ANNEX 14: EFFICIENCY ASSESSMENT COMPARED TO OTHER DNOS

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Contents

1. Executive Summary

We took the preparation of both our July 2013 business plan and this amended business plan very seriously. We have undertaken a huge amount of work assessing the potential for efficiency improvements. Ofgem's analysis broadly supports our case that our plan is an efficient one, with a few exceptions that we discuss in this document.

Ofgem's analysis showed us to be upper quartile based on its totex analysis but to be outside of the upper quartile in its bottom up assessment. Ofgem's choice of weighting of bottom up and top down models in its overall assessment had a material effect on the overall assessment of our plan in Ofgem's Fast Track analysis.

We asked Oxera to review Ofgem's totex models, along with other credible alternative totex models. Oxera concludes that, overall, Electricity North West is more efficient than an upper-quartile benchmark and is ranked first of six at the DNO ownership group level, on average, across various measures, and third of 14 at a licensee level. Oxera also concludes that Ofgem's totex models under-estimate the efficiency of our plan compared to other totex models.

Within Ofgem's bottom up analysis, it is clear that inappropriate analysis of a small number of activities has had a disproportionate effect on the assessed efficiency of our plan. Our analysis shows that the vast majority of what Ofgem has identified as inefficiency in our plan was actually due to either inappropriate cost assessment approaches or failure to make qualitative adjustments to modelling results to take account of strong evidence submitted elsewhere in our plans.

In particular, we have identified significant issues with the assessment of the following activities:

- asset replacement – the results of which are distorted by inappropriate assessment of required volumes due to 'cherry picking' and lack of qualitative adjustments, and inappropriate selection of 'expert view' unit costs
- business support - two assumptions in Ofgem's Business Support analysis materially distort the results of Ofgem's analysis: its incorrect treatment of fixed costs and its inappropriate exclusion of insurance costs
- refurbishment – which was based on very simple comparisons of DNOs' intervention rates and took no account of trade-offs due to differences in companies' asset management strategies

We recommend that Ofgem makes a small number of important changes to its cost assessment approach for slow track companies to address these material issues.

We have reviewed our plan in great detail in preparation for resubmission and have undertaken substantial analysis to assure ourselves that our revised plan represents an efficient and well justified proposition for customers to fund. We have removed costs where new evidence suggests that the costs included in our July 2013 plan were inefficient. We have removed more than £37m of costs from our plan. Our analysis shows that we can expect our revised plan to be assessed to be upper quartile across all activity areas and to be comfortably within overall upper quartile, when assessed via a range of assessment tools that includes the small number of key changes set out in this annex.

We are confident that our resubmitted plan represents an efficient proposition for our customers in the North West to fund.

2. Our approach to ensuring that our costs were well justified in July 2013

We undertook a substantial amount of analysis as part of developing our July 2013 plan to test that our submission was efficiently priced. The detailed analysis that we presented in our previous plan can be found in Appendix 1.

A summary of how we expected our plan would be assessed is shown in the table below. As Ofgem's document 'Assessment of the RIIO-ED1 business plans', published as part of Ofgem's fast track assessment stated that "*our central view does not include any adjustment for ENWL's view of 'fixed costs'", w*e show analysis prior to fixed cost adjustment here to allow an appropriate comparison.

Electricity North West Analysis - July 2013

		Before fixed cost adjustment *3		
		Totex analysis	**Mid level activity analysis**	**Unit cost comparisons**
Average efficiency	Network Investment *2	95%		86%
	Network Operating costs		89%	83%
	Closely associated indirects		71%	
	Business support costs		95%	
Total against upper quartile *1		100%	87%	96%

*1 – For mid level and unit cost based analysis upper quartile is based on sub-set of activities and may therefore represent a target that is more stretching than true upper quartile

*2 – Unit cost comparisons presented for lower voltage asset replacement only

*3 – Unit cost model developed by Cost Assessment Working Group includes embedded fixed cost adjustment

Ofgem published its analysis of the relative efficiency of DNOs' plans in December 2013. Ofgem's analysis models for its bottom up analysis were quite different to those we used in preparing our July plan and therefore it is difficult to draw a direct comparison. The following table summarises Ofgem's analysis in a format as close as possible to our original analysis.

Ofgem analysis - December 2013

		Totex analysis (average of two models)	**Bottom Up analysis**
Average efficiency	Network Investment	96%	120%
	Network Operating costs		88%
	Closely associated indirects		81%
	Business support costs		128%
Total against upper quartile		100%	103%

As Ofgem used different analytical techniques to us and had access to DNOs' latest plans on which to base analysis, it is inevitable that results will differ slightly. However, we note that our prediction of the overall assessment of the efficiency of our plan at totex level was very similar to Ofgem's ultimate view. This shows that our clear focus on managing the total costs that we ask customers to pay for was successful. However, Ofgem's assessment of

our activity level efficiency differed materially from our assessment for some activities. In particular, Ofgem assessed that our business support and network investment (particularly asset replacement) forecasts were inefficient.

3. How Ofgem assessed the efficiency of our July 2013 plan

3.1 Overall assessment

Ofgem used a range of cost assessment models in assessing the efficiency of DNOs' July 2013 plans. The three core models that it used comprised a bottom up model and two totex models. In combination, these were used to determine whether DNOs' plans were efficient.

DNO	submitted (net, inc RPEs)	Bottom Up	Totex Reg 72 (activity level)	Totex Reg 81 (high level)	Combined assessment[1]
ENWL	1,900	1,837	1,935	1,884	1,855
NPGN	1,365	1,278	1,333	1,367	1,296
NPGY	1,859	1,675	1,900	1,816	1,721
WMID	2,087	2,129	1,917	2,036	2,091
EMID	2,093	2,088	2,097	2,147	2,096
SWALES	1,084	1,169	1,077	1,161	1,156
SWEST	1,696	1,737	1,441	1,434	1,662
LPN	1,968	1,626	1,925	1,958	1,705
SPN	1,897	1,778	1,738	1,810	1,777
EPN	2,861	2,351	2,615	2,731	2,431
SPD	1,740	1,505	1,496	1,679	1,525
SPMW	2,220	1,759	1,485	1,400	1,680
SSEH	1,244	1,245	1,077	1,016	1,195
SSES	2,490	2,410	2,641	2,494	2,449

[1]Combined assessment weightings: 75% bottom up, 12.5% activity-level, 12.5% high-level

Source: Ofgem analysis, December 2013

Ofgem's combined assessment suggested that our July 2013 plan was £45m, or 2%, more expensive that its assessment of an efficient level of costs.

Ofgem's analysis suggested different levels of efficiency depending on the model used. All of Ofgem's models showed us to be within the top half of DNOs. One of Ofgem's totex models showed our plan to be within the upper quartile.

