ofgem Promoting choice and value
for all gas and electricity customers

Electricity Distribution Price Control Review
Final Proposals - Allowed revenue - Cost assessment

Document Type: Decision Document

Ref: 146/09

Date of Publication: 7 December 2009

Target Audience: Consumers and their representatives, distribution network operators (DNOs), independent distribution network operators (IDNOs), owners and operators of distributed energy schemes, generators, transmission owners, electricity suppliers and other interested parties.

Overview:
Ofgem regulates the 14 DNOs, who are all regional monopolies to protect the interests of current and future consumers. We put in place a price control every five years. This sets the total revenues that each DNO can collect from customers at a level that allows an efficient business to finance their activities. We also place incentives on DNOs to innovate and find more efficient ways to provide an appropriate level of network capacity, security, reliability and quality of service.

The current price control expires on 31 March 2010 and Ofgem has now undertaken a Distribution Price Control Review (DPCR5) to set the controls for 2010-2015. This document sets out in detail how we set the cost allowances for the companies. It should be read in conjunction with our Distribution Price Control Review Final Proposals core document. This supplementary document sets out in greater detail the cost assessment work for DPCR5.

Contact name and details: Rachel Fletcher - Director, Distribution

Tel: 020 7901 7209

Email: dpcr5.reply@ofgem.gov.uk

Team: Electricity Distribution

Context

This document is one of four more detailed, technical documents that accompany the DPCR5 Final Proposals. These documents explain the methodologies and rationale we have applied in arriving at our Final Proposals and set out further detail of the changes we have made since Initial Proposals. They are targeted primarily at the DNOs and those stakeholders who require a more in depth understanding of our proposals.

Our Final Proposals set out our decision on the maximum allowed revenues each DNO should be allowed to collect from customers between 2010 and 2015. We set out the behaviours and outputs customers want and expect from the DNOs over this period and the incentives and obligations we propose to use to achieve them. If the DNOs accept them, the new arrangements will come into effect on 1 April 2010. If they do not we intend to refer the matter to the Competition Commission.

In December 2008, we published our Policy Paper. The document focussed on three themes, environment, customers and networks and set out our views on the overall approach to setting the control, the methodologies we propose to use, the structure of incentives and the new regulatory arrangements we think are appropriate.

In May 2009, we published our Methodology and Initial Results document. This sets out details of our cost assessment methodology and the initial results for a number of core cost areas. We explained that we would continue to develop our work in this area as we worked towards Initial Proposals.

In August 2009, we published Initial Proposals for the maximum allowed revenues for each DNOs and the associated outputs, incentives and obligations.

In September 2009, we published an update setting out our proposals for those areas of analysis that were incomplete at Initial Proposals because of a lack of clarity in terms of either the requirements DNOs would be facing or issues with the cost data. These included:

- major system risks expenditure (High Impact Low Probability (HILP) events only),
- BT 21st Century network expenditure,
- expenditure on rising and lateral mains, and
- expenditure on Critical National Infrastructure Costs, black start and emergency batteries, and
- traffic management related costs.

Since then we have been refining our analysis and results to take into account further evidence submitted by the DNOs, responses to Initial Proposals, later updates, and correcting errors that impacted on our cost baselines and refining our methodology.

Associated Documents

- Electricity distribution price control review. Initial consultation document (32/08)
- Update letter on the DPCR5 process (151/08)
- Electricity distribution price control review. Policy Paper (159/08)
- Electricity distribution price control review. Methodology and Initial Results Paper (47/09)
- Electricity distribution price control review. Initial Proposals (92/09)
- Electricity distribution price control review. Initial Proposals - Incentives and Obligations (93/09)
- Electricity distribution price control review. Initial Proposals - Allowed revenue - Cost Assessment (94/09)
- Electricity distribution price control review. Initial Proposals - Allowed revenues and Financial Issues (95/09)
- Cover note electricity distribution price control review Initial Proposals – Financial Model 2010-15
- Electricity distribution price control review - September Update to Initial Proposals
- Electricity distribution price control review - October update covering letter.
- Regulating energy networks for the future: RPI-X@20 Principles, Process and Issues (13/09)

Table of Contents

Summary

One of the core elements of DPCR5 is assessing the efficient level of network investment and operational costs for April 2010 to March 2015 necessary for distribution network operators (DNOs) to deliver an appropriate level of outputs, reliability, customer service whilst meeting all of their statutory and licence obligations. This will ensure they can maintain a secure and reliable supply at an efficient cost while ensuring that any new assets they install meet customers' needs into the future and, where possible, take account of how those needs might change in future.

This document sets out in greater detail how we have arrived at our Final Proposals. It covers how we have carried out the cost assessment for each of the building blocks of DNOs' costs, the results of this work and how this has then be pulled together to form an overall view of an efficient level of expenditure for each DNO for April 2010 to March 2015. It also explains the key movements since we published Initial Proposals.

- **Chapter 1: Overview of our approach to cost assessment -** This chapter sets out a brief overview of our approach to the cost assessment work for DPCR5.

- **Chapter 2: DNOs' Forecast Business Plans** - we received updated cost forecasts from each of the DNOs for the period 2010 to 2015 in advance of Final Proposals. This chapter sets out a summary of the information for each of the building blocks including core network investment, non-core investment, network operating activities, indirect activities and non-operational capex. It also shows the key movements in their forecasts since Initial Proposals.

- **Chapter 3: Network Investment** - This chapter provides a summary of our Final Proposals baselines for each of the elements of core network investment including demand connections, asset replacement, general reinforcement, and each of the elements of non-core investment such as flooding, technical losses, quality of service and BT 21st Century. We also explain the key changes we have made since Initial Proposals including the main movements for each of the DNOs.

- **Chapter 4: Operational Activities** - This chapter provides a summary of our Final Proposals for each of the elements of Operational Activities. It also sets out how we have updated our analysis of Operational Activities since Initial Proposals. It explains the changes we have made to the benchmarking, including revised adjustments for insourcing/outsourcing, revisions to the cost drivers, the approach to setting the benchmarks for network operating costs and the weighting of the regressions. It also provides an update of the approach we have adopted for costs that sit outside of the main comparative analysis and the work carried out by our consultants.

- **Chapter 5 - Real Price Effects (RPEs) and Ongoing efficiency -** This chapter explains the updated analysis we have commissioned from CEPA on RPEs and our Final Proposals for both RPEs and ongoing efficiency taking into account evidence from the DNOs and other parties.

- **Chapter 6: Shetland -** This chapter sets out our proposals for the treatment of the additional costs of meeting electricity demand on Shetland.

- **Chapter 7: Managing cost and volume uncertainty** - This chapter sets out proposed mechanisms to manage cost uncertainty in DPCR5.

- **Chapter 8: Bringing the package together -** This chapter explains how we have brought together the different elements of the cost analysis to form our view of

overall cost baselines for Final Proposals. It explains how we have sense checked our analysis and carried out a holistic assessment of the companies' costs, taking into account a broader range of evidence. It presents Ofgem's overall Final Proposals baselines for each company and the resulting cost allowances and incentive strengths for each after the application of the Information Quality Incentives (IQI).

1. Overview of our approach to cost assessment

Chapter Summary

This chapter sets out an overview of our approach to the cost assessment analysis for Final Proposals.

Introduction

1.1. One of the core elements of our price control review involves assessing the efficient level of network investment and operational costs for April 2010 to March 2015 enabling DNOs to deliver an appropriate level of outputs, reliability, customer service and meet all of their statutory and licence obligations. We set cost baselines at a level that allow efficient DNOs to maintain a secure and reliable supply while ensuring that any new assets they install meet customers' needs into the future and, where possible, taking into account how those needs might change.

