrying out early replacement of older equipment that contains much higher volumes of SF₆.

	Action	Performance improvement
Option 1: WPD current view	Replace the worst 1% of equipment that have the highest leakage rate	<i>Oil leaks 4% → 1%</i> <i>SF₆ leaks 0.6% → 0.5%</i>
Option 2:	Replace the worst 5% of equipment that have the highest leakage rate	<i>Oil leaks 4% → 1%</i> <i>SF₆ leaks 0.6% → 0.3%</i>
Option 3:	Replace the worst 10% of equipment that have the highest leakage rate	<i>Oil leaks 4% → 1%</i> <i>SF₆ leaks 0.6% → 0.2%</i>

Benefit of WPD's proposed option

By 2023, we will:

- Significantly reduce emissions from WPD equipment by increasing the replacement of older assets and by using new innovations to detect leaks more quickly
- Reduce oil leakage from cables by 75%
- Reduce SF₆ leakage by 17%

Impact on customer bills

Oil and gas leaks						
	Option 1 - Worst 1% of equipment replaced		Option 2 - Worst 5% of equipment replaced		Option 3 - Worst 10% of equipment replaced	
	Expenditure per year in RIIO-ED1	Impact on customer bill	Expenditure per year in RIIO-ED1	Impact on customer bill	Expenditure per year in RIIO-ED1	Impact on customer bill
West Midlands	£0.5m	8p	£2.7m	41p	£5.7m	86p
East Midlands	£0.5m	8p	£2.6m	39p	£5.2m	78p
South Wales	£0.4m	14p	£1.3m	46p	£2.7m	95p
South West	£0.4m	10p	£1.4m	35p	£2.9m	73p



Consultation Questions:

7. Do you agree that WPD should reduce the risk of oil and SF₆ gas leaks from equipment, compared to current leakage rates? Which of the investment options do you support?

Improving service for remote customers

As well as reducing the average number of power cuts for all customers, we also want to improve service for those customers who suffer significantly more power cuts than the average, by investing in the least reliable part of the network. Ofgem define a 'worst served' customer as someone who experiences 15 or more power cuts (over 3 minutes) in a three year period.

Due to the high proportion of rural network in WPD's region, we currently have around 10,000 'worst served' customers, which is approximately 0.1% of our total customers (7.7 million).

'Worst served' customers are usually located in clusters on the most remote parts of the network. As a result, the solution to improve supply reliability to an individual or small group of customers can be complex and costly. Whilst the impact on all domestic bills is quite modest, the investment costs of improvement works can amount to between £600 and £1350 per benefitting customer.



Options for investment

We are considering the following options during 2015-2023. In our most recent consultation events, stakeholders agreed that WPD should improve service to remote customers. However, they did not support WPD going as far as initially proposed (option 2) due to the investment costs per benefitting customer. The majority supported option 1, which has therefore become WPD's current view.

	Reduction in 'worst served' customers	Total cost over 8 years
Option 1: WPD current view	2,000	£1.2m (£600 per customer)
Option 2: WPD initial view	4,000	£3.6m (£900 per customer)
Option 3:	6,000	£8.1m (£1350 per customer)

Benefit of WPD's proposed option

By 2023, we will:

- Increase investment in the least reliable sections of the electricity network.
- Improve service to remote customers and reduce the number of worst served customer by 2,000 (20%).

Impact on customer bills

Worst served customers						
	Option 1 Reduction of 2000 'worst served' customers		Option 2 Reduction of 4000 'worst served' customers		Option 3 Reduction of 6000 'worst served' customers	
	Expenditure per year in RIIO-ED1	Impact on customer bill	Expenditure per year in RIIO-ED1	Impact on customer bill	Expenditure per year in RIIO-ED1	Impact on customer bill
West Midlands	£0.04m	1p	£0.11m	2p	£0.25m	4p
East Midlands	£0.04m	1p	£0.11m	2p	£0.25m	4p
South Wales	£0.04m	1p	£0.11m	4p	£0.25m	9p
South West	£0.04m	1p	£0.11m	3p	£0.25m	6p



Consultation Questions:

8. Do you agree that WPD should invest to improve service to our most remote customers? Which of the investment options do you support?

