SPEN Response to Ofgem RIIO-ED1 Draft Determination for Slow-track electricity distribution companies

Annex 1: Response to Business plan expenditure assessment

Version – 26th September 2014

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We welcome the opportunity to comment on Ofgem's consultation for RIIO ED1 – Business Plan Expenditure assessment – for the Slow Track Draft Determination published on 30th July 2014.

1. STRUCTURE OF SPEN'S RESPONSE

1.1 Our response to the Ofgem Consultation: RIIO-ED1: DRAFT DETERMINATION FOR THE SLOW TRACK COMPANIES – OVERVIEW, contains an Executive Summary of the main concerns that are most critical to SPD and SPM (collectively SPEN) arising from all of the elements of Ofgem's consultation.

1.2 The purpose of this document is to focus specifically on the issues arising from the questions raised in the RIIO ED1 – Business Plan Expenditure Assessment Consultation.

1.3 We have sought to deal with these topics broadly in the same order as the questions raised in the Consultation. Where possible we have referred to the questions in the Consultation in the section headings (by cross referencing with the chapter number and question number).

1.4 A full table of contents follows this section.

1.5 SPEN's detailed responses to Ofgem's current RIIO-ED1 consultations are provided as annexes to our response to Ofgem's Consultation: RIIO-ED1: DRAFT DETERMINATION FOR THE SLOW TRACK COMPANIES – OVERVIEW as follows:

1.5.1 **Annex 1**. Response to "RIIO-ED1: Draft determinations for the slow-track electricity distribution companies – Business Plan expenditure assessment" (the "Expenditure Assessment").

1.5.2 **Annex 2**. Response to "RIIO-ED1: Draft determinations for the slow-track electricity distribution companies – Financial Issues" (the "Financial Assessment").

1.5.3 **Annex 3**. Response to "Assessment of the resubmitted RIIO-ED1 innovation strategies" (the "Innovation Assessment").

1.5.4 **Annex 4**. Response to "Consultation on the treatment of real price effects for RIIO-ED1 slow-track electricity distribution network operators" (the "RPE Consultation").

In this document we cross refer to various documents. The table of contents on page 4 lists such documents and where these documents have not already been provided to Ofgem they are provided as further appendices to this document.

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2.1

RESPONSE TO CHAPTER FOUR – NORMALISATIONS AND OTHER ADJUSTMENTS

3. Chapter 4: Question 1: Do you agree with our approach to regional labour cost adjustments?

3.1 We have logged with Ofgem our concerns that the approach adopted to Regional Wage Adjustments (made in both the totex and disaggregated models) is arbitrary, and is discriminatory against Scottish companies.

3.2 In the last 10 years, SPD and SHEPD have faced increasing challenges in retaining and recruiting specialist staff who also have opportunities within the oil and gas industry and within the rapidly growing Scottish renewables sector. Proximity to Edinburgh and Aberdeen pushes up the cost of skilled labour in SPD's region.

3.3 The Office of National Statistics (ONS) data used to demonstrate the need for an adjustment to DNOs in the South East of GB, and to calibrate that adjustment, also clearly demonstrates that a similar adjustment is merited for Scottish companies based on the evidence of the last 10 years of ONS data.

3.4 For its cost assessment, Ofgem has used the "3 region" adjustment, so has only allowed for wages to vary from the rest of the country in London and the South East. Given that Ofgem accepts the principle of regional variation in wages, and it has reliable data from which to calculate regional wage variation, it is arbitrary and discriminatory not to apply similar adjustments to other DNOs. We note that the difference between the two regional labour indices is particularly important for the SPD network area, where the adjustment changes sign depending on whether the 3-Region or 11- Region index is used as shown below in table 1.

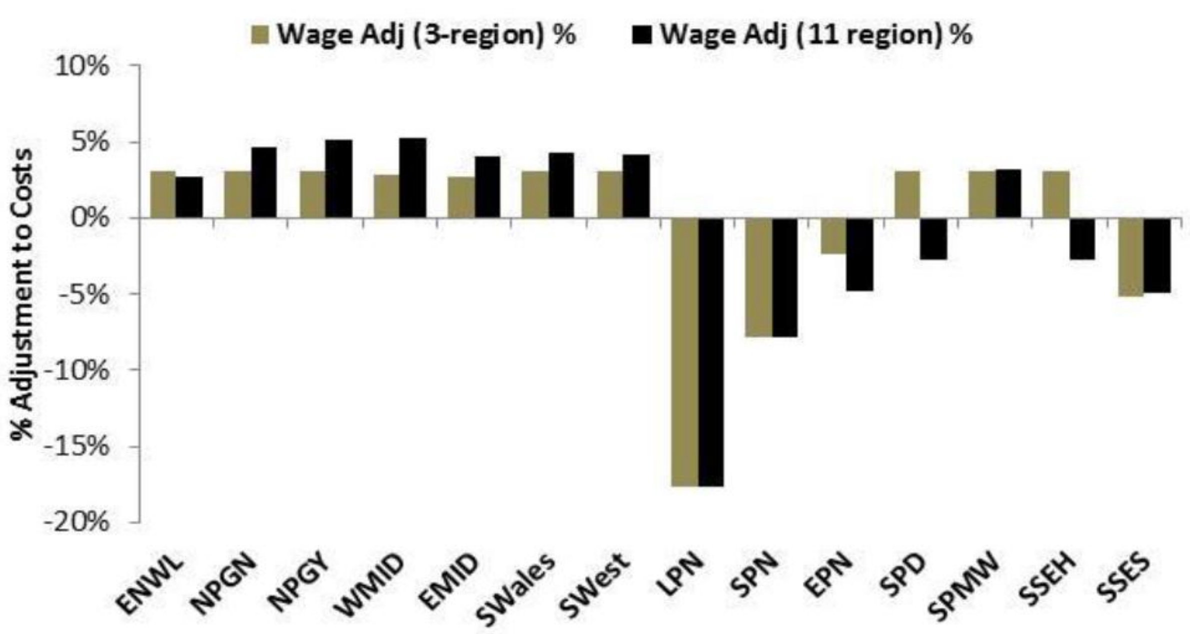
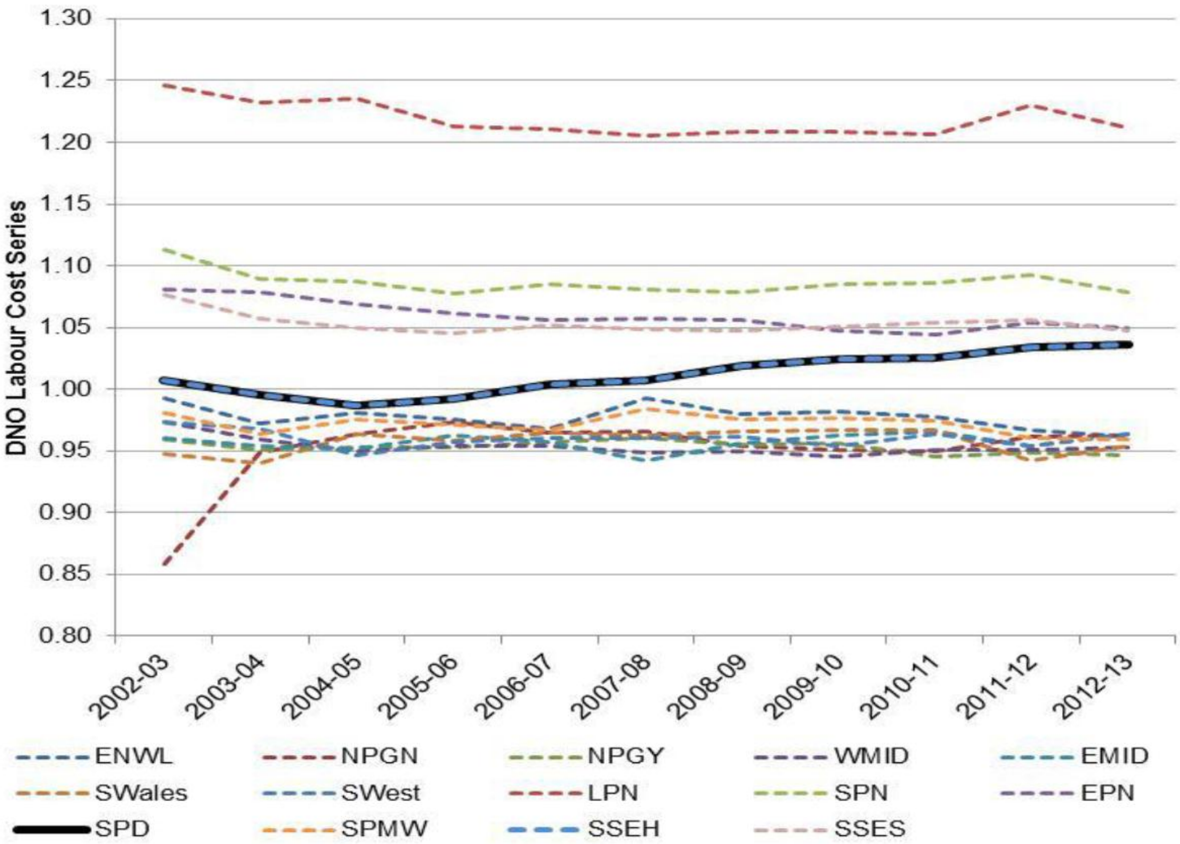


Table 1 - 3-Region versus 11-Region Labour Cost Adjustments
Source: NERA analysis

3.5 NERA applied the methodology Ofgem used to estimate the 11-region wage adjustment index[1], i.e. using the same ONS data and the same industry mapping, see table 2 below. Over the period since 2002[2] there is clear evidence that wages in London and the South East have been consistently higher than those in the rest of the country. However, the figure also shows that wages in Scotland (i.e. in the SPD and SSEH network areas) have been consistently higher than wages in the rest of the country outside of the South East. In fact, over time, the gap between Scottish wages and those of other DNOs outside the South East has grown.

3.6 In contrast to Ofgem's claim, there is clear evidence to support regional wage adjustments for the Scottish DNOs, as well as for the London and South East DNOs. The premium between Scottish wages and those in the rest of the country outside the South East has been consistently positive, and is growing over time. Hence, Ofgem's assertion that "t*he information for other areas is relatively volatile*" does not seem to be justified on the grounds of variation in data over time.



Source: NERA analysis using 2nd level SOC codes and ONS Annual Survey of Hours and Earnings (ASHE) data

Table 2 - DNO Regional Labour Cost Indices Using 2nd Level Standard Occupational Classification Codes

[1] Regional Wage Differential (2014) – NERA – Appendix 4
[2] NERA were unable to go back further than 2002, as the industry classifications changed.

3.7 In conclusion, there is no apparent basis for Ofgem's decision to award labour cost adjustments to only those DNOs in the South East of England. This decision appears arbitrary and discriminatory. Moreover, NERA's analysis demonstrates there is a material wage premium for the Scottish companies, which is visible from examination of wage data using 2nd, 3rd and 4th level Standard Occupational Classification (SOC) codes. The data also indicate that the Scottish wage premium is growing over time.

3.8 In response to an issue logged by SPEN with Ofgem, Ofgem have stated that they believe that labour mobility prevents the existence of wage differentials.

3.9 However our expert economic consultant (NERA) have identified a number of issues with this statement as set out below:

3.9.1 To our knowledge, this is the first time Ofgem has used this labour-mobility argument to defend the "3 region" approach and it does not provide any evidence to support it. Actually, there is strong evidence to suggest that labour is not as mobile as Ofgem believes. The OECD (2005) states that the labour markets of European countries react very slowly to regional disparities in unemployment in terms of inter-regional migration. European workers "*tend to leave the labour force in response to a decline in labour demand in their region rather than migrate to another region*."[3] Specific to the UK, Elliott and Lindley (2006) note that "*the reluctance of British workers to migrate geographically in response to changes in demand is generally well documented*."[4] Lindley et al. (2002) conclude that:

(i) "[British] labour (even highly skilled labour) is relatively immobile between regions. For whatever reason, the costs of relocation are clearly high even when regions are hit with negative demand shocks. This result is of course well known, as illustrated by the continued discussion of regional disparities in unemployment and wages."

(ii) They also find that UK migration rates are "*low in comparison with other OECD economies*."[5]

3.9.2 There is compelling evidence demonstrating that there *are* regional wage differentials beyond London and the South East. NERA have also shown that wages in Scotland have been consistently higher than in the rest of the UK (excluding London and the South East), and that that differential is growing. Ofgem's claim that these wage differentials cannot exist in theory is simply not supported by this evidence.