1.2. The DNOs collectively forecast £15.3bn of network expenditure during DPCR5. We have spent the last twelve months in discussions with each DNO on its business plans and carrying out our cost assessment. We have taken a firm but fair approach. We propose to cut these forecasts by 11 per cent on average pre-IQI although the most efficient companies have seen much smaller reductions and the least efficient larger reductions. After applying the Information Quality Incentive (IQI) mechanism which sets allowed revenues as a weighted average of the DNO' forecasts and the Ofgem view, our proposal is that DNOs should be allowed a 20 per cent increase (or £2.3bn) on expenditure in DPCR4. This represents a 8 per cent (or £1.3bn) reduction from the forecasts in the DNOs' business plans.

1.3. This document sets out our decision on the cost baselines for each of the DNOs, highlighting the key changes we have made since Initial Proposals and the impact this has had on the results. It also describes our mechanisms for addressing cost uncertainty.

1.4. This document focuses on our baselines for Operational Costs and Network Investment. In reaching our Final Proposals allowed revenues we also need to include our forecasts for pass-through items such as network business rates and Ofgem licence fees and partial pass-through items such as Transmission Connection Point Charges (TCPC). We also include our assumptions for the key financial issues, such as the treatment of tax and pensions and the appropriate weighted average cost of capital (WACC). Our approach and cost baselines for TCPC are set out in Chapter 5 of the Incentives and Obligations document. Our approach to the remaining areas is set out in the Financial Issues document together with our final proposals for allowed revenue.

Overall Approach to the cost assessment

1.5. Our overall approach to the cost assessment work has been to:

- review the DNOs' forecasts,
- carry out our own modelling and benchmarking work,

- consider evidence on why the DNOs' forecast volumes or costs differ from our benchmarks, and

- form an overall view on the appropriate baseline level of costs from DPCR5 taking this and wider evidence into account.

1.6. We have arrived at the final baselines through an iterative approach which has allowed extensive scrutiny by, and several rounds of interaction with, the DNOs and other stakeholders on the emerging results of our analysis.

1.7. We are confident that we have applied a fair, robust and transparent process and struck an appropriate balance between challenging the DNOs' forecasts and erring on the side of caution where there is uncertainty as to the appropriate level of costs. Based on four years' of annual regulatory reporting and several iterations of business plan questionnaires we now have much more robust data than at any previous distribution review. We have made use of this in carrying out time series regressions using four years' data which allow us to make more reliable estimates of efficiency. We have run a large range of regressions for Operational Costs taking account DNOs' views on appropriate levels of analysis and costs drivers. The results generate a consistent picture across the DNOs for Operational Costs and are also consistent with the overall results for our Network Investment analysis.

1.8. For both Network Investment and Operational Costs we have developed appropriate benchmarks taking into account data quality and the scope for variability across the DNOs. We have benchmarked asset replacement unit costs using an adjusted median rather than the upper quartile in recognition of the data imperfections. We have also given the DNOs the opportunity to remove costs from the general unit cost analysis where they could justify them as being atypical or costs associated with the work that are not incurred by other DNOs (non-modelled costs). We have made adjustments where there are boundary issues or trade-offs between separately defined unit costs. For indirect costs we have benchmarked at the upper quartile taking into account a smaller range of costs across the DNOs. We have benchmarked network operating costs at the upper third (top 33 per cent of companies) due to greater variability in the data.

1.9. We have given special treatment for large projects that exceed £15m, taking them outside the normal unit cost benchmarking and reviewing them separately. We have also given DNOs additional protection through a reopener should the efficient cost of these projects be more than 20 per cent greater than our baselines.

1.10. We have applied RPEs that are greater than our 1 per cent ongoing efficiency assumptions meaning that we are assuming expenditure rises above RPI inflation. We consider that our assumptions for RPEs are reasonable but err on the side of caution given the considerable (and unprecedented) uncertainties over how quickly the UK and world economy will emerge from recession and return to long term average growth rates. The RPI measure is likely to increase significantly relative to the CPI measure set as a target for the Bank of England's management of monetary policy. This is because RPI includes mortgage interest payments. A rise in interest rates from their current, historic lows, back towards (or above) long-run averages will see RPI increase significantly above CPI for a period. DNOs will benefit from this effect and their revenues (and RAVs) will rise faster than their input costs that are linked to the underlying level of inflation. Real wages have risen in the last year as pay deals have not reflected zero (or negative) inflation. This provides headroom - as inflation rises - for companies to

restore real wages levels unless there are productivity improvements to fund further increases in real wages.

1.11. We are allowing a premium for specialist labour and an allowance for workforce renewal. But we don't accept the DNO's arguments that their real wages will continue to outpace earnings inflation over the next five years. DNOs should be able to train new staff or attract skilled workers to counteract any short term skilled labour shortages. Beyond any temporary effects, real wage growth should reflect productivity improvements - as in any other industry.

1.12. We have provided more updates and opportunities for interaction with each of the DNOs than at previous price control reviews - issuing updates in September, early and late October - and have systematically logged and worked through their comments, providing feedback where appropriate. We have left our analysis open until a later stage in the review process and have even made changes to address DNOs' concerns when it was no longer practical to fully update and re-run all of our benchmarking analysis given the remaining time available.

1.13. For example Scottish Power highlighted a significant and material error in their FBPQ submission that underestimated network lengths feeding into the fault cost regressions and that their fault numbers have been under-reported. We have carried out some indicative analysis to estimate the impact and have taken this into account in their final cost baselines.

1.14. We have applied different cost analysis for each of the key building blocks of DNO expenditure including:

- **Network Investment** which is made up of core investment such as asset replacement, general reinforcement and non-core investment such as quality of service costs, costs of flood protections and the costs associated with the move to the BT 21st Century telecommunications network. This is set out in **Chapter 3**.
- **Operational Activity costs** which include network operating costs, closely associated indirect costs, business support costs and non-operating capex such as vehicles, IT and telecoms. This is explained in **Chapter 4.**
- **Our assumptions for RPEs and ongoing efficiency.** These are explained **in Chapter 5**
- The additional costs of meeting electricity demand on **Shetland.** This is explained in **Chapter 6.**

1.15. We have then pulled the results of our analysis together to form a view of the total expenditure requirements for each of the DNOs and have carried out sense checks to ensure the results of our analysis are sensible and fit well with other broader information regarding the DNOs, including:

- information on the DNO forecasts at DPCR4 and how the DNOs have performed against these forecasts during DPCR4,

- the quality of the information they have provided during the annual cost reporting visits over the last 4 years, including the robustness of project papers and explanations they have provided,

- the robustness of the forecasts and supporting information that they have provided during the DPCR5 review, and

- the quality of output information they have provided.

1.16. This overall sense check is described in **Chapter 8**. We have applied a revised version of the IQI in DPCR5 to encourage the DNOs to submit more accurate forecasts. The IQI has a number of effects. It sets the cost allowances part-way between the Ofgem baseline and DNO forecasts placing greater weight on their information than we have done in the past. The DNOs are also allowed to earn additional income depending on how close their forecast is to our baseline. Finally, the IQI sets the incentive rate for future efficiency savings dependent on how close the DNO's forecast is to our baseline. **Chapter 8** also presents the resulting cost allowances and incentive strengths per DNO once we have applied the IQI.

1.17. There are a number of areas where we think we need mechanisms to address uncertainty in the volume associated with network investment. Given the current situation in the housing market and wider economic conditions it is more difficult than at previous reviews to predict the volume of demand connections over the next few years. There is also uncertainty in the number of large high-cost connections and requirements for general reinforcement. We are proposing to true up the allowances for high-volume low-cost connections at the end of the price control period based on the actual volume of connections. We also propose to introduce a bundled reopener for low-volume high-cost connections and general reinforcement costs to ensure that there is protection for both DNOs and consumers for high materiality differences between the out-turn and assumptions underpinning the price control.