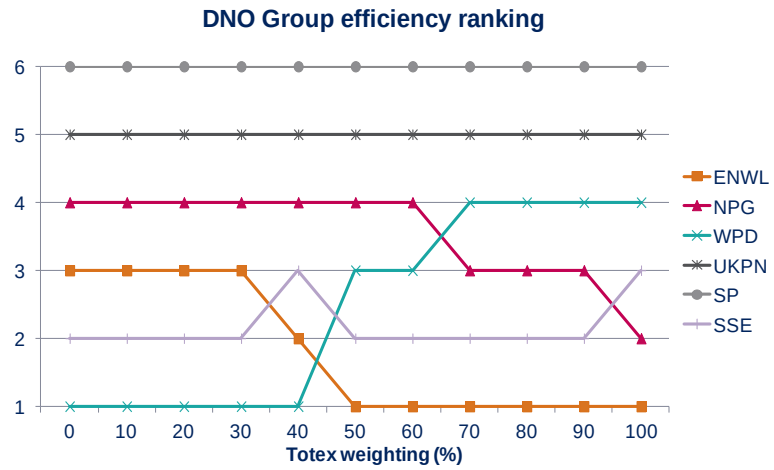
	Activity-level analysis	Totex activity-level drivers	Totex high-level drivers	Combined assessment[1]
Efficiency	103%	98%	101%	102%
Rank (of 14)	7	3	6	6

[1]Combined assessment weightings: 75% activity-level analysis, 12.5% Totex activity-level drivers, 12.5% Totex high-level drivers

Source: Ofgem analysis, December 2013

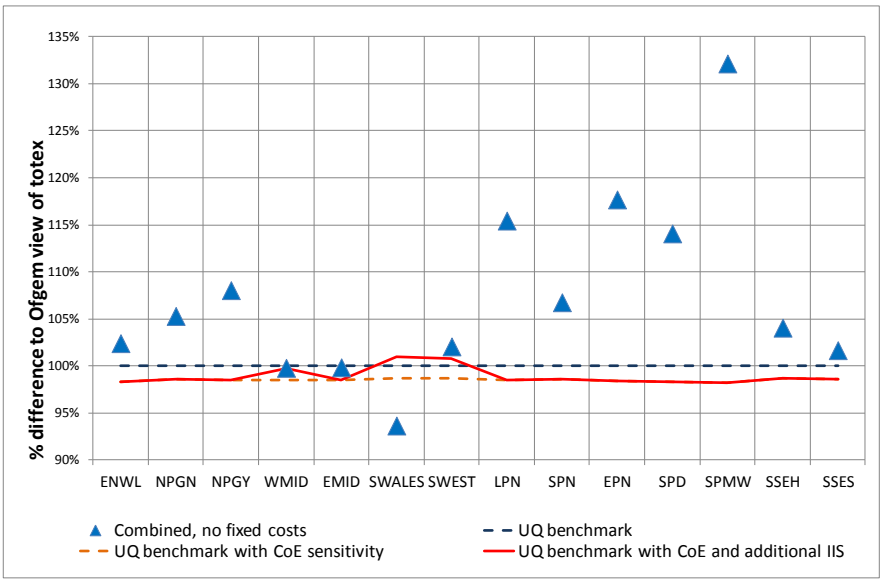
All modelling techniques have advantages and disadvantages. We agree, therefore, that it is appropriate for Ofgem to use a range of models to assess the efficiency of companies' plans. When using a range of models, however, it is important to carefully consider how the results from various models should be combined to reflect the findings from all models.

Ofgem's overall assessment of our plan was that it was slightly outside of its assessed efficient level of costs. This conclusion was materially affected by Ofgem's choice of weighting of totex and bottom up models. The following figure demonstrates how sensitive Ofgem's overall assessment is to the weighting of bottom up to totex models. This clearly shows that if Ofgem had opted to weight its totex models at 50% or more of its overall assessment we would have been ranked as the number 1 group. We note that Ofgem used a 50% weighting for totex models in its RIIO-GD1 analysis.



The analysis presented in this paper considers the relative merits of Ofgem's chosen models. We do not find evidence that Ofgem's bottom up model is superior to its totex model, and discuss several of the issues with the bottom up approach in this annex. Our analysis also shows that Ofgem's totex models are as statistically valid as those used in the DPCR5 review, and those used by other regulators.

Ofgem additionally considered DNOs' cost performance together with cost of equity assumptions and monetisation of outputs. This analysis suggested that our forecast was around £77m, or 4%, higher than Ofgem's view of efficient costs.



On the basis of its analysis, Ofgem assessed that our plan was not sufficiently well justified to be Fast Tracked.

3.2 Totex analysis

Ofgem assessed that our plan was efficient at totex level, when assessed against the average of its two totex models. This result was achieved through our efforts to reduce costs for customers by ensuring all aspects of our plan were robustly tested prior to inclusion in our plan.

Ofgem used two totex models to assess the efficiency of DNOs' plans. The results obtained from the two models give slightly different results.

		Ofgem totex models	
	ENWL forecast	Totex Reg 72 (activity level)	Totex Reg 81 (high level)
£m	1900	1935	1884
Efficiency %		98%	101%

The results of totex models can vary depending on assumptions such as model specification, functional form, data set, etc. We asked Oxera to examine a range of alternative totex models to test that this result was not a feature of the model specification.

Oxera considered the results of a range of models against three measures:

- **Average efficiency over the RIIO-ED1 period corrected to the upper-quartile benchmark—**this measure is commonly used (including by Ofgem) to assess whether a company's totex is efficient or otherwise relative to a benchmark. Oxera has used the average efficiency estimated over the RIIO-ED1 period corrected to the upper-quartile benchmark across the 48 sets of models to rank the companies' performance on this measure.
- **Percentage of times a DNO is better than the benchmark—**this measure is intended to capture the consistency of a company's performance across the 48 models, as assumptions underlying some models (i.e. model specification, estimation technique, etc.) may be more beneficial to some companies than others. This may mean that they are assessed to be significantly above the benchmark under these models, which might be masked in the first measure.
- **Average rank across the benchmark—**this measure is intended to address a limitation with the first two measures in that they do not take into account circumstances where the range of efficiencies estimated (across the industry) from a model is wide and the upper-quartile benchmark is quite low, such that even a company that is ranked poorly (e.g. in the bottom half) is assessed to be performing efficiently.

Oxera's analysis can be found in Appendix 2.

Based on empirical analysis of the 48 sets of models considered in Oxera's report, including Ofgem's core models and its sensitivities, Oxera draw the following conclusions on Electricity North West's efficiency:

- At the ownership group level Electricity North West is ranked first of six on average across the three measures considered.
- At the licensee level, while there is no single DNO that overwhelmingly dominates the others, Electricity North West and Northern Powergrid Northeast are the only DNOs that are almost always estimated to be better than the benchmark (in almost 90% of the examined models). Electricity North West is ranked second of 14 on this measure. In addition, Electricity North West, Northern Powergrid Northeast and

WPD South Wales are the only DNOs to be ranked in the top quartile on all three measures, and Electricity North West is ranked third of 14, on average, across the measures.

Oxera concludes that "*Overall, the analysis carried out in this report demonstrates that ENWL is more efficient than an upper-quartile benchmark and is ranked first of six at the DNO ownership group level, on average, across various measures, and third of 14 at a licensee level*".

