



Serving the Midlands, South West and Wales

Stakeholder engagement workshops

January/February 2017

Welcome

Today's format:

- A quick overview of WPD
- Three morning sessions following a similar format:
WPD presentation → Round-table discussion → Electronic voting
- Choice of 3 afternoon surgeries – on detailed topics

Clear plan to avoid a talking shop

Agenda:

1. WPD's Business Plan reporting

2. Long-term strategic priorities

3. Spotlight on two WPD strategic priorities

3A: *Future networks*

3B: *Environment & sustainability*

4. Choice of specific surgeries:

- *Connections & Distributed Generation*
- *Social obligations (vulnerability and fuel poverty)*
- *Emergency resilience*

Objectives:

- Seek views on how we can build on our year one (2015/16) performance reporting

- Review our nine existing long-term priorities
- Help identify improvement levels you value the highest for accelerated delivery

- Consult on WPD's strategy for future of electricity networks (DSO) and review current key actions
- Seek views on WPD's Data Privacy Plan for smart meters

- Present our 2015/16 delivery and reporting
- Consult on options for new developments/initiatives

- Consult on priorities and current action plans in each area

Housekeeping



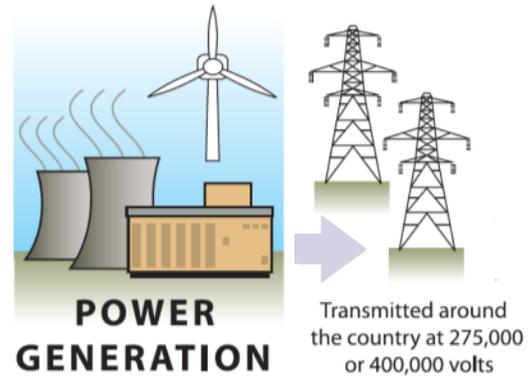


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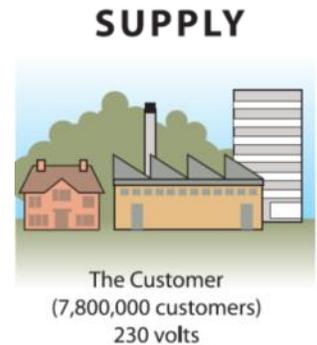
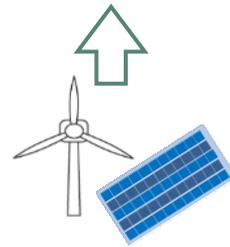
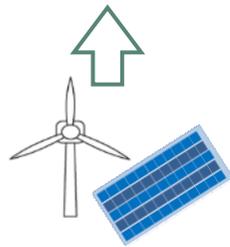
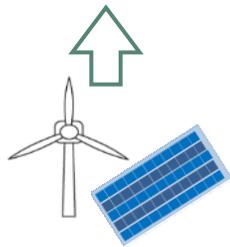
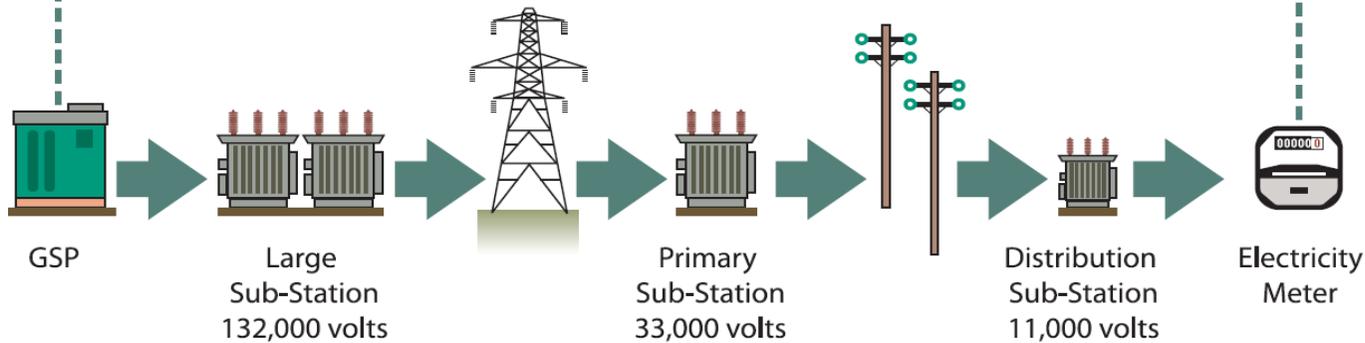
Introducing WPD

Alex Wilkes
Stakeholder Engagement Manager

Who we are



WESTERN POWER DISTRIBUTION



What we do

- “DNO” = Distribution Network Operator
- Four key tasks:



Keep the lights on

by operating our network assets effectively



Maintain equipment

so that the network is in a condition to remain reliable



Fix the network

if equipment gets damaged or is faulty

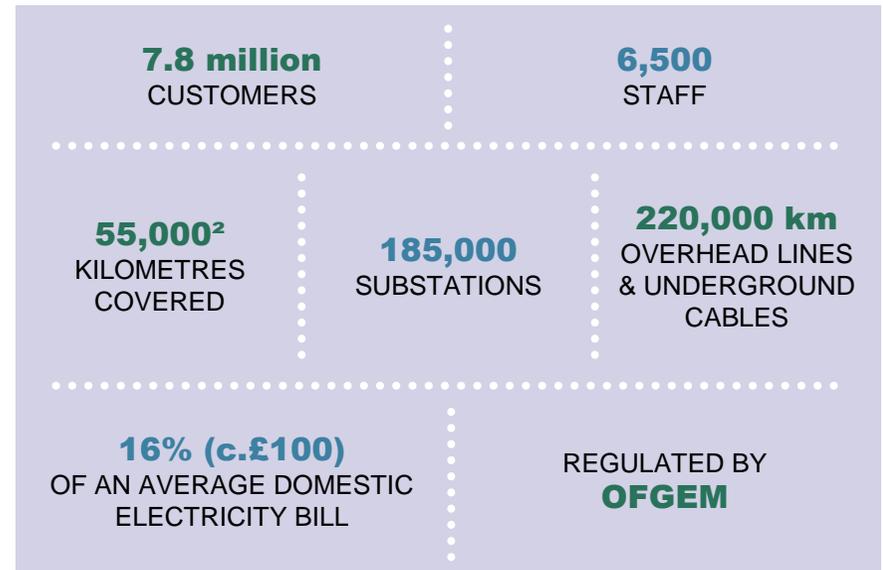


Connect customers

by upgrading existing networks or building new ones

Safety

Where we do it



Your feedback matters

- We want your honest feedback
 - Independent facilitators at each table
 - We publish your un-edited feedback (but never identify individuals)
- We will take action as a result of your feedback
 - Each session has a clear objective – we will give you options to discuss and vote on, and seek views to help us develop our plans/strategies in each area
 - We will publish a feedback summary report and a list of actions
 - Last year's workshops led directly to 26 actions
- If your 'hot topic' isn't covered explicitly by one of the sessions then please come and discuss it with one of us during the breaks



WESTERN POWER **DISTRIBUTION**

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ELECTRONIC VOTING - A QUICK INTRODUCTION



QA: In August 2015, a £10 accumulator bet on Leicester City winning the Premier League, a 'yes' Brexit vote and a Donald Trump Presidential victory would have won how much?

1. £45,000
2. £450,000
3. £4.5 million
4. £45 million
5. £450 million

QB: What type of stakeholder are you?

0. Domestic customer / consumer interest body
1. Business customer (or representative)
2. Local authority officer / elected representative
3. Developer / connections representative
4. Environmental representative
5. Energy / utility company
6. Charity / non-profit organisation
7. Academic / education institute
8. Housing / development
9. Other



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Session 1:
WPD's Business Plan
Commitments Reporting

Eleanor Sturges
Planning & Regulation Special Projects

Our Business Plan - 2015/16 performance

- Our RIIO-ED1 Business Plan covers eight years: 2015-2023
- We have committed to deliver 76 outputs by 2023 in 6 key areas:



- In the first year we have achieved, or are significantly on track to achieve, our annual target in 73 of the 76 areas
- Key highlights include:
 - Customer Interruptions (power cuts) have decreased by 27%
 - Customer Minutes Lost (the duration of power cuts) have decreased by 49%
 - 99% reduction in the number of customers off supply more than 12 hours
 - Rated number one for customer service, vulnerable customer support and stakeholder engagement
- Some elements of our ‘Environment’ performance remain a challenge
 - Session Three later today

Our reporting approach for 2015/16

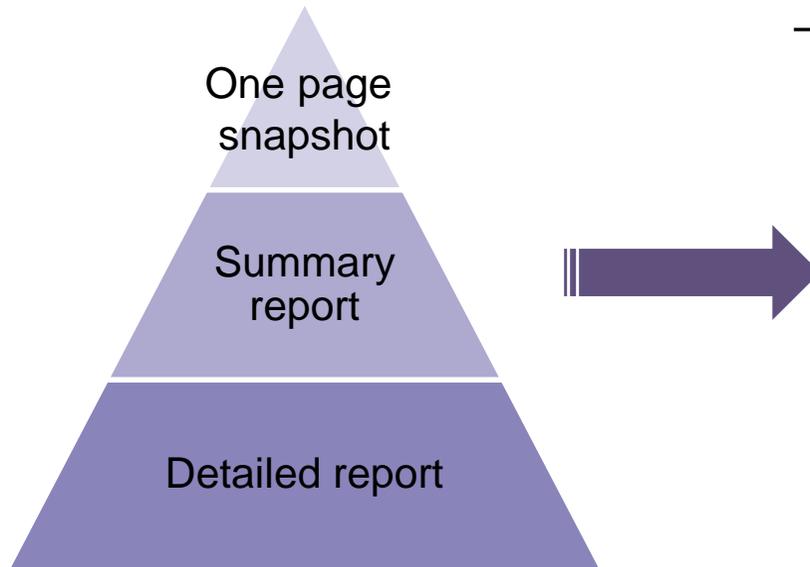
- We are required to provide an annual update on our progress delivering the 76 outputs we promised
- 2015/16 was the first year of Commitments Reporting
- No specific reporting format was specified by Ofgem
- Citizens Advice and Ofgem's Consumer Panel provided guidance on good practice
- We used extensive stakeholder input to decide on the format of the first report