[3] OECD (2005), "OECD Employment Outlook – Chapter 2", p92
[4] Elliott, R and Lindley, J (2006), "Skill Specificity and Labour Mobility: Occupational and Sectoral Dimensions", The Manchester School, Vol 74, No 3 (June), p390
[5] Lindley, J, Upward, R and Wright, P (2006), "Regional mobility and unemployment transitions in the UK and Spain", Leverhulme Centre for Research on Globalisation and Economic Policy, University of Nottingham, p28-29

3.9.3 Ofgem already acknowledges that some regional wage differential exists outside of London by categorising the rest of the South East separately in this regard. It has not provided evidence as to why the British labour market should be less mobile in London and the South East than elsewhere.

3.9.4 There are numerous reasons for regional wage differentials. Even if there were perfect labour mobility, regional wage differentials would likely still exist. For example, with perfect labour mobility, we would still expect wages to be higher where cost-of-living is higher as well as where there are few amenities. It is unreasonable to assume that the whole of Scotland, Wales and most of England are identical in either of these regards.

3.10 The detrimental financial impact on SPD is £27m[6], but a normalisation would have to be applied to SPM of (-£1m).[7]

3.11 Ofgem's decisions must not be based, wholly or partly, on errors of fact. Ofgem's proposed decision is based on errors of fact about the labour market in SPD's area. Ofgem must take into account all relevant considerations in this respect before finalising its decision. Ofgem has suggested that there is not sufficient evidence to support applying a differential for each region of the UK, given the mobility of the labour market. SPD has supplied such evidence.

3.12 In any event comparison of SPD's position with that of SPN, EPN and SSES shows that SPD's labour costs have converged. Ofgem proposes to make an adjustment for the higher costs of such DNOs. SPD's costs have converged with such DNOs. A failure to make a similar adjustment for SPD would be discriminatory and unfair.

[6] On a pre-upper quartile and IQI adjustment basis
[7] On a pre-upper quartile and IQI adjustment basis

4. Chapter 4: Question 2: Do you agree with our approach to adjusting for company specific factors

4.1 We do not agree with the detailed assessment of efficiency of company specific factors for SP Manweb.

4.2 We have also identified further unintended reductions resulting from the approach taken to combining the cost assessment models.

4.3 Overall we welcome the additional recognition of our SP Manweb special case given the extensive material provided as part of the slow track process[8]. This document outlined the additional costs incurred due to the level of interconnection on the SP Manweb network.

4.4 The additional costs identified in this special case were similar in quantum to adjustments identified in previous price controls. This is the first price control where the incremental costs have been consolidated into a single published document.

We do not agree with the detailed efficiency assessment of the SP Manweb special case.

4.5 Ofgem's technical consultants (DNV – GL) have reviewed our ED1 special case and recommended a reduction of £18.9m from £127.8m to £108.9m. However in reviewing the detailed DNV-GL engineering assessment of our special case there are reductions which we do not agree with:-

4.5.1 **Reduction to Pilot Cable Costs** – DNV- GL state that typical radial networks would have pilot network assets of similar extent to that of SP Manweb. Despite two of the six DNO groups not providing pilot wire asset data it is clear that in comparison to the rest of the industry SP Manweb has a significantly higher volume of pilot wire assets due to our interconnected (meshed) network.

4.5.2 **Reduction to BT21CN Costs –** The DNV - GL assessment similarly makes reductions to our BT 21st Century adjustments based on the ratio of pilot wire. The BT21CN programme of works identified in RIIO ED1 is based on rented assets and should not be confused with owned pilot wire circuits. We have a complete list of these circuits which require alternative communication channels to be developed by 2018 when the existing analogue BT circuits are due to be switched off.

Unintended reductions resulting from Ofgem process of consolidating cost model outputs

4.6 In addition to the engineering adjustments to our SP Manweb special case, there are unintended reductions due to the Ofgem benchmarking process. These reductions result in the special factor reducing from £108.9m to £88.2m, a further reduction of £20.7m.:-

4.6.1 **Net/Gross Ratio –** In the application of both the disaggregated and totex models the outcome benchmark is multiplied by a derived net/gross ratio. This is a calculated value from each DNO's net to gross cost ratio. This

[8] Manweb company special factor – SPEN (2014) – Appendix 5

approach appears to have a side effect of reducing the company specific special case for SPMW. The Net/Gross ratio will primarily be influenced by activities with cost contributions. As the costs included in our SPMW special case is unaffected by customer contributions it seems clear that the special case should be multiplied by a unity net/gross ratio. In its current form, the benchmarking approach inappropriately reduces our SPMW special case.

4.6.2 **Additional Reductions through Benchmarking** – In addition to the Net/Gross ratio we have also engaged NERA Consulting to review the impact of post regression modelling adjustments on the SP Manweb special case[8]. Examples include applying an upper quartile adjustment to the SP Manweb special case and adjustments within the disaggregated model. The extent of the modelling process reduces the allowed special case by a further £13.7m.

5. Chapter 4: Question 3: Do you agree with the costs excluded from our totex assessment?

5.1 Ofgem must exclude ESQCR costs from the totex modelling as the plans of 3 individual licensees represent 75% of the entire industry expenditure in this area.

5.2 Ofgem have excluded a number of costs from the totex modelling. We agree with this approach to deal with costs that are unusual and for which a small number of DNOs bear the costs in question disproportionately.

5.3 The rationale provided in Ofgem's Draft Determination[9] for excluding costs from the totex modelling is shown below:-

Ofgem Draft Determination - Table 4.1: Exclusions from totex

Activity Area	Rationale for exclusion
Flood mitigation	Costs associated with flood mitigation are dependent on flood plains development outside of DNOs' control and can vary significantly between DNOs.
BT 21st century costs	Few DNOs have costs in this area during RIIO-ED1.
Losses and environmental	Each scheme is specific to the relevant DNO and the costs within this vary greatly between DNOs.
Critical national infrastructure (CNI)	The classification of sites as CNI is driven by the government and is outside DNOs' control.
Rising and lateral mains (RLMs)	This only affects a small number of DNOs.
Ex ante call out costs for smart meters	There is no equivalent level of costs in the DPCR5 historical data used for the regressions. RIIO-ED1 smart metering costs are subject to a volume driver.
TCP charges	There is a significant change in the treatment and level of these costs between DPCR5 and RIIO-ED1.
Operational and non-op capex IT&T	We place a 75 per cent on our qualitative analysis in our disaggregated model. We therefore consider it appropriate to exclude these costs from the totex regressions.

5.4 ESQCR – Low Ground Clearance is based on addressing pre-existing low overhead line clearances resulting from a change in Health and Safety legislation that was out with DNOs' control.

[9] RIIO ED1 Draft Determinations for the slow-track electricity distribution companies. Business plan expenditure assessment – Ofgem (2014)

5.5 We have surveyed our entire network for non-compliance and have a register of non compliances that must be addressed to meet our statutory obligations within timescales we have set out in consultation with the HSE.

5.6 SPEN's forecast ESQCR expenditure is deemed 100% efficient in the disaggregated model. However the totex modelling effectively penalises both SPD and SPMW for this activity which is necessary to meet our mandatory public safety obligations.

5.7 These costs, which are out with our control, are significantly higher than the rest of the UK DNOs (ca.55% of the industry expenditure, when we have ca.14% of the customer base).

5.8 As three DNOs represent more than 75% of the industry expenditure, it seems consistent to exclude ESQCR - Low Ground Clearance from the Totex modelling.

5.9 The industry costs are shown below in table 3 (company details removed).

DNOs ESQCR expenditure in RIIO ED1 - Prime costs (12/13 Price basis)

	RIIO-ED1									
	2016	2017	2018	2019	2020	2021	2022	2023	TOTAL	% of UK
	£m	£m	£m	£m	£m	£m	£m	£m	£m	Total
DNO A	3.37	-	-	-	-	-	-	-	3.4	2%
DNO B	-	-	-	-	-	-	-	-	-	0%
DNO C	-	-	-	-	-	-	-	-	-	0%
DNO D	-	-	-	-	-	-	-	-	-	0%
DNO E	-	-	-	-	-	-	-	-	-	0%
DNO F	-	-	-	-	-	-	-	-	-	0%
DNO G	5.26	5.20	5.14	-	-	-	-	-	15.6	8%
DNO H	-	-	-	-	-	-	-	-	-	0%
DNO I	3.53	3.43	3.33	3.23	3.14	3.05	2.97	2.89	25.6	13%
DNO J	6.08	5.92	5.75	5.60	5.44	5.29	5.15	5.01	44.2	22%
SPD	8.41	8.32	8.23	8.14	8.05	7.96	-	-	49.1	24%
SPMW	10.73	10.61	10.49	10.37	10.25	10.13	-	-	62.6	31%
DNO K	1.31	1.30	-	-	-	-	-	-	2.6	1%
DNO L	-	-	-	-	-	-	-	-	-	0%
Total									**203**	

Table 3 - RIIO ED1 DNO ESQCR expenditure

5.10 Ofgem have responded to an issue that we formally logged with them that states that concerns regarding potential overlap in other cost categories as a reason to include ESQCR in the Totex modelling.

5.11 We are not clear why other DNOs would report low ground clearance activity in a Business Plan Data Table (BPDT) other than the clearly marked ESQCR – Low Ground clearance table. However this appears to be readily identified in other DNO plans.

5.12 We believe that the Regulatory Instructions and Guidelines were clear and that all such costs should have been recorded as ESQCR costs. However, SPEN have separately sent Ofgem analysis that demonstrates that these other DNOs' ESQCR costs can be identified and also excluded from the analysis.

5.13 The impact of including these other DNOs' equivalent costs is that the plans of the 3 DNOs referenced above still represent 60% of the industry ESQCR expenditure.

5.14 An extract of the information we have provided Ofgem showing the impact of including these additional costs in the ESQCR category is shown below in table 4 (with company details removed).

5.15 This shows that with these corrections that 3 DNOs still have more than 60% of the industry costs in this area.

DNO ESQCR costs Updated with Legal & Safety table Low Ground Clearance activity - Prime costs (12/13 Price basis)

	RIIO-ED1									
	2016	2017	2018	2019	2020	2021	2022	2023	TOTAL	% of UK
	£m	£m	£m	£m	£m	£m	£m	£m	£m	Total
DNO A	3.37	-	-	-	-	-	-	-	3.4	1%
DNO B	1.40	-	-	-	-	-	-	-	1.4	1%
DNO C	2.75	-	-	-	-	-	-	-	2.8	1%
DNO D	1.92	1.90	1.88	1.86	1.84	1.82	1.80	1.78	14.8	6%
DNO E	1.56	1.54	1.53	1.51	1.49	1.48	1.46	1.44	12.0	5%
DNO F	1.28	1.27	1.25	1.24	1.22	1.21	1.20	1.18	9.8	4%
DNO G	7.80	7.72	7.63	2.46	2.43	2.40	2.38	2.35	35.2	13%
DNO H	-	-	-	-	-	-	-	-	-	0%
DNO I	3.53	3.43	3.33	3.23	3.14	3.05	2.97	2.89	25.6	10%
DNO J	6.08	5.92	5.75	5.60	5.44	5.29	5.15	5.01	44.2	17%
SPD	8.41	8.32	8.23	8.14	8.05	7.96	-	-	49.1	19%
SPMW	10.73	10.61	10.49	10.37	10.25	10.13	-	-	62.6	24%
DNO K	1.31	1.30	-	-	-	-	-	-	2.6	1%
DNO L	-	-	-	-	-	-	-	-	-	0%
Total									**263**	

Table 4 – Adjusted RIIO ED1 DNO ESQCR expenditure

5.16 The result is that SPD and SPM's totex is assessed on an inflated basis, and it is not compared on a basis which is consistent with the other DNOs. The consequence is that SPD and SPM are assessed as inefficient on an erroneous factual basis.

5.17 Accordingly Ofgem has failed to apply their own criteria in failing to disapply ESQCR spend. This is inconsistent.

5.18 SPEN believes that the evidence clearly supports this cost category being excluded from the totex analysis.

RESPONSE TO CHAPTER FIVE – TOTEX MODELLING

6. Chapter Five – SP EnergyNetworks response to totex modelling

6.1 We have identified a number of errors and issues with Ofgem's totex cost assessment, and have logged these and potential solutions through Ofgem's formal process for resolution.

6.2 The main issues fall into six categories:

- 6.2.1 Ofgem's general approach to cost assessment
- 6.2.2 Ofgem's over reliance on the outputs of statistical models
- 6.2.3 Asset classes excluded from the Modern Equivalent Asset Value cost driver
- 6.2.4 Costs that should be excluded from the totex modelling
- 6.2.5 Company specific adjustment for unique SP Manweb network design
- 6.2.6 Regional wage adjustments are needed for Scottish companies

6.3 Detail of these is set out in Section 7 of our response to the RIIO-ED1 Draft Determination for the slow-track companies – Overview.

