



2015-2023

## RIIO-ED1 BUSINESS PLAN

SA-08 Supplementary Annex –  
Business Performance, Efficiency and Benchmarking

June 2013 (Updated April 2014)



# SA-08 Business performance, efficiency and benchmarking

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# 1 Introduction

- 1.1 This document is a supplementary annex to the Western Power Distribution (WPD) Business Plan for the eight year period from 1st April 2015 to 31st March 2023.
- 1.2 It describes WPD's record of operational performance and customer service compared to other companies in the sector. We then describe the day to day arrangements for managing business efficiently. Finally, we set out of the results of the cost benchmarking we have done. In short we start with comparative outputs, and then ensure that costs we have included in the Business Plan to maintain and improve that level of performance have been and continue to be efficient. The document relates to efficiency across the four WPD distribution licences of West Midlands, East Midlands, South Wales and South West.
- 1.3 The eight year period aligns with the next regulatory price control review period, known as RIIO-ED1; the first for electricity distribution to be determined using Ofgem's Revenue = Incentives, Innovation and Outputs framework. The Business Plan, supplementary annexes, detailed cost tables and financial models form the submission under RIIO-ED1 to the regulator Ofgem (Office for Gas and Electricity Markets), who will use the information to determine allowed revenues.

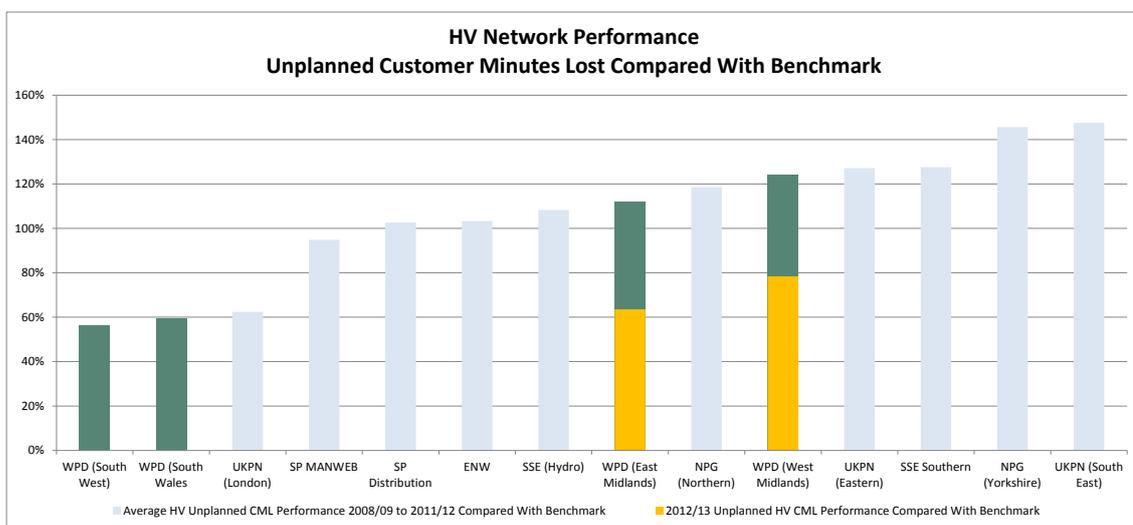
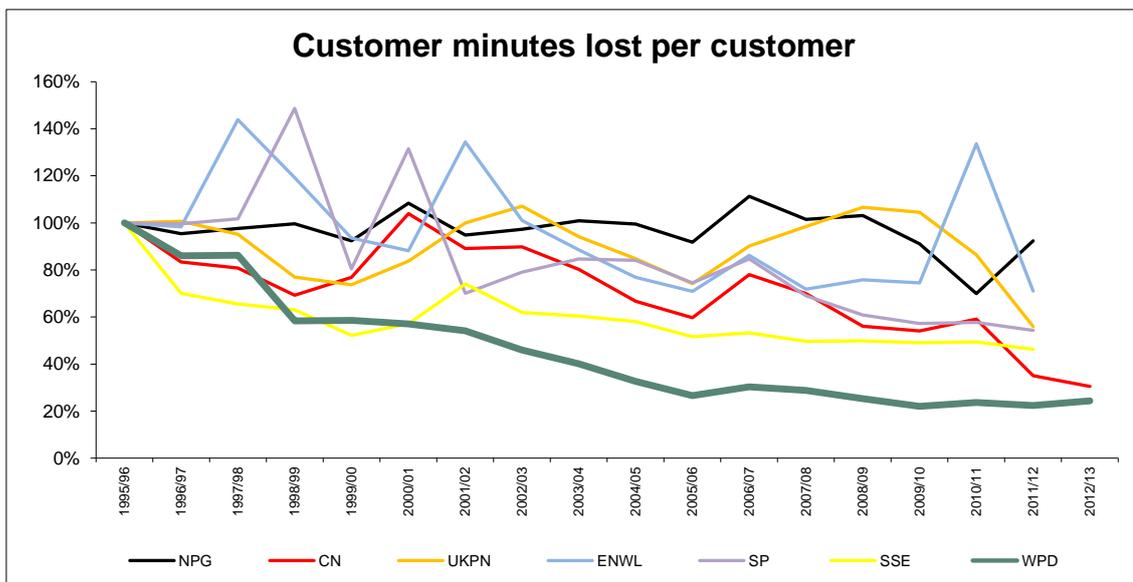
## Structure of this document

- 1.4 We appreciate that the readers of the WPD Business Plan suite of documents will range from regulatory experts and well informed stakeholders through to new customers who may have had little previous knowledge of WPD.
- 1.5 This document is aimed at readers who require a more detailed understanding of the efficiency of our business. A less detailed description can be found in the main Business Plan Overview document.
- 1.6 This document is subdivided into the following sections:

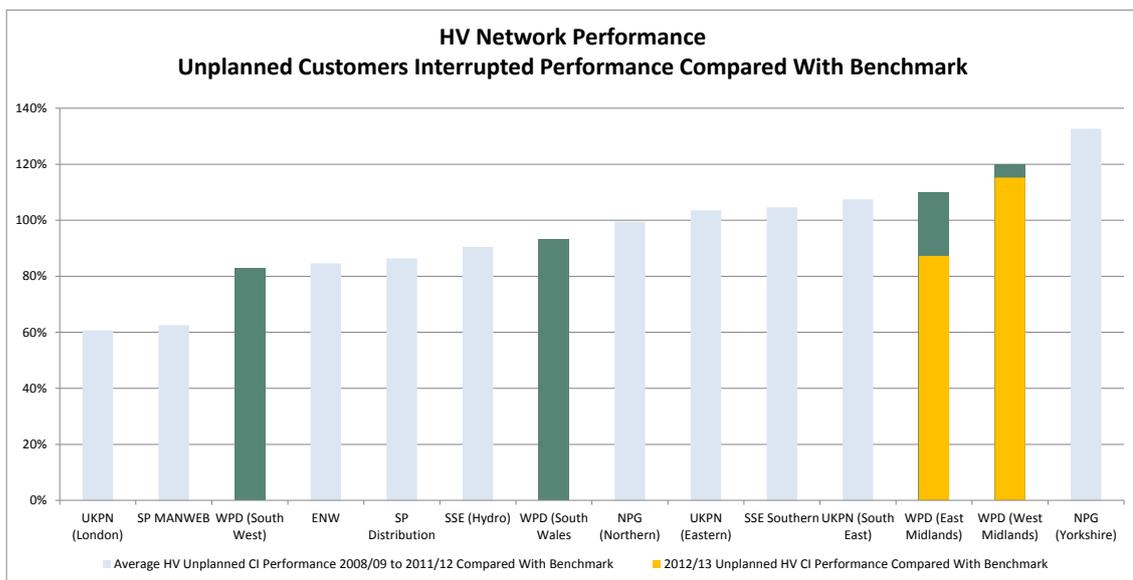
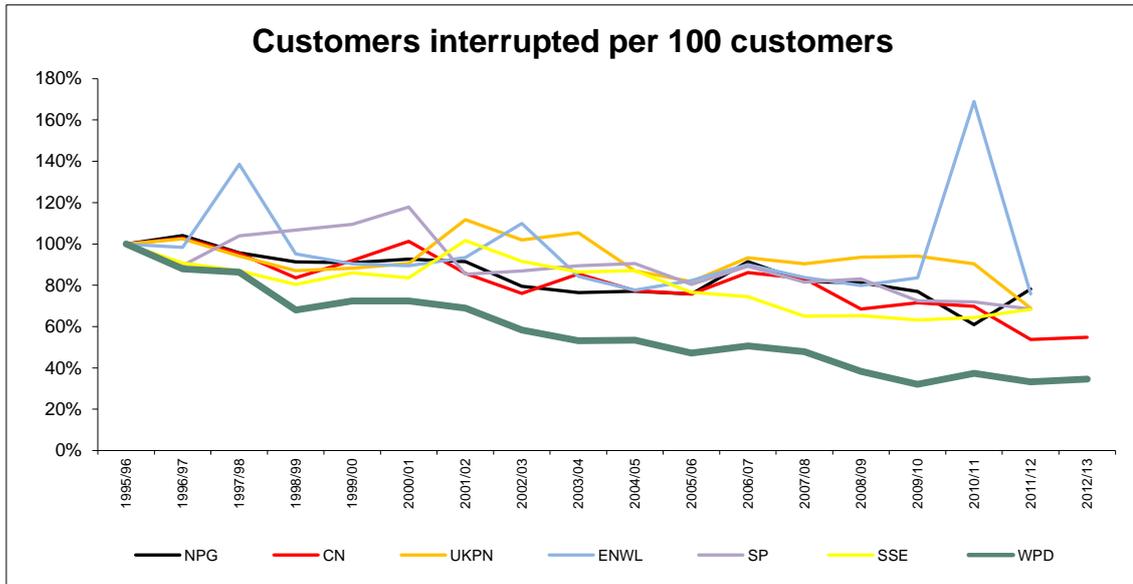
Chapter	Title	Content
2	<b>WPD's performance</b>	A brief description of the key regulatory measures of performances, comparing WPD's performance to other DNOs.
3	<b>What makes WPD efficient</b>	An overview of the organisation structure and business processes that lead to efficiency in WPD.
4	<b>Cost benchmarking</b>	An introduction to cost benchmarking and the methods used.
5	<b>WPD's disaggregated cost model</b>	An overview of the results from the model developed by WPD to assess costs and cost drivers at a disaggregated level of detail.
6	<b>Unit cost review by Parsons Brinckerhoff</b>	An overview of the independent assessment carried out for WPD that compared units costs across a range of activities.
7	<b>IT costs review</b>	A summary of the result of an independent assessment of WPD's IT costs carried out by Deloitte LLP.
8	<b>Summary</b>	Conclusions that WPD is an efficient business.
<b>Appendices</b>		The appendices provide links to supporting documentation and reports.

## 2 WPD's benchmarked performance against Ofgem measures

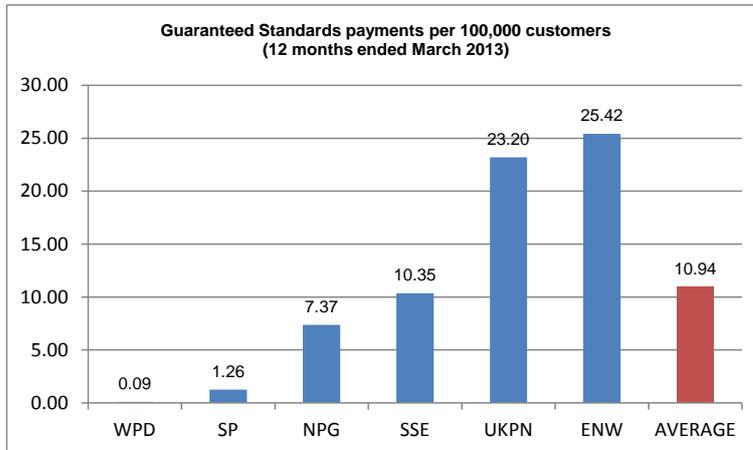
- 2.1 Efficiency is the measure of how successfully resources are applied to achieve outcomes. An efficient organisation uses the right volume and mix of inputs and fully uses them to maximise its outputs. It is therefore important to start with the outputs.
- 2.2 Efficiency is usually measured by comparative analysis to similar organisations within the same industry or through comparisons of discrete functions that are deployed at similar sized organisations. Efficiency can also be measured by internal comparative analysis to compare the performance of similar business units. 'Benchmarking' is the process that seeks to rank performance and efficiency based upon comparative analysis.
- 2.3 Ofgem's key measures of performance are Customer Minutes Lost (CMLs) Customer Interruptions (CIs), The Broad Measure of Customer Satisfaction survey and the number of Guaranteed Standard of Performance failures.
- 2.4 WPD's record of delivery is second to none. In particular we have the best and the most improved CML performance as can be seen below:



2.5 WPD also has the most improved CI performance and top quartile CI performance in 2012/13 as can be seen from the charts below.