Stakeholder input

Following feedback from over 300 stakeholders we:

- Adopted a three tier reporting approach:



- Agreed two key topics per output area for our summary report
- Identified at our January 2016 workshops:

Category	Performance topic
Safety	Accident frequency rates
	Public safety education
Reliability	Power cut frequency & duration
	Percentage of customers restored within 1 hour
Environment	Facilitating increased volumes of Low Carbon Technologies
	Reducing technical network losses
	Reducing the carbon footprint of the business
Connections	Time to provide quotations & completed connections
	Customer satisfaction with the connections process
Customer satisfaction	Customer satisfaction results
	= Complaints
	= Engagement with stakeholders
Social obligations	= Improved communication (e.g. social media, online etc.)
	Improving support for customers during power cuts
	Data analysis to identify vulnerable customers & better target services

- Draft versions of the reports were presented to WPD's Customer Panel in September 2016 and feedback was incorporated into the final versions

Overview of other DNO approaches

- WPD were the only DNO to provide three levels of reporting
- We provided significantly more detail than any others - average length of DNO main reports was 31 pages
 - WPD detailed report = 164 pages
 - WPD summary report = 36 pages
- We provided detail on our performance against all our outputs (76) – as well as the associated secondary deliverables
- The approach of the majority of DNOs was to produce a stylish, customer-friendly report which did not necessarily provide the same level of detail or data in terms of performance



Performance measure	2013 actual	2013 target	Status	2014 target	2015 target
Unplanned customer interruptions - "Northway"	49.3	39.0	⚠️	35.0	41.9
Unplanned customer interruptions - "Northway"	33.0	27.0	⚠️	26.0	40.8
Unplanned customer interruptions - "Northway"	34.0	30.0	⚠️	30.0	31.0
Unplanned customer interruptions - "Northway"	31.0	40.0	⚠️	40.0	30.0
Planned customer interruptions - "Northway"	1.0	1.0	✅	1.0	1.0
Planned customer interruptions - "Northway"	1.0	1.0	✅	1.0	1.0
Planned customer interruptions - "Northway"	1.0	1.0	✅	1.0	1.0
Average length of a low voltage cable repair (in minutes)	14	14	✅	14	14
Average length of a low voltage cable repair (in minutes)	170	100	⚠️	100	100
Performance guarantee ratio for power cuts	30.2%	100.0%	⚠️	100.0%	100.0%
Customer number of power cuts that affect their home	40	40	⚠️	40	40

Our investment in the network to improve reliability and availability

- 1,500 items of new technology installed including smart meters and fault locators.
- 34 substations equipped with advanced automation technology serving more than 400,000 customers.
- 9 sites protected from floods.

Our improvements for planned power cuts to put customers first

- We use mobile generation and renewable resources are experiencing an average of a longer running, permanent fault reduction.
- Our planned power cuts go ahead at the temperature drop.
- 88% of planned power cuts finished on time and 90% finished on-site.
- Our planned power cuts go ahead at the temperature drop.
- 2°C
- During the colder months planned power cuts are scheduled to last no longer than 4.5 hours.
- We have provided 24h and 24h services 72 out of 24 hours before a planned power cut starts.

Looking ahead we will:

- Continue our targeted investments and improvements in distribution operations with a priority on improving network automation.
- Support our ongoing investment in rolling out smart meters.
- Continue our targeting of "outages" - prioritizing where to take our customers the most problems.
- Focus on the development of smart grids at the heart of our long-term investment strategy.
- Continue to work with customers, local networks and generation which has a better capacity that can be brought up to benefit our customers.
- Complete our Road Network programme in line with our plan through a cycle of new contracts.

Considering our approach to reporting

- Now that year one data has been published we want to review our approach to reporting to make sure that we continue to meet stakeholder expectations
- As part of this session we want to ask:
 - 1. WPD's detailed report**
 - 1a. What do you think about our approach to reporting for 2015/16?
 - 1b. Should we amend the length and complexity of the report in the light of the approach taken by other DNOs?
 - 2. WPD's summary report**
 - 2a. What do you think about our approach to reporting for 2015/16?
 - 2b. What is your preferred style for WPD's report?

WPD's detailed report – Q1b. Should we amend WPD's report in light of the approach taken by other DNOs?

2015/16 report	Alternative version
Detailed explanation of technical elements	Simple explanation of technical elements
Tables showing detailed performance and targets	Simple charts with target lines. No detailed tables
Performance for each licence area	Performance for WPD as a whole
Formal report style, including numbered paragraphs for ease of reference	Informal layout

Network performance

4.3 The RIIO-ED1 business plan contained two outputs within the theme:

Network performance

- 4.3.1 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.
- 4.3.2 Ensure that a minimum of 95% of customers have their power restored within an hour of an RIIO fault occurring.

(7) Improving network performance

4.4 Customers expect power to be available all of the time because many household activities and business processes rely on electricity.

4.7 Distribution companies are incentivised to improve network performance through the Incentive Scheme (IS) where targets are available for performance and penalties applied where targets are not met. IS measures the average number of interruptions per 100 customers and the average length of time it takes each customer to get power (Customer Minutes Lost) when a power cut has occurred.

4.8 WPD aims to improve network performance by:

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

4.9 Overall WPD has committed to improving network performance on average customers will have 16% fewer power cuts than electricity suppliers restored 23% quicker when a power cut occurs. These improvement targets were calculated based on the overall RIIO-ED1 targets.

4.10 Since proposing the Business Plan, WPD has continued to improve its performance in the average duration of power cuts. This is reflected in the average duration of power cuts. This is reflected in the average duration of power cuts. This is reflected in the average duration of power cuts.