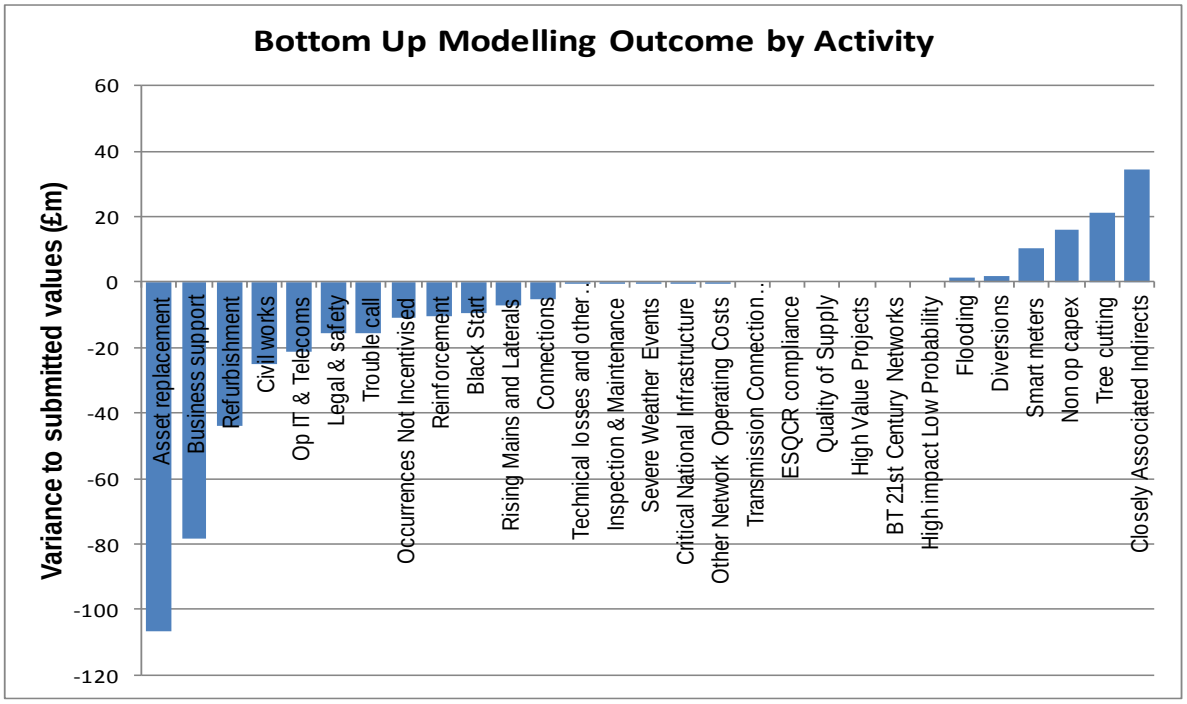
When using the historical data only, of the only two instances when Electricity North West is estimated close to, but not better than, the benchmark, one result comes from Ofgem's model specification (Electricity North West is estimated to be 2% worse than the benchmark), while Ofgem's other model specification estimates Electricity North West to be at the benchmark. That is, of the only two specifications used by Ofgem, both place Electricity North West at the bottom end of the efficiency range estimated across all of the specifications examined in Oxera's report. This suggests that Ofgem's totex models under-estimate the efficiency of our plan compared to other totex models considered in Oxera's report.

We recommend that Ofgem considers using the alternative totex models considered in Oxera's report for its slow track assessment to supplement its totex analysis.

3.3 Bottom Up analysis

Ofgem's bottom up analysis approach assessed the efficiency of specific activities included in our plan using individual models. These models comprised a combination of regression models and spreadsheets that separately considered volume and unit cost efficiencies. The results of those models were then aggregated to determine the overall efficient cost associated with Ofgem's bottom up models.

The following graph compares the results of Ofgem's bottom up analysis, by activity, to the costs included in our July 2013 submission.



It is clear from this graph that Ofgem's assessment of a small number of activities has a disproportionate effect on our assessed efficiency. In particular, Ofgem assessed that our proposed costs associated with asset replacement, business support and refurbishment activities were inefficient.

We have reviewed Ofgem's bottom up efficiency analysis in detail. The following sections of this annex review Ofgem's approach to cost assessment in these areas. We consider whether Ofgem's analysis has indeed identified inefficiencies in our plan or whether the results arise from shortcomings in Ofgem's analysis approach.

3.3.1 Asset Replacement

While many aspects of Ofgem's assessment of asset replacement are logical, two aspects of Ofgem's approach have resulted in an inappropriate assessment of the efficiency of our proposed costs:

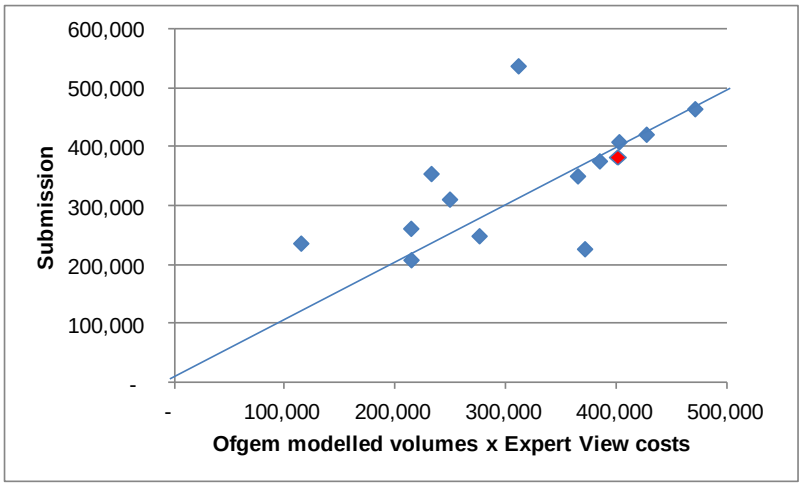
- inappropriate assessment of required volumes due to 'cherry picking'; and
- lack of qualitative adjustments, and inappropriate selection of 'expert view' unit costs.

In the following paragraphs we set out the effect of these very material issues

3.3.1.1 'Cherry picking' of asset replacement volumes

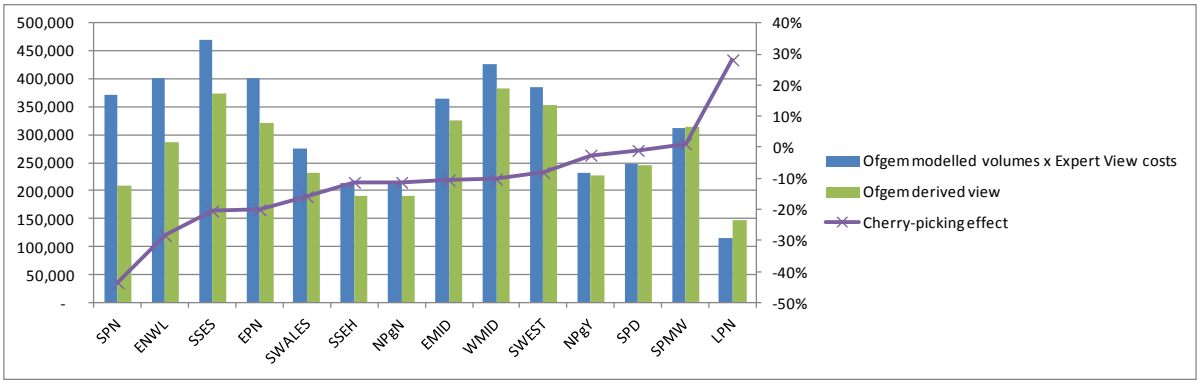
Ofgem's approach to assessing the required volume of asset replacement activities is generally based on allowing the DNO the lower of Ofgem's modelled view of the required volumes and the DNO's view. As this assessment is undertaken at the level of individual asset classes, no account is taken of the extent to which the DNO may address network health needs via varying its programme between asset classes.

We have analysed the outcome of Ofgem's models prior to it making its 'lower of' adjustment. The graph below compares companies' submitted asset replacement forecasts against Ofgem's modelled volumes multiplied by Ofgem expert view unit costs. The assessment of our forecast is highlighted in red. The graph clearly shows that our overall Asset Replacement submission aligns well to Ofgem's overall assessment of asset replacement needs. Indeed, Ofgem's unadjusted view would have allowed us over £20m more than the costs included in our July 2013 plan.