RESPONSE TO CHAPTER SIX – LOAD RELATED EXPENDITURE

7. Chapter Six: Question One: – Do you agree with our approach to assessing primary reinforcement and n-1 primary reinforcement?

7.1 We have identified two issues in the benchmarking approach to primary reinforcement and n-1 primary reinforcement that impact on SP Distribution and SP Manweb:

7.1.1 Ofgem's analysis has not included substation group capacities

7.1.2 Ofgem's analysis has incorrectly used our fast track tables

Ofgem's analysis has not included substation group capacities

7.1.3 All SP Manweb substation groups as submitted in SPMW CV102 are missing from the benchmarking model (assumed to be a data linking error) and accounts for 88.7% of the 33kV and 132kV SP Manweb network.

7.1.4 CV102 'Demand Group: Individual Substations' are also used differently from 'Demand Group: Substation Groups' in the benchmarking model (this is assumed to be a formula error).

7.1.5 SP Manweb operate a 'meshed' network with demand groups being defined as collections of substations which are electrically interconnected. The demand is shared across each of the substations in the group according to the size and location of the demands and the electrical parameters of the interconnecting network. For this reason, the groups are assessed as a whole and not separated into their individual substations and therefore this error has a significant impact on SPMW.

Ofgem's analysis has incorrectly used our fast track data tables

7.1.6 SP Distribution and SP Manweb fast track data was used in the benchmarking models utilising the CV104 BPDTs. A complete CV104 update was provided as part of our slow track submission in addition to an updated version of our network specific TRANSFORM models.

Correcting these errors

7.2 These issues were raised in Cost Outputs issue log dated 04/08/2014 (Reference SP-4) and supported by a report[10] issued to Ofgem on 04/08/2014. This issue was also raised at the bilateral meeting with Ofgem on the 27th August 2014 and we are of the understanding that Ofgem have looked into the issue and agree a correction is required.

7.3 The movements in RIIO-ED1 reinforcement modelled costs are shown below with CV104 and CV102 linked into the benchmarking model as submitted by SPEN in our slow track submission. These reinforcement costs cover N-1 primary, LCT, HV and fault level reinforcements.

[10] SP SlowTrack LRE Reinforcement Benchmarking Review – TNEI - (2014) – Appendix 9

7.3.1 SPEN has forecast a reinforcement expenditure of £288m. This analysis indicates that after refreshing the CV102 and CV104 data the RIIO-ED1 modelled cost for SPEN would be circa £326m. This represents a movement of £44.1m from the present position.

7.3.2 SPM forecasted expenditure of £155m on reinforcements in ED1. Ofgem reported a modelled cost for SPM reinforcements of £150m. This analysis indicates that refreshing the data would move this modelled cost to circa £180m. This corresponds to a movement in the cost difference from -£5.2m (-3.3%) to +£24.7m (+17.7%).

7.3.3 SPD forecasted expenditure of £133m on reinforcements in ED1. Ofgem reported a modelled cost for SPD reinforcements of £132m. This analysis indicates that refreshing the data would move this modelled cost to circa £147m. This corresponds to a movement in the cost difference from -£0.7m (-0.5%) to +£13.5m (+10.3%).

7.4 We believe Ofgem and their consultants have applied a rigorous and robust approach to primary reinforcement benchmarking including high quality quantitative and qualitative assessments. Since the fast track submission we have reviewed our plan by updating our assumptions with the most up to date data and ensured a comprehensive consideration of all solutions including detailed consideration of the smart grid solutions available. This was also backed up by a separate review by Smarter Grid Solutions to ensure that innovative and smart alternatives were considered in our plans (Annex RIIO-ED1 Review Project by Smarter Grid Solutions). Ofgem have applied a rigorous approach to review projects and costs using a detailed benchmarking and statistical analysis as well as an engineering review of the scheme papers and CBAs that we provided.

7.5 We are disappointed that Ofgem have taken a decision to apply a cut to our reinforcement allowance on the basis that smart grid savings are in addition to what we have already assumed which leads to a high level of double count. We have provided extensive evidence that these investments are essential, efficient and innovative to maintain the security and safety of the network. Further detail on our views of Smart Grid and Smart Meter benefits are provided in our response to the Draft Determination Overview document in Chapter 4, Question 4.

8. Chapter Six: Question 2: Do you agree with our approach to assessing secondary reinforcement (both low carbon technology (LCT) reinforcement and non-LCT reinforcement)?

8.1 In general we agree with Ofgem's approach to assessing secondary reinforcement subject to the error highlighted in our response to Chapter 6 Question 1 being resolved.

8.2 In Ofgem's analysis they have inadvertently used SPEN's fast track load tables and TRANSFORM model from our July 2013 plans.

8.3 In response to feedback from Ofgem at Fast Track we adopted a lower Low Carbon Technology uptake scenario and reduced our costs accordingly for our March 2014 updated plans. This represented a significant proportion of the reduction in our plans between fast and slow track.

8.4 We have formally logged this issue with Ofgem and asked that they use our latest load tables and TRANSFORM model in any equivalent analysis for the Final Determination.

8.5 Based on Ofgem's feedback from our fast track submission we have reviewed and reduced our plan by updating our assumptions with the most up to date data and ensured a comprehensive consideration of all solutions including detailed consideration of the smart grid solutions available. This was also backed up by an independent review by Smarter Grid Solutions[11] to ensure that innovative and smart alternatives were considered in our plans (Annex RIIO-ED1 Review Project by Smarter Grid Solutions).

8.6 We are disappointed that Ofgem have taken a decision to apply our reinforcement expenditure based on a very high level and flawed smart grid assumptions. We have provided extensive evidence that these investments are necessary and efficient to maintain the security and safety of the network.

9. Chapter Six: Question 3: Do you agree with our approach to assessing transmission connection point (TCP) charges?

9.1 We agree with the approach taken by Ofgem in respect to the assessment of TCP charges. We welcome Ofgem's consultants having undertaken an engineering review of these more 'bespoke' connections, which are not entirely within the full control of the DNO. By this approach the individual requirements at the interface and need case for the projects could be taken into consideration and assessed. This method of assessment also avoided potential skewing of results in the modelling as these projects can release large amounts of capacity compared with the majority of reinforcements planned for the primary network.

10. Chapter Six: Question 4: Do you agree with our approach to assessing connections?

10.1 We agree that the approach taken is appropriate. However, as the cost and volume benchmarking is based on historic costs for connections activities the actual costs may vary both due to the inherent variability in connections activity and due to the significant changes expected to result from Smart Grids, Smart Metering and the adoption of LCT during the course of RIIO ED1.

10.2 SPEN thoroughly appreciates and supports the significant benefits of smart grids. SPEN will deliver significant efficiencies, already included in our business plan, as a result of smart grids. Savings and customer benefits associated with our plan amount to c.£190m (that accrues to customers via lower totex and connections charges).

[11] SPEN ED1 Smart Grid Review - Smart Grid Solutions – (2014) – Appendix 6

RESPONSE TO CHAPTER SEVEN – ASSET REPLACEMENT, REFURBISHMENT AND CIVILS

11. Chapter 7: Question 1: Do you agree with our approach to assessing asset replacement costs?

11.1 SPEN believes there are a number of aspects of the disaggregated benchmarking, and treatment of the outputs of that modelling, that require refinement in order that Ofgem can set appropriate levels of totex at the Final Determination.

11.2 No one company sets the frontier for the disaggregated model and SPEN believe that cherry picking is evidenced by the fact that the disaggregated model output (post upper quartile adjustment) identifies no DNO with any apparent efficiency, as discussed above.

11.3 The disaggregated model identifies £1,316m of apparent inefficiency across all 14 DNOs, i.e. every DNO is deemed to be inefficient, including the Fast Track companies, upper quartile companies and SP Distribution as the frontier company.

11.4 This evidence points to the disaggregated benchmarking being skewed, perhaps by systematic cherry-picking, and calls into question the validity of an upper quartile adjustment in setting allowances, a further step which is justified by Ofgem on the basis that the modelling is calibrated using industry median costs.

11.5 Median unit cost benchmarking is also inappropriate where there are relatively low volumes of activities and relatively wide scope of works across the industry. For example this is demonstrated by wide standard deviations (ranging 200% to 400%) around median unit costs at higher voltage levels.

11.6 SPEN has identified a number of material errors and issues, we have logged these and proposed solutions with Ofgem for resolution through their formal issues log process, including:

- 11.6.1 Inappropriate use of industry median costs for certain cost categories
- 11.6.2 Transparency of calculation of expert unit costs
- 11.6.3 Interaction between tables
- 11.6.4 Qualitative Volume Reductions
- 11.6.5 Incremental investments supported by stakeholders
- 11.6.6 Adjustment of model outputs to reflect real differences between DNOs

11.7 Each of these points is described in more detail below and we have provided case studies to demonstrate our points (extracted from information already provided to Ofgem).

INAPPROPRIATE USE OF INDUSTRY MEDIAN COSTS FOR CERTAIN COST CATEGORIES

11.8 There are a number of areas where unit cost benchmarking is used extensively to identify the relative efficiency of DNOs. In general we agree with this approach however upon review the information it is clear that there are a number of areas where unit cost benchmarking is not a valid option.

11.9 This is particularly the case where there is considerable variance in scope of works across the industry for an activity and is particularly prevalent in Refurbishment activity and in the modernisation of 132kV assets.

11.10 We accept that across the industry there are activities where DNOs will be more or less efficient and that the model adequately seeks to account for that. This does not hold however when the variance in unit cost is 400-500% above the standard deviation of the median. It has been our recommendation throughout the RIIO ED1 negotiations that these assets/schemes should be considered on their own merits and cannot simply be benchmarked though an industry median when the scope of works vary to this extent.

11.11 The analysis supporting the graphs below has been provided to Ofgems cost and outputs team.

11.12 This demonstrates that there are some areas where SPENs unit costs are atypically low but are offset by atypically high unit costs for associated assets (e.g. LV/HV conductor and LV/HV poles). SPEN believe this is simply caused by differences in categorisation of costs between DNOs. The approach adopted by Ofgem to provide a credit for atypically lower than benchmarked unit costs deals with this categorisation issue.

11.13 This analysis also clearly demonstrated the need for focussed further technical investigation by Ofgem's engineering consultants in the areas of 132kV asset replacement, refurbishment and civils costs, as at RIIO-T1.

11.14 SP EnergyNetworks engaged PA Consulting to analyse unit cost variances across the industry in an effort to highlight areas where our unit costs were either atypically high or atypically low.

11.15 The charts below outline the unit costs as a function of the median (=100%). These charts provide Ofgem's expert view unit cost, SP Distribution's and SP Manweb's unit cost as a proportion of the Median and one standard deviation across the industry around the median.

11.16 This information has been provided for Asset Replacement, Asset Refurbishment, Civil Modernisation and Reinforcement activities.