Performance for Customer Interruptions

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

Region	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35	2035-36	2036-37	2037-38	2038-39	2039-40	2040-41	2041-42	2042-43	2043-44	2044-45	2045-46	2046-47	2047-48	2048-49	2049-50	2050-51	2051-52	2052-53	2053-54	2054-55	2055-56	2056-57	2057-58	2058-59	2059-60	2060-61	2061-62	2062-63	2063-64	2064-65	2065-66	2066-67	2067-68	2068-69	2069-70	2070-71	2071-72	2072-73	2073-74	2074-75	2075-76	2076-77	2077-78	2078-79	2079-80	2080-81	2081-82	2082-83	2083-84	2084-85	2085-86	2086-87	2087-88	2088-89	2089-90	2090-91	2091-92	2092-93	2093-94	2094-95	2095-96	2096-97	2097-98	2098-99	2099-00	2100-01	2101-02	2102-03	2103-04	2104-05	2105-06	2106-07	2107-08	2108-09	2109-10	2110-11	2111-12	2112-13	2113-14	2114-15	2115-16	2116-17	2117-18	2118-19	2119-20	2120-21	2121-22	2122-23	2123-24	2124-25	2125-26	2126-27	2127-28	2128-29	2129-30	2130-31	2131-32	2132-33	2133-34	2134-35	2135-36	2136-37	2137-38	2138-39	2139-40	2140-41	2141-42	2142-43	2143-44	2144-45	2145-46	2146-47	2147-48	2148-49	2149-50	2150-51	2151-52	2152-53	2153-54	2154-55	2155-56	2156-57	2157-58	2158-59	2159-60	2160-61	2161-62	2162-63	2163-64	2164-65	2165-66	2166-67	2167-68	2168-69	2169-70	2170-71	2171-72	2172-73	2173-74	2174-75	2175-76	2176-77	2177-78	2178-79	2179-80	2180-81	2181-82	2182-83	2183-84	2184-85	2185-86	2186-87	2187-88	2188-89	2189-90	2190-91	2191-92	2192-93	2193-94	2194-95	2195-96	2196-97	2197-98	2198-99	2199-00	2200-01	2201-02	2202-03	2203-04	2204-05	2205-06	2206-07	2207-08	2208-09	2209-10	2210-11	2211-12	2212-13	2213-14	2214-15	2215-16	2216-17	2217-18	2218-19	2219-20	2220-21	2221-22	2222-23	2223-24	2224-25	2225-26	2226-27	2227-28	2228-29	2229-30	2230-31	2231-32	2232-33	2233-34	2234-35	2235-36	2236-37	2237-38	2238-39	2239-40	2240-41	2241-42	2242-43	2243-44	2244-45	2245-46	2246-47	2247-48	2248-49	2249-50	2250-51	2251-52	2252-53	2253-54	2254-55	2255-56	2256-57	2257-58	2258-59	2259-60	2260-61	2261-62	2262-63	2263-64	2264-65	2265-66	2266-67	2267-68	2268-69	2269-70	2270-71	2271-72	2272-73	2273-74	2274-75	2275-76	2276-77	2277-78	2278-79	2279-80	2280-81	2281-82	2282-83	2283-84	2284-85	2285-86	2286-87	2287-88	2288-89	2289-90	2290-91	2291-92	2292-93	2293-94	2294-95	2295-96	2296-97	2297-98	2298-99	2299-00	2300-01	2301-02	2302-03	2303-04	2304-05	2305-06	2306-07	2307-08	2308-09	2309-10	2310-11	2311-12	2312-13	2313-14	2314-15	2315-16	2316-17	2317-18	2318-19	2319-20	2320-21	2321-22	2322-23	2323-24	2324-25	2325-26	2326-27	2327-28	2328-29	2329-30	2330-31	2331-32	2332-33	2333-34	2334-35	2335-36	2336-37	2337-38	2338-39	2339-40	2340-41	2341-42	2342-43	2343-44	2344-45	2345-46	2346-47	2347-48	2348-49	2349-50	2350-51	2351-52	2352-53	2353-54	2354-55	2355-56	2356-57	2357-58	2358-59	2359-60	2360-61	2361-62	2362-63	2363-64	2364-65	2365-66	2366-67	2367-68	2368-69	2369-70	2370-71	2371-72	2372-73	2373-74	2374-75	2375-76	2376-77	2377-78	2378-79	2379-80	2380-81	2381-82	2382-83	2383-84	2384-85	2385-86	2386-87	2387-88	2388-89	2389-90	2390-91	2391-92	2392-93	2393-94	2394-95	2395-96	2396-97	2397-98	2398-99	2399-00	2400-01	2401-02	2402-03	2403-04	2404-05	2405-06	2406-07	2407-08	2408-09	2409-10	2410-11	2411-12	2412-13	2413-14	2414-15	2415-16	2416-17	2417-18	2418-19	2419-20	2420-21	2421-22	2422-23	2423-24	2424-25	2425-26	2426-27	2427-28	2428-29	2429-30	2430-31	2431-32	2432-33	2433-34	2434-35	2435-36	2436-37	2437-38	2438-39	2439-40	2440-41	2441-42	2442-43	2443-44	2444-45	2445-46	2446-47	2447-48	2448-49	2449-50	2450-51	2451-52	2452-53	2453-54	2454-55	2455-56	2456-57	2457-58	2458-59	2459-60	2460-61	2461-62	2462-63	2463-64	2464-65	2465-66	2466-67	2467-68	2468-69	2469-70	2470-71	2471-72	2472-73	2473-74	2474-75	2475-76	2476-77	2477-78	2478-79	2479-80	2480-81	2481-82	2482-83	2483-84	2484-85	2485-86	2486-87	2487-88	2488-89	2489-90	2490-91	2491-92	2492-93	2493-94	2494-95	2495-96	2496-97	2497-98	2498-99	2499-00	2500-01	2501-02	2502-03	2503-04	2504-05	2505-06	2506-07	2507-08	2508-09	2509-10	2510-11	2511-12	2512-13	2513-14	2514-15	2515-16	2516-17	2517-18	2518-19	2519-20	2520-21	2521-22	2522-23	2523-24	2524-25	2525-26	2526-27	2527-28	2528-29	2529-30	2530-31	2531-32	2532-33	2533-34	2534-35	2535-36	2536-37	2537-38	2538-39	2539-40	2540-41	2541-42	2542-43	2543-44	2544-45	2545-46	2546-47	2547-48	2548-49	2549-50	2550-51	2551-52	2552-53	2553-54	2554-55	2555-56	2556-57	2557-58	2558-59	2559-60	2560-61	2561-62	2562-63	2563-64	2564-65	2565-66	2566-67	2567-68	2568-69	2569-70	2570-71	2571-72	2572-73	2573-74	2574-75	2575-76	2576-77	2577-78	2578-79	2579-80	2580-81	2581-82	2582-83	2583-84	2584-85	2585-86	2586-87	2587-88	2588-89	2589-90	2590-91	2591-92	2592-93	2593-94	2594-95	2595-96	2596-97	2597-98	2598-99	2599-00	2600-01	2601-02	2602-03	2603-04	2604-05	2605-06	2606-07	2607-08	2608-09	2609-10	2610-11	2611-12	2612-13	2613-14	2614-15	2615-16	2616-17	2617-18	2618-19	2619-20	2620-21	2621-22	2622-23	2623-24	2624-25	2625-26	2626-27	2627-28	2628-29	2629-30	2630-31	2631-32	2632-33	2633-34	2634-35	2635-36	2636-37	2637-38	2638-39	2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WPD's summary report – Q2a. What do you think about our approach to reporting for 2015/16?



RIIO-ED1 Business Plan Commitments Summary Report 2015/16



WESTERN POWER DISTRIBUTION
Serving the Midlands, South West and Wales

WPD RIIO-ED1 Business Plan Commitments Summary Report 2015-16
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You have a copy of the summary report on your tables:

Environment

Low carbon technologies

Levels of demand for connecting low carbon technologies (LCTs), such as solar panels and heat pumps are steadily growing. We monitor areas where high volumes of LCTs are forecast and consider the installation of higher capacity assets (larger cables and transformers) to ensure that the network can accommodate future demand. This data has started to influence our asset replacement project planning and the oversizing of assets will steadily increase over the period of RIIO-ED1.




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 LCT hotspots.

Case Study - installing oversized assets

During 2015/16 we upgraded equipment at Bar Meadow substation. A range of stakeholders, including the Centur National Park Authority, Exmoor Moorland Landscape Partnership and Natural England, were engaged in plans for the delivery of a new electricity supply to the Valley of Rocks within the Exmoor National Park. Bar Meadow also serves part of Lynton, a small North Devon town which is densely populated and has been flagged as a potential LCT 'hotspot'. As a result when upgrading works were undertaken to deliver the new supply the transformer was oversized from 500 to 600kVA and the Low Voltage feeder cables increased to 300mm².

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Safety... is fundamental to everything we do

Performance summary 2015/16

Compliance with health and safety law

(1) Target zero improvement notices. (2) No prosecution notices and prosecution letters have been issued. (3) Complete with progress to achieve compliance with R2206 regulatory objective to eliminate or reduce the number of improvement notices issued to contractors on the ground.	(2) No improvement notices. (3) One instance where legal proceedings for a potential incident were considered. (4) Proximity to structure programme completed for the R2206. (5) East Midlands and South West. (6) 90% of South West programme completed with completion deadline of March 2016.	(4) No prosecution notices issued. (5) No prosecution notices issued where the subject of alleged breach was using 2015/16 that additional security measures installed.
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Reducing accidents

(4) Reduce our overall accident frequency rate by 10%. (5) Monitor our active contribution to the R2206. (6) Planning improvement initiatives that lead to improved safety performance. (7) Work with our trade unions to enhance safety performance including the provision for additional performance safety initiatives. (8) Investigate all accidents involving members of the public, contractors or our employees to ensure a full understanding of safety understand and communicate.	Accident rate in 2015/16 is better than the 10% improvement target set by RIIO-ED1 as a whole. (2) Safety Assigned Areas: Review of Working with contractors and Managing Contractors of health risk initiated within 2015/16. (3) 1,000 sign awarded behaviour safety sessions. (4) Investigated all 70 incidents involving in part 2015/16. (5) 100% compliance with regulatory quality understand and communicate.
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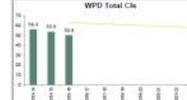
WPD RIIO-ED1 Business Plan Commitments Summary Report 2015-16
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Reliability

Network reliability is a high priority for WPD. Over the eight year RIIO-ED1 period we have committed to reducing the number of power cuts that customers experience by 16%, we have also committed to restoring supplies 21% quicker when power cuts occur. We are already beating these targets.

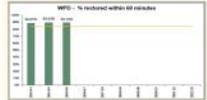
Customer Interruptions (CIs)

We measure the average number of power cuts per 100 customers. We are beating the end of period target, and have delivered a 27% improvement to date.



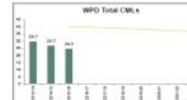
Speed of restoration

WPD has an internal initiative called 'Target 60' where we have committed to ensuring that over 50% of customers are restored within one hour when an HV fault occurs. We continue to achieve this target.



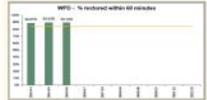
Customer Minutes Lost (CMLs)

We measure the average length of time that each customer is without power. We have exceeded our targets by reducing the duration of power cuts by 45%.



Customer Minutes Lost (CMLs)

We measure the average length of time that each customer is without power. We have exceeded our targets by reducing the duration of power cuts by 45%.



WPD RIIO-ED1 Business Plan Commitments Summary Report 2015-16
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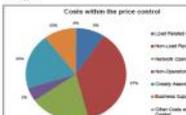
Expenditure

Expenditure performance 2015/16

In the RIIO-ED1 Business Plan, WPD proposed to spend £9.2bn over the eight year period, of which £7.1bn was covered by the price control mechanism, referred to as Toxex. The remaining £2.1bn covers costs such as rates, licence fees and transmission charges that are treated as outside of regulated expenditure because they are either directly reimbursed by customers or form costs that DNOs do not have control over. In 2015/16 WPD expenditure was 2% higher than Toxex allowances for costs within the price control.