Undergrounding overhead lines to improve visual amenity

Since 2005 we have been working with representatives from Areas of Outstanding Natural Beauty (AONB) and National Parks to identify schemes where removing overhead lines and replacing them with underground cables may enhance the visual amenity of the area.

Placing cables underground for long distances can be up to five times more expensive than providing overhead cables. Doing so does not have any significant carbon reduction or supply reliability benefits.

On average WPD are currently undergrounding 5km of overhead cables a year in National Parks and AONBs. Stakeholders who have worked with us so far have told us that the current scheme is working. The delivery of schemes invariably depends on agreeing a programme with these stakeholders. We therefore intend to continue our investment between 2015 and 2023 at the current rate.

Options for investment

Our initial proposal to stakeholders was to increase the amount of cables undergrounded from 40km over 8 years (5km a year) to 70km (8.75km a year). However stakeholders asked us to scale-back our plans and continue at the current levels. We have therefore revised the options for investment between 2015-2023 as follows:

	Length of overhead lines undergrounded in 8 years	Total cost over 8 years
Option 1: As now WPD current view	40km	£6m
Option 2:	55km	£8.3m
Option 3: WPD initial view	70km	£10.5m

Before



After



Option 1: 40km		
	Length of overhead lines undergrounded in 8 years	Expenditure over 8 years
West Midlands	12.6km	£1.8m
East Midlands	12.6km	£1.8m
South Wales	5.7km	£1.1m
South West	9.1km	£1.3m

Option 3: 70km		
	Length of overhead lines undergrounded in 8 years	Expenditure over 8 years
West Midlands	22.0km	£3.2m
East Midlands	22.0km	£3.2m
South Wales	10.0km	£1.6m
South West	16.0km	£2.5m

Option 2: 55km		
	Length of overhead lines undergrounded in 8 years	Expenditure over 8 years
West Midlands	17.3km	£2.6m
East Midlands	17.3km	£2.6m
South Wales	7.9km	£1.3m
South West	12.5km	£1.8m

Benefit of WPD's proposed option

By 2023, we will:

- Improve visual amenity in National Parks and AONBs by undergrounding 5km of overhead lines per year (40km in 8 years)

Impact on customer bills

	Option 1 - 40km		Option 2 - 55km		Option 3 - 70km	
	Expenditure per year in RIIO-ED1	Impact on customer bill	Expenditure per year in RIIO-ED1	Impact on customer bill	Expenditure per year in RIIO-ED1	Impact on customer bill
West Midlands	£0.23m	3p	£0.33m	5p	£0.40m	6p
East Midlands	£0.23m	3p	£0.33m	5p	£0.40m	6p
South Wales	£0.14m	5p	£0.16m	6p	£0.20m	7p
South West	£0.16m	4p	£0.23m	6p	£0.30m	8p



Consultation Questions:

9. If you have had experience working with WPD to deliver a scheme, how did you find the experience?
10. Do you agree that WPD should continue to invest at the current rate? Which of the investment options do you support?

Improving our new connections service

In 2011/12, over 34,000 new demand connections were made to the electricity network. Our aim is to provide a smooth, quick and value for money service, and our geographically organised, team-based structure is designed to support this. We currently have the highest satisfaction in the industry for our connections service. However our customers have given us clear feedback that this is an area where we can still do better.

Customers tell us that we should improve the overall time it takes to provide a quotation and once the quotation is accepted, the time it takes for the connection to be completed. They would also like us to make the process easier by providing more communication and alternative methods by which they can access information.

Reducing the overall time to connect – demand connections

Quotation process

The current average time from first application to providing a quotation, is as follows:

	Average time (working days)				
	East Midlands	West Midlands	South Wales	South West	All WPD
Small scheme (4 properties or less)	4	6	3	3	4
Large scheme (Domestic developments of more than 4 properties, & commercial/industrial developments)	16	14	8	8	12

We will reduce the average time to quote by 20% at no extra cost to the customer.