1.18. Finally, there continues to be uncertainty regarding the costs associated with permitting schemes under the Traffic Management Act 2004 and the Transport (Scotland) Act 2005, although both Transport for London (TfL) and Kent Council are due to start implementing the schemes from April 2010. Given that we have no historical information regarding these costs, we propose to include a stand-alone reopener for these costs during DPCR5.

1.19. Details of our approach to cost uncertainty are set out in **Chapter 7**.

Review of Network Investment

Process

1.20. Our review of the DNOs' forecasts for network investment has been detailed and robust. We have developed and improved network investment models used in previous price control reviews. For asset replacement we assessed each DNO's forecasts against its own asset replacement policies in the past, and against the expenditure forecasts of other DNOs, taking into account the age profile of assets on the individual networks. Our network reinforcement model similarly assesses capacity added against the additional capacity each DNO has needed to meet demand growth in the past, and compares the forecast unit cost of adding new capacity with long run average costs. We

have assessed both the volume of investment each company is planning to undertake and the unit cost of this investment.

1.21. Our work has been through several iterations. We used our models to assess the forecasts we received from the DNOs in February and to highlight areas of concern. We held detailed discussions with each of the DNOs to explain our approach, discuss our concerns and give the opportunity for the DNOs to provide us further feedback. We spent much of May and June reviewing additional information, for example asset condition data, provided by the DNOs in response to our questions. Following Initial Proposals we incorporated the DNOs' updated DPCR5 forecasts into our models to inform our view of DPCR5 expenditure. We have also held further meetings and discussions with each of the DNOs to discuss their responses to Initial Proposals and have taken account of the further evidence they have submitted in updating and refining our analysis.

1.22. Finally, the view of Network Investment expenditure for each DNO set out in this document has been influenced by a number of broader considerations including the company's track record in spending against its forecasts, the ability of the company to ramp up levels of expenditure and the quality of the business plan narrative submitted along with the expenditure forecasts.

1.23. Throughout this process we have had support from specialist engineering consultants, PB Power. They have audited our investment models. We have also made full use of our in-house team of expert engineers and economists who have built up an understanding of each business over the past few years including through the cost visits and the reporting process we carry out annually.

1.24. The adjustments we have made to each DNO's forecast for network investment are set out below.

Key findings - asset replacement and network reinforcement

1.25. We think that in general the DNOs are looking to replace an appropriate volume of assets over the DPCR5 period, especially once the condition of the assets and their observed rate of deterioration is taken into account. In 6 cases we have made no cuts to the volumes the DNO proposes to make, with cuts of below 10 per cent in most other cases. Overall, our proposals should have only a minor impact on the volume of asset replacement that DNOs are planning to undertake, and we are confident that the companies can achieve their planned network health and fault levels by 2015. This is in line with the results of the stakeholder engagement and customer research which suggested that customers expected no deterioration in the networks.

1.26. We see a range of attitudes towards risk in the volume of reinforcement investment forecast by the DNOs, with some DNOs looking to build in additional capacity early in response to forecast demand growth. However, as is explained in more detail in Chapter 7 there is some uncertainty around the rate of demand growth in each DNO area and we propose to have an integrated reopener for large one-off connections and general reinforcement making use of the new load index output measure we have introduced. This reopener will depend on the DNO being able to demonstrate through the load index that demand is significantly higher than originally forecast. This should mean that customers do not have to pay for reinforcement unless it is necessary and that there is no risk of the DNO not being funded to provide the capacity that is required to accommodate new demand.

1.27. We think that many of the DNOs still have an overly conservative view of the unit costs they will face over the DPCR5 period. We have observed a very large range in the unit cost assumptions the DNOs make for carrying out broadly the same work. Applying sensible benchmarking which allows each DNO a set of unit costs at the lower of the DNOs' forecast or the median level has allowed us to cut network investment expenditure by 12 per cent or (£863m) before applying the IQI and adding back our assumptions for RPEs and by 15 per cent after applying the IQI and adding back our assumptions for RPEs. Some DNOs have challenged our approach to unit costs but we consider this approach is fair. We have benchmarked asset replacement unit costs using an adjusted median rather than the upper quartile in recognition of some of the data imperfections. We have also given the DNOs the opportunity to remove costs from the general unit cost analysis where they could justify them as being atypical or costs associated with the work that are not incurred by other DNOs (non-modelled costs). We have made adjustments where there are boundary issues or trade-offs between separately defined unit costs. We have provided an adjustment for those companies who are performing at the frontier on asset replacement unit costs to avoid penalising them relative to less efficient DNOs and to give them broadly the same scope to outperform the settlement.

1.28. In this price control review we have placed a strong emphasis on the need for DNOs to develop and commit to delivering suitable network output measures as part of the DPCR5 settlement. This is to ensure that DNOs undertake the necessary network investment required on the network and to deliver what customers have paid for via the DPCR5 settlement.

1.29. This ensures that the cost incentives effectively bind on the DNOs. In the absence of such output measures, it is difficult to distinguish between those companies that have innovated and found ways to deliver what customers need and expect more efficiently, and those that have deferred investment at the expense of network health and/or network loading.

1.30. Based on the work undertaken since Initial Proposals, we now have network outputs relating to both asset replacement (health indices) and general reinforcement (load indices) for all 14 DNOs that are fully consistent with our Network Investment allowances as set out in these Final Proposals. The DNOs' outputs are provided as a set of Excel spreadsheets on the Ofgem website with Final Proposals, and form part of the overall DPCR5 package. These outputs will become the 'agreed network outputs' (i.e. the baseline, relevant for assessment purposes), subject to the DNOs agreement to the Final Proposals package. Further details on Network Outputs are provided in the Incentives and Obligations Document.

Exceptions

1.31. In a number of cases DNOs are proposing to undertake large investment projects in excess of £15m, which together total around £0.7 bn. In particular, EDFE has proposed a series of interrelated projects to reinforce central London which together will cost £209m. We have taken these projects outside of the assessment process explained above. Our consultants have reviewed and indicated their support for the engineering justification provided by EDFE for the London projects. However, as with the other projects there is some uncertainty over whether these projects will go ahead in the DPCR5 period or whether they will be deferred by issues such as delays in gaining the relevant planning consents or by difficulties resourcing the projects. We are also concerned that our proposed output measures will not capture whether these projects

have gone ahead, and we would like to make sure that customers only pay where investment has been made.

1.32. In Initial Proposals we put forward a number of options on how we could treat high-value projects (HVPs). Taking into account responses to Initial Proposals, further discussion with the DNOs, and some further thinking, we have decided that high value projects be subject to the following treatment for DPCR5:

- an ex-ante allowance is included in our baselines (subject to an efficiency adjustment where appropriate),
- the DNOs will be required to commit to project specific outputs, and
- if outputs are not delivered an adjustment will be made based on the 'outputs gap'.

1.33. In addition, if the total spend on HVPs is +/- 20 per cent of the total ex-ante allowance and all outputs are delivered the HVPs will be eligible for the reopener for these projects. Further details of how the reopener will be applied to HVPs are discussed in Chapter 7 on dealing with uncertainty.

Discretionary Expenditure

1.34. In total the DNOs put forward forecasts of £113m over and above normal business expenditure in order to increase future flexibility. We have assessed this expenditure according to the quality of the justification, especially with respect to whether the expenditure will enable the network to be more flexible in the future (for connecting distributed generation, using demand side management or active network management etc.) We do not consider that any of the DNOs have come forward with sufficient justification for this expenditure so we have not included any of these costs in our baselines. We consider that this type of expenditure is now best dealt with through the Low Carbon Networks fund, which is explained in Chapter 1 of the Incentives and Obligation document.