Expenditure type	Total Expenditure (£bn)					WPD Total
	2015/16	2016/17	2017/18	2018/19	2019/20	
Within price control	354.1	356.4	354.2	353.4	353.1	354.8
Outside price control	265.3	265.1	267.1	271.1	267.8	267.8
% of allowed Toxex	113%	107%	107%	107%	107%	107%

The chart below shows how Toxex is split across a variety of cost types:



Costs within the price control

- Network Capital Expenditure
- Network Operational Costs
- Network Replacement Costs
- Network Maintenance Costs
- Network Support
- Other Costs within the Price Control

Cost categories explained:

- Network Capital Expenditure - expenditure incurred in providing additional capacity on the network.
- Network Operational Costs - other capital investment in the network, two thirds of which is replacement and refurbishment of past condition assets.
- Network Replacement Costs - includes replacement, repair and maintenance, faults and loss cutting.
- Network Maintenance Costs - includes the purchase of new IT systems, property, vehicles and small tools and equipment.
- Network Support - corporate activities such as the costs of staff and expenses that enable the work on the network to be carried out, such as network design activities.
- Other Costs within the Price Control - includes support activity costs and costs associated with execution activity.

WPD RIIO-ED1 Business Plan Commitments Summary Report 2015-16
Page 23

WPD's summary report – Q2a. What is your preferred style?

- On your tables you'll find examples from the other DNOs



Option 1: As now 2015/16 report

Safety

Public safety education

Children and other members of the public may not always be aware of the potential dangers from the electricity distribution network. We're committed to providing over 1,000 educational sessions to over 400,000 school children over the course of R10-ED1.

We visit both Primary and Secondary schools, sometimes joining forces with the emergency services, to teach young people about electricity and safety.

We've made good progress - during 2015/16 we delivered over one thousand education sessions benefiting in excess of 69,000 children.

Public safety leaflets

We recognise that those engaged in work or recreational activities near our network assets may be unaware of the potential hazards around them. We've committed to distributing 500,000 safety leaflets over the course of R10-ED1.

So far we've distributed over 380,000 safety leaflets. We use social media and advertising to make sure that the information we provide is accessible to a diverse range of individuals.

WPD R10-ED1 Business Plan Commitments Summary Report 2015-16 Page 6

Safety

Accident frequency rates

The safety of our 8,500 staff is paramount. We monitor accident frequency rates and have committed to achieving a 10% reduction in our accident rate over the course of R10-ED1 (when compared to our average performance between April 2010 and March 2015).

The number of accidents taking place each year remains at a low level and we have achieved our target in year one. This better than targeted performance was however overshadowed by the fatality of a colleague.

We cannot be complacent and recognise that further improvements can be made. Every year we produce a new safety action plan - informed by factors such as accident reports, near misses, industry incidents and any legal, regulatory or industry wide initiatives.

During 2015/16 we have focused on behavioural safety - encouraging staff to take responsibility for their own safety and the safety of others by acting on training, following instructions and challenging others when they see rules about to be broken.

Case Study - using behavioural safety to improve our performance:

During 2015/16, 5,500 members of staff attended a behavioural safety session, combining live theatre with interactive discussions.

The learning has subsequently been used by teams to generate action plans at local depots.

These plans are shared so that ideas and good practice can be applied across the business.

WPD R10-ED1 Business Plan Commitments Summary Report 2015-16 Page 7

Option 2:

Safety

Public safety education

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Simple actions can save lives

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0800 6763 195

WPD R10-ED1 Business Plan Commitments Summary Report 2015-16 Page

Option 3:

Safety is fundamental to everything we do.

Accident frequency rates

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WPD R10-ED1 Business Plan Commitments Summary Report 2015-16 Page

Option 4:

Safety... is fundamental to everything we do

Behavioural safety in action

During 2015/16, 5,500 members of staff attended a behavioural safety session, combining live theatre with interactive discussions.

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Accident frequency rates

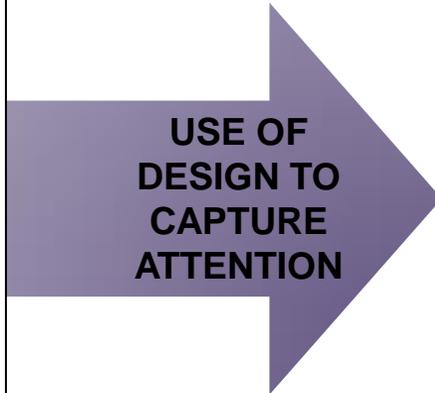
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Overall Accident Rate/100 Staff

WPD R10-ED1 Business Plan Commitments Summary Report 2015-16 Page



**SIMPLER,
LESS
DETAIL**

**USE OF
DESIGN TO
CAPTURE
ATTENTION**

Gathering further feedback

- If you have further feedback on the approach that we have taken please complete the survey on our webpage, this provides a free text comments box

- The survey can be found at:

www.westernpower.co.uk/About-us/Stakeholder-information/Performance-reporting-RIIO-ED1.aspx

Performance reporting survey

Did you find our performance reporting easy to find on the website?: *

Yes No

Please tick the boxes below to indicate which of the reports you accessed: *

The single page performance snapshot

The summary report

The comprehensive report

Using a scale of 1 to 10, where 1 is very dissatisfied and 10 is very satisfied, please indicate how satisfied you were with the performance reporting provided by WPD for RIIO-ED1: *

1 2 3 4 5 6 7 8 9 10

Please provide us with any comments indicating how our reporting could be improved for the future: *

Please indicate what type of stakeholder you are by selecting one box.: *

Domestic Customer

Business Customer

Consumer interest body

Academic/educational institute

Energy/utility company

Developer/connections representative

Local authority officer/elected representative

Other

Table discussion

1. WPD's detailed report

- 1a. What do you think about our approach to reporting for 2015/16?
- 1b. Should we amend the length and complexity of the report in the light of the approach taken by other DNOs?

2. WPD's summary report

- 2a. What do you think about our approach to reporting for 2015/16?
- 2b. What is your preferred style for WPD's report?

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Vote 1: What is your preferred approach for WPD's detailed report?

	Option 1	Option 2
A.	Detailed explanation of technical elements	Simple explanation of technical elements
B.	Tables showing detailed performance and targets	Simple charts with target lines. No detailed tables
C.	Performance for each licence area	Performance for WPD as a whole
D.	Formal report style, including numbered paragraphs for ease of reference	Informal layout

Vote 2: What's you preferred summary report style?

Option 1: As now

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WPD RIG-ED1 Business Plan Commitments Summary Report 2015-16 Page 7

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WPD RIG-ED1 Business Plan Commitments Summary Report 2015-16 Page

Option 3:

Safety is fundamental to everything we do.

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WPD RIG-ED1 Business Plan Commitments Summary Report 2015-16 Page

Option 4:

Safety... Is fundamental to everything we do

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WPD RIG-ED1 Business Plan Commitments Summary Report 2015-16 Page

1. Option 1
2. Option 2
3. Option 3
4. Option 4

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Session 2:

WPD's long-term priorities

- Measuring the value for money of our actions

Alison Sleightholm
Regulatory & Government Affairs Manager

Session 2: Stakeholder priorities

- Delivery of our 2015-2023 Business Plan commitments (76) is crucial
- At the same time we will engage stakeholders about long-term strategic priorities that may change the way we operate in future (and may not be time bound/programmed like a business plan)
- For the last 3 years stakeholders have identified the following consistent list and the importance ratings have not changed dramatically:

Rank	2015	Category	2016
1	(1)	Keeping the lights on	9.20/10
2	(2)	Smart networks	7.46
3	<i>New</i>	Environment & sustainability	6.85
4	(3)	Workforce renewal, skills & training	6.65
5	(5)	Vulnerability	6.64
6	(4)	Government legislation/policy	6.21
7	(6)	Affordability	6.00
8	(7)	Customer information and data	5.90
9	(8)	Customer awareness	4.08

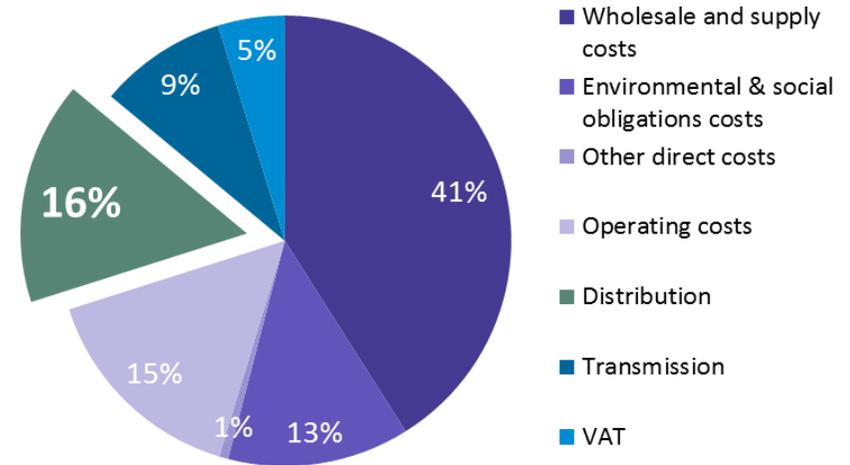
Reviewing these priorities

- We will continue to review these priorities annually to see if areas are shifting
- Today will test the '**value to you**' of possible accelerations in delivery and/or stretches to existing targets, within the next 1-5 years
- This will be for actions within some of the long-term priority areas – but not all (we've picked the ones where obvious action today is possible)
- We can't deliver everything at once, but can't make some trade-offs to prioritise some earlier than others
- This will not change the baseline of delivering our 76 Business Plan outputs by 2023