Completed connection process

The current average time from accepting the quotation to work being completed, is as follows:

	Average time (working days)				
	East Midlands	West Midlands	South Wales	South West	All WPD
Small scheme (4 properties or less)	45	54	47	47	48
Large scheme (Domestic developments of more than 4 properties, & commercial/industrial developments)	73	74	74	75	74

Options for investment

	Average time to connect	Total cost over 8 years	Average additional cost to connections customer
Current performance	Small scheme: 48 days Large scheme: 74 days	-	-
Option 1: WPD current view	20% improvement: Small scheme: 38 days Large scheme: 59 days	-	0p
Option 2:	30% improvement: Small scheme: 34 days Large scheme: 52 days	£18m	£60-£322 (depending on the voltage and size of the scheme)

Whilst there are sometimes costs to reinforce the network that all customers contribute towards in their electricity bills, on the whole, the cost to provide a connection is paid for only by the connections customer. We are committed to shortening the overall timescales by 20%, and will do so through increased efficiency and at no additional cost to the customer.

Benefit of WPD's proposed option

By 2023, we will shorten:

- The average time to quote by 20%
- The average time to provide a completed connection by 20%

Making it easier to deal with us

There are a number of stages in the connections process:

- Initial enquiry
- Application
- Scheme design
- Agreeing wayleaves and consents
- On site works and construction

We are working hard to improve our communication throughout this process, by providing more frequent and timely updates and being quicker to put our customers in touch with the right person to deal with their request.

Options for improvement

During our latest consultation events we asked our customers how we can improve the communication we provide during the connections process. We proposed the following options:

Option 1:	Introduce a dedicated contact number for connections enquiries, with better expertise at the first contact point (rather than passing straight through to the local teams responsible for the work) to enable discussions about the customer's requirements and information such as available capacity on the network.
Option 2:	Introduce a website based self-service system to allow customers to make enquiries and applications, payments, and track the progress of their job online.
Option 3:	Provide a single, local point of contact for you connection job, with whom you would deal with at every stage of the process.

Of the options presented, stakeholders overwhelmingly supported the introduction of more information online, but showed little support for the other options presented. We were also challenged to deliver the improvements at no additional cost to the customer.

Benefit of WPD's proposed option

We will:

- Introduce online job tracking, applications and payments in 2013 (in advance of the RIIO-ED1 period).



Consultation Questions:

11. What aspects of the new connections process would you most like WPD to focus on improving?
12. Overall time to connect: Which improvement option do you support?
13. Communication methods: Which improvement option do you support?

Introducing new communication channels

Customers contact WPD for a variety of reasons, so it is vital that we make it as easy as possible for them to get in touch. The most frequent reason, is to report a power cut and to access accurate, useful and up-to-date information.

Stakeholders have told us that their preferred method of communication is still the telephone. We currently provide a free telephone service for customers to report a power cut, 24 hours a day, 365 days of the year. WPD as a whole has the highest overall customer satisfaction of all UK distribution companies. However our customers have also told us that they would like more of a choice and more control over the service they receive.

Customers would like us to provide different methods they can use to communicate with us including options for self-service. So we are planning to provide easy access to key information during power cuts via the internet and mobile phone channels.

Options for investment

During our latest consultation events we asked our customers how we can improve the communication methods we offer. We proposed the following options:

Option 1:	Real-time power cut information available on our website This would allow customers, as well as friends and family of affected customers, to access the latest information updates without the need to telephone us.
Option 2:	Send and receive information via SMS text messaging Currently when there are incidents affecting the high voltage network we can proactively send text messages to customers to give them the estimate time of restoration. We could extend this service in the future to allow customers to register to receive updates for any power cuts affecting them. Customers could also send information to us including reporting power cuts.
Option 3:	Social media channels This would allow customers to access power cut updates via social media channels such as Twitter.

Of the options presented, the majority of stakeholders supported the introduction of online power cut information. Feedback suggested that WPD should take a staged approach starting with online information, followed by two-way text messaging and finally the possible introduction of social media channels..