2012 London Olympics

1.35. EDFE has requested we provide up front funding for costs associated with the Olympics. We think that any additional DNO costs (whether capital or operational) associated with the risk mitigation and successful delivery of the Olympics should be funded directly by the Olympic Delivery Authority (ODA) or the London Organising Committee of the Olympic Games and Paralympic Games (LOCOG). This is appropriate since they are the commissioning bodies for these outputs. We therefore do not consider it is appropriate at this stage to include any Olympics related costs and outputs within the DPCR5 Final Proposals.

1.36. We do recognise that there may be Olympics related outputs that have value to EDFE's customers after the Olympics. At the next price control review, DNOs will have the option to identify efficiently and unavoidably incurred costs that were directly related to the Olympics but were not recovered from the Olympic organising (or other associated) bodies. Ofgem will then consider whether these unrecovered investments are of sufficient demonstrable value to customers to justify allowing such costs to be recovered from customers through future price control revenues.

Review of network operating and indirect costs

Overall Approach

1.37. We have generally arrived at our view of the network operating, indirect costs and non-operational capex that the DNOs will be allowed to recover from customers by benchmarking historical cost data and then rolling forward these benchmarks in line with our view on:

- the scope for further efficiency improvements,
- forecasts of input price inflation, and
- the impact that the volume of activity will have on cost levels over the five years.

1.38. Comparative benchmarking analysis is not appropriate for all categories of costs (e.g. lumpy costs where it is difficult to conduct robust comparisons across the DNOs, or costs that are specific to particular DNOs). For example, rather than just benchmarking wayleave costs and the costs of substation electricity, we have looked at historical levels of costs, industry trends and DNO forecasts. There are also areas where we need specialist support in carrying out the analysis. For this reason we appointed Mouchel as non-operational IT specialists and Drivers Jonas as property specialists to carry out a detailed review. We also included these costs in the benchmarking process to quantify the impact of different assumptions on our regressions.

1.39. Our benchmarking analysis is based on four years of historical cost data gathered initially through annual regulatory reporting packs (RRP) and then updated in the business plan submissions. The improved data set means we have been able to conduct more sophisticated and robust benchmarking than before. Like our network investment team, our operating cost assessment team contains a number of individuals who have, through the RRP process, built up a good understanding of each business and its cost structure. We have benefitted also from the support of an academic advisor, Melvyn Weeks, who specialises in econometric techniques. His report on our work was published as an appendix to the Cost Assessment document at Initial Proposals.

1.40. We have applied an Ordinary Least Squares (OLS) approach with time dummies to capture movement in the data between years. At DPCR4 we based our top-down analysis of opex plus total fault costs on a composite scale variable made up of customer numbers, units distributed and network length. There was widespread concern that this was an inappropriate cost driver that did not adequately relate to the costs that were being assessed. Indeed one of the key purposes of the Electricity Networks Association cost working group during the last few years has been to explore a more appropriate form of cost analysis and associated cost drivers. Although the industry was unable to reach agreement on appropriate drivers for some of the areas of costs, a range of options were developed. These included the use of Modern Equivalent Asset Value (MEAV) or some measure of direct activities (typically costs) for assessing indirects, using fault numbers for fault costs, using asset numbers or an asset workload driver for inspections and maintenance and using trees cut or trees inspected and managed for tree cutting.

1.41. Our approach to the DPCR5 cost assessment analysis directly builds on this valuable analysis put forward by the DNOs. We have developed our approach to both core and sensitivity regressions in order to reflect a range of options that have been put forward. These include top-down analysis to capture the interactions between different

activities and more disaggregated analysis where it is possible to specify more targeted cost drivers based on engineering experience and knowledge of the businesses.

1.42. Twenty years after privatisation of the electricity distribution companies there are still some significant differences in efficiency across the DNOs. The efficiency scores for network operating costs vary between 128 per cent for the least efficient company - EDFE EPN - and 70 per cent for most efficient - Scottish and Southern Energy (SSE) Hydro. The efficiency scores for indirect costs vary between 119 per cent for the least efficient company - EDFE EPN - and 83 per cent for the most efficient - SSE Southern.. In many cases we can trace a company's level of efficiency according to our benchmarking back to corporate structure or business strategies. Overall we consider that the efficiency ranking are consistent with the general view that we, commentators and the companies have of relative efficiency in the industry.

1.43. We have taken a tough line on inefficiency and assumed that DNOs have to close the gap with our upper third and upper quartile baselines for network operating costs and indirects respectively by the first year of the next price control period. This means that where a company needs more time to catch up to the benchmark, shareholders, not customers will carry the cost of inefficiencies.

1.44. We think this is reasonable for a number of reasons. Companies should find it easier to close any efficiency gap quickly when costs and allowed revenues are rising rather than falling. We have, in previous controls, recognised that when allowances are being cut significantly it can take more time to restructure and become more efficient. But this isn't the case in this price control. Nearly 20 years after privatisation we think that shareholders and management have had more than enough time to close any efficiency gap. Finally, business and domestic customers are enduring one of the most painful recessions in living memory and are also faced with rising network costs and energy prices.

1.45. We recognise the need for DNOs to be able to manage increasing levels of network investment during DPCR5. As such we have assumed that efficient indirects associated with investment will increase at one third of the rate of increase of network investment.

1.46. However, it is important that there is ongoing pressure on the DNOs to deliver this work more efficiently for customers. Therefore we have applied an ongoing efficiency assumption of 1 per cent per annum over and above any "catch-up" that the DNOs are required to make. This accounts for productivity improvements that are expected to be made over the course of DPCR5.

1.47. We have set out further details of our benchmarking methodology in the Cost Assessment document and the accompanying Annex.

Benchmarking analysis - key decisions

1.48. Benchmarking is a highly technical area, and we have explained in full the methodology we have used in the Initial Proposals Operational Cost chapter and the appendix to this Cost Assessment document. Chapter 4 sets out our Final Proposals baselines and the key changes we have made since Initial Proposals. Below we set out the key decisions we have made in our analysis. In arriving at these we have sought to place appropriate weight on the results of different benchmarking techniques, while doing all we can to make sure that inefficiencies are not built into the DPCR5 allowances.

1.49. We have carried out benchmarking at different levels of disaggregation, broken down costs into a number of categories with their own cost driver, and also conducted top down regressions of total Operational Activities. For each cost category we have had to decide whether we set the benchmark level at the frontier (i.e. the level of the most efficient company), the upper quartile (the top 25 per cent companies), the upper third (the top 33 per cent of companies) or at the average level. In general our approach is to use the upper quartile, which means that all but the top 25 per cent will have to be more efficient than in DPCR4 if they are to spend within the operating cost allowance we have set. We do not consider that our benchmarking results or the quality of the underlying data justify setting allowances according to the frontier, and to do so would discredit our work. However, to balance this we do not propose to allow the less efficient companies any time to reach the benchmark levels and they will apply from day one of DPCR5.

1.50. In the case of network operating costs (e.g. tree cutting, repairing faults) inspections and maintenance) the benchmarking results are weaker than elsewhere, perhaps because there is still not enough consistency in the reporting applied by DNOs to this cost category. Since Initial Proposals we have been giving further consideration on how to deal with this difference and have decided it is more appropriate to adjust the DNOs to a common upper third benchmark, which is more relaxed than the upper quartile. We consider that the banded approach that we introduced at Initial Proposals could lead to perverse incentives as those companies performing marginally worse than the average and forecasting large cost reductions would have been given a lower baseline than those performing marginally better than the average and forecasting large increases in costs excluded from the regression analysis.