Delivering these improvements - context

Average annual electricity bill



- Next year the average WPD domestic customer will pay £98
- The majority of WPD's expenditure is allocated to network investment & operations
- A proportion of this is for discretionary service improvements, however
- There is therefore opportunity for some trade-offs over the timing/speed and scope of improvements
 - *E.g. more flood protection vs more vulnerable customer support*
- We've picked areas for discussion where action is possible today. Some areas still require a watching brief for now, with actions dependent on the outcomes of other priorities
 - *E.g. Actions to deliver 'future workforce, skills and training', will be influenced by WPD's transition to a Distribution System Operator (discussed in the next session)*

Measuring the value to you

- Some of the actions we can take may have benefits that are difficult to quantify in a traditional way:
 - E.g: Proactive contact to 500k vulnerable customers a year:
 - *Leads to significant increase in reassurance and customer resilience to power cuts*
 - *An admirable outcome – but do customers sufficiently value it to justify the cost it takes to deliver?*
 - *Would they rather it's 100k or 750k for example?*
- WPD have used Willingness To Pay* (WTP) research when developing our last two Business Plans. This type of research seeks to:
 - Establish customer priorities between a range of service improvements
 - Identify notional monetary values customers place on these
- We are not actually asking customers to pay more - the figures show what you would *hypothetically* be willing to pay extra per year to see the proposed improvements achieved
- This will guide us on the speed and allocation of resources to achieve the preferred action
 - It also enables us to judge whether the cost of the actions to deliver improvements, can be achieved for less than the values customers place on them

* Research with c.1,600 customers (domestic & businesses) to inform future investment decisions by deriving customers' preferred levels of improvement in various areas, and their willingness to pay values to achieve them

Today's exercise



- We will present you with current performance and a number of improvement options to possibly deliver within the next 5 years (earlier than 2023)
- **You will have 10 vote counters in total**
- **Vote as a table** for your preferred level (can't have them all!)
 - Later, vote electronically as an individual

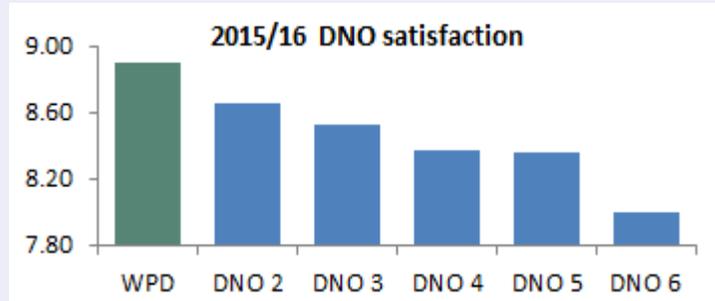
Category	As now	Option 1 1 vote	Option 2 2 votes	Option 3 3 votes
Overall customer satisfaction	Rated 8.90 out of 10	9.1/10	9.3/10	9.5/10
Connections satisfaction	Rated 8.70 out of 10	8.9/10	9.1/10	9.3/10
Smart networks	Active Network Management zones rolled out by 2023	By 2022	By 2021	By 2020
Business carbon footprint	↓5% by 2023	↓5% by 2021	↓7.5% by 2023	↓10% by 2023
Undergrounding schemes	55km by 2023	55km by 2021	75km by 2023	90km by 2023
Emergency resilience	20% communities and businesses supported to improve resilience (e.g. via chambers of commerce)	30%	40%	50%
Customer awareness of WPD	50%	55%	60%	65%
Safety education	60,000 children educated a year	60,000 & expanded scope	70,000 & existing scope	70,000 & expanded scope
Vulnerable customers	125,000 supported a year during power cuts	150k	175k	200k
Fuel poverty	6,500 supported a year	10,000	12,500	15,000

Context to help inform your decisions

Customer satisfaction

As now	Option 1: 1 vote	Option 2: 2 votes	Option 3: 3 votes
Rated 8.90 out of 10	9.1/10	9.3/10	9.5/10

Context:



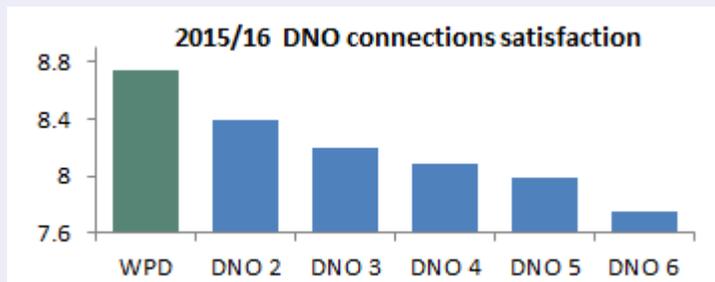
Examples of actions we could take:

- Increase proactive contact with customers during emergencies (c.35% at present)
- New online services – e.g. power cut reporting on website and register properties for proactive updates

Connections satisfaction

Rated 8.70 out of 10	8.9/10	9.1/10	9.3/10
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Context:



Examples of actions we could take:

- Greater availability of data online before applications (e.g. live network capacity, heat maps)
- More bespoke support for community energy schemes
- Quicker quotations process with more frequent contact

Context to help inform your decisions

Smart networks

As now	Option 1: 1 vote	Option 2: 2 votes	Option 3: 3 votes
Active Network Management zones rolled out by 2023	By 2022	By 2021	By 2020

Context:

- Following innovation trials we've launched several ANM zones – enabling a more sophisticated Demand Side Response by controlling demand and Distributed Generation levels in real time
- Enables us to provide alternatives to conventional connections offers (requiring network reinforcement)
- By agreeing to manage their energy more flexibly at times of network constraint, customers can connect quicker and at lower costs

Business Carbon Footprint

↓5% by 2023	↓5% by 2021	↓7.5% by 2023	↓10% by 2023
-------------	-------------	---------------	--------------

Context:

- Impact from offices, transport emissions, fuel combustion and release of greenhouse gases (SF6)
- Current BCF is broadly equivalent to 4,500 homes or 5,750 Ford Mondeos
- Committed in our Business Plan to a 5% reduction on 2012/13 levels (89,376 tCO₂e) by 2023 (= c.85,000 tCO₂e)

Undergrounding schemes

55km by 2023	55km by 2021	75km by 2023	90km by 2023
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Context:

- Visual amenity benefit only – targeted to National Parks (NP) and Areas of Outstanding Natural Beauty (AONB)
- Commitment in our Business Plan to 55km undergrounded by 2023
- Schemes selected by stakeholders - Steering groups (with NPs & AONBs) prioritise schemes, funding & timescales

Context to help inform your decisions

Emergency resilience

As now	Option 1: 1 vote	Option 2: 2 votes	Option 3: 3 votes
20% communities and businesses supported to improve resilience (e.g. via chambers of commerce)	30%	40%	50%

Context:

- We participate in every Local Resilience Forum in our region and key gold/silver commands during incidents
- Can provide support with emergency and business continuity planning ahead of power cuts
- We could target this to small businesses and most vulnerable communities – how far do we go?

Customer awareness

50%	55%	60%	65%
-----	-----	-----	-----

Context:

- We write to every customer once a year as part of a 'Power For Life' campaign, which includes TV advertising
- Ease of access to services - Knowing about WPD and how to contact us is key
- Changing relationships/role – Requires trust and a basic awareness of WPD

Safety education

60,000 children educated a year	60,000 & expanded scope	70,000 & existing scope	70,000 & expanded scope
---------------------------------	-------------------------	-------------------------	-------------------------

Context:

- >1,000 education sessions for school children a year
- Children's education focusses on safety around electrical equipment – could broaden to include Priority Service Register (e.g. for elderly loved ones) and energy efficiency

Context to help inform your decisions

Vulnerable customers

As now	Option 1: 1 vote	Option 2: 2 votes	Option 3: 3 votes
125k proactively supported during power cuts	150k	175k	200k

Context:

- We have a Priority Service Register of 1.3m customers in vulnerable circumstances
- Targeted support can include: proactive contact in emergencies (in the first 2-3 hours) to provide information and reassurance and offer welfare support such as warm drinks, hot meals, crisis packs, oxygen concentrate etc.

Fuel poverty

6,500 supported a year	10,000	12,500	15,000
------------------------	--------	--------	--------

Context:

- 8 referral schemes in place across our region to deliver practical support to tackle root causes of fuel poverty
- Support can include: tariff switching, debt management advice, energy efficiency schemes, boiler replacements etc
- 6,500 supported in 2015/16 led to £1.4 million annual savings for customers

Workshop 2 – Discussion questions

1. Do you consider there to be a key action area missing?
2. You are given 10 votes in total – as a table which are your preferred options?
(Later you will vote electronically as an individual)
3. How much would you be willing to pay from your bill to achieve the package your table arrives at?

Category	As now	Option 1 1 vote	Option 2 2 votes	Option 3 3 votes
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ELECTRONIC VOTING



Vote 3a: Which is your preferred option?

Customer satisfaction

- 0. *As now* Rated 8.90 out of 10
- 1. *Option 1:* Improve to 9.10 out of 10
- 2. *Option 2:* Improve to 9.30 out of 10
- 3. *Option 3:* Improve to 9.50 out of 10

3b: What's the value to you - How much would you be willing to pay from your annual bill to achieve the top supported option?

- 0. *0p*
- 1. *10p*
- 2. *50p*
- 3. *£1.00*
- 4. *£1.50*
- 5. *£2.00*

Vote 4a: Which is your preferred option?

Connections satisfaction

- 0. *As now* Rated 8.70 out of 10
- 1. *Option 1:* Improve to 8.90 out of 10
- 2. *Option 2:* Improve to 9.10 out of 10
- 3. *Option 3:* Improve to 9.30 out of 10

4b: What's the value to you - How much would you be willing to pay from your annual bill to achieve the top supported option?