WPD's current plans

- We will introduce real-time power cut information on our website in 2013 (in advance of the RIIO-ED1 period). We will do so at no additional cost to our customers.
- We will introduce two-way text messaging, allowing customers to send information to us and receive updates on power cuts. We will do so at no additional cost to our customers.
- We will continue to consult on the use of social media and seek further stakeholder views on the topic to help inform our plans before we finalise our business plan in July 2013.



Consultation Questions:

14. How can we make it easier for our customers to communicate with us? Which of the improvement options do you support?

Our expenditure plans – overview of our latest forecasts

WPD Overall

Total price controlled costs (£m)

	DPCR5 (2010-2015) Average per year	RIIO-ED1 (2016-2023) Average per year	Spend profile in RIIO ED1 (2016-2023)									INITIAL VIEW presented to stakeholders (November 2012):	CURRENT VIEW as per options presented in this document (March 2013):
			2015/2016	2016/2017	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	2022/2023	Total expenditure RIIO-ED1 (2016-2023)	Total expenditure RIIO-ED1 (2016-2023)	
Maintaining the Network													
Operating Costs (Inspection, maintenance and routine tree cutting)	78.63	66.62	66.61	66.62	66.62	66.62	66.62	66.62	66.62	66.62	66.62	532.97	532.97 (No change)
Asset Replacement	209.76	258.59	235.92	241.92	248.90	255.20	262.09	268.48	274.51	281.69	2068.71	2068.71 (No change)	
Real Time Control Systems and Telecommunications	15.32	33.76	62.66	29.68	28.23	28.13	32.01	48.60	21.34	19.40	270.05	270.05 (No change)	
Diversions	24.66	23.52	24.67	24.71	15.41	24.68	24.68	24.67	24.68	24.68	188.17	188.17 (No change)	
Responding to and repairing faults	66.80	70.51	70.51	70.51	70.51	70.51	70.51	70.51	70.51	70.51	564.07	564.07 (No change)	
Purchase of Vehicles, Engineering Equipment, IT & Property	32.81	39.23	39.44	42.57	29.22	41.17	49.95	39.16	37.85	34.47	313.83	313.83 (No change)	
Other	12.99	11.41	17.61	18.36	18.56	10.22	7.81	7.45	6.01	5.28	91.31	91.31 (No change)	
Reinforcement of the Network													
General Network Reinforcement	59.96	68.09	59.95	57.00	64.53	66.13	70.09	78.64	82.95	65.46	544.76	544.76 (No change)	
Reinforcement for Low Carbon Technologies	0.00	14.06	0.00	0.00	7.50	15.00	15.00	22.50	22.50	30.00	112.50	112.50 (No change)	
Organising the Delivery of Our Work													
Engineering management	155.49	139.93	143.67	138.57	138.30	139.68	140.92	146.62	142.00	129.66	1119.42	1119.42 (No change)	
Corporate activities	97.01	73.49	76.93	76.90	75.25	74.66	74.02	73.34	72.66	64.16	587.93	587.93 (No change)	
Workforce renewal	17.68	15.83	17.25	17.14	16.40	16.19	15.96	15.82	15.45	12.41	126.63	126.63 (No change)	
Low Carbon Innovation													
Low Carbon Innovation Projects	3.41	13.85	13.85	13.85	13.85	13.85	13.85	13.85	13.85	13.85	110.81	110.81 (No change)	
Service Improvement Initiatives													
Reducing power cuts	11.61	3.68	4.91	4.91	4.91	4.91	4.91	4.91	0.00	0.00	29.46	29.46 (No change)	
Improving network resilience to severe weather	3.90	5.78	5.78	5.78	5.78	5.78	5.78	5.78	5.78	5.78	46.23	60.93 (+14.7)	
Protecting equipment from flooding risk	6.14	4.19	6.50	6.50	6.50	6.00	6.00	1.99	0.00	0.00	33.50	50.10 (+16.6)	
Reducing oil and gas leaks from equipment	2.52	1.72	1.73	1.72	1.72	1.72	1.72	1.72	1.72	1.72	13.77	13.77 (No change)	
Improving service for remote ("worst served") customers	0.35	0.45	0.72	0.72	0.72	0.72	0.72	0.00	0.00	0.00	3.60	1.20 (-2.4)	
Undergrounding overhead lines in AONBs and National Parks	1.18*	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	10.50	6.00* (-4.5)	
TOTAL	800.23	846.03	850.02	818.78	814.23	842.49	863.96	891.98	859.75	827.00	6760.52	6784.92	