However, the effect of Ofgem's 'lower of' approach was to remove £114m, or 28%, from its overall assessment. The average proportion of Ofgem's overall assessment removed via cherry picking across all DNOs was just 11%. Despite the fact that our overall asset

replacement plan compares favourably to Ofgem's overall assessment, we faced the second largest cherry picking effect of any DNO. This cherry picking materially and adversely reduced Ofgem's view of the efficiency of our plan.



Our analysis suggests that we face this disproportionately large cherry picking adjustment because we undertake a particularly thoughtful approach to developing our asset replacement programme. Ofgem's models generally utilise median intervention rates in establishing the comparator baseline. Notwithstanding modelling issues relating to substitutable assets (eg LV cable), this approach penalises those areas where more extensive (and cheaper) refurbishment options are being proposed by not crediting the avoided replacement costs. Even where intervention rates above median are fully justified based on network circumstances, and justified using the risk indices and associated CBA analysis, Ofgem did not take this into account.

Our Condition Based Risk Management approach to developing our network investment programme, supplemented with detailed cost benefit analysis and detailed work scheduling, results in the makeup of our programme being different to that of other DNOs. Some aspects of our forecast also differ to the activities that we undertook in DPCR5, for example we have undertaken a substantial programme of woodpole asset replacement programme during DPCR5 and co-ordinated the activity with our ESQCR programme to maximise the benefit from both programmes. Our focus on this asset class during DPCR5 means that we need much lower volumes of work to be undertaken during RIIO-ED1, now that our ESQCR programme is largely concluded. We remain convinced that the volume of asset replacement included in our July 2013 plan remains appropriate for customers to fund during the RIIO-ED1 period and is well justified.

We accept that it will always be difficult for Ofgem to develop models that take account of all the complexities of developing detailed asset replacement forecasts. It is important, therefore that Ofgem supplements its models with detailed qualitative assessment of companies' forecasts and, where evidence exists to do so, adjusts the results of its models. These adjustments must take account of interactions between different parts of the cost base, especially between asset replacement and refurbishment.

We note that Ofgem did make some qualitative adjustments to our forecasts in its assessment of our July 2013 plan; however it only made adjustments in a small number of asset classes and it never fully restored the volumes to the proposed levels.

We have enhanced the CBA analyses provided for asset replacement and linked them to a discussion of the resulting risk profiles in Annexes 2B and 3 to better explain our proposals and their justification.

3.3.1.2 Selection of 'expert view' unit costs

Ofgem's unit cost analysis for asset replacement is based on comparisons of median unit costs achieved by all DNOs during DPCR5 and those forecast for the remainder of DPCR5 and for RIIO-ED1. In many cases, its assessment of unit costs is logical. However, in a number of cases, Ofgem's determination of 'expert view' unit costs is distorted by two key issues: use of inappropriate combinations of unit costs for an asset type to create an impossible overall 'unit cost', and inappropriate aggregation of unit costs across some asset categories.

Ofgem's selection of 'expert view' unit costs is generally based on selecting the lowest unit cost suggested by actual unit costs achieved in DPCR5 to date, actual unit costs forecast for the last two years of DPCR5 or the unit costs forecast for RIIO-ED1.

Some unit costs associated with the same asset or group of assets can be distorted by the reporting boundaries adopted by DNOs. In these cases, choosing unit costs from different DNOs or different time periods for the same asset can result in impossibly low unit costs. For example, in the case of unit costs associated with 132kV towers, Ofgem has chosen to use unit costs from different DNOs in different time periods for tower lines and for the associated fittings and conductors. The combined 'unit cost' resulting from this approach is lower than is suggested in any one time period for any DNO.

In some cases, Ofgem has aggregated asset classes in setting unit costs and applied a single unit cost across the combined asset class. This approach disadvantages companies that propose to install any assets that have higher unit costs than are proposed for the combined class.

We agree that there are many asset categories that can be aggregated for the purposes of assessing appropriate volumes, particularly where there is a degree of potential substitution between categories, or where obsolete categories need to be considered against their modern equivalents, for example when considering all categories of LV cables. However, in assessing unit costs, it is essential that Ofgem undertakes unit cost assessment at a more detailed level.

Ofgem's approach to aggregating asset classes has a particularly adverse effect on the assessment of our plan in the case of 132kV switchgear. For this group of assets, Ofgem aggregated all types of switchgear when assessing both required volumes of work and unit costs. We accept that it is appropriate for Ofgem to consider the whole 132kV circuit breaker population when assessing future volumes of work and intervention rates. However, a blended unit cost between gas insulated switchgear (GIS) and air insulated switchgear (AIS) types is inappropriate as it does not allow a true like-for-like comparison. In this example, the plant costs for AIS are significantly cheaper, but AIS solutions require far more cabling, land & ancillary equipment. These additional costs are not picked up in a unit cost analysis, but would emerge in a discussion of options for individual schemes. Where appropriate, our scheme papers for 132kV projects set out our analysis of why GIS or AIS solutions are appropriate in each case.

We accept that Ofgem will want to test that DNOs are not inappropriately proposing to install more expensive equipment than is necessary, however we believe that this assessment should be based on analysis of DNOs' cost benefit analysis and, where appropriate, scheme papers, rather than over-simplified averaging.

We recognise that in a small number of cases, for example 33kV transformers and high voltage circuit breakers, Ofgem's analysis has identified that our proposed unit costs were a

little high. Where Ofgem's analysis has identified that our unit costs were not as efficient as those of other DNOs we have made changes to our resubmitted plan.

3.3.2 Business Support

Two assumptions in Ofgem's Business Support analysis materially distort the result and Ofgem's view of the efficiency of our costs:

- treatment of fixed costs; and
- exclusion of insurance costs.

In the following paragraphs we set out the effect of these very material issues as well as exploring a number of other concerns that we have with Ofgem's approach to assessing cost associated with this activity.

3.3.2.1 Incorrect Treatment of Fixed Costs

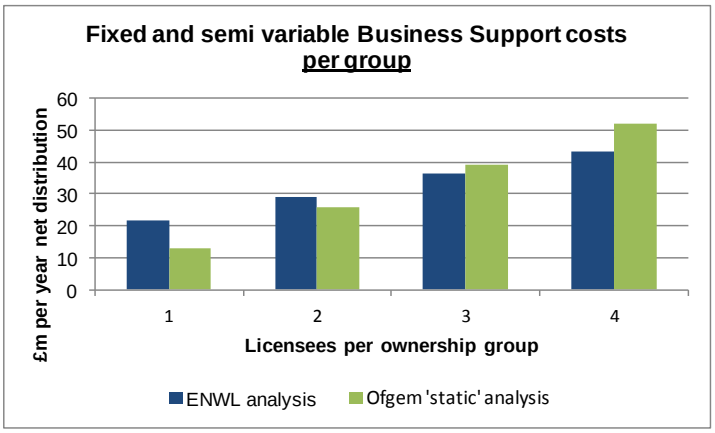
Electricity North West is the only DNO that is in an ownership structure that does not contain another DNO. Analysis based on 14 licensees will not appropriately calculate the level of fixed costs that would be required for an efficient single licensee (because all other DNOs belong to ownership groups that include multiple DNOs).