- 0. 0p
- 1. 10p
- 2. 50p
- 3. £1.00
- 4. £1.50
- 5. £2.00

Vote 5a: Which is your preferred option?

Smart networks

0. *As now:* Active Network Management zones rolled out by 2023
1. *Option 1:* By 2022
2. *Option 2:* By 2021
3. *Option 3:* By 2020

5b: What's the value to you - How much would you be willing to pay from your annual bill to achieve the top supported option?

0. 0p
1. 10p
2. 50p
3. £1.00
4. £1.50
5. £2.00

Vote 6a: Which is your preferred option?

Business carbon footprint

- 0. *As now: 5% reduction by 2023*
- 1. *Option 1: 5% reduction by 2021*
- 2. *Option 2: 7.5% reduction by 2023*
- 3. *Option 3: 10% reduction by 2023*

6b: What's the value to you - How much would you be willing to pay from your annual bill to achieve the top supported option?

- 0. *0p*
- 1. *10p*
- 2. *50p*
- 3. *£1.00*
- 4. *£1.50*
- 5. *£2.00*

Vote 7a: Which is your preferred option?

Undergrounding schemes

0. *As now:* 55km by 2023
1. *Option 1:* 55km by 2021
2. *Option 2:* 75km by 2023
3. *Option 3:* 90km by 2023

7b: What's the value to you - How much would you be willing to pay from your annual bill to achieve the top supported option?

0. 0p
1. 10p
2. 50p
3. £1.00
4. £1.50
5. £2.00

Vote 8a: Which is your preferred option?

Emergency resilience

- 0. *As now:* 20% communities & businesses supported to improve resilience
- 1. *Option 1:* 30% supported
- 2. *Option 2:* 40% supported
- 3. *Option 3:* 50% supported

8b: What's the value to you - How much would you be willing to pay from your annual bill to achieve the top supported option?

- 0. 0p
- 1. 10p
- 2. 50p
- 3. £1.00
- 4. £1.50
- 5. £2.00

Vote 9a: Which is your preferred option?

Customer awareness of WPD

- 0. *As now: 50%*
- 1. *Option 1: 55%*
- 2. *Option 2: 60%*
- 3. *Option 3: 65%*

9b: What's the value to you - How much would you be willing to pay from your annual bill to achieve the top supported option?

- 0. *0p*
- 1. *10p*
- 2. *50p*
- 3. *£1.00*
- 4. *£1.50*
- 5. *£2.00*

Vote 10a: Which is your preferred option?

Safety education

0. *As now:* 60,000 children educated a year
1. *Option 1:* 60,000 & expanded scope
2. *Option 2:* 70,000 & existing scope
3. *Option 3:* 70,000 & expanded scope

10b: What's the value to you - How much would you be willing to pay from your annual bill to achieve the top supported option?

0. 0p
1. 10p
2. 50p
3. £1.00
4. £1.50
5. £2.00

Vote 11a: Which is your preferred option?

Vulnerable customers

- 0. *As now:* 125,000 supported a year (during power cuts)
- 1. *Option 1:* 150,000 supported a year
- 2. *Option 2:* 175,000 supported a year
- 3. *Option 3:* 200,000 supported a year

11b: What's the value to you - How much would you be willing to pay from your annual bill to achieve the top supported option?

- 0. 0p
- 1. 10p
- 2. 50p
- 3. £1.00
- 4. £1.50
- 5. £2.00

Vote 12a: Which is your preferred option?

Fuel poverty

- 0. *As now:* 6,500 supported a year (during power cuts)
- 1. *Option 1:* 10,000 supported a year
- 2. *Option 2:* 12,500 supported a year
- 3. *Option 3:* 15,000 supported a year

12b: What's the value to you - How much would you be willing to pay from your annual bill to achieve the top supported option?

- 0. 0p
- 1. 10p
- 2. 50p
- 3. £1.00
- 4. £1.50
- 5. £2.00

COFFEE BREAK

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Session 3: **Spotlight on two long-term priorities** *3a: Future Networks*

Nigel Turvey
Network Strategy & Innovation Manager

Agenda

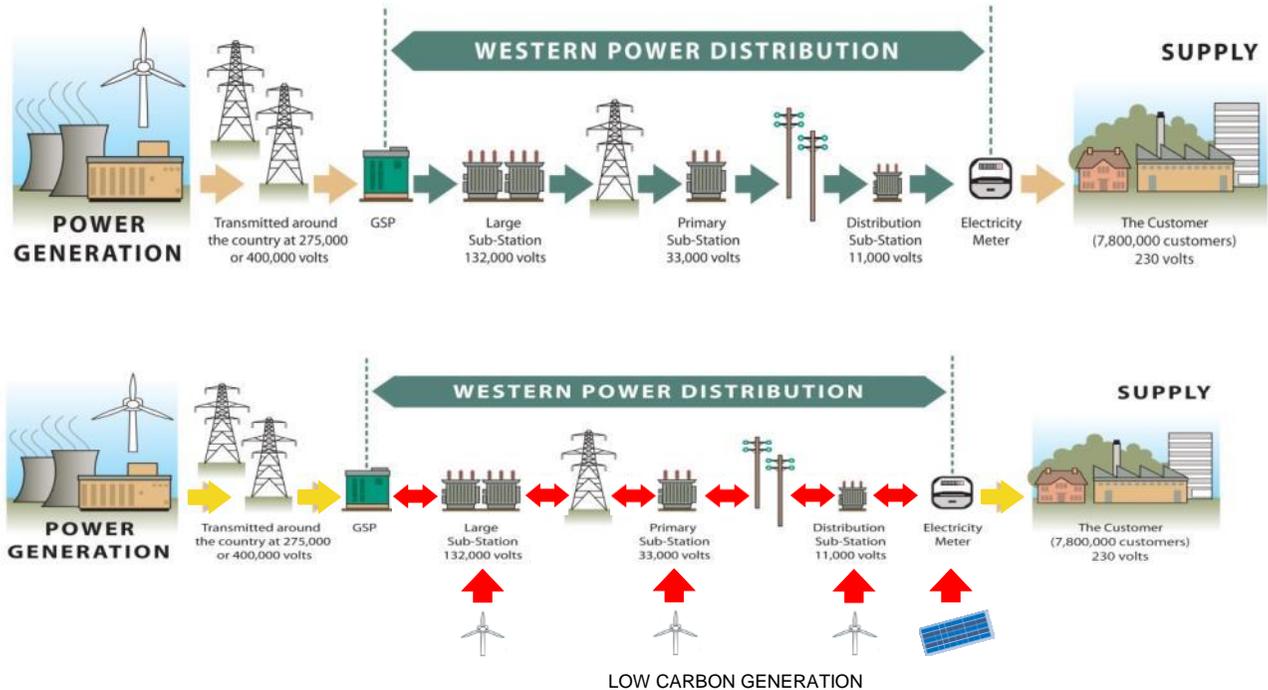
- Towards a smart, flexible energy system
- Transition from DNO to DSO
- Our DSO priorities
- Capabilities we need to develop and our current projects
- Use of smart meter data

Context

- The way we generate electricity is changing:

Centralised power stations

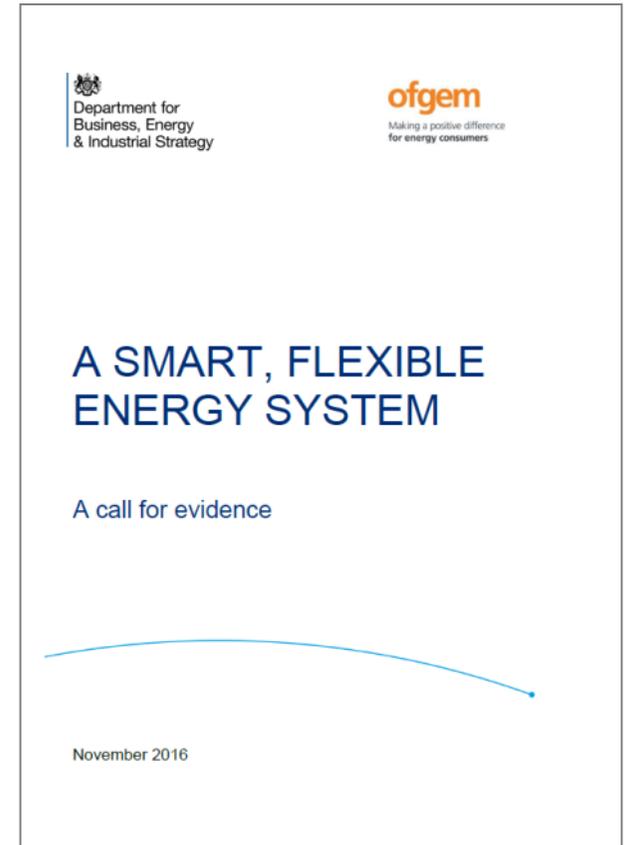
Thousands of distributed generators operating at various times



- Demand for electricity could double by 2050 and the way we use it could change e.g. more storage or electric vehicles
- This creates challenges for the National Grid and DNOs

Towards a smart, flexible energy system

- Recent Ofgem/Government call for evidence on the above highlighted the need to change including:
 - **Smart energy technology** and processes have the potential to deliver lower bills
 - **Greater flexibility** will help deliver security of supply
 - **Simpler integration of low carbon technologies**
 - **Electrification of transport and heat** will significantly impact the patterns and levels of power demand locally and nationally
 - **We should act sooner rather than later** so consumers can benefit now