1.51. We have had to consider whether, in advance of our benchmarking, we should adjust historical costs for specific factors that might mean the efficient level of costs is higher in some regions than in others. This has been a controversial area and we have decided to apply adjustments for both regional labour and contractor costs, as well as a number of specific additional costs associated with particular networks. We have recognised in our benchmarking that it is more costly to work on both sparsely populated networks such as the Highlands and Islands, and on densely populated networks in London. We have also recognised that there are extra costs associated with running the interconnected network in SP Manweb's area.

Key changes since Initial Proposals

1.52. Over the last few months since the publication of Initial Proposals we have been updating and refining our analysis based on new evidence that has been put forward by the DNOs, responses to Initial Proposals and further updates we have issued. Responses to these documents and our own internal review identified refinements to our approach and a number of errors. We have:

- Taken into account changes to the historical and forecast data submitted by the DNOs.
- Included an adjustment to normalise for the indirect costs included within reported contractor direct costs.
- Removed the Integrated Delivery Team (IDT) adjustment that we included in the May Methodology document and at Initial Proposals.

- Excluded the set-up costs for alliance contracts at EDFE from the regressions.
- Removed the indirect costs relating to high value projects in the EDFE LPN area.
- Revised the cost drivers for the indirect cost activities so that they better reflect the costs we are assessing.
- Refined our approach to weighting the efficiency scores from different elements of the regression analysis.
- Made some minor amendments to our analysis of costs outside the benchmarking.
- Refined the approach for rolling forward indirect costs to take account of movements in Network Investment. We now quantify the movements in Network Investment from DPCR4 to DPCR5 using a weighted average of DPCR4 expenditure rather than the costs for a single year.
- Included baseline figures for Vehicles and for Small Tools and Equipment (STE) driven by Network Investment in our indirects and non-operational capex analysis which had previously been incorrectly omitted, and
- Used the results of our IT consultant's work to set baseline allowances for these costs.

2. DNOs' Forecast Business Plans

Chapter summary

This chapter presents a high level view of the final forecasts submitted by the DNOs for DPCR5 in advance of Final Proposals.

2.1. All figures presented in this document are in 2007-08 prices.

DPCR5 forecasts - submissions and movements

2.2. We received the initial indicative DPCR5 forecasts from the DNOs in August 2008 to give us an early opportunity to understand the DNOs' plans. We then received the formal forecasts in February 2009, which were updated ahead of Initial Proposals in June 2009. The forecasts have now been updated ahead of Final Proposals. We made it clear that the DNOs would have to provide a detailed explanation and audit trail of areas where their final cost forecasts differed from those presented to us in June.

2.3. Taking all changes to the forecast business plans as absolute values, the final DNO forecasts show approximately a 2 per cent change in historical network investment costs compared to the plans submitted in June[1]. The change in historical operational costs reported from June is approximately 4 per cent.

2.4. The changes in historical costs for each DNO range from zero per cent for network investment for many of the DNOs up to 11 per cent for EDFE SPN. The changes in operational costs vary from zero per cent for three of the DNOs to 10 per cent for WPD S Wales. On a proportional basis the changes for costs associated with traffic management and real price effects (RPEs) are much higher but in absolute terms the costs are significantly lower.

2.5. The final DNO forecasts show approximately a 6 per cent change in forecast network investment compared to the plans submitted in June. The change in operational costs forecast in June is approximately 7 per cent.

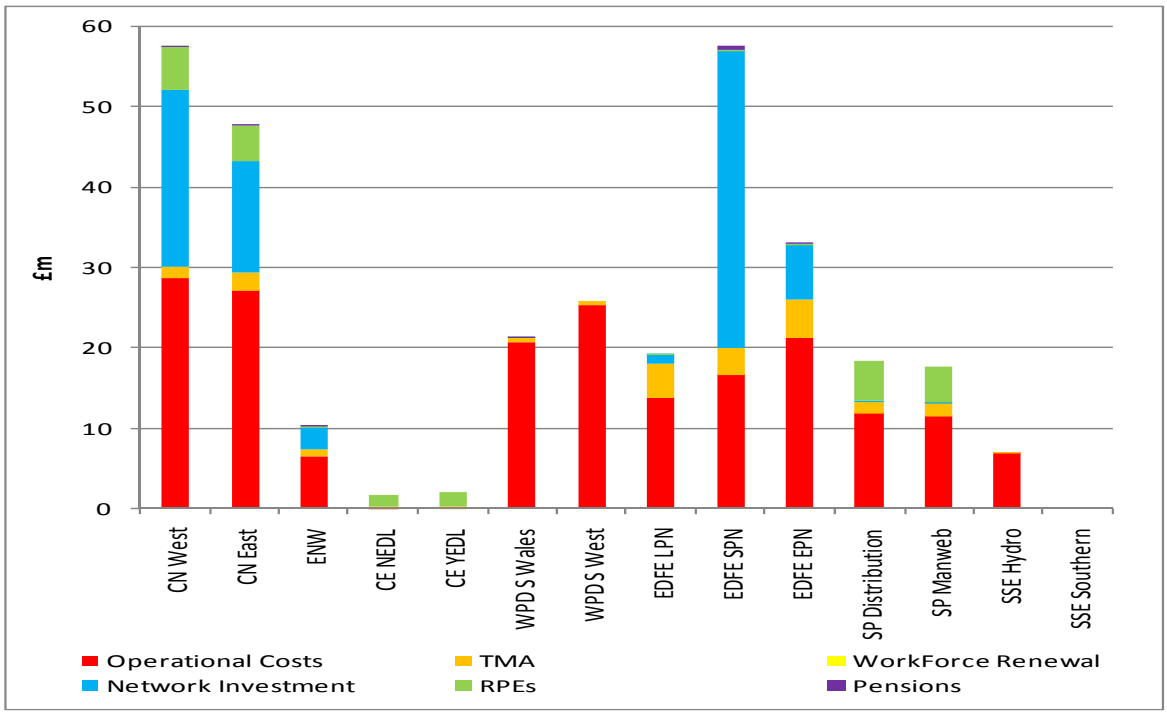
2.6. The changes in forecast network investment costs range from zero per cent for the SSE DNOs to 8 per cent for CE YEDL. The changes in operational costs vary from 1 per cent for ENW and SSE Southern to 9 per cent for WPD S West and SP Distribution.

2.7. Since Initial Proposals CE and SSE have provided a single updated FBPQ at our request while CN has provided 4 updated FBPQs. These changes in costs are important as these costs are used in both our benchmarking and network investment modelling.

2.8. Figure 2.1 shows the absolute changes in the historical data provided in the FBPQs from Initial Proposals to Final Proposals for each DNO at a per activity level. (The chart ignores any netting off and shows the total value of movements regardless of the sign.)