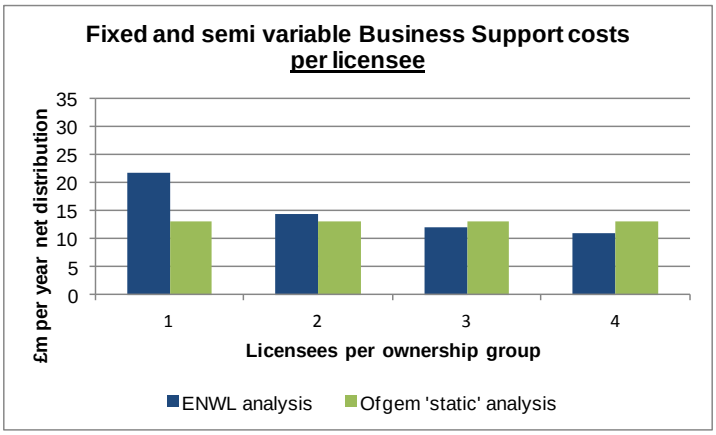
We asked KPMG to analyse the level of fixed costs that a single licensee would incur above the level that would be expected of DNOs in an ownership group that included two DNOs. KPMG's report estimated that the fixed cost uplift which Electricity North West should be afforded relative to other DNOs as a result of its single licence status is £10.5m per year. We included this report in our July 2013 plan and are pleased that Ofgem recognised this as a "*well presented report*". Details of KPMG's analysis can be found in Annex 29.

Ofgem's bottom up analysis of our proposed business support costs as part of its fast track decision suggested that efficient business support costs for Electricity North West are £177m (2012-13 prices, net distribution, 8 year total, including real prices effects). Our plan included £255m of business support costs. Ofgem therefore suggested that our proposed business support costs were 44% higher than a modelled efficient level of costs.

As part of its analysis Ofgem made a normalisation adjustment to remove £13m per licensee from business support costs. In doing so, it effectively assumed that costs were fixed by licensee and no costs could be shared between companies.

The following graphs show how the level of fixed and semi variable costs removed in Ofgem's normalisation compare to the level identified in KPMG's analysis. We have extrapolated KPMG's analysis to show 3 and 4 licensee groups. It is clear that Ofgem's normalisation differs significantly from KPMG's and that at a licensee level, Ofgem's approach will particularly distort the efficiency results of single licensee groups.





Ofgem's business support cost assessment model does not currently include a facility to remove different levels of fixed costs per group; it simply allows removal of the same value per licensee or per group.

We asked Oxera to undertake analysis to test the sensitivity of results of Ofgem's modelling to different assumptions in fixed cost normalisation, using the following scenarios:

- £13m per licensee – as in Ofgem's fast track analysis
- No fixed cost adjustment
- £23m per ownership group – twice KPMG's identified fixed cost uplift between a single and two DNO group

The results of Oxera's analysis show that Ofgem's business support analysis is hugely sensitive to its fixed cost assumptions, and that more appropriate assumptions would result in modelled efficient costs for Electricity North West being more than £75m higher.

Fixed costs - results

£m ED1 2012-13 prices		£13m per licensee (Ofgem)	No adjustment	£23m per Group
Static	Efficiency %	-47%	-24%	29%
	Allowance	184.5	190.8	261.7
Monte Carlo	Efficiency %	-25%	-22%	6%
	Allowance	184.9	192.8	262.1

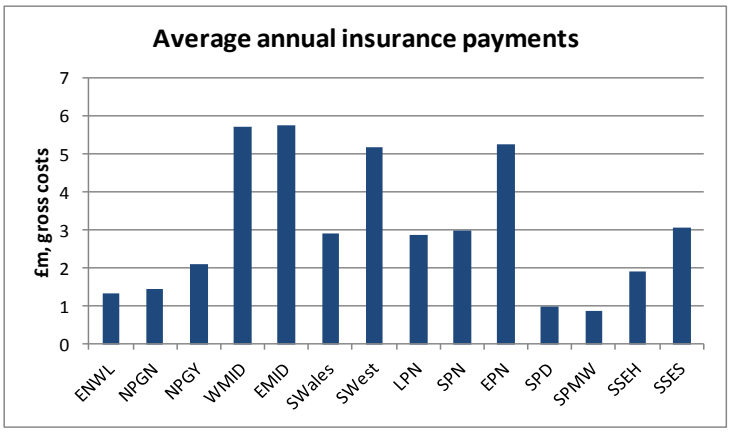
Fixed costs - variance

£m ED1 2012-13 prices		£13m per licensee (Ofgem)	No adjustment	£23m per Group
Static	Efficiency %	N/A	23%	76%
	Allowance	N/A	6.2	77.2
Monte Carlo	Efficiency %	N/A	3%	31%
	Allowance	N/A	7.9	77.2

The detailed results of Oxera's analysis can be found in Appendix 3.

3.3.2.2 Inappropriate Exclusion of Insurance Costs

Ofgem's cost assessment approach removed insurance costs from Business Support analysis. Analysis of DNO forecasts shows significant variation in the level of insurance costs included in companies' plans submitted in July 2103. These differences could be due to a number of reasons for example companies' chosen risk balance, company specific factors as well as the efficiency of insurance costs.



We have undertaken considerable work to seek to get the risk to cost balance optimised to minimise costs for customers. Our approach is reviewed regularly as insurance costs change and as our view of risks evolves. This approach to managing this important aspect of our cost base led to us including the third lowest insurance costs of any DNO for RIIO-ED1.

Ofgem's approach took no account of the 'trade-offs' that are considered by companies in deciding on the level of insurance purchase. For example, companies may take out vehicle insurance or may instead choose to 'self insure' and would therefore forecast associated costs within 'vehicle and transport'. Similarly, companies may take out machinery breakdown cover or instead may forecast higher levels of Troublecall or asset replacement costs. Companies that concluded that the lowest cost approach is to carry more risk will have been 'penalised' for higher costs in these alternative areas of spend while getting no 'credit' for lower insurance costs.

Ofgem's document setting out its approach to cost assessment for Fast Track stated that "*an efficient view of costs associated with these activities has been added back to our benchmarked expenditure assessment*". We see no evidence of this having been undertaken; companies with inefficient levels of insurance costs included in their plans will have therefore not incurred any penalty.

A more appropriate approach would be to not remove insurance costs from assessment, and in doing so ensure both sides of risk balance are included in Ofgem's bottom up model and to test efficiency of insurance activity. Any insurance that is only incurred by one licensee for company-specific reasons can be subject to separate qualitative review and adjustment.

We asked Oxera to undertake analysis to test the sensitivity of results of Ofgem's modelling to insurance normalisation.

The results of Oxera's analysis show that Ofgem's business support analysis is very sensitive to its insurance normalisation assumption, and that more appropriate assumptions would result in modelled efficient costs for Electricity North West being more than £25m

higher. The extent of the movement in Ofgem's Monte Carlo model is greater than in Ofgem's static model due to a spreadsheet error in Ofgem's Monte Carlo model.

Insurance - results

£m ED1 2012-13 prices		Insurance excluded from modelling	Insurance included in modelling
Static	Efficiency %	-47%	-31%
	Allowance	184.5	203.0
Monte Carlo	Efficiency %	-25%	-15%
	Allowance	184.9	209.9

Insurance - variance

£m ED1 2012-13 prices		Insurance excluded from modelling	Insurance included in modelling
Static	Efficiency %	N/A	16%
	Allowance	N/A	18.4
Monte Carlo	Efficiency %	N/A	10%
	Allowance	N/A	25.1

The detailed results of Oxera's analysis can be found in Appendix 3.

3.3.2.3 Endogenous cost drivers

Ofgem's business support assessment approach used a composite scale factor comprising a number of endogenous scale drivers. This approach of using factors that are significantly within companies' control, such as companies' proposed costs or revenues, has the potential to reward companies for inefficient operating structures or proposing high prices for customers.

For its slow track assessment, Ofgem must either use exogenous cost drivers such as the high level scale drivers like MEAV (as used in totex composite for business support costs), or it must adjust its endogenous cost drivers to remove this distortion.