*The same total km undergrounded per year, but delivered in RIIO-ED1 at a lower cost per km, via better efficiency and targeted solutions.

West Midlands

Total price controlled costs (£m)

	DPCR5 (2010-2015) Average per year	RIIO-ED1 (2016-2023) Average per year	Spend profile in RIIO ED1 (2016-2023)									INITIAL VIEW presented to stakeholders (November 2012):	CURRENT VIEW as per options presented in this document (March 2013):	
			2015/ 2016	2016/ 2017	2017/ 2018	2018/ 2019	2019/ 2020	2020/ 2021	2021/ 2022	2022/ 2023	Total expenditure RIIO-ED1 (2016-2023)	Total expenditure RIIO-ED1 (2016-2023)		
Maintaining the Network														
Operating Costs (Inspection, maintenance and routine tree cutting)	27.43	21.57	21.57	21.57	21.57	21.57	21.57	21.57	21.57	21.57	21.57	172.59	172.59 (No change)	
Asset Replacement	69.15	91.82	84.86	86.74	89.07	90.90	92.82	95.10	96.74	98.37	734.60	734.60 (No change)		
Real Time Control Systems and Telecommunications	5.22	8.65	15.62	8.34	8.34	8.54	9.99	9.99	4.17	4.17	69.16	69.16 (No change)		
Diversions	9.49	8.09	9.25	9.25	0.00	9.25	9.25	9.25	9.25	9.25	64.75	64.75 (No change)		
Responding to and repairing faults	19.25	19.50	19.50	19.50	19.50	19.50	19.50	19.50	19.50	19.50	156.02	156.02 (No change)		
Purchase of Vehicles, Engineering Equipment, IT & Property	9.77	12.03	11.56	12.56	7.31	10.09	16.83	14.69	12.92	10.26	96.21	96.21 (No change)		
Other	2.02	3.13	4.47	4.79	5.21	2.82	2.18	2.11	1.80	1.64	25.03	25.03 (No change)		
Reinforcement of the Network														
General Network Reinforcement	27.30	23.07	20.91	22.18	25.41	21.25	23.04	23.48	25.16	23.16	184.60	184.60 (No change)		
Reinforcement for Low Carbon Technologies	0.00	4.22	0.00	0.00	2.25	4.50	4.50	6.75	6.75	9.00	33.75	33.75 (No change)		
Organising the Delivery of Our Work														
Engineering management	51.46	42.79	44.12	43.50	42.24	42.99	43.29	43.57	42.49	40.13	342.33	342.33 (No change)		
Corporate activities	34.32	24.38	25.51	25.51	24.90	24.69	24.42	24.12	23.74	22.14	195.02	195.02 (No change)		
Workforce renewal	4.37	4.80	5.28	5.27	4.98	4.90	4.80	4.69	4.52	3.93	38.38	38.38 (No change)		
Low Carbon Innovation														
Low Carbon Innovation Projects	1.09	4.09	4.09	4.09	4.09	4.09	4.09	4.09	4.09	4.09	32.75	32.75 (No change)		
Service Improvement Initiatives														
Reducing power cuts	3.43	1.88	2.50	2.50	2.50	2.50	2.50	2.50	0.00	0.00	15.00	15.00 (No change)		
Improving network resilience to severe weather	0.28	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	10.19	13.89 (+3.7)		
Protecting equipment from flooding risk	0.63	0.19	0.50	0.50	0.50	0.00	0.00	0.00	0.00	0.00	1.51	2.0 (+0.49)		
Reducing oil and gas leaks from equipment	0.13	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	4.04	4.04 (No change)		
Improving service for remote ("worst served") customers	0.04	0.11	0.18	0.18	0.18	0.18	0.18	0.00	0.00	0.00	0.90	0.30 (-0.60)		
Undergrounding overhead lines in AONBs and National Parks	0.38	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	3.23	1.80 (-1.43)		
TOTAL	265.74	272.51	272.12	268.68	260.23	269.96	281.15	283.59	274.88	269.42	2180.04	2182.20		