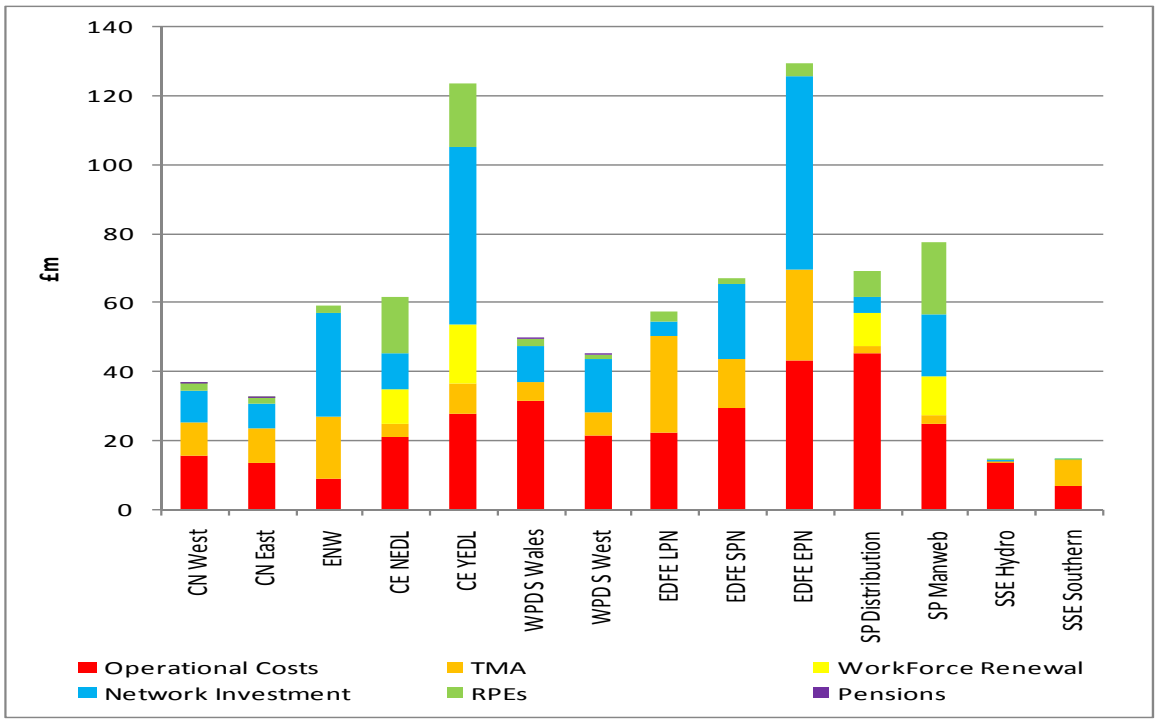
[1] Includes core and non-core network investment costs but excludes costs for the connection of distributed generation.

Figure 2.1 - Absolute changes in FBPQ historical data per cost area (£m 2007-08 prices)



2.9. Figure 2.2 shows the absolute changes in forecast costs submitted by the DNOs since Initial Proposals at a per activity level.

Figure 2.2 - Absolute changes in FBPQ forecast data per cost area (£m 2007-08 prices)



2.10. Some of the absolute changes in data were made at our request, where we considered our analysis would benefit from changes in the classification of costs; however, a substantial amount of the changes have resulted from the DNOs altering their data. Changes made by the DNOs, particularly in the reporting of historical costs have caused significant problems for the completion of our analysis. We will be making changes to the way we collect data in the future to minimise the potential for such changes during future cost reviews.

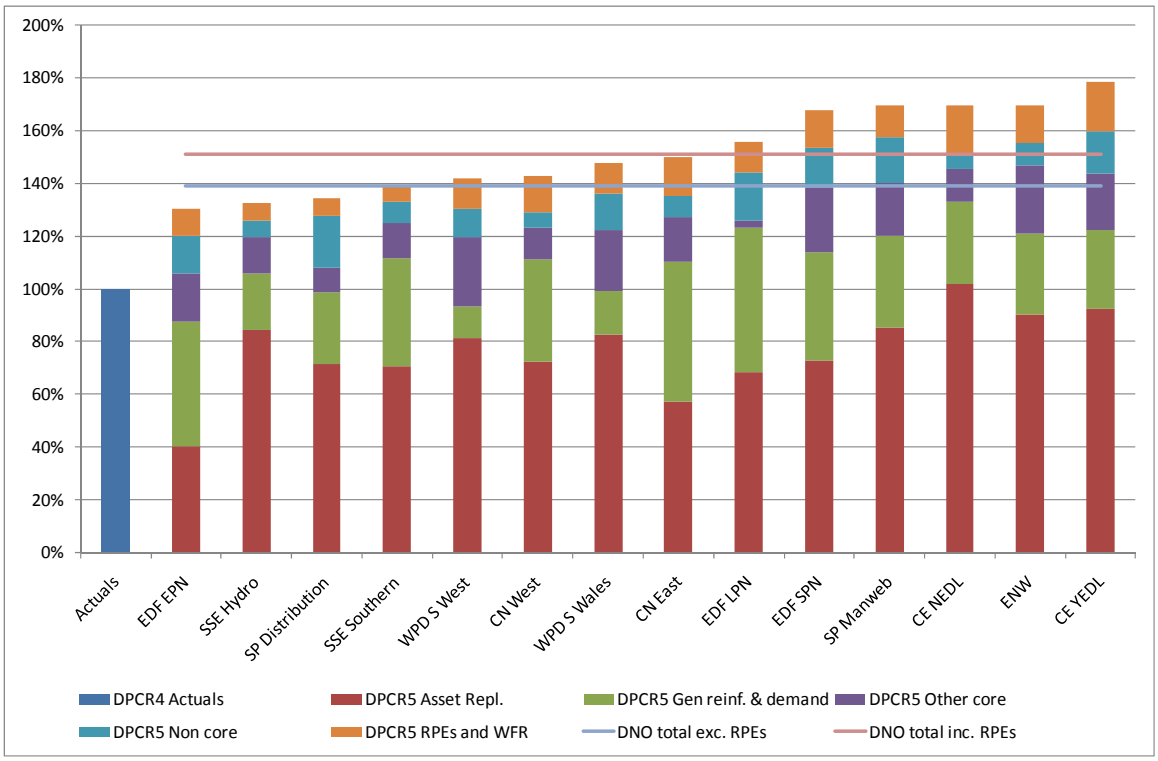
DPCR5 forecasts analysis - Network Investment

2.11. We have categorised Network Investment in a similar manner to Initial Proposals but splitting non-core investment into those costs covered by an ex-ante allowance and those subject to logging up and revenue drivers. The costs are split as follows:

- asset replacement expenditure,
- general reinforcement expenditure and customer specific demand expenditure (associated with connections),
- other core expenditure:
  - diversions,
  - legal and safety (which includes expenditure relating to horizontal and vertical clearances but excludes critical national infrastructure (CNI) and rising and lateral mains (RLM)), and
  - operational IT and telecoms (but excluding expenditure relating to BT 21st century networks (BT21CN)).
- non-core costs, with an ex-ante allowance:
  - flooding,
  - BT21CN,
  - environmental costs (excluding investment for undergrounding in areas of outstanding natural beauty (AONB)),
  - quality of Service (QoS) (excluding Worst Served Customers (WSC)), and
- RPEs and workforce renewal (WFR).
- non-core costs, subject to logging up and revenue drivers:
  - high impact low probability events (HILP),
  - RML,
  - CNI, and
  - black start capability and emergency batteries.

2.12. We present the DNOs' Network Investment forecasts as a percentage of their expected actual levels of expenditure in DPCR4 in Figure 2.3. Network Investment to accommodate distributed generation (DG), for worst served customers and for undergrounding in AONB is not included in the chart as these areas are subject to stand-alone funding mechanisms. Discretionary expenditure has also been excluded from the DNOs' forecasts.