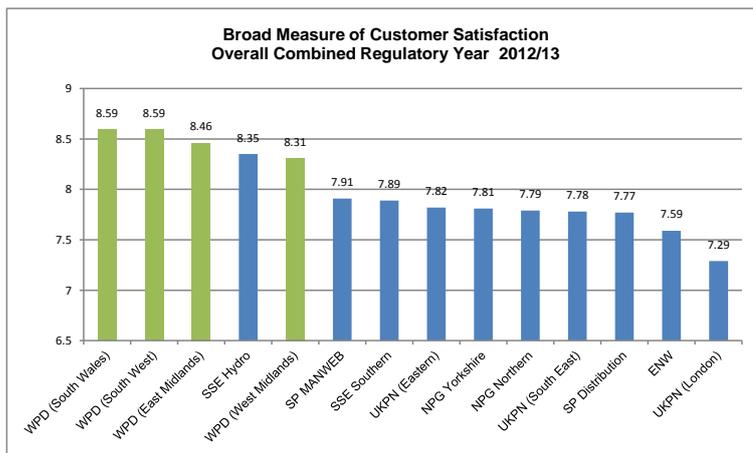


**2.6** WPD consistently performs well against the Guaranteed Standards of Performance and has the lowest level of payments per 100,000 customers as demonstrated in our 2012/13 relative performance shown below:

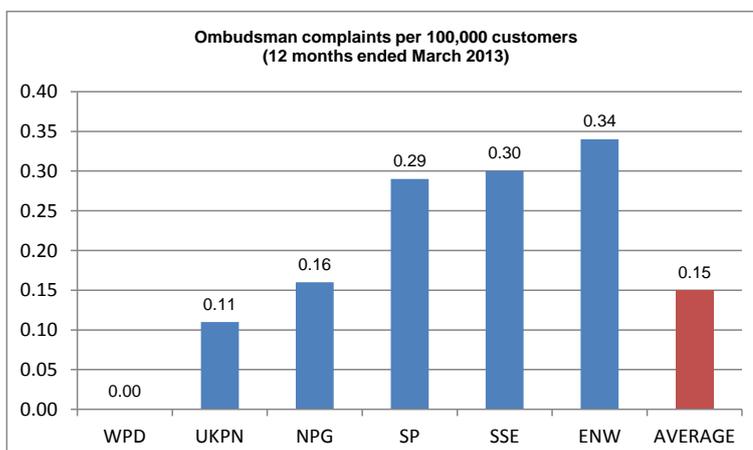


**2.7** Our call centres answer at least 99% of call within 20 seconds and have an average speed of answering no supply calls of less than 2 seconds

**2.8** This level of performance is reflected in the Broad Measure of Customer Satisfaction survey, whose 2012/13 result is shown below:



**2.9** As a result of this level of service WPD has the lowest level of Ombudsman complaints of any DNO group. It is now 8 years since WPD South West or WPD South Wales have had an Ombudsman complaint upheld against them.

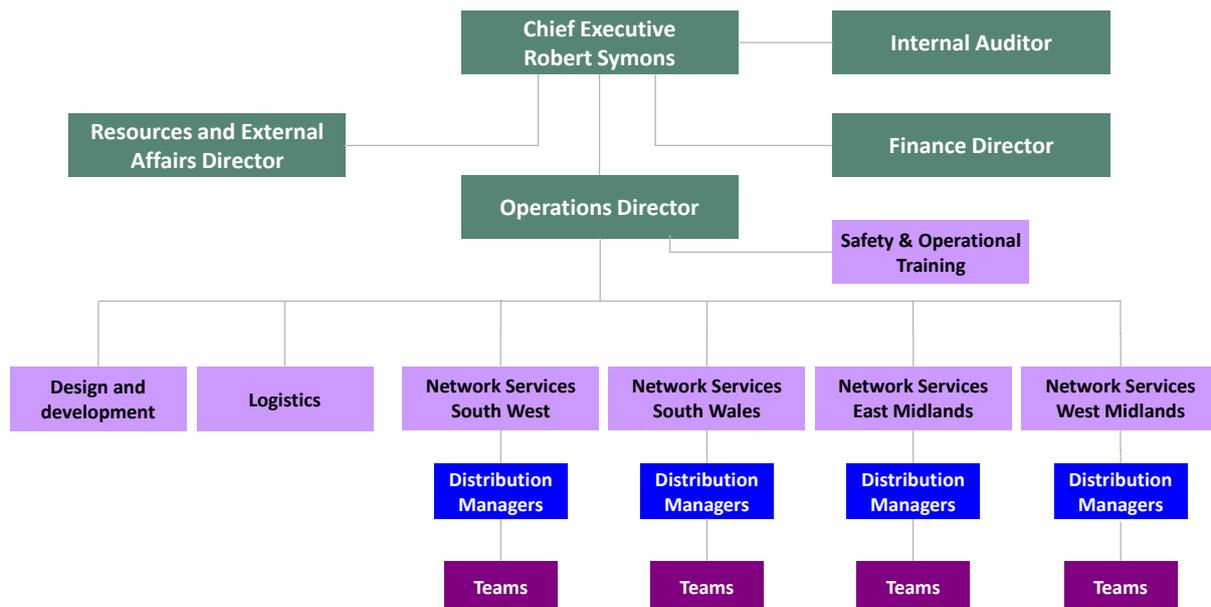


## 3 What makes WPD efficient

- 3.1 It is important to be able to demonstrate that the costs incurred in producing these exceptional results are efficient.
- 3.2 Overall the benchmarking (detailed later in this document) has shown WPD to be an efficient business. This affirms our regular analysis and our understanding informed through the acquisition of the two Midlands DNOs.
- 3.3 It is important to reflect on the underlying reasons for WPD's relative efficiency position to ensure that the successful attributes can continue to be incorporated into our future business plans and strategies.
- 3.4 Key WPD features that provide efficiency are:
- company culture;
  - organisational structure;
  - model of insourcing workforce;
  - asset acquisition practices.
- 3.5 As previously stated, in April 2011, WPD acquired the distribution licences for the East Midlands and West Midlands. By December 2011, the businesses had been integrated into the WPD group and were being operated using the WPD business model. Annual cost savings of the merged businesses of £119m were achieved. Below we illustrate how some of the key WPD features and business practices helped us to achieve these savings.

### *Organisational structure*

- 3.6 WPD operates a low overhead business with a small number of layers of management. There are only three levels between front line staff and the Board. These are team managers (TMs), distribution managers (DMs) and network services managers (NSMs).
- 3.7 TMs are responsible for 30 staff on average. They have responsibility for a specific geographical area for day-to-day business operations and their team will include a mixture of staff with different skills including:
- planners who design projects and determine project costs;
  - wayleave officers that negotiate rights of way and access onto land;
  - technicians that manage the delivery of projects and carry out operational preparation of the network;
  - team supports that deal with customer calls and carry out a wide range of administrative duties
  - craft staff consisting of overhead linesmen, jointers and fitters who carry out the work.
- 3.8 Each team is broadly self-sufficient, except where volumes of work dictate that resources are shared between teams. DMs are responsible for a wider geographic area that will have up to 8 TMs and their respective staff. They are responsible for all day-to-day aspects of safety, physical delivery and delivery costs in their areas, along with managing the day-to-day requirements of their depots.
- 3.9 DMs report to NSMs, of which there are four in WPD, each covering a WPD licence area.
- 3.10 It should be noted that all levels of management are actively involved in driving network performance and customer services. The structure allows rapid and clear communications between senior management and all staff.