It is not possible for us to calculate the effect of using endogenous cost drivers on the results of Ofgem's fast track analysis as we do not have access to efficient cost drivers for other DNOs.

3.3.2.4 External benchmarks

We note that Ofgem's report 'RIIO-ED1 business plan expenditure assessment - methodology and results' suggests the potential for Ofgem to use external benchmarking data for slow track companies.

We asked Oxera to evaluate Ofgem's proposed approach to using external benchmarks. Oxera identified a number of important issues associated with this possible approach including:

- Costs can differ dramatically due to accounting rules, sector specific needs, cultural differences and legislation
- The comparator group used in GD1 and T1 is much larger than most DNOs and may not provide like-for-like comparison
- Most external databases collect and hold data from business units of large companies and may exclude divisional and group costs
- It is likely that data from several sources may contain inconsistencies due to diverse data classifications, dissimilar accounting rules and differences in interpretation
- Organisations in external benchmark databases are likely to report on statutory opex basis rather than the cash basis that DNOs are required to use
- Use of single scale metrics to measure a whole business support function could result in crude simplification and exacerbate issues outlined above

For these reasons, we strongly recommend that Ofgem does not use external benchmarks as part of its slow track assessment.

Oxera's report can be found in Appendix 5.

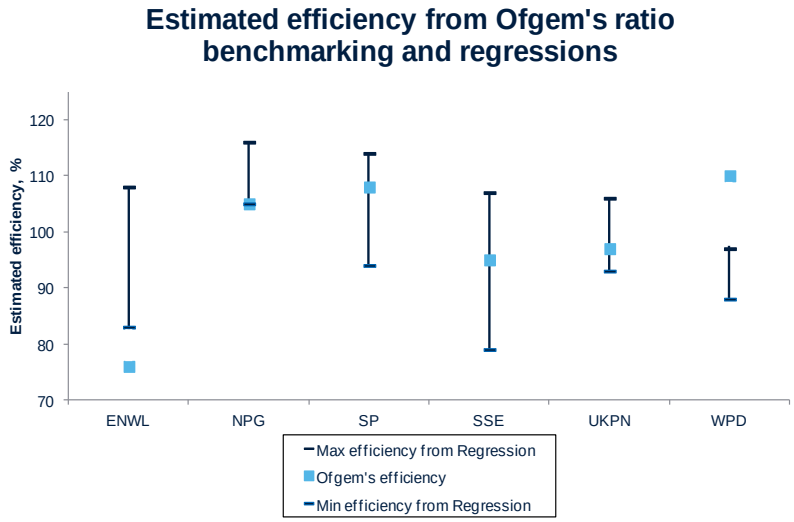
3.3.2.5 Alternative methods of assessing business support analysis

We asked Oxera to assess how the results from regression analysis differ from those of Ofgem's model.

Oxera developed a range of eight regressions based on combinations of:

- Cost driver: Ofgem's Business Support composite and MEAV (the driver for business support in Ofgem's activity drivers totex model)
- Licensee and group based analysis
- Logarithms and levels

The results of its analysis are shown on the following graph.



Note that in Oxera's analysis values of greater than 100 are more efficient.

In addition to demonstrating the sensitivity of results to the regression models chosen, Oxera's results clearly demonstrate that the results obtained from Ofgem's model are outside of the range of results obtained from regression analysis.

Oxera's analysis included four ownership group based models. On average, these models suggest that Electricity North West's modelled efficient costs should be some £48m higher than Ofgem's fast track analysis.

We recommend that Ofgem tests the results of its slow track analysis against group based regressions. If the results of Ofgem's model deviation significantly from the results of Ofgem's model it should consider whether the results are sufficiently valid to use for setting DNO cost allowances.

More details of Oxera's regression analysis can be found in Appendix 4.

3.3.2.6 Business support - overall

Ofgem's approach to assessing the efficiency of business support costs for fast track assessment was materially flawed.

The combined effect of changing the fixed cost assumptions and insurance normalisations to address the issues set out in sections 3.3.2.1 and 3.3.2.2 results in very material increases to the modelled efficient costs for Electricity North West.

Monte Carlo £m ED1 2012-13 prices		Fixed cost approach		
		£13m per licensee (Ofgem)	No adjustment	£23m per Group
Insurance excluded from modelling	Efficiency %	-25%	-22%	6%
	Allowance	184.9	192.8	262.1
Insurance included in modelling	Efficiency %	-15%	-10%	13%
	Allowance	209.9	221.4	278.9

variance (£m) £m ED1 2012-13 prices		£13m per licensee (Ofgem)	No adjustment	£23m per Group
Insurance excluded	Efficiency %	0.0	7.9	77.2
Insurance included	Allowance	25.1	36.6	94.0

Making the two changes we recommend to business support modelling would have a combined effect of increasing Ofgem's view of the efficient level of costs for Electricity North West by £94m. This represents a swing of more than 36% of our proposed costs for this activity.

This change in assessment has a further, secondary effect on Ofgem's bottom up assessment of our plan in that, because the results of all companies change when more appropriate modelling assumptions are used, the overall upper quartile also changes and further improves our assessed performance.

We believe that our assessed performance has been further distorted by Ofgem's use of endogenous cost drivers. As our plan was assessed as being very close to Ofgem's overall efficient level, and our proposed revenues were amongst the lowest of any DNO, other less efficient companies will have received higher business support cost allowances because Ofgem's chosen cost driver for less efficient companies would be larger and attract larger allowances.

We recommend that Ofgem makes changes to its cost assessment approach for slow track to address these very important issues.

We also recommend that Ofgem tests the results of its slow track analysis against ownership group based regressions. If the results of Ofgem's model deviate significantly from the results of Ofgem's model it should consider whether the results are sufficiently valid to use for setting DNO cost allowances.

3.3.3 Refurbishment

Ofgem's assessment of the efficiency of refurbishment volumes was based on very simple comparisons of DNOs' intervention rates. It took no account of trade-offs between, for example, refurbishment volumes and asset replacement volumes due to differences in companies' asset management strategies.

Ofgem's assessment of refurbishment costs was further distorted by the fact that companies have reported very different unit costs for refurbishment activities. In the case of many asset classes the differences in unit costs are sufficiently large to suggest differences in the level of intervention undertaken when companies refurbish assets or differences in interpretations of reporting rules rather than differences in efficiency between DNOs.

Ofgem's assessment approach also took no account of trade-offs between asset replacement and refurbishment in DNOs' asset management approaches. In a number of cases, the level of cherry picking adjustment in Ofgem's asset replacement assessment of an asset class was greater than the level of refurbishment cost disallowed from our plan. For example, Ofgem's cherry picked approach to asset replacement failed to allow us a greater than £8m 'credit' in asset replacement costs for 132kV towers, but at the same time the refurbishment assessment disallowed £5.5m of refurbishment costs for this asset type.

We accept that it will always be difficult for Ofgem to develop models that take account of all the complexities of developing detailed asset intervention forecasts. It is important, therefore that Ofgem supplements its models with detailed qualitative assessment of companies' forecasts and, where evidence exists to do so, adjusts the results of its models. These adjustments must take account of interactions between different parts of the cost base, especially between asset replacement and refurbishment.

We have refined the presentation of our cost benefit analysis and condition based risk management approach for our resubmitted plan to make clearer where trade-offs exist that should be considered in qualitative adjustments.