Transition from DNO to DSO

- **Role of a Distribution System Operator (DSO) is to:**
 - Balance various sources of supply and demand in real time
- Alongside traditional reinforcement options, we need to:
 - **Make active use of new technologies**, providers and solutions to help manage the distribution network
 - **Have an increased role in delivering ‘whole system’ solutions** that are economic, efficient and coordinated
 - **Significantly increase engagement with National Grid** (the GB System Operator) to deliver the best whole system outcome for customers



Our DSO priorities

- Our DSO enabling priorities are to:
 1. **Expand the roll out and application of Active Network Management (ANM)**
 - Targeted to the higher voltage networks, prioritising areas that are the most likely to benefit
 2. **Protect the integrity and safety of lower voltage networks**
 - We will be looking to maximise the use of smart meter data, apply additional network sensing as required and implement simple control schemes
 3. **Coordinate with the System Operator SO**
 - Help to establish visibility platforms for suppliers, aggregators and customers to allow the development of flexibility services shared between DSO and SO

A substantial change - capabilities we need to develop

Our strategy – 5 key areas:

- 1 Understand historic and real time energy flows
- 2 Forecast future energy volumes across the network
- 3 Actively reconfiguring the system dependent on need
- 4 Commercial arrangements to contract services e.g. DG, active demand, storage
- 5 Coordinate DSO operations with National Grid (SO) and potentially provide services

Projects developing these capabilities:

- **“Local Energy Market”**: Development of a ‘visibility’ platform
-
- **Long term strategic studies**
-
- **Active Network Management**: developed from our Low Carbon Hub project
 - **Demand response projects**: including “FALCON”, “SYNC” and “ENTIRE”
 - **“CarConnect”**: understand customer behaviour using static and dynamic time of use tariffs
-
- **“Transmission”**: interface project via our trade association ENA
 - **Regional development program** being developed jointly with National Grid

Use of Smart Meters - Context

- Smart meters are being rolled out by suppliers – not WPD
- Government target is for every domestic customer to have one installed by 2020
- WPD will be able to communicate with the latest type of smart meter rolled out later this year

What is a smart meter?

- Measures energy and communicates readings in real time
- Give customer up-to-date information about usage (in-home display) and costs
- Can receive information remotely – e.g. update tariff information and switch between credit and prepayment modes
- WPD will communicate with meters via a new secure national communications network

Benefits to consumers

- Visibility can enable you to use energy more efficiently and save money
- End estimated billing & manual reads
- Improve switching between suppliers
- Government estimates av. annual dual fuel saving of £23, but for some much more
- Enable smart products – e.g. designed to switch on when prices are lower

Smart Meters – Potential benefits for networks

- Currently we have limited visibility of real-time load – mostly based on past experience (e.g. seasonal)
- Smart meters allow us to get half hourly (HH) consumptions from all our customers – enabling a very accurate picture of what is happening on the network
- We are seeking to use data from smart meters to:
 - **Automatically understand when outages occur** to be able to respond earlier to faults
 - **Detect issues with the voltage** delivered rather than rely on the customer telling us
 - **Understand the load on our low voltage network** to be able to detect potential overloads earlier and assess new connection applications



Smart Meters – How we access this data

- However HH readings are personal data, so we need to be very careful how we use them
- Currently we can access HH data in 3 circumstances:
 - We have gained explicit customer consent
 - Customer is part of a WPD new technology trial
 - Customer is believed to be tampering with our equipment or the meter
- To do anything over and above these three examples we must have a Data Privacy Plan approved by Ofgem
- In order to access meter data WPD systems have to successfully pass rigorous government approved testing and security requirements



Smart Meter Data Privacy Plan

1. As soon as the customers HH consumptions are received, link this to the feeder (final cable in street) and remove any data that identifies the specific property
 2. Add the consumptions of all the properties to get a HH picture of load per feeder
 3. Generate monthly totals and feeder profiles – all individual consumptions deleted immediately
 4. Monthly totals and feeder profiles would be deleted after a defined period
 5. Only staff with genuine business need allowed to access the data
 6. Appropriate controls to ensure data privacy & secure storage – externally audited
 7. Use the information for the sole purpose of monitoring the network
- We will review the privacy plan annually

Summary

- Our DSO priorities are to:
 - Expand active management of higher voltage networks
 - Protect the integrity and safety of lower voltage networks
 - Coordinate with the SO to share flexibility services
- Use of flexibility from customers, generators and the network has the potential to reduce bills and help deliver security of supply
- We are developing capabilities via trials and projects
- Smart meters are an important source of data to help manage and develop the network

Workshop 3a – Discussion questions

1. **Do you agree with WPD's DSO priorities?**
 - 1a. Are we missing any areas that we need to develop?
2. **Do you agree that it will be beneficial for networks to access smart meter data? Have we sufficiently explained the benefits?**
3. **How comfortable are you with networks having access to, and using, smart meter HH data in general?**
4. **What do you think of WPD's 7-point approach to data privacy**
 - 4a. Are there any safeguards or areas of concern that are not addressed?
 - 4b. Are there areas you would require extra detail/assurances?
5. **How comfortable are you with WPD having access to smart meter data in these terms?**

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Vote 13: Having reviewed the objectives of WPD's data privacy plan, how comfortable are you with WPD having access to smart meter data in these terms?



Vote 14: Which of the following factors for consideration are most important to you?

1. Data is aggregated so individual properties cannot be identified
2. Data is only used to create monthly totals and operating profiles for our equipment (therefore historic, not real-time)
3. Ensuring the security of our systems to store this data
4. Ensuring data is only used for network operating purposes and is never sold or shared with other parties
5. Safeguards are in place to ensure only select staff can access it within WPD
6. All of the above – I don't want anyone accessing this data
7. None of the above – I'm comfortable as long as these factors are addressed

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Session 3: **Spotlight on two long-term priorities** *3b: Environment & Sustainability*

Paul Jewell
Policy Manager

Environment and Sustainability

- 'Environment and Sustainability' is one of the key areas of our Business Plan
- We have committed to deliver **15 outputs** in this area
- The targets were developed as a part of previous stakeholder engagement sessions for Environment and Sustainability and include;
 - Reduce waste to landfill by 20% (first 2 years) then 5% per year
 - Reduce electricity usage by 5%
 - Reduce SF₆ leakage by 17%
- We report on all these areas in our Environment and Innovation Annual Report



https://www.westernpower.co.uk/docs/About-us/WPD-Innovation-and-Environment-Report_2015-16.aspx

2015/16 performance – key highlights

 2015/16	
1. LCT response time	-
2. Identifying LCT hotspots	✓
3. Uprating assets - LCT hotspots	✓
4. Developing smart solutions	✓
5. Using smart solutions	✓
6. Oversizing transformers for losses	✓
7. Uprating cables for losses	✓
8. Lowering vehicle emissions	✓
9. Energy efficiency - buildings	✓
10. Reducing waste to landfill	✓
11. Reducing Business Carbon Footprint	✗
12. Reducing oil leaks from cables	✓
13. Reducing SF6 leaks	✗
14. Installing bunds	✓
15. Undergrounding lines in AONBs	✓

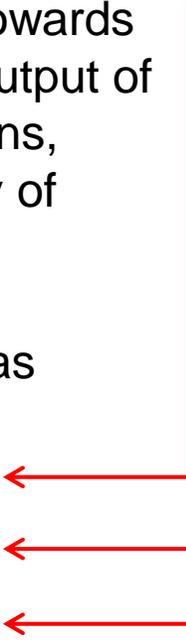
- Reduced the carbon footprint of our buildings and operational transport
- Reduced fluid-filled cable losses
- Extended our ISO14001(2004) environment certificate to include all operations throughout the WPD business
- Significant 12% reduction in percentage waste to landfill from 2012/13 levels (847 tonnes) and this continues to fall
 - 1,625 tonnes of waste diverted from landfill disposal in 2015/16

2015/16 performance – challenges

	2015/16	
11. Reducing Business Carbon Footprint		✘

- Continued effort to work towards achieving our RII0-ED1 output of reducing our CO2 emissions, whilst maintaining security of supply and reducing costs
- Today we will discuss areas of only limited change
 - Building Energy Use
 - Vehicle Emissions
 - SF₆
- We are now considering further actions to help drive changes

WPD Carbon Footprint Report (tCO _{2e})					
Aspect		2012/13	2013/14	2014/15	2015/16
Buildings energy use	Buildings - Electricity	12,098.2	9,979.9	12,454.4	10,933.0
	Buildings – Other fuels	191.6	260.1	207.6	193.1
	Substation Electricity	28,836.7	24,856.9	27,578.7	25,789.3
Operational Transport	Road	33,335.9	35,400.6	40,018.8	38,246.8
	Other (e.g. rail, air etc)	1,253.01	1,624.5	1,430.5	1,833.4
Business Transport	Road	3,903.7	3,792.9	3,304.0	5,253.6
	Other	41	74.8	128	62.1
SF ₆ Emissions		6,063.4	7,384.9	8,282.1	9,045.9
Fuel Combustion	Diesel / Gas / Oil	3,653.2	11,836.7	8,574.1	7,515.0
Total Carbon (tCO _{2e})		89,376.7	95,211.1	101,978.1	98,872.2