## Geographically based teams

- 3.11 Team responsibilities are organised geographically. This means that all the people required to plan and deliver all the differing work activities in a particular geographic area are part of the same team. This reduces the number of hand-offs that would occur in a functional organisation and speeds up communication. Any queries can also be quickly resolved, for example technicians delivering work can quickly speak to the planners that have designed the projects.
- 3.12 Locally based teams provide flexibility. At times of severe weather, resources can be directed across areas to assist with fault repair.
- 3.13 Stores are located close to the workforce. This reduces travel time and aids operational efficiency by focusing skilled resources on the key activities requiring those skills.
- 3.14 Geographically based teams help to reinforce our corporate values. Teams are responsible for the outputs and customer service delivered within their area. This empowers thinking and helps with the development of innovation and initiatives to achieve our goals.

## Delegated personal responsibility

- 3.15 Staff are encouraged to take personal responsibility. This applies to everything they do. This reduces bureaucracy in the organisation and speeds up decision making. It is an empowering culture which matched with the geographical team structure helps our workforce to see the link between the activities they perform and the outcome achieved in terms of safety, customer service and network performance.

## Insourcing

- 3.16 We use our own staff for the majority of the work that we carry out. This avoids the need to pay management fees and profit margins to contractors or 'Alliance' organisations.
- 3.17 It also has the benefit of enabling us to retain expertise (and create succession plans) within the company and provides flexibility as we are able to readily redirect staff to resolve issues as they arise.

- 3.18** Contractors are still used for certain work areas such as tree clearance and excavation activities. These contracts are tightly managed with regular reviews and management action taken as appropriate and are reviewed periodically to assess whether it is still advantageous economically or in respect of customer service to keep them outsourced.
- 3.19** WPD avoids using turnkey projects i.e. those where complete responsibility for design and build is handed over to third parties. Where specialist skills are required or additional resource are needed to deal with high volumes of work, external resources are used but projects are retained under the control of WPD.
- 3.20** The Alliance contracts that were previously operated in the Midlands are no longer in place and any direct skilled staff required have been brought into the employment of WPD. Significant savings have been made as a result of this because the previous Alliance structures:
- created duplication of staff (and cost);
  - slowed communication and response to business need (affecting delivery);
  - caused confusion with respect to understanding who was responsible for what (affecting cost and delivery);
  - started to remove the experience and knowledge of staff within the business as the ability to create succession and to pass on relevant information and experience was removed (reducing long term effectiveness).
- 3.21** By using staff that are part of the business we are able to develop a workforce that reflects our values for safety and customer service delivery. Ideas and innovations to improve our business come from our employees. An outsourcing model would not be able to foster and develop ideas from its frontline workforce. To support this model WPD developed its own 'in-house' apprentice scheme that aims to develop skilled craftsmen who can carry out high quality work. The programme demands that apprentices carry out sufficient repetitions of certain tasks so that they become fully conversant with the requirements.
- 3.22** Practical work is supplemented by task records that the apprentices use to produce detailed reports for each type of task. Once sufficient tasks are completed, apprentices sit rigorous trade tests before being allowed to progress through the scheme and become craftsmen.
- 3.23** This thorough approach to training our own craftsmen increases the quality of work that is produced and ensures that training is wholly relevant to the work that they will be performing. This is both efficient and reduces the likelihood of workmanship related failures of assets.
- 3.24** Overall our insourcing philosophy has contributed significantly to WPD being efficient.

## ***Asset acquisition practices***

- 3.25** It is WPD strategy to specify and purchase assets that:
- are fit for purpose;
  - comply with Industry, British and International Standards, where available;
  - comply with all relevant statutory and regulatory requirements, in particular in respect of safety of employees and the public and also the environment;
  - are, as far as possible, "off the shelf", with the minimum special construction
  - achieve the best compromise between reliability, cost and impact on objectives.
- 3.26** Keeping to standard products and minimising variations has a number of benefits:
- it helps us to drive an efficient product acquisition process through volumes and low overhead procurement cost;
  - it enables us to be efficient in associated overheads such as the number of policies supporting the use of equipment or training hours dedicated to equipping employees to deploy the equipment;

- it helps WPD to operate a unified asset management system where the same equipment and techniques are adopted.
- 3.27** New types of assets are introduced in a controlled manner assessing compliance to standards and only after successful field trials to ensure that they provide the anticipated benefits and minimise risk to safety and reliability.
- 3.28** We periodically review specifications to ensure they remain current to industry developments. Before entering into fixed term equipment supply contracts we also review the relevant specifications to ensure that we procure the most up to date equipment. Our specifications will have evolving requirements so that equipment with improved functionality or reduced costs can be procured.
- 3.29** When implementing new systems we consider various alternatives and select those that provide reliability as well as low costs. We do not choose our suppliers simply on price and this is detailed in the procurement practices listed below.
- 3.30** We aim to award only those contracts that provide the 'most economically advantageous tender' (MEAT). In doing so we consider the performance of a product as well as the best price.
- 3.31** The process of using MEAT allows us to consider all factors, not just price. The functional capability of the product, on-going support, maintenance and contractual terms and conditions are all factors in the overall 'economical cost' of a product. Focusing on price alone can be more costly in the longer term, especially where low prices are coincident with lower manufacturer liabilities and shorter warranty periods. Using the MEAT approach, all of these things can be taken into consideration to ensure that the best overall value is achieved.
- 3.32** Tenders are evaluated against pre-set criteria with weightings applied to different elements to gain the right balance between price, technical capability and service level.

## Frequent tendering

- 3.33** Tendering is the most frequently used method of purchasing goods and services throughout WPD.
- 3.34** The tenders are conducted in accordance with the Utilities Contract Regulations 2006 where appropriate.
- 3.35** The duration of contracts is set to provide suppliers with a reasonable commitment allowing for better levels of service to be achieved (such as reduced lead times or prices) balanced with ensuring we can return to the market to ensure ongoing competition and take advantage of market developments..

## Ensuring competition in the market

- 3.36** In order to increase competition in the tendering process, we use the Achilles Utilities Vendor Database to source suppliers. In developing a vendor list, we consider a wide range of potential suppliers and include small and medium enterprise in the process to ensure that the competition is open to the wider market. This process can also identify innovative techniques and processes with added value.
- 3.37** In some cases it is prudent to use the 'Call for Competition' process to increase the number of potential suppliers. This process involves issuing an advertisement in the Official Journal of the European Union detailing the requirement. Interested parties (who subscribe to OJEU and receive notification of upcoming tenders issued by the UK utility sector) are then invited to express their interest, which in turn forms the 'Invitation to tender' list.

## Using multiple suppliers

- 3.38** When contracts are placed for strategic items, they are dual sourced wherever possible and where markets allow. This means that we do not get tied to single suppliers (and higher prices in the long term). It also encourages competition on price and ensures we receive their focus on performance, quality, reliability and customer support.

## Volume discounts

- 3.39** The large scale of the activities we carry out across the four licence areas means that in some cases we are purchasing high volumes of components. This means that we can take advantage of volume discounts. For example we have recently consolidated the types of jointing resin across all 4 WPD DNOs and have been able to achieve negotiated price reductions of some 32% compared to the previous contracts.