3.3.4 Other aspects of Ofgem's bottom up analysis

A number of aspects of Ofgem's analysis have been distorted by apparent differences in the interpretation of Ofgem reporting instructions. For example, it is clear that DNOs have interpreted the scope of civil cost 'units' quite differently. Some companies report a relatively small number of quite expensive pieces of work whereas others report a much higher number of relatively inexpensive pieces of work. The overall effect of Ofgem's assessment is to allow Electricity North West low volumes of inexpensive unit of work, resulting in a significant cut to our efficient proposals. Ofgem must ensure that it reviews companies' submitted data to identify such issues in resubmitted plans and, where found, takes account of the differences

We have also found a small number of spreadsheet linking issues and calculation errors, such as use of zero values in median calculations, in Ofgem's files. Some of these issues had quite material consequence for the assessment of our plan, for example Ofgem's analysis failed to add in £10.8m of efficient costs associated with service unlooping. We have identified these to Ofgem; Ofgem has acknowledged that such issues will be corrected for slow track analysis.

3.3.5 Overall

It is clear from Ofgem's bottom up assessment that inappropriate analysis of a small number of activities has had a disproportionate effect on our assessed efficiency. Our analysis shows that the vast majority of what Ofgem has identified as inefficiency in our plan was actually due to either inappropriate cost assessment approaches or failure to make qualitative adjustments to modelling results to take account of evidence submitted elsewhere in our plans.

In particular, we have identified significant issues with the assessment of the following activities:

- asset replacement – the results of which are distorted by inappropriate assessment of required volumes due to 'cherry picking' and lack of qualitative adjustments, and inappropriate selection of 'expert view' unit costs
- business support - two assumptions in Ofgem's Business Support analysis materially distort the results of Ofgem's analysis: its inappropriate treatment of fixed costs and its incorrect exclusion of insurance costs
- refurbishment – which was based on very simple comparisons of DNOs' intervention rates and took no account of trade-offs due to differences in companies' asset management strategies

We propose a number of changes to Ofgem's approach that will address these issues.

3.4 Fixed cost sensitivity

Ofgem's published fast track assessment document 'Assessment of the RIIO-ED1 business plans' states that "*Whilst our central view does not include any adjustment for ENWL's view of 'fixed costs', our sensitivity analysis with 'fixed costs' included shows that ENWL is still above our overall fast-track cost assessment benchmark."* The report goes on the say that this sensitivity analysis was undertaken '*on the basis of ENWL's view of 'fixed costs*''.

Ofgem's overall cost assessment results, adjusted for monetisation of cost of equity and outputs, suggested that our costs were £77m above Ofgem's benchmark (8 year value, 2012-13 prices, net distribution). KPMG's view of equivalent annual fixed cost uplift, as included in our July 2013 plan, is £10.7m per year ie £85m over eight years. We therefore do not understand how Ofgem has concluded that our costs are above its cost assessment benchmark when fixed costs are included.

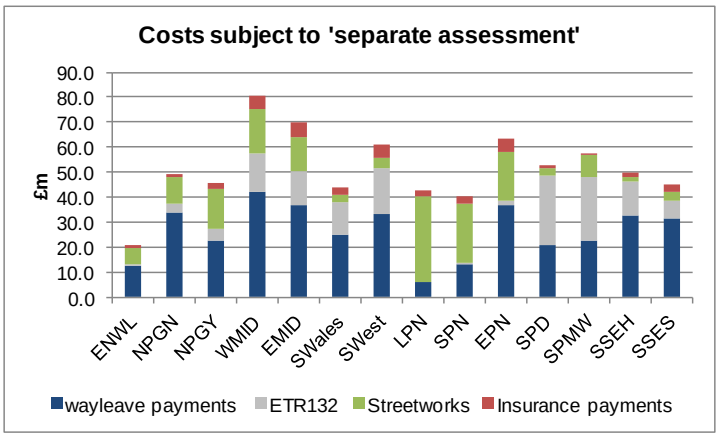
We have repeatedly asked Ofgem to share its sensitivity analysis to allow us to understand how it reached this conclusion, but it has not shared the analysis with us. Without being able to review Ofgem's analysis, we can only assume that Ofgem made an error in how it undertook its fixed cost sensitivity.

3.5 Normalisations and Exclusions

Ofgem made a number of normalisations and exclusions to its bottom up and totex analysis to adjust for company specific factors.

3.5.1 Costs Subject to Separate Assessment

Ofgem's cost assessment approach excluded some costs from analysis for 'separate assessment'. Our plan sought to continue to make efficiencies in all aspects of our expenditure. This included costs that have been excluded from modelling. The level of excluded costs forecast by different companies varies significantly, as shown in the following graph.



We accept that some of these excluded costs are legitimately incurred at different levels by different DNOs, but believe these should be subject to separate efficiency tests. These tests should give credit for efficient forecasts as well as penalising inefficiency. Where Ofgem did undertake separate assessment we are found to have efficient costs but are given no credit for this (our costs were just 72% of Ofgem view, or more than £43m lower). In other areas no separate efficiency assessment has been made.

3.5.2 Rail electrification costs

In their fast track plans, WPD companies included almost £100m of costs associated with rail electrification. Ofgem excluded these costs from its cost assessment for fast track companies. WPD has been allowed to charge these costs, in full, to customers. A mechanism has been included in the licence of WPD companies to allow these costs to be returned to customers if another party ultimately funds the work. However, we believe that that there are a number of credible situations where WPD can keep this allowance and it is therefore funded (subject to efficiency sharing factor) by WPD's customers. Examples of such potential situations are if

(a) some or all of the funded projects are cancelled
(b) some or all of the funded projects do not start
(c) the outturn costs are lower than forecast
(d) project phasing delays some costs into RIIO-ED2
(e) WPD delays billing for contributions into RIIO-ED2

Along with many other companies, we included provision for the associated NRSWA diversions within roads and bridges in our submission, but we made no provision for overhead line diversions, as we expect these be recharged to Network Rail. We are aware of at least six 132kV and four lower voltage overhead line diversions with an estimated capital cost of £1.75m but have assumed that these will be recharged.

This approach has artificially improved WPD's modelled performance in both bottom up and totex models, as well as artificially moving the upper quartile boundary against which all other companies are compared.

It is essential that these costs are included in WPD's cost base for slow track cost assessment for both bottom up and totex analysis. In the case of bottom up analysis this should be assessed as being unnecessary volume of work and disallowed. To do otherwise risks (a) inappropriately tough benchmarks for slow track companies and (b) inappropriate 'no worse' off adjustment for WPD for which it already has an outperformance opportunity built into its allowances.

4. Changes we have made in our new plan to improve our cost efficiency

In a small number of activities, we recognise that our plan was slightly more expensive than other DNOs' plans. Where this is the case we have made changes to our plan. We have removed more than £37m from our plan across seven activities where we accept that our July 2013 plan was slightly inefficient.

£m, gross costs, 2012-13 including associated RPEs	2016	2017	2018	2019	2020	2021	2022	2023	**RIIO-ED1 total**
Reinforcement	0.1	-0.9	-0.6	0.0	-1.7	-0.3	0.3	-2.2	**-5.2**
Asset Replacement	-1.1	-1.5	-1.3	-1.4	-1.4	-0.3	-0.3	-3.7	**-11.1**
Blackstart	-	-	-	-	-	-2.3	-2.3	-2.3	**-6.8**
Rising Mains & Laterals	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	**-1.7**
Occurrences Not Incentivised	-0.3	-0.3	-0.3	-0.3	-0.3	-0.4	-0.4	-0.4	**-2.8**
CEO Etc Costs	-1.3	-1.3	-1.3	-1.3	-1.3	-1.3	-1.3	-1.3	**-10.3**
Total	**-2.8**	**-4.1**	**-3.8**	**-3.3**	**-4.9**	**-4.7**	**-4.1**	**-10.1**	**-37.8**

Having understood from Ofgem its intention in normalising insurance costs out of its business support analysis we propose to slightly change the balance of insurance versus 'self insurance' (ie carrying risk and bearing the costs if the issue arises) in our plan. We have made this change in a way that has not changed the costs that we are proposing that customers pay. We have achieved this by moving these costs from Finance where many uninsured claims are reported.