East Midlands

Total price controlled costs (£m)

	DPCR5 (2010-2015) Average per year	RIIO-ED1 (2016-2023) Average per year	Spend profile in RIIO ED1 (2016-2023)									INITIAL VIEW presented to stakeholders (November 2012):	CURRENT VIEW as per options presented in this document (March 2013):	
			2015/ 2016	2016/ 2017	2017/ 2018	2018/ 2019	2019/ 2020	2020/ 2021	2021/ 2022	2022/ 2023	Total expenditure RIIO-ED1 (2016-2023)	Total expenditure RIIO-ED1 (2016-2023)		
Maintaining the Network														
Operating Costs (Inspection, maintenance and routine tree cutting)	23.40	18.01	18.01	18.01	18.01	18.01	18.01	18.01	18.01	18.01	18.01	144.12	144.12 (No change)	
Asset Replacement	60.24	70.16	62.84	64.66	66.44	68.85	71.00	73.08	75.49	78.89	561.25	561.25 (No change)		
Real Time Control Systems and Telecommunications	6.39	11.66	19.11	11.83	11.83	12.03	13.48	14.55	5.24	5.24	93.31	93.31 (No change)		
Diversions	8.24	8.39	8.39	8.39	8.39	8.39	8.39	8.39	8.39	8.39	67.09	67.09 (No change)		
Responding to and repairing faults	20.65	22.20	22.20	22.20	22.20	22.20	22.20	22.20	22.20	22.20	177.63	177.63 (No change)		
Purchase of Vehicles, Engineering Equipment, IT & Property	9.30	11.20	10.82	10.36	7.51	10.83	15.11	11.82	12.84	10.32	89.61	89.61 (No change)		
Other	3.58	3.66	6.63	7.22	5.57	3.27	2.18	1.99	1.31	1.08	29.24	29.24 (No change)		
Reinforcement of the Network														
General Network Reinforcement	24.36	30.19	31.58	24.94	24.91	32.39	33.35	32.69	33.05	28.59	241.50	241.50 (No change)		
Reinforcement for Low Carbon Technologies	0.00	4.22	0.00	0.00	2.25	4.50	4.50	6.75	6.75	9.00	33.75	33.75 (No change)		
Organising the Delivery of Our Work														
Engineering management	47.82	37.43	38.66	37.03	36.89	38.12	38.43	38.60	37.34	34.41	299.47	299.47 (No change)		
Corporate activities	33.54	25.68	26.24	26.23	25.99	25.90	25.80	25.71	25.58	23.99	205.44	205.44 (No change)		
Workforce renewal	4.28	4.77	5.05	5.01	4.89	4.88	4.84	4.81	4.72	3.99	38.19	38.19 (No change)		
Low Carbon Innovation														
Low Carbon Innovation Projects	1.03	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	36.78	36.78 (No change)		
Service Improvement Initiatives														
Reducing power cuts	3.60	1.04	1.39	1.39	1.39	1.39	1.39	1.39	0.00	0.00	8.34	8.34 (No change)		
Improving network resilience to severe weather	0.36	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	9.38	12.78 (+3.4)		
Protecting equipment from flooding risk	1.73	1.26	2.01	2.01	2.01	2.01	2.01	0.00	0.00	0.00	10.05	15.2 (+5.15)		
Reducing oil and gas leaks from equipment	0.58	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	4.05	4.05 (No change)		
Improving service for remote ("worst served") customers	0.04	0.11	0.18	0.18	0.18	0.18	0.18	0.00	0.00	0.00	0.90	0.30 (-0.60)		
Undergrounding overhead lines in AONBs and National Parks	0.37	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	3.23	1.80 (-1.43)		
TOTAL	249.50	256.67	259.79	246.14	245.15	259.63	267.57	266.66	257.61	250.80	2053.34	2059.86		