Figure 2.3 - Network Investment DPCR5 forecast as a percentage of DPCR4 outturn



2.13. Core expenditure makes up 91 per cent of DPCR5 network investment expenditure excluding RPEs and WFR.

2.14. The forecast levels of Network Investment expenditure by DNO are detailed in Table 2.1.

Table 2.1 - Forecast Network Investment for DPCR5 against DPCR4 outturn (£m 2007-08 prices)

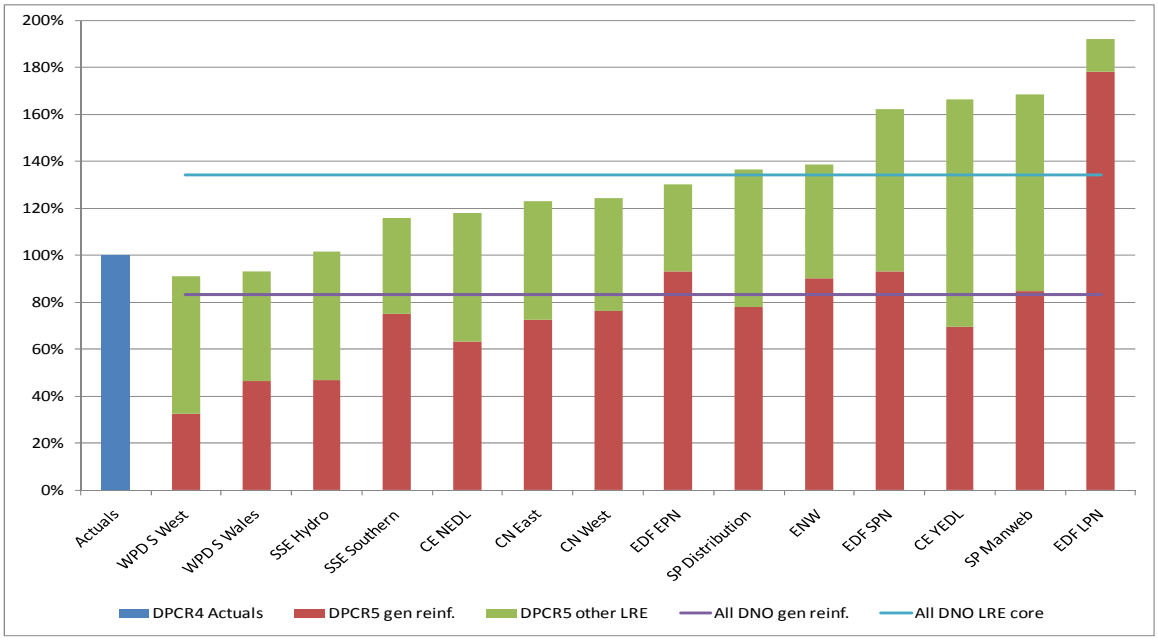
£m	DPCR4	DPCR5						Change DPCR4 to DPCR5
DNO	Total	Asset Repl.	Gen reinf. & demand	Other core	Non core	RPEs and WFR	Total	%
CN West	523	379	202	62	31	72	745	43%
CN East	499	286	265	83	42	72	748	50%
ENW	389	350	120	101	32	56	659	70%
CE NEDL	274	279	85	33	17	49	464	69%
CE YEDL	357	330	105	77	57	66	636	78%
WPD S Wales	159	132	26	37	22	18	235	48%
WPD S West	256	208	31	67	27	30	363	42%
EDF LPN	404	275	222	11	73	47	628	56%
EDF SPN	392	287	159	96	60	55	657	67%
EDF EPN	640	257	304	116	92	66	835	30%
SP Distribution	355	255	96	34	69	24	477	34%
SP Manweb	390	333	135	79	67	47	661	69%
SSE Hydro	179	151	38	25	11	12	237	32%
SSE Southern	522	369	213	71	42	28	724	39%
Total	**5338**	**3892**	**2002**	**891**	**642**	**642**	**8068**	**51%**

2.15. The DPCR4 costs include four years of actual expenditure and one year of forecast expenditure. Across the industry DNOs are forecasting a 51 per cent, or £2.7bn increase in Network Investment over DPCR4 levels. Core Network Investment is forecast to increase by 38 per cent across all DNOs, varying from 18 per cent for SP Distribution to 58 per cent for CE NEDL. Roughly £0.64 billion (or 24 per cent) of the additional expenditure in DPCR5 is forecast to come from non-core activities. The biggest forecast increases are for CE, ENW, SPN and SP Manweb, primarily driven by increases in asset replacement and general reinforcement and the smallest increase is in the SSE Hydro area. Below we set out the changes in each of the categories in the table above.

Net core load related expenditure

2.16. Net core load related expenditure consists of general reinforcement expenditure, customer specific demand expenditure (less direct customer contributions), diversions and fault level expenditure. Figure 2.4 shows forecast net core load related expenditure, with general reinforcement separately identified.

Figure 2.4 – Net core load related expenditure as a percentage of DPCR4 outturn



2.17. Taking the industry as a whole, DNOs are forecasting a 34 per cent increase in core load related expenditure over DPCR4. This varies from a reduction of 9 per cent for WPD S West to an increase of 92 per cent for EDFE LPN. Forecast levels of net core load related expenditure are shown in Table 2.2. In a number of areas the forecasts for general reinforcement are below DPCR4 levels showing the impact of a reduction of demand in recent years.

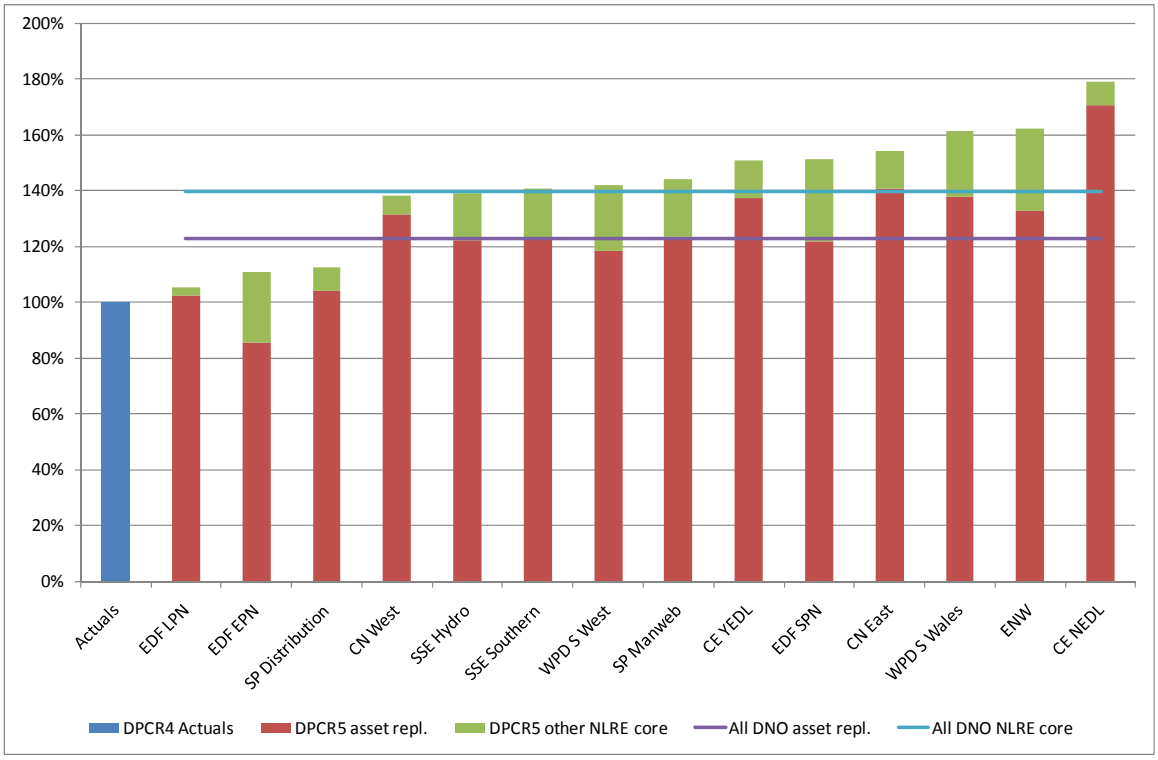
Table 2.2 - Net core load related expenditure for DPCR5 against DPCR4 outturn (£m 2007-08 prices)