Buildings Energy Usage – Current actions

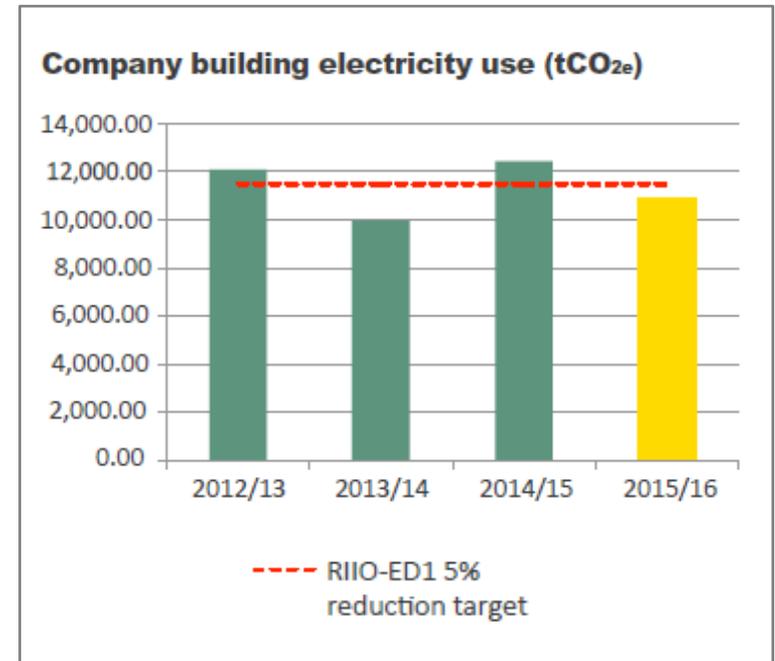
- All new buildings are BREEAM* “excellent”
- All refurbishments of existing buildings are BREEAM “good” (highest refurb rating)
- Local Managers now receive quarterly KPI information of total electricity used in their buildings
- We completed a “switch off” week during 2016 which showed we could reduce our electricity usage by around 4% in the daytime and 5% at nights



* BREEAM (Building Research Establishment Environmental Assessment Method, first established in 1990, is the world's longest established method of assessing, rating and certifying the sustainability of buildings

Buildings Energy Usage – Actions to consider today

- Using the bespoke KPI reporting now in place per site, analyse usage and develop tailored actions plans at each location
- Application of solutions such as:
 - Lighting timers/sensors
 - Better air-con timers
 - Automatic curtains for sites with open equipment stores
- Install low energy lighting, where possible, in all buildings which have not yet been updated
- **Is there anything else that you think we should be considering?**



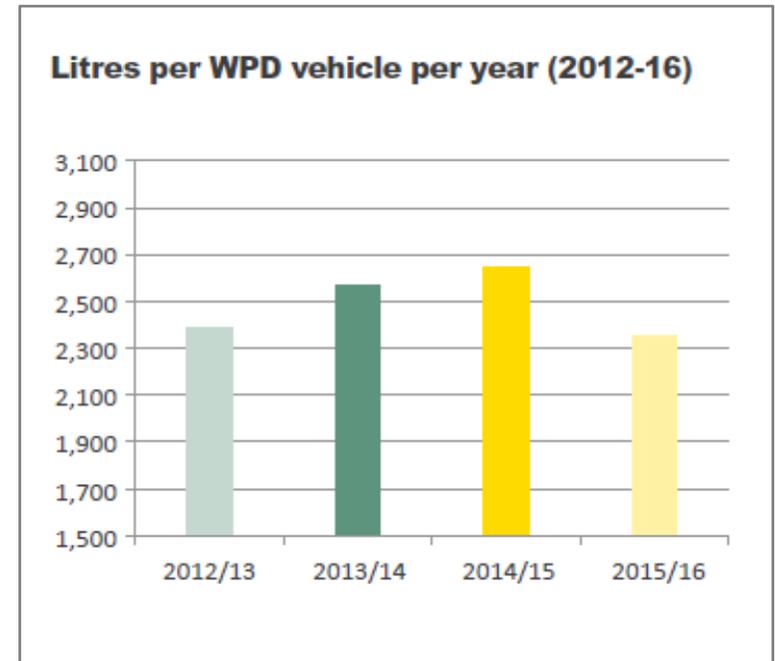
Vehicle Emissions – Current actions

- All of our replacement vehicles have lower emissions than the ones that they replace
- Local Managers receive quarterly KPI information of total fuel used and fuel used per vehicle
- Office to office vehicle use is reduced by the use of videoconferencing
- We are trialling electric and hydrogen vehicles on our fleet



Vehicle Emissions – Actions to consider today

- Extend videoconferencing to tablets and mobile phones
- Introduce a programme of Driver Training to increase awareness of driving style on emissions
- Investigate alternative fuel and engine lubricant technology to reduce emissions
- **Is there anything else that you think we should be considering?**



Sulphur Hexafluoride (SF₆)

- A quick reminder of the properties and use of SF₆:
 - It is a Fluorinated Greenhouse Gas (Fgas Regulations)
 - It is a very efficient insulating gas for high voltage switchgear
 - It is a potent greenhouse gas (22,800 times that of CO₂)
- Our “bank” of SF₆ is increasing as we change old switchgear
- There is no suitable alternative to this gas in certain switchgear
- We recover SF₆ from end of life switchgear
- A small quantity is lost to the atmosphere through leaks and switch failures, approximately 1% of the volume of the “bank”

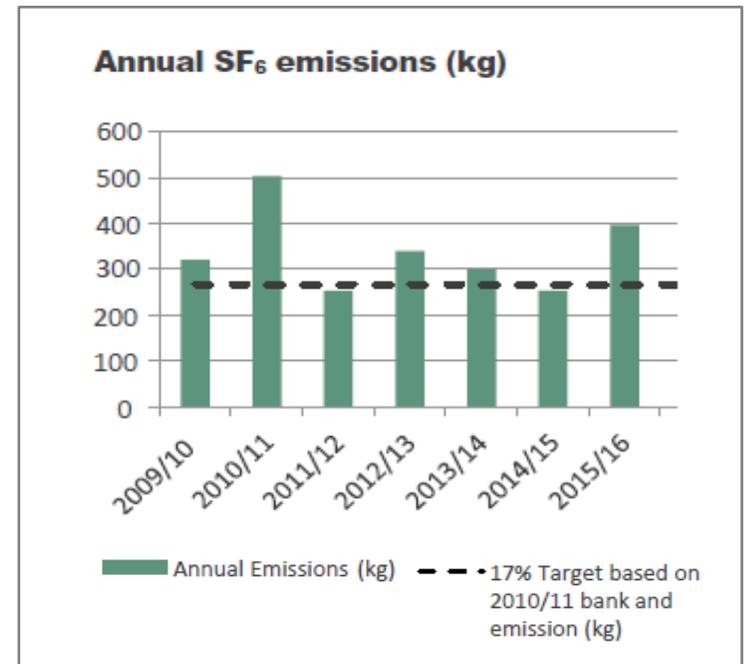
Sulphur Hexafluoride (SF₆) – Current actions

- Local Managers receive quarterly KPI information of SF₆ leaked in their areas
- Our replacement policy for smaller items of switchgear is to replace when a leak occurs
- Our replacement policy for larger and expensive items of switchgear is to investigate and repair
 - We have introduced a “three leaks and replace” methodology as standard



Sulphur Hexafluoride (SF₆) – Actions to consider today

- Provide SF₆ detection cameras for each of our four areas
 - Aid our Inspections and Maintenance programme
 - Visualises SF₆ from a safe distance without the need to interrupt the plant's operation
 - Ensure quicker leak detection
- Continue support of industry research to investigate alternatives
- **Is there anything else that you think we should be considering?**



Workshop 3b – Discussion questions

1. **With regards to ‘buildings energy use’, ‘vehicles emissions’ and ‘SF₆’, do you agree with the listed priorities and actions?**
 - A. **Buildings:** Analyse usage and develop tailored actions plans at each location
 - B. **Buildings:** Install low energy lighting in all buildings which have not yet been updated
 - C. **Vehicles:** Extend videoconferencing to tablets and mobile phones
 - D. **Vehicles:** Driver Training (impact of driving style on emissions)
 - E. **Vehicles:** Investigate alternative fuel and engine lubricant technology
 - F. **SF₆:** Provide SF₆ detection cameras for each of our four areas
 - G. **SF₆:** Continue support of industry research to investigate alternatives

2. **Should we be doing more? What’s missing?**

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ELECTRONIC VOTING



Vote 15: Of the areas for focus within WPD's Business Carbon Footprint discussed today, which area is most important to you for immediate action?

1. Building Energy Usage
2. Vehicle Emissions
3. Sulphur Hexafluoride

Vote 16: Taking them one at a time, on a scale of 1-10, how important to you are the actions proposed?



Not important at all

Extremely important

- A. **Buildings:** Analyse usage and develop tailored actions plans at each location
- B. **Buildings:** Install low energy lighting in all buildings which have not yet been updated
- C. **Vehicles:** Extend videoconferencing to tablets and mobile phones
- D. **Vehicles:** Driver Training (impact of driving style on emissions)
- E. **Vehicles:** Investigate alternative fuel and engine lubricant technology
- F. **SF6:** Provide SF6 detection cameras for each of our four areas
- G. **SF6:** Continue support of industry research to investigate alternatives

LUNCH

Session 4 – this afternoon

A choice of three sessions:

Table 1: Connections & Distributed Generation

Table 2: Social obligations (incl. vulnerability & fuel poverty)

Table 3: Emergency resilience

INFORMATION FOR STAKEHOLDERS

Thank you for attending

- Slides and feedback will be posted on the website www.westernpower.co.uk
- We would appreciate feedback on any of the areas discussed today. Please contact:

Alex Wilkes, Stakeholder Engagement Manager

✉ email: awilkes@westernpower.co.uk

☎ phone: 01332 827647