South Wales

Total price controlled costs (£m)

	DPCR5 (2010-2015) Average per year	RIIO-ED1 (2016-2023) Average per year	Spend profile in RIIO ED1 (2016-2023)										INITIAL VIEW presented to stakeholders (November 2012):	CURRENT VIEW as per options presented in this document (March 2013):
			2015/ 2016	2016/ 2017	2017/ 2018	2018/ 2019	2019/ 2020	2020/ 2021	2021/ 2022	2022/ 2023	Total expenditure RIIO-ED1 (2016-2023)	Total expenditure RIIO-ED1 (2016-2023)		
Maintaining the Network														
Operating Costs (Inspection, maintenance and routine tree cutting)	12.39	12.04	12.04	12.04	12.04	12.04	12.04	12.04	12.04	12.04	12.04	12.04	96.36	96.36 (No change)
Asset Replacement	30.52	36.40	33.03	33.86	35.42	36.15	36.97	37.80	38.58	39.37			291.17	291.14 (No change)
Real Time Control Systems and Telecommunications	1.40	7.42	15.18	7.91	6.45	5.97	6.94	9.85	3.54	3.54			59.36	59.36 (No change)
Diversions	2.86	2.94	2.95	2.95	2.94	2.95	2.94	2.94	2.94	2.94			23.56	23.56 (No change)
Responding to and repairing faults	10.79	11.61	11.61	11.61	11.61	11.61	11.61	11.61	11.61	11.61			92.87	92.87 (No change)
Purchase of Vehicles, Engineering Equipment, IT & Property	5.84	6.07	6.01	7.32	5.62	8.42	7.26	4.97	3.99	4.97			48.58	48.58 (No change)
Other	2.79	1.41	0.90	0.91	1.91	1.90	1.50	1.47	1.43	1.27			11.29	11.29 (No change)
Reinforcement of the Network														
General Network Reinforcement	3.94	6.83	3.82	4.74	6.43	4.59	5.27	11.43	11.50	6.86			54.62	54.62 (No change)
Reinforcement for Low Carbon Technologies	0.00	2.81	0.00	0.00	1.50	3.00	3.00	4.50	4.50	6.00			22.50	22.50 (No change)
Organising the Delivery of Our Work														
Engineering management	21.82	23.44	23.95	22.81	23.23	23.14	23.44	25.19	23.92	21.80			187.48	187.48 (No change)
Corporate activities	11.21	8.85	9.45	9.42	9.17	9.09	8.97	8.85	8.68	7.19			70.83	70.83 (No change)
Workforce renewal	3.46	2.42	2.66	2.63	2.53	2.49	2.45	2.44	2.35	1.84			19.39	19.39 (No change)
Low Carbon Innovation														
Low Carbon Innovation Projects	0.65	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19	2.19			17.54	17.54 (No change)
Service Improvement Initiatives														
Reducing power cuts	2.24	0.35	0.46	0.46	0.46	0.46	0.46	0.46	0.00	0.00			2.76	2.76 (No change)
Improving network resilience to severe weather	1.96	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80			14.36	17.46 (+3.1)
Protecting equipment from flooding risk	2.45	1.25	2.00	2.00	2.00	2.00	2.00	0.00	0.00	0.00			10.00	15.00 (+5.00)
Reducing oil and gas leaks from equipment	0.30	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36			2.84	2.84 (No change)
Improving service for remote ("worst served") customers	0.16	0.11	0.18	0.18	0.18	0.18	0.18	0.00	0.00	0.00			0.90	0.30 (-0.60)
Undergrounding overhead lines in AONBs and National Parks	0.17	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20			1.62	1.10 (-0.52)
TOTAL	114.98	128.50	128.78	123.40	126.03	128.52	129.58	138.10	129.63	123.98			1028.04	1034.99