## Regulatory approval of procurement processes

- 3.40** Ofgem has given approval to the procurement processes that are to be used for the acquisition of devices and materials for the WPD FlexDGrid LCNF project. The processes for this innovation project are representative of the general procurement processes used in WPD. The WPD submission detailing the processes can be found in appendix A7 and the Ofgem response can be found in appendix A8.

## 4 Cost benchmarking

- 4.1 In addition to the Ofgem comparisons of performance WPD routinely uses internal benchmarking statistics to assess relative performance in terms of key inputs and outputs of each DNO licence area and underlying distribution area. Extensive Key Performance Information has been developed and is reviewed monthly by the management team. Where appropriate targets are set and performance management initiatives are pursued to achieve goals.
- 4.2 Each year WPD uses comparative RRP data to understand its relative efficiency to other DNO groups. This provides the stimulus to scrutinise areas of perceived inefficiency and to look for innovative ways of improving efficiency.
- 4.3 Further benchmarking work has been performed for RIIO-ED1. The purpose was to confirm our understanding of WPD business efficiency and ensure that the costs we are requesting are set at a business efficient rate.
- 4.4 The following chapters summarise the benchmarking work performed and the implications of the findings.

### *Benchmarking methods and results*

- 4.5 For the purposes of regulatory assessment, benchmarking is a process of comparison under which the costs incurred by companies are analysed and compared in order to determine what the right amount of cost to be incurred by each business should be.
- 4.6 As set out in Ofgem's 'Strategy decisions for the RIIO-ED1 electricity distribution price control - Tools for cost assessment', Ofgem will use a number of methods to assess each company's cost submissions in their business plans.
- 4.7 The first of the two principal methods is a 'bottom-up' or disaggregated approach. This approach subdivides the business into a number of activities and then compares the cost of each activity by how much work is involved. For example, if 1,000 poles need to be inspected and each pole should cost £10 to inspect then the total cost of inspection should be £10,000. The sum of the predicted costs for all activities is then the total cost allowance for the company.
- 4.8 The second principal method is the 'top-down' or 'totex' approach. This method takes each company's costs in total and then uses regression and other statistical techniques to determine a comparable efficiency level for each company. This method is described more fully in Frontier Economics' paper attached as Appendix A3.
- 4.9 A top-down approach uses well known statistical techniques and does not require a view to be taken about what an activity should cost, nor does it require a view to be taken about the volume of work that is to be done. However, crucially, the top-down approach cannot distinguish between a company that spends less because it is efficient and a company that spends less because it has just not done the work that the cost allowances were supposed to cover. Further, given the data available, the statistical techniques used cannot distinguish between costs that vary between companies because of the scale of task driven by the network and costs that vary between companies because of differences in efficiency.
- 4.10 As set out below, WPD has either used consultants to compare costs across DNOs or across businesses generally, or we have used the bottom-up method to compare costs using shared RRP data.
- 4.11 We have not relied on top-down benchmarking as we have had detailed analysis undertaken which leads us to conclude that it is unreliable.

- 4.12** Prof Stan Zachary and Dr. Richard Gibbens have advised that the top-down model developed for RIIO-ED1 is not fit for purpose because there are insufficient data points to enable statistical methods to be of any use. A copy of their report is at Appendix A1. Their conclusion states in relation to the totex approach proposed by Frontier Economics that:

*“We are of the opinion that, for all the reasons outlined above, an econometric approach to DNO benchmarking is so unreliable as to produce efficiency scores which might almost as well have been randomly generated. We therefore believe that the nature of the problem, and of the available data, is such that the proposed approach is simply not feasible for this purpose.”*

- 4.13** Deloitte LLP also reviewed the Frontier Economics model and have also concluded that the model does not produce reliable results. A copy of their report is at Appendix A2
- 4.14** In short, there is insufficient data to use statistical techniques to produce reliable conclusions based on totex and if such statistical techniques based on totex are used, the conclusions reached are unreliable.
- 4.15** WPD developed a cost assessment model that analyses costs at a disaggregated level. This model has since been adopted by Ofgem for use in RIIO-ED1. The model uses Regulatory Reporting Pack (RRP) data as the basis for benchmarking. The model has been shared with all DNOs and discussions undertaken with them during the course of its development. One of the main benefits of the model is that it provides a mechanism to analyse and compare unit costs.
- 4.16** WPD has taken a proportionate approach to benchmarking to ensure both that the most significant areas are benchmarked or tested and that a significant proportion of total costs have been examined to test their efficiency.
- 4.17** In particular, the conclusions of the disaggregated model in relation to network investment and maintenance have been confirmed by PB (who reviewed unit costs – Appendix A4).
- 4.18** Deloitte LLP also benchmarked non-operational IT and telecoms costs (Appendix A5).

## 5 WPD disaggregated unit cost model

- 5.1** The disaggregated unit cost model enables unit cost benchmarking at the most detailed level of information contained within the annual Regulatory Reporting Pack (RRP) and covers all totex.
- 5.2** The inputs to the model are the detailed costs and volumes in the RRP for each DNO.
- 5.3** The model then calculates the actual unit costs for each activity for each DNO and also the average unit cost for each activity across all DNOs.
- 5.4** By using the average unit costs multiplied by actual volumes of work in each DNO the model then computes the “predicted cost” for each activity – i.e. what that DNO’s costs for each activity would have been had their unit costs been the industry average .
- 5.5** The model then determines a value of efficiency by comparing actual costs to predicted costs. This is expressed as a percentage so that to the extent that a DNO’s costs are greater than 100% of the predicted costs they are inefficient, and to the extent that a DNO’s costs are less than 100% of the predicted costs that DNO is efficient.
- 5.6** Inputs to the model also include an assumption on a level of fixed costs for each activity and the choice of an appropriate cost driver:
- fixed costs do not change with the scale of an activity nor the size of a DNO. For example, network policy is an activity with fixed costs, because engineering policies are required regardless of the size of the DNO. However, the range of policies may vary by DNO so that costs are not totally fixed for the whole activity;
  - the acquisitions of South Wales Electricity in 2000 and Central Networks in 2011 has enabled WPD to have a good understanding of how costs vary with scale. WPD’s view is that fixed costs amount in total to around £16m for a DNO Group.
  - variable costs change in proportion to the increase in volume of an activity for example fault costs vary in line with the number of fault incidents;
  - for each activity there will be a variable cost per unit of activity and also a fixed cost that will not vary with the level of activity;
  - the cost driver is the unit of activity, the measure of the volume of activity with which the costs change in proportion e.g. for pole inspection the cost driver is the number of poles on the network or volume of spans cleared in the activity of tree cutting.
- 5.7** WPD’s view on the cost driver for each activity is contained in WPD’s disaggregated unit cost model which can be viewed in Appendix A6.
- 5.8** The different business structures and operational choices made by the different companies can mean that the relative efficiency for certain activities are not directly comparable. For example the choice to replace PCs every four years in WPD may increase the apparent costs of PC provision over RIIO-ED1 but significantly reduces the maintenance and other operating costs e.g. it negates the need for a help desk function. These trade-offs between activities result in some activities appearing very efficient at the expense of other activities appearing less so. The existence of these trade-offs means that the efficiency frontier is not simply the sum of the most efficient unit costs from each DNO. The model avoids such ‘cherry-picking’ by using the total of the actual and predicted costs for all activities to derive an overall efficiency for each DNO.
- 5.9** The disaggregated model is the best available approach to determining efficiency because:

- all DNOs essentially “do the same thing” which is to install, maintain and repair assets. This means that a comparison at a detailed level provides a meaningful result. The networks were built to similar standards and differences in costs will therefore be driven by how a DNO chooses to organise and manage their operations;
- there is no requirement for regional adjustments. Volumes of work drive costs - labour costs, contractor and asset costs do not vary nationally (other than inside the M25);
- there is no need to make adjustments for customer density or sparsity because the volume of work drives the cost, and network characteristics will have already been taken into account in the volume of work. For example, a DNO with a higher proportion of overhead lines will have a higher number of poles to inspect and the cost driver for pole inspection is the number of poles on the network;
- The cost drivers have a direct causal relationship with the cost incurred. For example, the cost of faults will be driven by the number of fault incidents.

**5.10** Analysing data at a detailed level can raise concerns about the treatment of trade-offs between activities and unexpected spurious results. However any spurious results are usually down to inaccurate completion of the RRP and the existence of trade-offs does not diminish the usefulness of the model, because the model assesses efficiency at the total cost level and therefore the impact of trade-offs is accounted for. In fact the model provides an assessment of the effectiveness of different trade-off decisions taken by DNOs.

## *Results from disaggregated benchmarking model*

**5.11** The latest year for which WPD has data for all DNOs is 2011/12.

**5.12** In undertaking this analysis it must be recognised that 2011/12 is not a representative year for assessing WPD efficiency in the WPD West Midlands and WPD East Midlands DNOs because this was the year during which these DNOs were completely reorganised following the acquisition by WPD of Central Networks (CN) on 4 April 2011.

**5.13** During the remainder of 2011 the two Midlands DNOs were fully integrated into WPD’s organisational structure. Changes to working methods resulted in many process modifications, the acquisition of additional depots and the reorganisation of the company structures.

**5.14** The re-organisation led to around 800 direct staff redundancies and approximately 800 further redundancies from Alliance and other Central Networks supply partners. All of these changes were achieved by December 2011.

**5.15** 2012/13 will therefore be the first representative year for comparing WPD’s four DNOs with all other DNOs (when this data is available).

**5.16** The results for the 2010/11 and 2011/12 provide the following comparable efficiencies;

DNO Group	Rank	Efficiency %
Scottish & Southern Energy (SSE)	1	90%
WPD South West and South Wales	2	92%
Northern Powergrids (NPG)	3	93%
Electricity North West (ENWL)	4	100%
Scottish Power and Manweb	=5	103%
WPD (CN) – West Midlands and East Midlands	=5	103%
UK Power Networks (UKPN)	7	110%

- 5.17** In order to ensure that the costs included within this Business Plan are efficient we have used the available data for other companies for 2011/12 but have replaced the data for WPD West and East Midlands with the unit cost forecasts for RIIO-ED1.
- 5.18** This enables us to forecast the new relative efficiency where we have made significant improvements in West and East Midlands following the efficiency improvements that have been implemented following acquisition.
- 5.19** We have then rerun the comparison (having first restated the 2015/16 cost data in 2011/12 terms to ensure comparability). The result in rankings are therefore predicted to be:

DNO Group	Rank	Totex Efficiency %
WPD (four DNOs)	1	88%
Scottish and Southern Energy (SSE)	2	92%
Northern Power Grid	3	96%
Electricity North West (ENWL)	4	102%
Scottish Power	5	106%
UK Power Networks (UKPN)	6	113%

- 5.20** The results show that the increased efficiency of the former CN companies has lowered the industry average unit costs, but that despite this lowering, the WPD group is the most efficient in the sector.
- 5.21** As discussed below, WPD's network costs and IT costs have also been independently benchmarked by Parsons Brinckerhof and Deloitte LLP.
- 5.22** Therefore, not only have all of our costs been benchmarked by the disaggregated model, but 63% of direct network expenditure (asset replacement 37%, troublecall 16%, I&M 4% and tree cutting 6%) and 100% of non-operational IT has been independently benchmarked.

## 6 Unit Cost Review by Parsons Brinckerhoff (PB)

6.1 PB were engaged to provide WPD with an expert view on the efficiency of the unit costs we have used in building up our proposed expenditure forecast for the RIIO ED1 period.

6.2 Their full report is included at Appendix A4.

6.3 In conclusion PB stated:

*“Following our analysis we conclude that the unit costs proposed by WPD for the RIIO ED1 submission for these activities are efficient”.*

6.4 The PB review of unit costs was in respect of Asset Replacement costs, Inspection and Maintenance (I&M) costs (including Tree Cutting) and Trouble Call unit cost.

6.5 The costs across the four WPD DNOs were analysed to understand how they were built up and to identify differences. Where differences existed they were investigated to seek a rationale for them.

6.6 The costs used within the RIIO-ED1 forecasting calculations were verified by comparing them to the costs used for planning the work content and materials requirement for specific work categories on the WPD asset work management system, known as CROWN

6.7 CROWN holds data with respect to both raw material and labour input costs and also the standard work elements that are combined to create the specific activity types undertaken.

6.8 PB confirmed that CROWN contained up to date cost information and was being used appropriately to derive forward cost projections for RIIO-ED1.

6.9 In addition PB confirmed that the material supply contracts were established following an efficient market tested approach for seeking competitive quotations and post tender negotiation techniques in line with best practice.

6.10 They also confirmed that these material inputs had been correctly used to develop the forecast unit costs inferring a market-based efficient cost price base.

6.11 PB also reviewed two years of historical unit costs data using data submitted to Ofgem by all DNOs. This allowed them to benchmark the WPD DNOs against other DNOs and establish relative efficiency percentages.