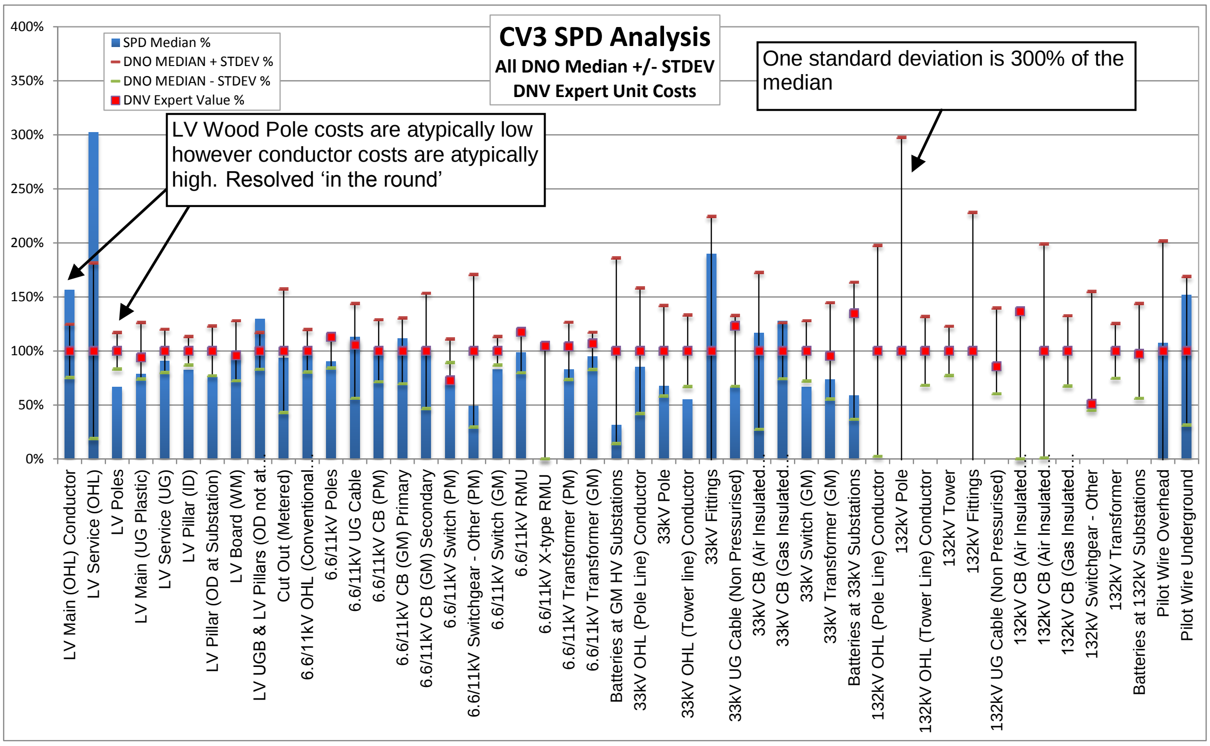


Table 5 – SP Distribution Asset Replacement unit cost variances

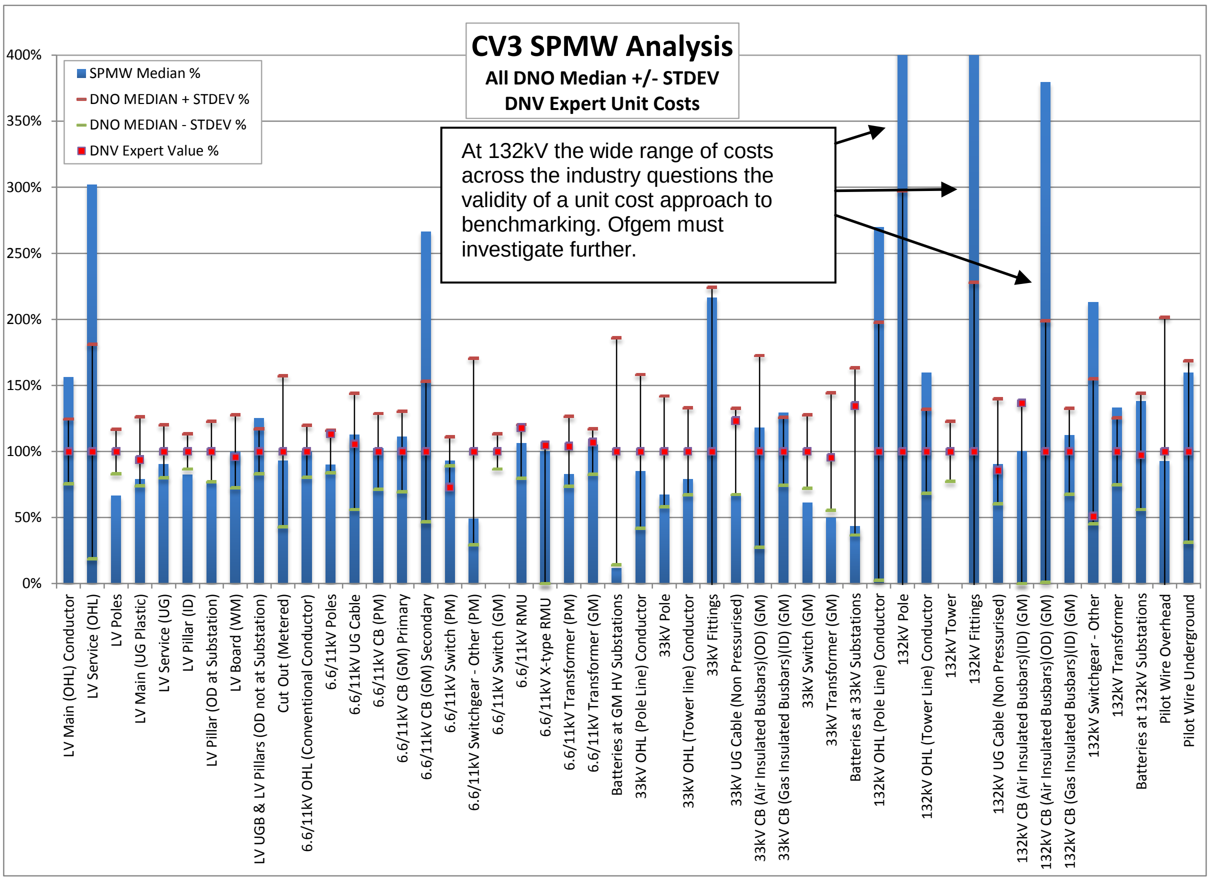


Table 6 – SP Manweb Asset Replacement unit cost variances

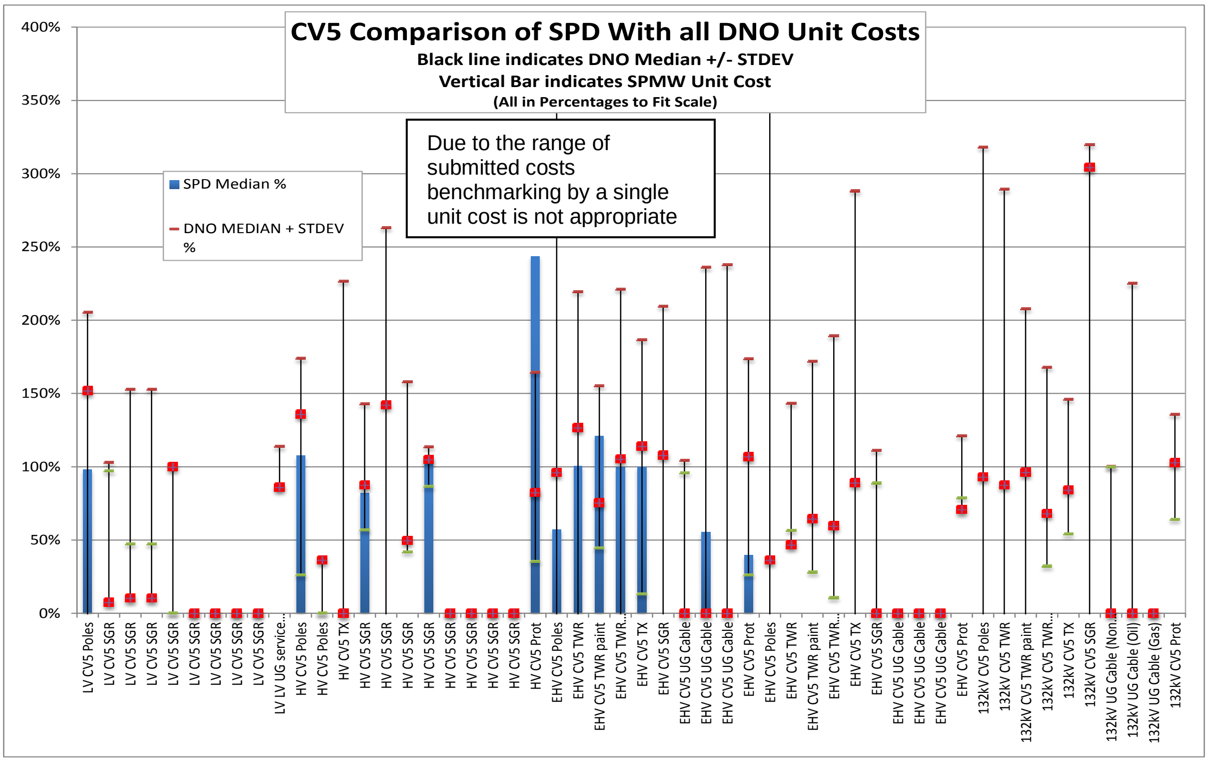


Table 7 – SP Distribution Asset Refurbishment unit cost variances

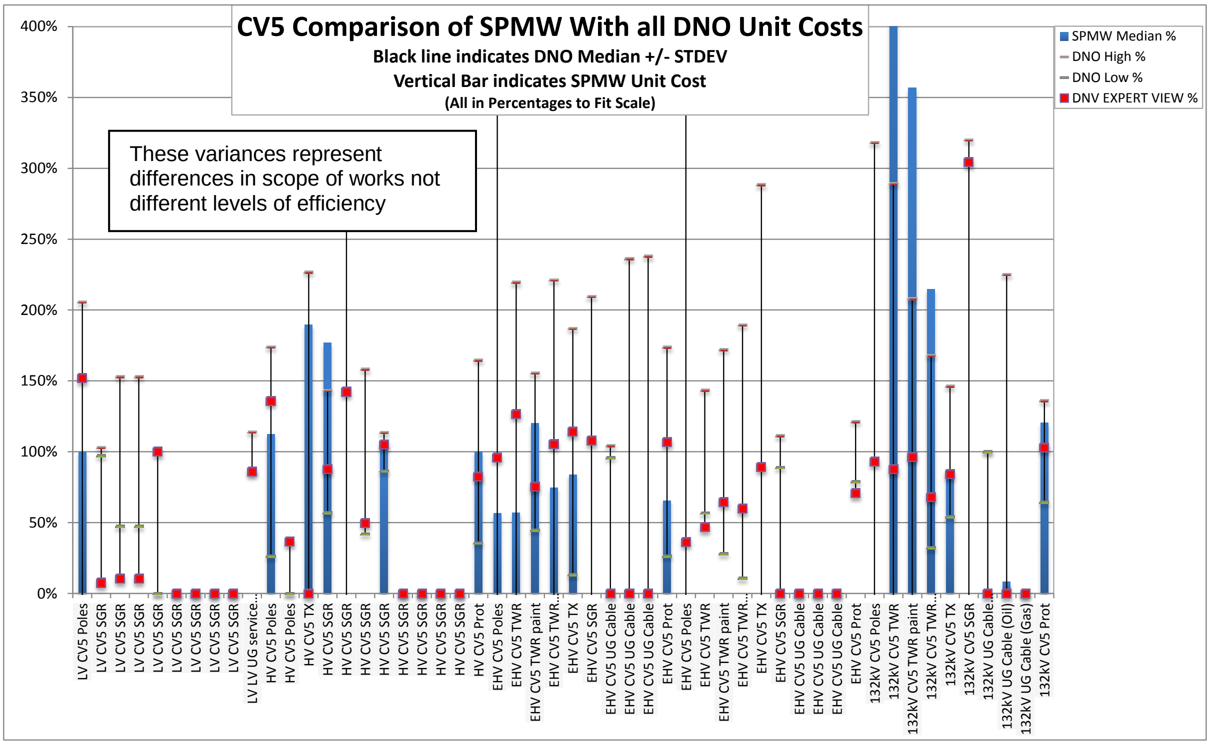


Table 8 – SP Manweb Asset Refurbishment unit cost variances

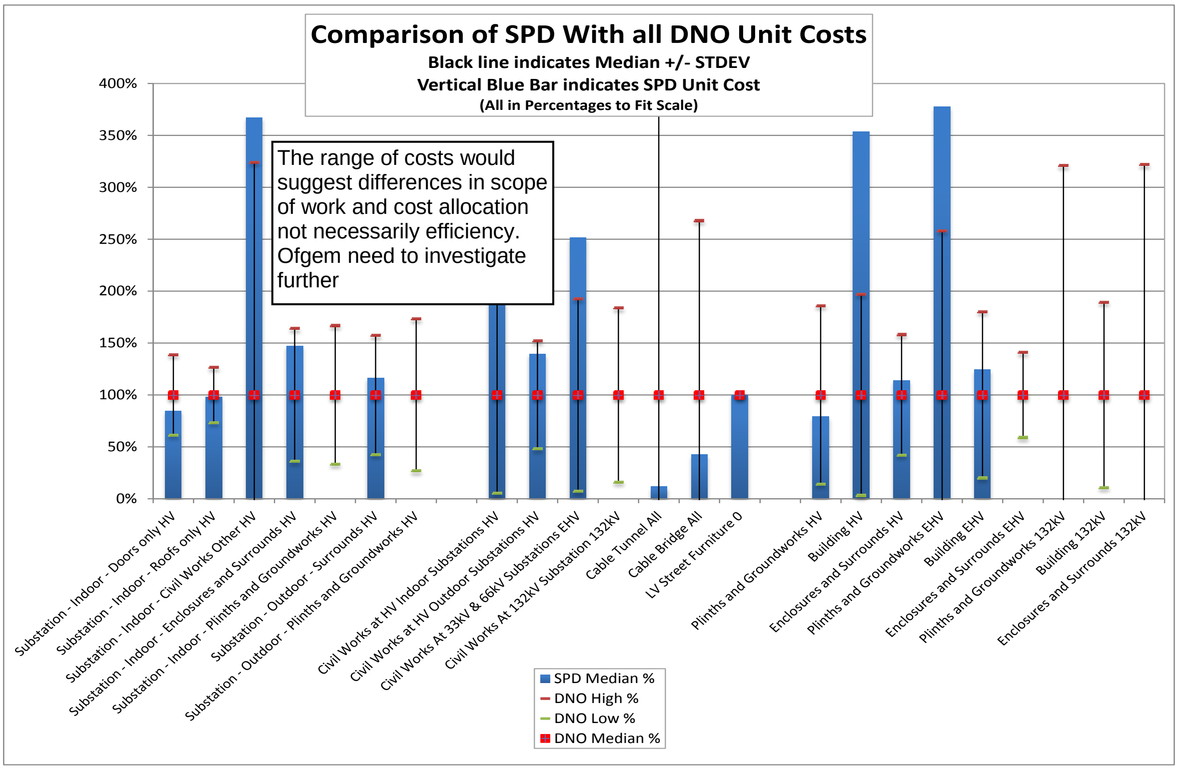


Table 9 – SP Distribution Civil Modernisation unit cost variances

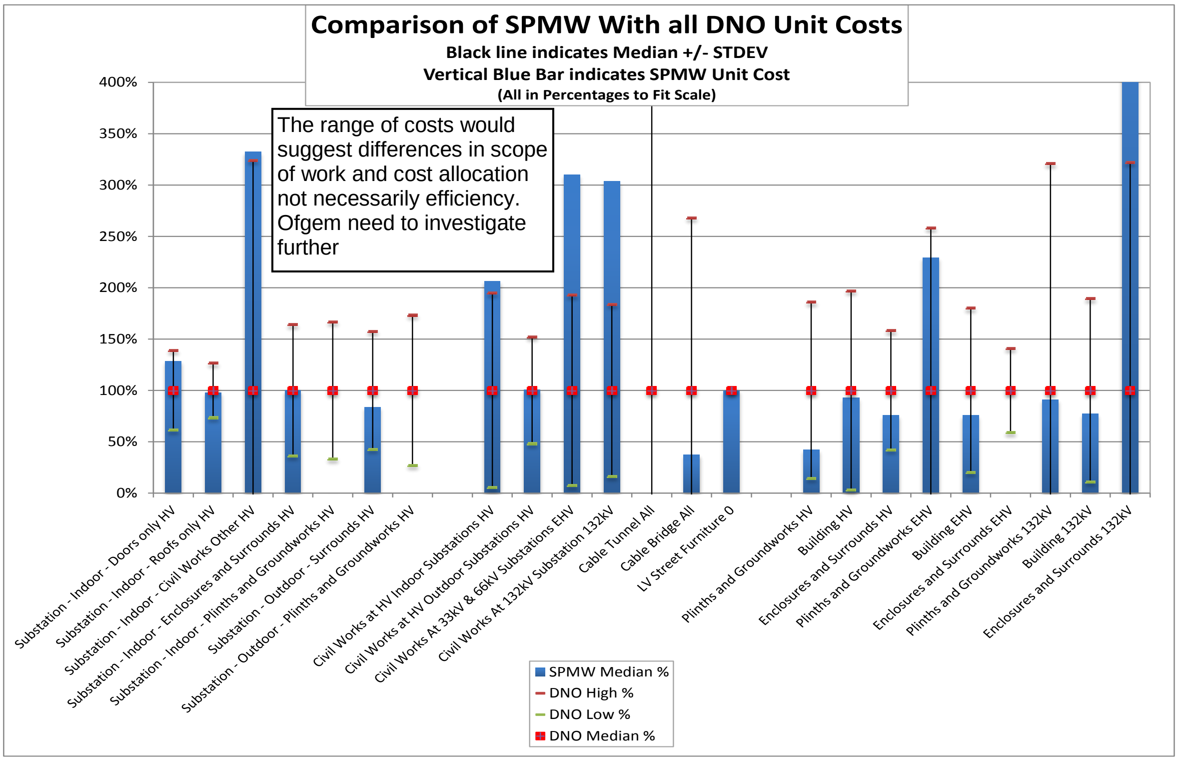


Table 10 – SP Manweb Civil Modernisation unit cost variances

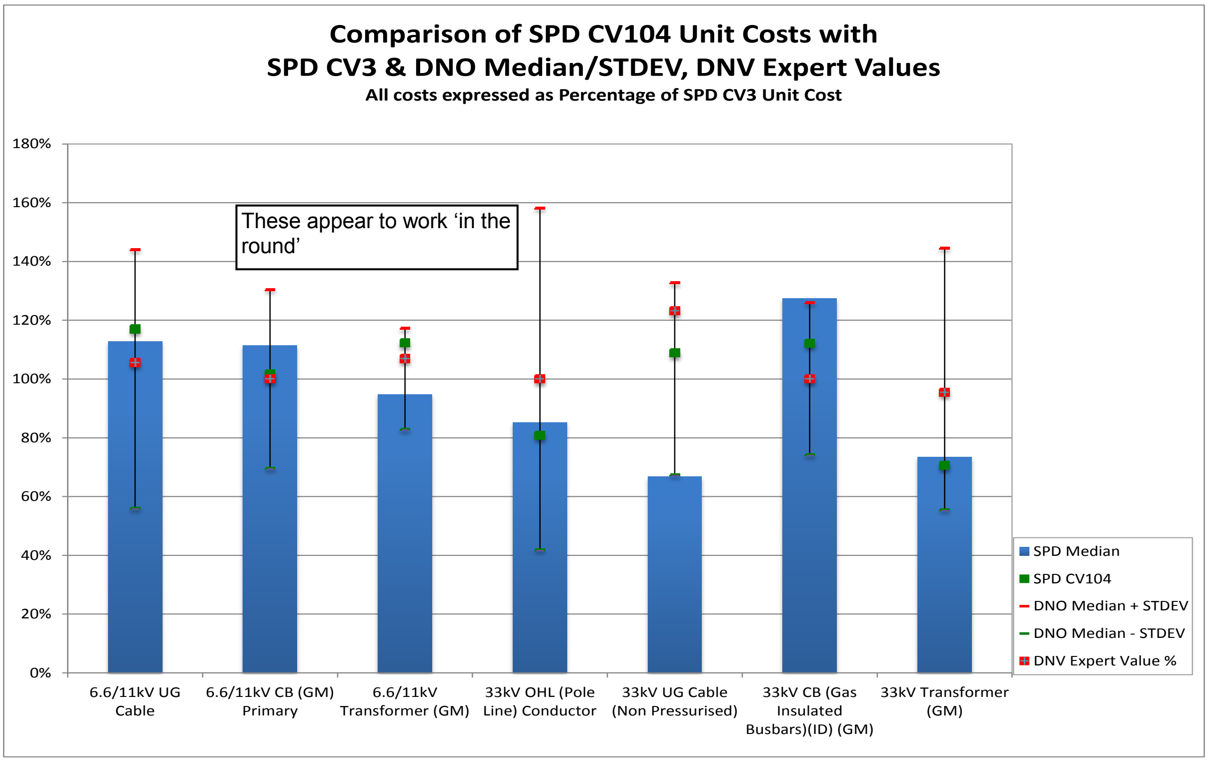


Table 11 – SP Distribution Reinforcement unit cost variances

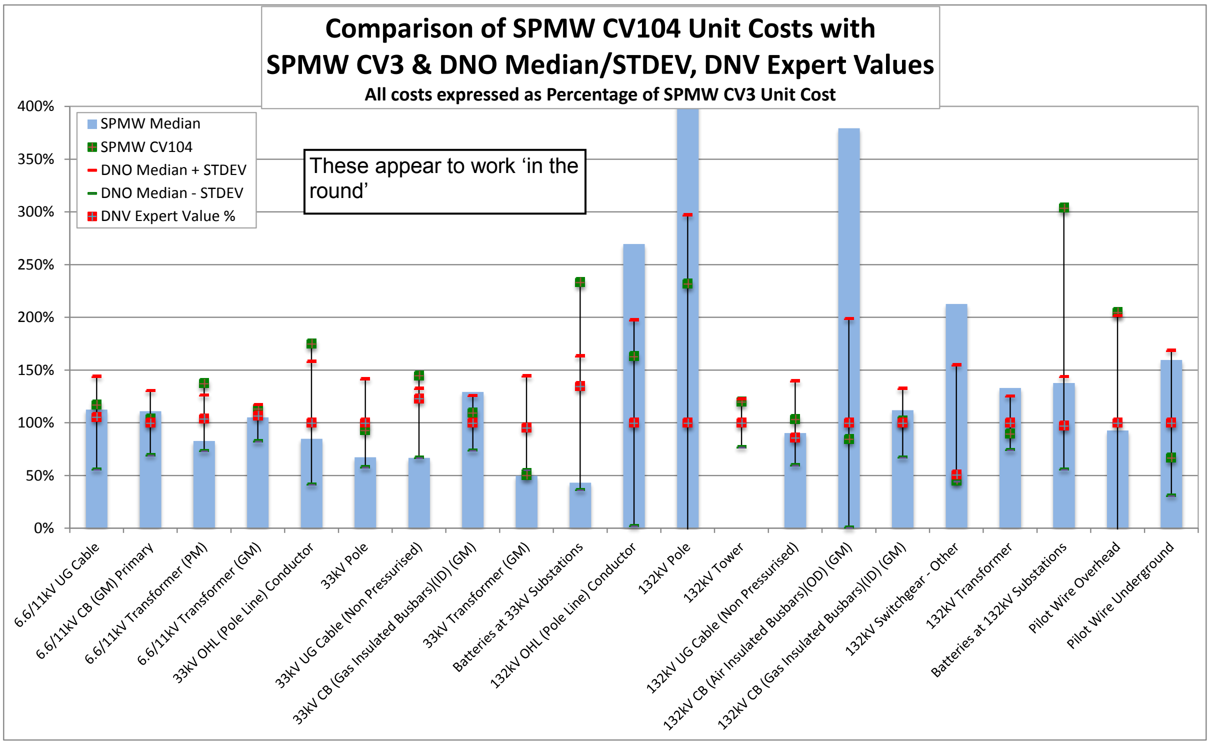


Table 12 – SP Manweb Reinforcement unit cost variances

11.17 As can be seen from the above charts, the range of standard deviation increases significantly as the voltage level increases. Ofgem must satisfy themselves that through the disaggregated model they are identifying true efficiency and not fundamental differences in scope of work. As an example, using unit cost to evaluate efficiency for refurbishment works will ultimately lead to reductions in scope of work and not necessarily encourage efficiency across the industry.

LACK OF TRANSPARENCY OF OFGEM EXPERT UNIT COSTS

11.18 Ofgem have not made clear how all expert unit costs have been established by Ofgem and their engineering consultants, and have not yet responded to a request for further information in this regard.

11.19 It is imperative that Ofgem set out the basis for any expert view and the process followed to examine and deal appropriately with outliers.

Example - Switchgear scope of works

11.20 We believe that within the current RIGs definitions, there is the possibility of significant variation in the scope of work that can be undertaken in relation to 132kV circuit breakers from full bay replacement on the most extensive interpretation to replacement of a single circuit breaker at the narrowest. Shown below is an extract from the RIGs glossary scope of works for 132kv Circuit Breakers. Two examples are outlined which both adhere to the RIGs, despite having substantially different scopes of work. Under the existing benchmarking approach, these two examples would be benchmarked as if they were of equal scope. Without adequate assessment of the scope of work being delivered, it follows that minimum scope projects will appear to be the most efficient.