South West

Total price controlled costs (£m)

	DPCR5 (2010-2015) Average per year	RIIO-ED1 (2016-2023) Average per year	Spend profile in RIIO ED1 (2016-2023)										INITIAL VIEW presented to stakeholders (November 2012):	CURRENT VIEW as per options presented in this document (March 2013):
			2015/ 2016	2016/ 2017	2017/ 2018	2018/ 2019	2019/ 2020	2020/ 2021	2021/ 2022	2022/ 2023	Total expenditure RIIO-ED1 (2016-2023)	Total expenditure RIIO-ED1 (2016-2023)		
Maintaining the Network														
Operating Costs (Inspection, maintenance and routine tree cutting)	15.40	14.99	14.98	14.99	14.99	14.99	14.99	14.99	14.99	14.99			119.9	119.91 (No change)
Asset Replacement	49.86	60.21	55.19	56.66	57.98	59.30	61.30	62.50	63.70	65.06			481.69	481.69 (No change)
Real Time Control Systems and Telecommunications	2.31	6.03	12.76	1.60	1.60	1.60	1.60	14.21	8.39	6.45			48.21	48.21 (No change)
Diversions	4.07	4.10	4.08	4.12	4.09	4.10	4.10	4.09	4.10	4.10			32.78	32.78 (No change)
Responding to and repairing faults	16.11	17.19	17.19	17.19	17.19	17.19	17.19	17.19	17.19	17.19			137.55	137.55 (No change)
Purchase of Vehicles, Engineering Equipment, IT & Property	7.90	9.93	11.05	12.33	8.78	11.83	10.75	7.69	8.10	8.92			79.44	79.44 (No change)
Other	4.60	3.22	5.61	5.43	5.88	2.24	1.95	1.88	1.48	1.29			25.75	25.75 (No change)
Reinforcement of the Network														
General Network Reinforcement	4.36	8.01	3.64	5.14	7.79	7.90	8.44	11.06	13.24	6.84			64.04	64.04 (No change)
Reinforcement for Low Carbon Technologies	0.00	2.81	0.00	0.00	1.50	3.00	3.00	4.50	4.50	6.00			22.50	22.50 (No change)
Organising the Delivery of Our Work														
Engineering management	34.40	36.27	36.94	35.22	35.94	35.43	35.75	39.26	38.27	33.32			290.13	290.13 (No change)
Corporate activities	17.94	14.58	15.73	15.74	15.19	14.99	14.83	14.66	14.66	10.84			116.64	116.64 (No change)
Workforce renewal	5.58	3.83	4.26	4.23	4.01	3.92	3.87	3.88	3.86	2.65			30.67	30.67 (No change)
Low Carbon Innovation														
Low Carbon Innovation Projects	0.64	2.97	2.97	2.97	2.97	2.97	2.97	2.97	2.97	2.97			23.75	23.75 (No change)
Service Improvement Initiatives														
Reducing power cuts	2.34	0.42	0.56	0.56	0.56	0.56	0.56	0.56	0.00	0.00			3.36	3.36 (No change)
Improving network resilience to severe weather	1.30	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54			12.30	16.70 (+4.4)
Protecting equipment from flooding risk	1.32	1.49	1.99	1.99	1.99	1.99	1.99	1.99	0.00	0.00			11.94	17.9 (+5.96)
Reducing oil and gas leaks from equipment	1.51	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36			2.84	2.84 (No change)
Improving service for remote ("worst served") customers	0.11	0.11	0.18	0.18	0.18	0.18	0.18	0.00	0.00	0.00			0.90	0.30 (-0.60)
Undergrounding overhead lines in AONBs and National Parks	0.26	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30			2.42	1.30 (-1.12)
TOTAL	170.01	188.35	189.33	180.55	182.83	184.38	185.66	203.63	197.63	182.81			1506.82	1515.46