Where it is clear that Ofgem did not fully understand our July 2013 plan, we have improved clarity of our justification. We have made considerable changes to the commentary document that supports our business plan data tables. We have also refined the presentation of our cost benefit analysis and condition based risk management approach for our resubmitted plan to make clearer where trade-offs exist that should be considered in qualitative adjustments. We have also included additional cost benefit analyses and scheme papers to assist Ofgem in understanding the make-up of our plan and how it is efficient.

We have made some other changes to our plan to reflect drivers other than efficiency, for example to reflect changes to Ofgem guidance or to update our plan for new information that was not available in July. A summary of all the changes that we have made to our plan can be found in our document 'Summary of Changes from the July 2013 Version of our Well Justified Business Plan'.

We firmly believe that these changes to our plan will lead to Ofgem assessing our plan as being well justified and within the upper quartile of all DNOs' plans.

5. How our new plan compares to Ofgem's view of efficient costs

We have undertaken substantial analysis to assure ourselves that our revised plan represents an efficient and well justified proposition for customers to fund.

The analysis overleaf compares Ofgem's analysis of our previous plan to the anticipated efficiency analysis of our revised plan.

It has clearly not been possible for us to pre-empt how changes to other DNOs' plans or wider changes to Ofgem's assessment approach may change the outcome of Ofgem's modelling. We have therefore based our analysis on DNOs' original 2013 plans.

Our analysis shows that we can expect our revised plan to be assessed to be upper quartile across all activity areas and to be comfortably within overall upper quartile, when assessed via a range of assessment tools that includes the small number of key changes set out in this annex.

We recognise that the upper quartile may change as a result of other companies' resubmitted plans. We are comfortable that we have sufficient headroom between our resubmitted plan and modelled upper quartile to allow for this.

Note that we have dropped our cost of equity assumption to 6.3% used by Ofgem in its fast track cost assessment and therefore we are confident our plan will also be assessed as efficient when combined with our financing costs.

Note that the variance between plans shown overleaf differs very slightly from that shown in our document 'Summary of Changes from the July 2013 Version of our Well Justified Business Plan' as Ofgem used a slightly later version (November 2013) of our plan for its cost assessment. We show variances here to that November version.

Analysis of how we expect the efficiency of our revised plan will be assessed by Ofgem

Ofgem's December 2013 assessment

£m, net, including RPEs	Bottom up						Totex		Combined assessment
	Network Investment	Network Operating Costs	Closely Associated Indirects	Business Support Indirects	Non Operational Capex	Total	Activity level drivers	High level drivers	
ENWL Plan	939	329	336	255	41	1900	1900	1900	1900
Ofgem assessment	784	375	416	199	64	1837	1935	1884	1855
Efficiency (compared to UQ)	120%	88%	81%	128%	64%	103%	98%	101%	102%

Anticipated assessed efficiency of our revised plan

£m, net, including RPEs	Bottom up						Totex		Combined assessment
	Network Investment	Network Operating Costs	Closely Associated Indirects	Business Support Indirects	Non Operational Capex	Total	Activity level drivers	High level drivers	
ENWL Revised Plan	925	336	336	245	41	1882	1882	1882	1882
Ofgem assessment - November 13	784	375	416	199	64	1837	1935	1884	1855
Changes due to linking errors and omissions in Ofgem assessment	20					20			15
Changes due to re-categorisation within and justified additions to our plan	17	2		8		27			20
Proposed changes to business support modelling to better reflect fixed costs and include insurance costs (here based on use of group based regression)				52		52			39
Amend asset replacement unit cost assessment to avoid aggregation of asset types	11					11			8
Qualitative adjustments that we expect Ofgem will make to the results of its models based on our submitted evidence	107	2				110			82
Assessment of excluded costs allowing credit for efficient forecasts		17	27			44			
Consider alternative totex modelling technique						0	155	115	34
Anticipated revised Ofgem assessment of our plan	939	396	443	259	64	2101	2089	1999	2087
Anticipated efficiency (compared to UQ)	98%	85%	76%	95%	64%	90%	90%	94%	90%

Change summary

£m, net, including RPEs	Bottom up						Totex	
	Network Investment	Network Operating Costs	Closely Associated Indirects	Business Support Indirects	Non Operational Capex	Total	Activity level drivers	High level drivers
Changes in ENWL plan	-15	7	0	-10	0	-18	-18	-18
Assumed changes in Ofgem assessment	155	21	27	60	0	263	155	115
Assumed change in efficiency assessment	-21%	-3%	-5%	-34%	0%	-14%	-8%	-7%

6. Conclusion

Ofgem's Fast Track analysis showed Electricity North West's business plan to be upper quartile based on its totex analysis but to be outside of the upper quartile in its bottom up assessment.

We have identified a number of significant issues with Ofgem's cost assessment approach used as part of its Fast Track decision. Several of the issues that we have identified are sufficiently material that correction of any one of them could have resulted in Ofgem reaching a different conclusion as to whether our plan was efficient and therefore sufficiently well justified. In combination, the issues that we have identified represent a very material distortion of Ofgem's view of the efficiency of our plan.

We conclude that Ofgem's totex models under-estimate the efficiency of our plan compared to other totex models.

We have identified a number of issues with Ofgem's bottom up analysis including the following very significant issues:

- asset replacement – the results of which are distorted by inappropriate assessment of required volumes due to 'cherry picking' and lack of qualitative adjustments, and inappropriate selection of 'expert view' unit costs
- business support - two assumptions in Ofgem's Business Support analysis materially distort the results of Ofgem's analysis: its incorrect treatment of fixed costs and its inappropriate exclusion of insurance costs
- refurbishment – which was based on very simple comparisons of DNOs' intervention rates and took no account of trade-offs due to differences in companies' asset management strategies

Ofgem's approach to exclusions and normalisations fails to recognise the efficient level of costs included in our plan for these excluded areas.

We believe that Ofgem made an error in how it undertook its fixed cost sensitivity.

We recommend that Ofgem makes a small number of important changes to its cost assessment approach for slow track companies to address these material issues.

We have reviewed our plan in great detail in preparation for resubmission and have undertaken substantial analysis to assure ourselves that our revised plan represents an efficient and well justified proposition for customers to fund. We have removed costs where new evidence suggests that the costs included in our July 2013 plan were inefficient. We have removed more than £37m of costs from our plan. Our analysis shows that we can expect our revised plan to be assessed to be upper quartile across all activity areas and to be comfortably within overall upper quartile, when assessed via a range of assessment tools that includes the small number of key changes set out in this annex.

We are confident that our resubmitted plan represents an efficient proposition for our customers in the North West to fund.

7. Appendices

The following documents are attached as appendices to this annex

Appendix 1 Cost analysis submitted in support of our July 2013 plan

Appendix 2 Oxera – ENWL's TOTEX efficiency in RIIO-ED1

Appendix 3 Oxera - Analysis of Business Support Costs

Appendix 4 Oxera - Business Support regression results

Appendix 5 Oxera - use of external databases to benchmark business support costs

[These appendices contain commercially sensitive information and have been redacted from public domain versions.]