132kV CB AIS OD Replacement (Minimum works)

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET
Dismantle, remove and dispose of existing 132 kV CB and associated structures
Dismantle, remove and dispose of existing 132 kV busbars and associated structures
Supply and install replacement 132 kV outdoor circuit breaker and associated structures (including post mounted CTs and structures for use with live tank circuit breakers)
Supply and install 132 kV busbars and associated structures
Supply and install replacement multicore cable
Make off multicore terminations
Dismantle, remove and dispose of existing multicore cable
Supply and install replacement control/protection panel at the same site as the prime asset being replaced
Remove existing control/protection panel at the same site as the prime asset being replaced
Connection to substation earthing system (including extension of substation earth grid, where required)

132kV CB AIS OD Replacement (Maximum works)

COSTS WITHIN SCOPE OF REPLACING PRIME ASSET
Dismantle, remove and dispose of existing 132 kV CB and associated structures
Dismantle, remove and dispose of existing 132 kV busbars and associated structures
Supply and install replacement 132 kV outdoor circuit breaker and associated structures (including post mounted CTs and structures for use with live tank circuit breakers)
Supply and install 132 kV busbars and associated structures
Supply and install replacement multicore cable
Make off multicore terminations
Dismantle, remove and dispose of existing multicore cable
Supply and install replacement control/protection panel at the same site as the prime asset being replaced
Remove existing control/protection panel at the same site as the prime asset being replaced
Connection to substation earthing system (including extension of substation earth grid, where required)

11.21 Another area that appears to need correction for different interpretation of the RIGs by DNOs is the category 132kV switch (GM), where further investigation in necessary by Ofgem.