## Asset Replacement

- 6.12 PB took a sample of the 25 asset categories with the highest forecast expenditure over the RIIO-ED1 period to test their efficiency across the four WPD DNOs. This represents some 40% of the asset replacement expenditure by cost.
- 6.13 PB's main conclusion for asset replacement costs was that WPD unit costs have historically been low when compared to other DNOs. This is especially the case for the South Wales and South West DNOs.
- 6.14 The application of the same working practices and organisational structure in the West Midlands and East Midlands licence areas will bring downward pressure on unit costs.
- 6.15 The analysis of DNO specific unit costs on a weighted cost basis demonstrates that WPD are ranked first in South Wales and second in the South West.
- 6.16 The forward cost forecasts remove the historic inefficiency in the West Midlands and East Midlands following the successful adoption of the common WPD structures, practices and operating procedures achieved in 2011.
- 6.17 PB report that unit cost forecasts for RIIO-ED1 across all four of the WPD DNOs are in line with the low historical costs of WPD South Wales and WPD South West and are efficient.
- 6.18 PB concluded that:

*“Our analysis has concluded that historically Asset Replacement unit costs have been low when benchmarked against other DNOs. This is especially the case for South West and South Wales. Since these unit costs have been demonstrated to have been deliverable we have no reason to believe that the company will not be able to deliver similar efficiencies going forward based on the present company-wide procurement principles and working practices.”*

## *Inspection and Maintenance (I&M)*

- 6.19** Of the 75 Ofgem categories, PB ranked the top 25 according to the RIIO ED1 total forecast I&M spend with PB's analysis focused on these 25.
- 6.20** These 25 activities account for nearly 90% of the total I&M spend.
- 6.21** PB investigated differences between the four WPD DNOs and the efficiency of the unit costs when compared against the normalised values for other DNOs.
- 6.22** Where forecast unit costs were found to be less efficient, this was discussed with WPD and if appropriate the forecast unit costs were revised to lower values.
- 6.23** PB concluded that:

*“WPD has given significant thought and attention to forecasting I&M unit costs. The most appropriate cost driver has been selected, major issues investigated and resolved and the efficiency of individual items has been assessed.*

*The efficiency of WPD's unit costs is improving and each of WPD's four businesses will move towards a more consistent overall cost.*

*WPD have estimated that the impact of adopting the revised forecast unit costs will improve relative efficiency to below benchmark.*

*Following these revisions, PB considers WPD's forecast unit costs for I&M in RIIO-ED1 overall to be efficient.”*

## Tree Clearance

- 6.24 Tree Cutting is a subsection of I&M examined by PB.
- 6.25 In order to understand WPD's unit costs, PB spent time in WPD's offices and spoke to key people within the business. PB worked through WPD's spreadsheets and calculations and discussed with WPD any issues or anomalies.
- 6.26 Our forecast unit costs are taken directly from the three-year average of costs for 2009/10 to 2011/12, inflated to 2011/2012 prices. One forecast unit cost is produced for the four DNOs.
- 6.27 For spans inspected at all voltage levels, contracts are in place, and so the forecast unit cost is based on these contracts.
- 6.28 PB concluded that:

*“Due to the differences in how costs are divided by different DNOs, it is difficult to compare WPD's performance against other DNOs item by item.*

*Tree cutting contracts are awarded following competitive tendering processes in line with WPD Procurement practices.*

*Tree cutting activities are subject to continuous field audit with actions taken as appropriate to ensure consistency of delivery against contract specifications.*

*Overall, we have seen no evidence that WPD's unit costs are not efficient.”*

## Trouble Call Costs

- 6.29** Trouble Call is the term applied to the activity for the resolution of faults, which cause interruptions to customer supplies.
- 6.30** There are 50 Trouble Call items identified by Ofgem for RIIO-ED1 reporting split across three different types of incident:
- non-damage incidents (Items 1-4): Supplies to customers are interrupted but no failed asset has been identified and it is possible to restore supplies without undertaking any repair;
  - damage incidents requiring minimum repair (Items 5-27): Supplies to customers are interrupted and it is necessary to undertake repairs in order to restore supplies. The repair work is classified as the minimum required to returning the asset affected back to service.
  - damage incidents that require more extensive repair (Items 28-50): Supplies to customers are interrupted and it is necessary to undertake initial repairs in order to restore supplies, but the full repair work is extensive and classified as capital asset replacement in accordance with Ofgem's reporting rules. The costs included in these types of incident relate to the costs associated with initial repairs, supply restoration and making the network safe. The cost of the capital asset replacement (the full repair work) was not included.
- 6.31** Of the 50 Ofgem item categories, PB ranked the top 10 according to the average total volumes across the four WPD DNOs between 2009/10 and 2011/12 multiplied by the RIIO-ED1 forecast unit cost.
- 6.32** PB's analysis focused on these 10 which accounts for 94% of the total forecast Trouble Call cost.
- 6.33** PB worked through WPD's spreadsheets and calculations, and discussed with WPD any issues or anomalies. Where appropriate, WPD revised their forecast unit costs.
- 6.34** PB concluded that:

*“overall efficiency is good at South West (4<sup>th</sup>), East Midlands (6<sup>th</sup>) and South Wales (7<sup>th</sup>), although West Midlands is 12<sup>th</sup>. However, West Midlands was affected by a large third-party cable claim and also a number of abnormally costly faults.*

*PB's analysis highlighted four items of concern which WPD looked at.*

*For three of these, the forecast unit cost was lowered to be consistent with the GB DNO average, and for one it was found that a problem with the Cost Assessment model was affecting the figures.*

*Overall, PB believes WPD's forecast unit costs to be efficient.”*

## 7 IT Costs Review

- 7.1 WPD engaged Deloitte LLP to provide an independent expert view on the efficiency of WPD IT costs specifically analysing non-operational IT costs.
- 7.2 WPD's IT department has the aim to deliver a 'no frills', highly resilient and available IT function based on a lean structure, without reliance on contractors or outsourcing. The WPD IT department works closely with the core business to deliver IT systems that directly contribute to WPD's business performance.
- 7.3 Deloitte LLP undertook two approaches to benchmarking: first, a bottom up approach benchmarking the costs of WPD's key IT services after the Central Networks integration against wider industry peer groups including leading IT benchmarking datasets and secondly, a top down comparison of costs across all DNOs for the period between 2007/8 and 2012/13.

### IT Benchmarking

- 7.4 Deloitte LLP's bottom-up benchmarking assessed the efficiency of non-operational IT and telecoms on a 'business as usual' basis that had been used to calculate the non-operational IT and telecoms costs for the period 2015 to 2023, as stated in the Business Plan.
- 7.5 Deloitte LLP compared the costs against a worldwide dataset of companies with comparably sized IT functions using key performance indicators (KPIs) including midrange computing data centre and hosting costs, midrange computing staffing costs, mainframe data centre and hosting costs, end user computing costs, data network costs, mobile network costs as well as application development and application maintenance staff costs.
- 7.6 The detailed cost data for *bottom-up* benchmarking was not available for the non-WPD DNOs. Therefore, notwithstanding the caution with which top-down benchmarking results should be treated, Deloitte LLP used top-down benchmarking to rank WPD's efficiency relative to other DNOs in order to provide as full a picture as possible of our relative efficiency.
- 7.7 The top down benchmarking of costs considered three different scale variables as cost drivers:
- number of full time employees;
  - circuit length;
  - number of customers.
- 7.8 The results of the benchmarking, which are consistent across three different specifications of cost modeling, show that in 2009/10 South Wales and South West are at or near the top quartile of efficiency across the DNOs.
- 7.9 The datasets for East Midlands and West Midlands pre-date the acquisition and show that costs in these DNOs were 30% higher than in South Wales and the South West. Following the integration of all four of the WPD DNO IT systems the WPD group cost has reduced by 35% in 2012/13. On the assumption that IT costs remain level for other DNO groups, WPD would rank 1<sup>st</sup> in 2012/13.
- 7.10 In their report (appendix A5) Deloitte LLP concluded that:

*"WPD's South West and South Wales IT activities were efficient relative to other DNOs in 2009/10. Acquiring two less efficient DNOs could have led to weaker productivity. Instead, the bottom-up benchmarking for the post-merger organisation shows that productivity improved further compared to 2 DNO WPD group in 2009/10. Most importantly the increase in IT costs for WPD from its efficient cost base of £12.6m when it was South Wales and South West, to the larger group comprising two more DNOs in 2011/12 of £25.2m, is no more than would be expected given the availability of economies of scale. Thus while the scale of the WPD business increased by 158% (as measured by circuit length), total non-operational IT*

*costs increased by only 100%. In this way, the overall WPD efficiency improvement across the four DNOs exceeds the strength of economies of scale indicated by the top down results.”*

**7.11** In conclusion, WPD’s forecasted costs for non-operational IT and telecoms are efficient.

## 8 Summary

**8.1** WPD is an efficient business.

**8.2** Our processes are efficient - from the way we procure materials and services to the local team structure that plans and delivers the work. The structure of the business, our emphasis on personal responsibility and the fact that we delegate responsibility as far down the organisation as is sensible reduces the number of ‘handoffs’.

**8.3** The majority of work is carried out by our own staff, which means that we are not paying for the management fees and profit margins of contractors. Our view of efficiency is complemented by the assessment and benchmarking by independent organisations.

## 9 Appendices

### ***Appendix A1 – Report from Professor Stan Zachary and Dr Richard Gibbens***

- 9.1 Professor Stan Zachary and Dr Richard Gibbens have assessed the suitability of a ‘top down’ benchmarking approach proposed by Frontier Economics, stating that it is unreliable for benchmarking DNOs. Their full report can be found at <http://www.westernpower.co.uk/docs/About-us/Stakeholder-information/Our-future-business-plan/Supporting-Business-Efficiency-information/Gibbons-Zachary-commentary-on-Frontier-Economics-t.aspx>

### ***Appendix A2 – Deloitte LLP review of Frontier Economics model***

- 9.2 Deloitte LLP have reviewed the Frontier Economics ‘top down’ benchmarking model and have concluded that the model does not produce reliable results. A copy of their report can be found at <http://www.westernpower.co.uk/docs/About-us/Stakeholder-information/Our-future-business-plan/Supporting-Business-Efficiency-information/Deloitte-review-of-Frontier-Economics-Totex-Model.aspx>

### ***Appendix A3 – Totex ‘top down’ benchmarking model***

- 9.3 Frontier economics were commissioned by Ofgem to develop a methodology for the benchmarking costs. Volume 1 of their report can be found at <http://www.westernpower.co.uk/docs/About-us/Stakeholder-information/Our-future-business-plan/Supporting-Business-Efficiency-information/Frontier-Economics-Total-cost-benchmarking-at-RIIO.aspx>
- 9.4 Volume 2 can be found at [http://www.westernpower.co.uk/docs/About-us/Stakeholder-information/Our-future-business-plan/Supporting-Business-Efficiency-information/Frontier-Economics-Total-cost-benchmarking-at-\(1\).aspx](http://www.westernpower.co.uk/docs/About-us/Stakeholder-information/Our-future-business-plan/Supporting-Business-Efficiency-information/Frontier-Economics-Total-cost-benchmarking-at-(1).aspx)

### ***Appendix A4 – Parsons Brinckerhoff review of WPD unit costs***

- 9.5 WPD commissioned Parsons Brinckerhoff to carry out a review of unit costs across the industry for a range of activities including asset replacement, inspection and maintenance, tree clearance and faults. Their report can be found at <http://www.westernpower.co.uk/docs/About-us/Stakeholder-information/Our-future-business-plan/Supporting-Business-Efficiency-information/Parsons-Brinckerhoff-review-of-WPD-unit-costs.aspx>

### ***Appendix A5 – Deloitte LLP review of WPD’s IT costs***

- 9.6 Deloitte LLP were commissioned by WPD to benchmark non-operational IT and telecoms costs across the industry. They carried this out using both bottom up and top down approaches. The bottom up report can be found at <http://www.westernpower.co.uk/docs/About-us/Stakeholder-information/Our-future-business-plan/Supporting-Business-Efficiency-information/Deloitte-LLP-review-of-efficiency-of-WPD-IT-functi.aspx>
- 9.7 The top down report can be found at [http://www.westernpower.co.uk/docs/About-us/Stakeholder-information/Our-future-business-plan/Supporting-Business-Efficiency-information/Deloitte-LLP-review-of-efficiency-of-WPD-IT-fu-\(1\).aspx](http://www.westernpower.co.uk/docs/About-us/Stakeholder-information/Our-future-business-plan/Supporting-Business-Efficiency-information/Deloitte-LLP-review-of-efficiency-of-WPD-IT-fu-(1).aspx)

## ***Appendix A6 – WPD’s disaggregated cost model***

- 9.8 WPD’s disaggregated cost model contains comparative data and also identifies the cost driver for each activity. The model is in two parts; the first normalises each activity and can be found at <http://www.westernpower.co.uk/docs/About-us/Stakeholder-information/Our-future-business-plan/Supporting-Business-Efficiency-information/WPD-disaggregated-cost-driver-normalisation-model.aspx>
- 9.9 The second part uses the normalized data to carry out the comparative benchmarking and can be found at <http://www.westernpower.co.uk/docs/About-us/Stakeholder-information/Our-future-business-plan/Supporting-Business-Efficiency-information/WPD-disaggregated-cost-driver-analysis-model.aspx>

## ***Appendix A7 – WPD’s innovation procurement process***

- 9.10 This document aims to provide an overview of WPD’s Innovation Procurement Process, detailing the legal obligations and requirements to appropriately procure goods and services for Low Carbon Networks Fund projects. It is specifically for the procurement of fault level mitigation technologies for the FlexDGrid project, but it is representative of the general procurement processes that are adopted in WPD. The full report can be found at <http://www.westernpower.co.uk/docs/About-us/Stakeholder-information/Our-future-business-plan/Supporting-Business-Efficiency-information/WPD-Innovation-Procurement-Processes-Report.aspx>

## ***Appendix A8 – Ofgem’s approval of WPD’s fault level technologies procurement report***

- 9.11 Ofgem gave approval for WPD’s Innovation Procurement Process. The full response can be found at <http://www.westernpower.co.uk/docs/About-us/Stakeholder-information/Our-future-business-plan/Supporting-Business-Efficiency-information/Ofgem-approval-of-WPD-FlexDGrid-procurement.aspx>