11.22 Where there are clear differences in scope of works or interpretation of RIGS then Ofgem need to investigate further and make appropriate adjustments to ensure comparability.

Treatment of consequential assets

11.23 It is not clear how the costs of consequential assets have been accounted for, if at all, in the unit cost analysis. For example if a DNO has more 'off-line' 132kV projects, their switchgear and transformer unit costs will contain proportionately more 132kV cable costs, which should be reported as consequential assets with the associated costs being assigned to the main asset.

Time period used for benchmarking

11.24 Ofgem seem to have used one of three benchmark periods to determine an industry unit cost, namely,

- The first 4 years of DPCR5,
- The 8 years of ED1,
- The 13 years of DPCR5 & ED1 combined.

11.25 Ofgem have not made clear why any one of these time periods was chosen over another, and why this varies across cost categories.

INTERACTION BETWEEN COST TABLES

11.26 During the cost assessment there has been a lack of linkage between the benchmarking carried out on CV3 and on CV6 tables.

11.27 We would like to draw out that in the particular case of 132kV substation civil works, significant reductions have been made in the disaggregated model to volumes of Civil work associated with asset replacement. This approach is based purely on median costs and median volumes and takes no cognisance of the direct linkage between asset replacement works and Civil works.

11.28 Although Ofgem's benchmarking shows the asset replacement volumes as necessary, if the associated civil volumes are excluded then we will be unable to complete the 132kV substation works as laid out in our RIIO ED1 submission.

11.29 We recommend that Ofgem's technical consultants review the existing schemes and make qualitative adjustments to the benchmarking results to account for civil activity directly related to substation works.

11.30 This also an issue where Ofgem propose reduced volumes of one activity and replace it with an alternative, for example:

11.30.1 for a proposed adjustment between 132kV GIS & AIS volumes, there was no corresponding plinth or surrounds volume increase made to reflect the differences in GIS and AIS layout.

11.31 We have built programmes of resilience work which include the rebuilding of HV overhead lines. These programmes are split across a number of asset categories in CV3. The cost assessment has taken no cognisance of these resilience programmes so there has been a complete disconnect between poles and conductor. So although no adjustment was made to our HV pole volume in the draft determination, our HV conductor volumes have been adjusted down substantially.

11.32 In concluding their Final Determination Ofgem must ensure that they make changes across relevant associated tables.

QUALITATIVE VOLUME ADJUSTMENTS

11.47 Ofgem's engineering consultants have made qualitative volume adjustments to a number of investment areas, not as a result of the asset replacement modelling but as a result of them not believing that forecast year on year volume increases were credible during the DPCR5 period and moving into the ED1 period. Reductions of this nature have been applied to 11kV OHL conductor, and 33kV and 11kV cable replacement programmes.

11.48 With regards to 11kV OHL, our actual 2013/14 delivery data demonstrates that the consultants' delivery concerns were unfounded as we have outperformed our 2014 forecast. DNV stated that "2014 forecasts were not credible as they were more than double historic", yet SPD actually delivered 10% more than that forecast for 2014.

11.49 Whilst in other areas SPEN has a very strong track record of working effectively with suppliers and contractors to deliver new and increasing programmes of investment activity. For example, in TPCR5 SPT delivered a total of 80 circuit-kilometres of 132kV overhead line renewal across 5 years. In RIIOT1 we planned a programme of 100 circuit-kilometres per annum, a more than 5 fold increase. Our actual delivery for the first year of RIIOT1 is almost 120 circuit-kilometres.

11.50 However, our primary concern with the approach adopted for the Draft Determination is that the nature of the RIIOED1 outputs contract means that any volume delivery risk sits with SPEN, so if SPEN fails to deliver then SPEN will be penalised and our customers will be compensated.

11.51 These volume reductions are not consistent with the RIIO framework, are not in customers best interests, and should be reversed. To ensure that benchmarking can be carried out with any validity, it is important that the RIGs are clear and comprehensive in order to avoid inconsistencies in DNOs' approaches to the population of BPDTs. For example at ED1, it seems there may be some inconsistency across the industry in interpreting the RIGs for 132kV switch (GM).

INCREMENTAL INVESTMENT SUPPORTED BY STAKEHOLDERS

11.52 It appears that Ofgem have taken no account of incremental activities that were requested by stakeholders and supported by customers through comprehensive willingness to pay surveys. This represents c£30m of incremental investment in SPENs plans associated with storm resilience and smart network future proofing.

11.53 In order that the integrity of the RIIO process can be retained it is essential that Ofgem ensure that the levels of expenditure supported by this process are held whole, and are not affected inappropriately by the cost benchmarking. Of equal importance is that this is done in a fully transparent manner so that DNOs can communicate the success of the stakeholder engagement process to stakeholders.

ADJUSTMENT OF MODEL OUTPUTS TO REFLECT REAL DIFFERENCES BETWEEN DNOS

11.54 Ofgem has confirmed that before setting totex allowances in the Final Determination it must assess whether apparent inefficiencies arising from the cost benchmarking arise from justifiable differences between the DNOs. SPEN agrees. When the models disclose an apparent inefficiency it does not follow that there is an inefficiency. Ofgem must carefully consider whether:

11.54.1 the apparent inefficiency arises as a result of legitimate differences between the DNOs; and

11.54.2 the difference in spend, cost or activity is caused by the differences and not, therefore, inefficiency.

11.55 Simply put, the outputs of the models must be adjusted to take account of legitimate factual differences between the DNOs.

The importance of considering all relevant facts

11.56 Ofgem must make its assessment of DNOs' Business Plans on a sound factual basis. In that regard Ofgem must consider all relevant information before determining any element of SPEN's investment programmes. As an example, SPEN must submit a well justified cost benefit analysis (CBA) for major schemes and programmes, supported by robust asset condition data and Health information index information. Ofgem has said that this is a critical input to the Business Plans and therefore Ofgem must consider this information. This is consistent with Ofgem's approach in RIIO-T1.

11.57 At a high level, there would appear to be a measure of agreement on this point. The process of normalisation and other adjustments to the cost assessment models aims to ensure that the models produce an accurate proxy of the efficiency DNOs' Business Plans. However as Ofgem recognise[12] it is important to cross-check the results of the modelling against the known facts and engineering analysis and in light of the particular circumstances of individual DNOs.

[12] Expenditure Assessment 3.2

11.58 Such analysis needs to have full regard to a range of evidence including DNO narrative and supporting evidence,[13] such as scheme papers.[14] Other examples of relevant evidence is listed at paragraph 7.11 of the Expenditure Assessment:

11.58.1 business cases and other supporting narratives for named schemes and high value assets;

11.58.2 asset specific condition information;

11.58.3 relationships to health indices;

11.58.4 evidence of poor or worsening performance;

11.58.5 evidence of type faults, failure modes and safety issues; and

11.58.6 reports from specialist external consultants.

11.59 SPEN has provided a significant volume of evidence of these types to support such analysis. Such analysis should be carried out by appropriately qualified personnel, by way of example, experienced engineers.

11.60 We are therefore pleased to note that Ofgem has made use of factual analysis in preparing the Draft Determination. We also recognise that such analysis can be complex, and that dialogue is essential to ensure that it is carried out to the requisite standards.

11.61 However Ofgem has given insufficient weight to factual analysis in assessing SPEN's Business Plan and we are therefore reassured that Ofgem have confirmed that their review of the factual and expert evidence is not complete and continues to progress.

Investment cycles

11.62 As Ofgem are aware, the annual regulatory reporting packs DNOs are required to submit to Ofgem gathers information on asset health, age, turnover and more recently criticality.

11.63 It is important to consider whether differences in planned expenditure are explained by DNOs' different investment cycles. Investment cycles can differ for a range of reasons.

11.64 Our expert econometric consultant NERA observe (reports in appendices 1, 2 & 3):

11.64.1 Ofgem's totex models seek to explain variation in DNOs' capex and opex over the DR5 and ED1 periods using data on the variation in companies' size, represented by metrics such as MEAV. These size variables bear no relation to asset condition, and so DNOs incurring a high level of capex because of poor asset condition will appear "inefficient". In reality, DNOs' asset condition can vary for many reasons:

(i) DNO assets are long-lived, and many date from the pre-privatisation era. If a large number of assets are approaching the end of their lives in a particular control period, it may well be

[13] Expenditure Assessment 3.1

[14] Expenditure Assessment 3.18

efficient for the DNO(s) affected by this trend to seek additional funding for their replacement. The longevity of assets also means that decades may pass between individual DNOs' large replacement and refurbishment programmes.

(ii) There may also be economies of scale and scope in replacement and refurbishment programmes, making "lumpy" investment profiles efficient.

11.64.2 This potential need for high levels of replacement and refurbishment expenditure can be identified and explained by variation in DNOs' asset condition, as measured, for instance, by their respective health indices. Our previous analysis of the link between health indices and DNOs' totex has suggested that including the health index in the regression materially reduces the modelled efficiency "gap" (i.e. the difference between business plan submissions and Ofgem allowances) for SPMW.

11.65 Ofgem have the data required to complete this assessment between annual RRP submissions and company ED1 plans. As evidenced, analysis of the DPCR4 and 5 regulatory reporting packs shows that DNOs have different investment cycles and approaches. To take an example, over 18 years Electricity North West's overhead lines investments are comparable to SPEN's. What is different is the timing. SPD and SPM's programme is 35% lower than ENWL's over DPCR4 and 5 but 38% higher in RIIO-ED1. This represents prudent profiling on the part of SPEN, avoiding imposing financing and other costs on consumers until it is necessary to do so.

CASE STUDIES EXTRACTED FROM INFORMATION PROVIDED TO OFGEM

11.66 Set out below are a number of case studies to demonstrate a number of the points made above in relation to selected examples.

11.67 These examples are mainly focused on 132kV asset replacement. As outlined above we have particular concerns over the use of median unit costs as a benchmark for 132kV investment activities.

11.68 The cost assessment for all key 132kV investment categories should be project based as was the case in the RIIO-T1 process. We provided a scheme by scheme breakdown of 132kV projects in addition to detailed CBAs and these need to be taken into consideration in benchmarking appropriate costs.

132kV Switchgear - GIS vs AIS

11.69 Through Ofgem's disaggregated benchmarking approach, significant reductions have been made to SP Manweb's 132kV Circuit Breaker modernisation programme.

11.70 The majority of this adjustment is due to Ofgem's technical consultant's viewpoint that two of our Gas Insulated Substation (GIS) solutions were not justified and we should replace components at the existing Air Insulated substations (AIS) instead

11.71 We have proposed GIS solutions for three sites; Birkenhead, Crewe and Lister Drive. The draft determination recognises that the most cost effective solution for Birkenhead is a GIS solution but recommends we employ AIS solutions for Crewe and Lister Drive.

11.72 We maintain that over the asset lifecycle, the most cost effective solution for all of these sites is a GIS solution, this decision was informed by a Cost Benefit Analysis.

11.73 To address this difference in opinion on the most appropriate solutions to be deployed at Crewe and Lister Drive, we engaged PA Consulting to carry out an independent review of our CBA process for both sites[15].

11.74 The outcome of this report highlights that the most cost effective solution for Lister Drive is a GIS solution.

11.75 For Crewe, the results of the CBA are not conclusively in favour of either an AIS or GIS solution. However the report notes that there are significant additional benefits associated with the GIS solution, most notably the ability to facilitate the outage requirements associated with other significant investments related to Crewe in the RIIO ED1 period (the AIS solution is expected to take 5 years as opposed to 3 years for the GIS solution). This includes a major 132kV tower line modernisation and the installation of an innovative phase shift transformer at the substation.

132kV transformers

11.76 The draft determination made no cognisance of the variability in terms of size/rating of 132kV transformers despite this more disaggregated information being available in BPDT table CV4. Ofgem have since proposed that they utilise this additional data and adopt 2 unit costs for these assets – one for transformers greater than 60MVA rating and a second for those below 60 MVA. However, transformer rating is not the only driver for transformer scheme cost and therefore Ofgem must also consider that within these unit costs, there may be fundamental differences in scope of work between schemes.

11.77 For example, dependent on the most appropriate location for the new transformer, the scheme cost can include a material volume of 132kV cable. As per RIGs, this cost should be reported as a 'consequential asset'. The volume of consequential cable associated with a transformer change can vary from low tens of metres to several hundred metres, introducing significant differences into the overall replacement cost. This typically means that the cost of these projects are not directly comparable.

11.78 Beyond the issue of consequential assets, there are 2 schemes within our 132kV transformer modernisation programme which cannot be directly compared with those of other DNOs or indeed other schemes proposed by SP Manweb. These schemes are as follows:-

[15] Review of SP Manweb 132kV SG CBAs – PA Consulting (2014) – Appendix 7

Castner Kelner

11.79 Ineos Chlor's Castner-Kellner site is the largest single distribution connected customer in the UK fed by 6 bespoke 132/33kV 100MVA transformers. Three of these units will reach end of life before the end of the RIIO ED1 period and require to be replaced. Due to site specific specifications, all 6 units require to be impedance matched and as such, the replacement transformers will need to retain the bespoke features and consequently will be significantly more expensive than a typical 132kV transformer model of a more commonly utilised design and capacity. Replacement of 2 units in the DPCR4 and 5 periods has shown that the increase in cost of transformer replacement over a more conventional 90MVA unit can be up to 100%.

Woodside 132kV substation

11.80 At the Woodside 132kV substation, we have a legacy issue due to an unconventional site layout including a non-standard transformer cooling arrangement and electrical connections that have been installed above the existing control room. The existing transformer will reach end of life before the end of RIIO ED1 and needs to be replaced. to the replacement of the transformer will require the site to be reconfigured to meet current safety standards, incurring significant costs beyond the typical scope of works for a transformer replacement.

132kV Overhead Line Modernisation

11.81 The largest single adjustment to our slow draft RIIO ED1 plans within the disaggregated benchmark modelling is associated with 132kV overhead line modernisation activity. It is our view that the primary reason for this is fundamental differences in scope of works across the industry.

11.82 Our plan is based on the same asset management approach as we deploy on our similar 132kV tower lines in our SPT licence in Scotland. This approach, which was fast tracked in RIIO-T1, has the objective of replacing ageing tower line conductor prior to the point at which it degrades to the extent that it can no longer be replaced by the most cost-effective technique, which relies on the residual strength of the conductor being adequate to pull the new conductor into position. Once this point is passed, the cost of replacement increases significantly.

11.83 Given the volume of conductor to be replaced, we have developed a 3 price review replacement plan as set out in table 13 to manage the deliverability of this programme. Driven by this conductor replacement programme, our approach sets out to ensure that we undertake a comprehensive refurbishment of all other components of the overhead line system so that we deliver a life extension of at least 40 years, subject only to relatively minor interventions such as routine painting over its extended life. In order to be able to deliver this outcome, or work scope is comprehensive and addresses the condition of all associated fittings, steelwork and foundations.

Price Review	Time period	Forecast modernisation plans
DPCR5	2010-2015	167km (162km actual outturn)
RIIO ED1	2015-2023	412km
RIIO ED2	2023-2031	257km

Table 13 – SP Manweb planned 132kV Overhead line tower modernisation plans by price review

11.84 The greater volume planned for RIIO ED1 reflects the age profile of our conductor and the need to make the interventions prior to the point at which we may lose the opportunity to deploy the most cost effective 'tension pulling' technique.

11.85 Our plans include the modernisation of 13 schemes and we will address all outstanding condition issues for those circuits including; tower condition, foundation condition, fittings replacement and conductor replacement. All of these circuits have been individually condition assessed and the schemes designed to address only those issues relevant to each circuit to deliver a life extension of 40 years. Surveys of all circuit road crossings and land access requirements have been carried out for all schemes. Ofgem's unit cost benchmarking approach has used a median cost and we do not believe it adequately addresses the variability in scope of work across DNO's 132 overhead line programmes.

11.86 In addition, we believe we have a number of schemes which are atypical and have additional differentiating factors that must be taken into account in assessing efficiency. These schemes are outlined below:-

YS Line

11.87 This circuit connects Crewe, Whitfield and Cellarhead substations and has a circuit length of 61.9km. The existing tower line is built to 275kV construction and was originally planned (pre-privatisation) to be upgraded to a 275kV in feed to Crewe substation. Although the 275kV upgrade did not progress, the extra capacity provided by the heavier construction has been utilised to meet load growth in the area and as a result, it is not now possible to revert to a conventional 132kV conductor arrangement. The only modernisation approach therefore, is full refurbishment retaining its existing capacity. Refurbishment of 275kV tower lines is a significantly more expensive activity than is the case for a conventional 132kV line and this must be taken into account in assessing this scheme.

11.88 The condition of this tower line requires significant modernisation and is critical to our RIIO ED1 plans around the Crewe area, which include switchgear modernisation, and installation of the innovative phase shifting transformer.

11.88.1 Shown below are examples of the circuit condition:-

AH-Q line

11.89 This section of 132kV tower line runs between Birkenhead and Wallasey with a circuit length of 13.9km and is in a built up urban environment. As such, in order to complete the modernisation works on this circuit, there is a need for extensive road crossings, motorway crossings and protection for residential areas far in excess of a normal 132kV modernisation scheme.

BH Line

11.90 This 132kV tower line runs between Legacy, Whitchurch and Crewe a with a circuit length of 20km and includes sections made using a gantry construction technique. This construction technique has not been widely deployed in the UK and the design has a number of significant limitations which would need to be addressed were the gantries to be refurbished. However, given the excessive costs associated with attempting to refurbish the gantries and their associated foundations which are known to be defective, it is more cost effective to completely replace the line with one of conventional wood pole construction. However, the project must include the cost of removal of the existing line, which results in a higher costs than would otherwise be associated with a wood pole line replacement project.

11.91 We have provided Ofgem extensive information on a number of our 132kV overhead line schemes to illustrate the scope of works and the approach to costing these schemes.

11.92 As with all areas of benchmarking the benchmark approach for 132kV Overhead lines must assess efficiency and does not inappropriately reward those DNOs with the lowest scopes of work, and penalise those with the largest modernisation need based on asset condition.

33kV Towers

11.93 The age based and qualitative benchmarking approaches result in significant reductions to our 33kV Tower line modernisation programmes in both our SP Distribution and SP Manweb licences.

11.94 This is an area that has historically required low investment and as such we now have a significant proportion of our assets approaching end of life, with much of our network constructed in the 1950's and 1960's. Predominantly, our investment plans are driven by the need to manage the risk presented by ACSR conductor in excess of 54 years age (it's life expectancy prior to extensive mechanical degradation). Concurrently, we also need to manage the condition of the tower steelwork and fittings.

11.95 This presents direct risks to our customers' security of supply (with single circuits crossing routes in exposed and remote locations) and to safety (with multiple road/river crossings and proximity to housing and other urban locations). Our plans are key to managing these risks in the short to medium term.

11.96 This further emphasises that the benchmarking approach does not allow for activities that vary significantly from historic investment trends, particularly given the variances in DNO investment cycles.

12. Chapter 7: Question 2: Do you agree with our approach to assessing refurbishment costs?

12.1 We have similar concerns to those expressed in relation to asset replacement.

12.2 It is not clear how Ofgem have derived some of the expert view unit costs and we have requested greater transparency in the unit cost setting approach.

12.3 Only protection refurbishment unit costs seem to have been based on any of the industry DPCR5 or ED1 medians. If an expert view is used to determine a unit cost, then the methodology used must be made clear.

12.4 The unit cost analysis has made no recognition that DNOs will have varying scopes of work within one CV5 asset category. This must be accounted for in any cost assessment. For example, it is obvious when comparing 132kV switchgear refurbishment unit costs of £9.2k for one DNO group and £54k for another, that there must be a vast difference in the scopes of work across the 12 DNOs planning this activity.

12.5 In any benchmarking analysis a representative sample is crucial. Therefore if a small number of licensees have submitted plans for an asset refurbishment category and a large variance is observed, then using a median is not a fair benchmark. A large variance, especially in refurbishment, clearly indicates a difference in the scope of works and allowance must be made for this:

12.5.1 For example, it is clear when comparing HV transformer refurbishment unit costs of £5k for SP Manweb and £0.275k for the only other DNO carrying out this activity, that there must be a vast difference in the scopes of work and taking a unit cost median is not the correct decision.

12.6 For ED1, it seems there may be differences in the way DNOs have interpreted the RIGs. For example for HV & EHV protection refurbishment, where protection refurbishment is attributed to a HV asset in an EHV substation we have classed it as HV. Other DNOs may have classed this activity as EHV Protection refurbishment. Ofgem need to take account of this in the Final Determination.

13. Chapter 7: Question 3: Do you agree with our approach to assessing civil works costs?

Civil Modernisation Due to Plant Replacement

13.1 We do not consider the current benchmarking methodology robust for determining the level of civils expenditure associated with plant replacement works.

13.2 SPEN's submitted civil expenditure in CV6 is directly linked to asset replacement activities in CV3. From our analysis of the slow track benchmarking file provided 'Civils supporting file-20140717-1_1.xlsx' we see no evidence that OFGEM has made a logical link between these two activities.

13.3 We are concerned the RIGs guidance in this category are currently not well defined which may lead to DNOs reporting costs and volumes an inconsistent manner. In addition the activities defined for each civil reporting category is very broad, which makes direct cost comparisons challenging. Examples of these activities are outlined below.

13.4 Furthermore DNOs have differing requirements of civil expenditure due to network legacy issues and design differences for future optimised plant replacement activities.

Civil Modernisation Due to Condition

13.5 We believe Ofgem's civil cost model is not acceptable; a number of factors mean it is difficult to determine expenditure based on benchmarking alone and requires further dialogue with DNOs.

13.6 As per plant replacement works, cost and volume reporting do not appear consistent across DNOs; for example 7 DNOs are carrying out interventions on more than 100% of their 33kV/66kV sites in ED1. In addition the model does not take into account investment cycles. Finally variation of substation designs and legacy issues (ex. power station sites, differing site sizes, types of construction etc.) influence required expenditure levels.

13.7 This position is further backed by independent analysis of DNV - GL on behalf of OFGEM.

13.7.1 'In DNV KEMA's opinion, it is difficult to benchmark each DNO against each other on unit costs, since specifically for civil related activities, these are very much dependant on the condition of the asset and also on particular sites, e.g. site access, height of building, location (urban or rural) etc. which have an influence on the unit costs'

13.8 Ofgem's RIGs definition for Building works associated with asset replacement, demonstrates the wide range of potential scopes of work:

13.8.1 Scope of work includes any civil works to a building that are required to enable plant asset replacement, for example:

(i) complete building replacement
(ii) building extensions
(iii) modifications to building doors or roofs to accommodate installation of plant
(iv) plinth and trenching works within the building
(v) building foundation works

Civil Health Indices provided by SPEN

13.9 SP Energy Networks are the only DNO to provide Ofgem with Health Index output information for Civil assets. In order to provide this a methodology was created to assign a Health Index to each component within a substation and then to aggregate those scores into a single Health Index score.

13.10 This was provided for Primary substations and above in SP Distribution and 33kV substations and above in SP Manweb.

13.11 For each of these substations a condition assessment was carried out and all required works identified. This was an extensive piece of work which formed the basis for our RIIO ED1 plans, but does not appear to have been used by Ofgem.

13.12 The use of median unit costs and median volumes results in significant reductions within the disaggregated modelling for SP Energy Networks. We believe this is primarily due to fundamental differences in scope of work and does not highlight the relative efficiency of companies. If benchmarked unit costs are carried through to the Final Determinations SP Energy Networks will need to revise our Health Index forecasts for Civil assets as the scope of works will not be achievable at the median unit costs for Primary substations or 33kV substation works.

14. Chapter 7: Question 4: Do you agree with our approach to assessing high value projects (HVPs)?

14.1 SPEN do not have any projects which can be classified as HVP (threshold of £25m) however we agree with the approach outlined.

RESPONSE TO CHAPTER EIGHT – NON-CORE EXPENDITURE

15. Chapter 8: Question 1: Do you agree with our slow-track approach for assessing:

Operational IT&T costs

15.1 We agree with Ofgem's approach to benchmarking operational IT&T costs.

Diversions costs

15.2 We agree with Ofgem's approach to benchmarking diversions costs.

ESQCR costs

15.3 As stated in our response to Chapter 4, question 3 we believe that ESQCR should be excluded from the Totex modelling however we agree with the approach taken in the disaggregated model.

Legal and safety costs

15.4 We agree with Ofgem's approach to benchmarking Quality of Supply costs with the exception of the treatment of clearly identified ESQCR (low ground clearance) expenditure being included in this table by several DNOs. This activity should be reported in the dedicated ESQCR table.

Quality of service (QoS) costs

15.5 We agree with Ofgem's approach to benchmarking Quality of Supply costs.

Flooding costs

15.6 We agree with Ofgem's approach to benchmarking flooding costs.

BT21CN costs

15.7 We do not believe that the lesser unit costs of DPCR5 or RIIO ED1 should be used to set the benchmark. On instruction from Ofgem, and in line with the DPCR5 settlement, SPEN focused on the lowest cost circuits first.

15.8 This has left us with a number of complex circuits to address in RIIO ED1 resulting in higher unit costs in the RIIO ED1 period. As such we would recommend using the ED1 unit costs to set the benchmark for BT21CN.

Environmental costs

15.9 We agree with Ofgem's approach to benchmarking environmental costs

Black start costs

15.10 We believe that the guidance as set out by the ENA16 to achieve Black Start resilience can be interpreted in a number of ways. Our plans have been developed

[16] Engineering Recommendation G91 Issue 1 - Black Start Resilience. Energy Networks Association (ENA) (2012) – Appendix 8

utilising both the ENA guidance and our extensive experience of Black Start resilience readiness on our SP Transmission licence. Through the current disaggregated benchmark modelling the lowest unit cost option is set as the benchmark.

15.11 This lowest cost solution provides inferior resilience to a Black start event than SP Energy Networks proposed solutions.

15.12 If Ofgem believe that a lower level of resilience is an appropriate solution for benchmarking purposes then SPEN should be asked to resubmit its black start plans. We do not believe that we should be penalised through the IQI mechanism for selecting an equally valid solution to Black Start resilience at a number of our sites.

Rising and lateral mains (RLM) costs?

15.13 We agree with Ofgem's approach to benchmarking Rising and Lateral mains

RESPONSE TO CHAPTER NINE – NETWORK OPERATING COSTS

16. Chapter 9: Question 1: Do you agree with our approach to assessing troublecall and occurrences not incentivised (ONIs) costs?

16.1 We have some issues with the approach to individual elements of the ONI's assessment in particular using median volumes of pilot wire failures. We also think there are a number of reporting issues as a number of DNOs have reported no volume for this activity. However in combining the ONIs assessment and the Troublecall assessment 'in the round' we believe the outcome of the modelling is acceptable.

17. Chapter 9: Question 2: Do you agree with our approach to assessing the costs of tree cutting (ENATs 43-8)?

17.1 We agree with Ofgem's approach to modelling ENATS 43-8 activity.

18. Chapter 9: Question 3: Do you agree with our approach to assessing the costs of severe weather – atypical, inspections and maintenance, NOCs other, and tree cutting (ETR 132 activity)?

18.1 We agree with Ofgem's approach to modelling ETR 132 activity.

19. Chapter 9: Question 4: Do you agree with our approach to assessing smart meter costs?

19.1 We agree with Ofgem's approach to modelling Smart Meter costs in RIIO ED1. A more detailed approach to unit cost assessment could have been utilised given the variety of possible remedial works, however due to the relative uncertainty of what remedial works will be required we agree with the approach taken.

20. Chapter 9: SP view on network operating cost (NOCs) other

20.1 We do not agree with the Ofgem's approach to evaluating Substation Electricity Costs. The approach derives a cost per substation using all HV and above DNO owned substations divided by the DNO planned expenditure. DNOs are then benchmarked using the median cost per substation.

20.2 The flaw with this approach is that many HV substations utilise negligible amounts of substation electricity whilst higher voltage substations will utilise a much higher level of substations electricity and as such result in higher substation electricity costs.

20.3 The current benchmarking approach benefits those DNOs with high populations of HV Indoor and Outdoor secondary substations rather than assessing those substations most likely to contribute to substation electricity costs. We recommend that the analysis be refined to only include 33kV and above substations to provide more proportionate treatment.

RESPONSE TO CHAPTER TEN – CLOSELY ASSOCIATED INDIRECTS, BUSINESS SUPPORT AND NON-OP CAPEX

21. Chapter 10: Question 1: Do you agree with our overall assessment of closely associated indirect (CAI) costs?

21.1 We welcome the output of the Ofgem analysis on closely associated indirect (CAI) costs. It is clear that the collaborative approach in this area has resulted in Ofgem changing the focus on drivers from Weighted MEAV to MEAV over a longer period and adopting more robust and statistically sound cost assessment models. We do believe however that the MEAV calculation requires to be reconsidered in line with our response in Chapter 5 – MEAV exclusions. Ofgem have stated that the submission must be considered "in the round" and in this area the point is valid. The result of this is that the case for CAI expenditure submitted by SPEN has been accepted by Ofgem and therefore we accept the output of that assessment.

21.2 In addition our comments on the application of labour adjustments in Chapter 4, Question 1 also need to be taken into consideration.

22. Chapter 10: Question 2: Do you agree with our approach to assessing:

The eight aggregated categories of CAI costs.

22.1 We believe that this approach is intuitively sound and reflects the actual nature of the expenditure in this area. It is possible that further aggregation may present a more intuitive "fit" however we understand that this may not provide a more robust statistical model and as we have stated in Question 1 response we accept the overall output.

Vehicles and transport (for both CAI costs and non-operational capex)

22.2 We welcome the incorporation of feedback from the working groups in this area re the lease/purchase consideration. We believe that the assessment is very difficult and, subject to the caveat on the use of MEAV, accept the methodology and output proposed.

Operational training and workforce renewal

22.3 We are disappointed that the assessment of these costs did not utilise the extensive work done by the industry in this area.

22.4 SPEN was the key participant at the working group at EU Skills and we have thoroughly assessed our FTE retiral and attrition levels.

22.5 On a line by line basis we have reviewed the proposed retiral age of each of our staff. These range from 60 to 65 dependent on the appropriate Pension scheme. In addition we have reviewed the attrition rates for our staff on a trade by trade basis. (The average attrition being 1.82% amongst the lowest in the UK.)

22.6 This resulted in the leaver profile shown below in table 14:

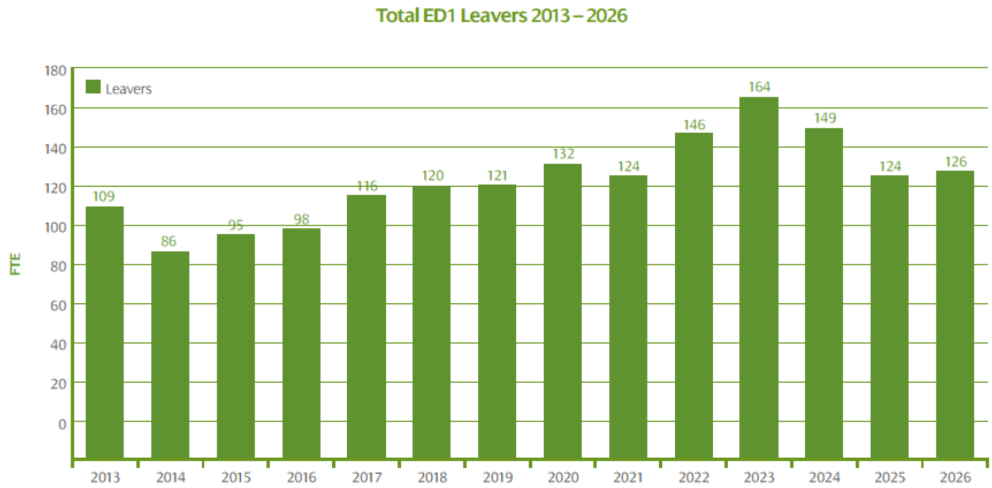


Table 14 – Total ED1 Leavers 2013-2026

22.7 We have set a plan to reduce costs for our customers and stakeholders by recruiting at apprentice and graduate level. This reduces our costs through reducing our exposure to the current market conditions in the Energy market.

22.8 To achieve this we require to make the following entry level appointments (Graduates and Apprentices) shown below in table 15.

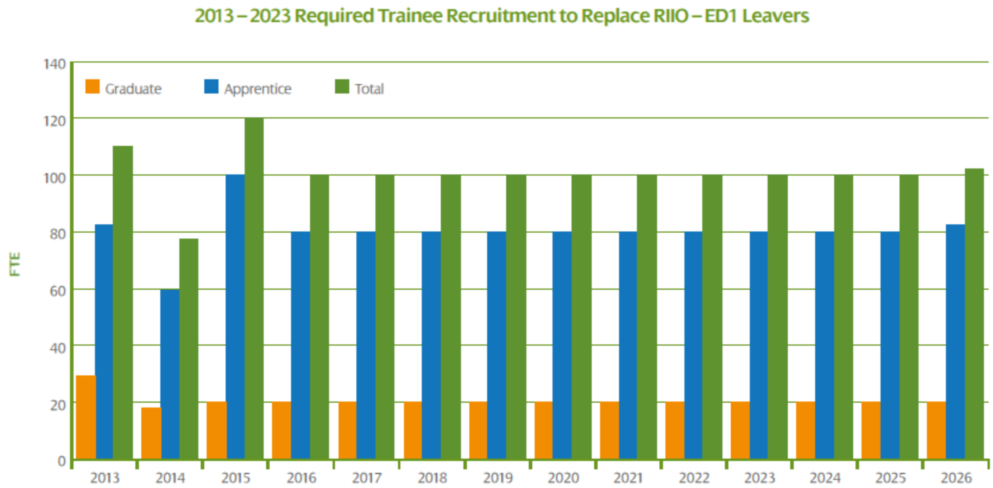


Table 15 – Required trainee recruitment rate to replace leavers

22.9 These appointments formed the basis for our volume calculations and were fully supported by our stakeholders. (The Contracting community and our Training Centres)

22.10 To have undertaken this level of detail in our plan and to have the volumes reduced, and accordingly our allowance, through use of median as a volume assessment is somewhat disappointing.

22.11 If we are to ensure that we have a workforce sufficiently recruited and trained to meet the demands of RIIO-ED1 we require to recruit the volumes we have stated. We feel that to use a median volume approach - when some of the DNOs were not participating in the EU Skills programme - is not appropriate.

22.12 A fuller description of our process of evaluating the staff number requirements in this area is shown on Chapter 7f of our March 2014 Business Plan.

Assessing streetwork costs?

22.13 We understand the difficulty in assessing the costs associated with street works in the current changing environment and accept the assessment of Ofgem as they have clearly understood the issues associated and have mitigated the risk through the introduction of a reopener.

23. Chapter 10: Question 3: Do you agree with our approach to assessing business support costs (BSCs)? Please consider the four aggregated areas and IT&T costs separately.

23.1 In our analysis of our Business Support Costs we had considerable difficulty in the use of regression models that allowed intuitive drivers and satisfied the statistical tests requirements. We have shared our findings with Ofgem and can understand the difficulties in this area. The result of this is that the case for BSC expenditure submitted by SPEN has been accepted by Ofgem and therefore we accept the output of that assessment.

23.2 In line with previous comments however we do believe however that the MEAV calculation requires to be reconsidered in line with our response in Chapter 3 – MEAV exclusions.

24. Chapter 10: Question 4: Do you agree with our approach to assessing non-operational capex costs? Please consider each of the two categories of IT&T and property and small tools, equipment, plant and machinery (STEPM) separately.

24.1 We agree that the aggregation of costs for IT&T and vehicles with their respective areas in CAIs and Operational expenditure is an intuitive fit. As we have previously stated the MEAV used in the calculations requires to be reassessed.

24.2 Whilst our allowance in this area is less than we have submitted this is offset by the modelled costs in the Operational IT and Vehicles costs elsewhere. Accordingly we accept the methodology used to assess costs in these areas.

RESPONSE to CHAPTER ELEVEN – SMART GRIDS AND SMART METER BENEFITS

24.3 No questions posed

24.4 We have outlined in detail our concerns with the proposed Smart Grid and Smart Meter Benefits in detail in our response to the Draft Determination – Overview document in Chapter 4, Question 4.

RESPONSE TO CHAPTER TWELVE – REAL PRICE EFFECTS (RPE'S) AND ONGOING EFFICIENCY

25. Chapter 11: Question 1: Do you agree with our approach to assessing ongoing efficiency?

25.1 Included in our plans was a challenging 1% p.a. compounding ongoing efficiency. The purpose of this is to deliver ongoing value for customers, and recognise that technological developments will reduce our costs over time.

25.2 Therefore we agree with Ofgem's assessment which provides a similar quantum of ongoing efficiency.

25.3 However, we believe that Ofgem have double-counted the benefits which are available from ongoing efficiency by imposing a further Smart Grid adjustment of £89m to SPEN.

25.4 We already have included a £38m Smart Grid component in our 1% efficiency stretch. Of the total saving of £146m over ED1 built into our plan, we included:

- £16m for load related investment
- £15m for fault costs
- £1m for smart metering
- £6.4m of CAI for LRE, faults and smart metering

25.5 Ofgem's proposed smart grid reduction of £89m should be adjusted to reflect this double count of £38m.