£m	DPCR4			DPCR5			Change DPCR4 to DPCR5
DNO	Gen reinf	Other LRE	Total	Gen reinf	Other LRE	Total	%
CN West	110	86	196	150	94	244	24%
CN East	112	149	261	188	132	320	23%
ENW	68	36	104	94	50	144	39%
CE NEDL	61	28	89	56	49	105	18%
CE YEDL	49	41	90	63	87	150	67%
WPD S Wales	23	20	43	20	20	40	-7%
WPD S West	34	29	63	20	37	57	-9%
EDF LPN	104	14	118	210	17	226	92%
EDF SPN	70	45	115	107	79	187	62%
EDF EPN	198	66	265	247	98	344	30%
SP Distribution	44	35	79	62	47	108	37%
SP Manweb	38	57	94	80	79	159	69%
SSE Hydro	23	19	42	20	23	42	2%
SSE Southern	169	31	200	150	82	232	16%
Total	**1102**	**656**	**1758**	**1466**	**893**	**2359**	**34%**

Core non-load related expenditure

2.18. Core non load related expenditure consists of expenditure on asset replacement, legal and safety works including building and vertical clearance work (excluding expenditure on CNI and RML) and operational IT and Telecoms (excluding BT 21st Century expenditure). Core non-load related expenditure is shown in Figure 2.5 with asset replacement expenditure separately identified.

Figure 2.5 – Core non-load related expenditure as a percentage of DPCR4 outturn



2.19. All DNOs are forecasting an increase in core non-load related expenditure over DPCR4, with an increase across the industry forecast at 40 per cent. The forecast increases range from 5 per cent for EDFE LPN to 79 per cent for CE NEDL. Expenditure on asset replacement is forecast to increase in all but one DNO. EDFE EPN is forecasting a reduction in asset replacement expenditure of 4 per cent. Forecast levels of core non-load related expenditure are detailed in Table 2.3.

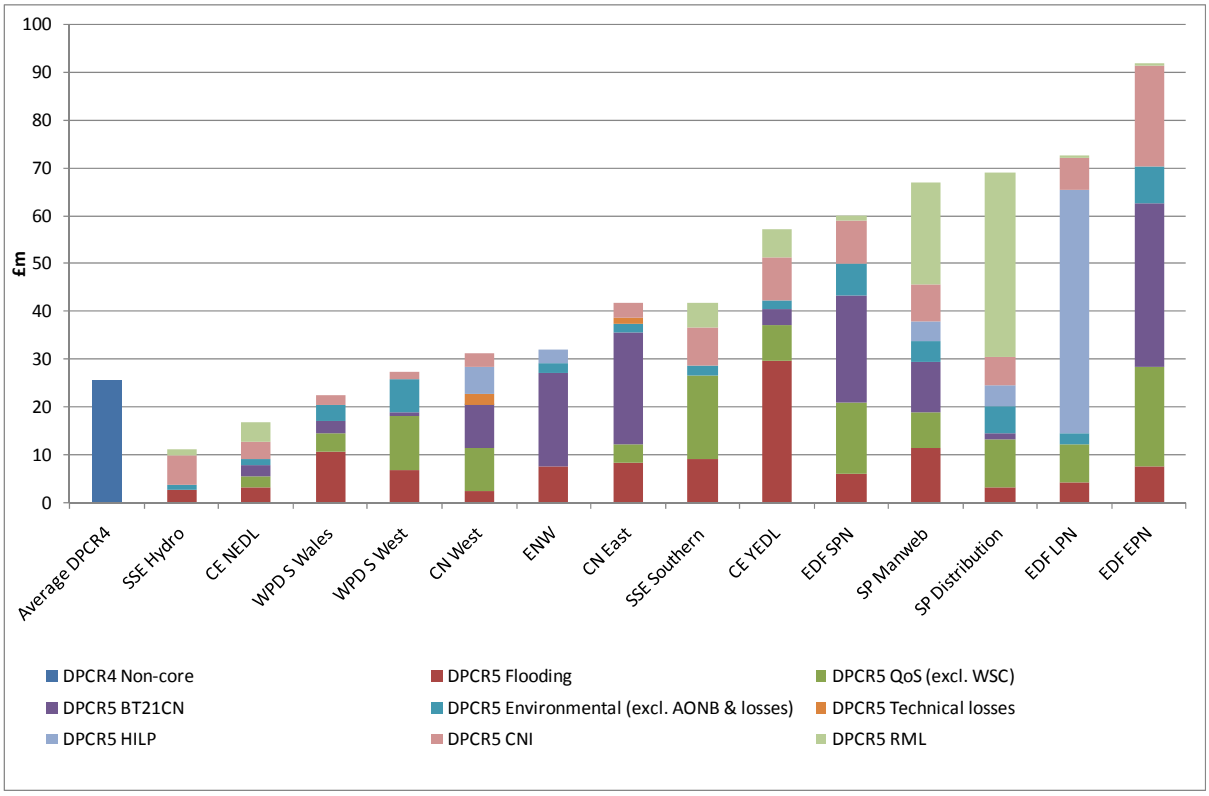
Table 2.3 – Core non-load related expenditure for DPCR5 against DPCR4 outturn (£m 2007-08 prices)

£m	DPCR4			DPCR5			Change DPCR4 to DPCR5
DNO	**Asset repl.**	**Other NLRE**	**Total**	**Asset repl.**	**Other NLRE**	**Total**	**%**
CN West	271	17	288	379	19	398	38%
CN East	192	11	203	286	27	314	54%
ENW	234	29	263	350	78	428	62%
CE NEDL	155	9	164	279	14	293	79%
CE YEDL	217	23	240	330	32	363	51%
WPD S Wales	85	11	96	132	23	154	61%
WPD S West	158	18	176	208	41	249	42%
EDF LPN	255	14	268	275	7	282	5%
EDF SPN	214	22	235	287	69	355	51%
EDF EPN	268	32	300	257	76	333	11%
SP Distribution	223	22	245	255	21	275	13%
SP Manweb	234	36	269	333	55	388	44%
SSE Hydro	118	5	124	151	21	172	39%
SSE Southern	293	6	300	369	52	421	41%
Total	**2916**	**255**	**3171**	**3892**	**534**	**4425**	**40%**

Non-core expenditure

2.20. Non-core expenditure includes expenditure on major system risks (flooding and High Impact Low Probability Events (HILP)), environmental works (excluding undergrounding in AONB), QoS (excluding worst-served customers (WSC)), critical national infrastructure (CNI), rising mains and laterals (RML) and BT 21st Century). These are largely new areas of expenditure for DPCR5, in many cases driven by external stakeholders. Most DNOs consulted on these areas of expenditure to some extent in their stakeholder engagement. As discussed in Initial Proposals, discretionary expenditure has been excluded. Non-core expenditure is shown in Figure 2.6.

Figure 2.6 - Non-core network investment forecasts



2.21. Much of the non-core expenditure addresses new areas of investment (for example expenditure on mitigating the risks of flooding). The "environmental" costs within non-core include expenditure on technical losses, noise pollution, SF6 leakage and mitigation of the risk of oil pollution. All but three DNOs are forecasting an increase in non-core expenditure over DPCR4. There is a very large range in forecasts from £11 million for SSE Hydro to £92 million for EDFE EPN.

2.22. EDFE LPN is forecasting £51 million for HILP investment. SP Distribution and SP Manweb are forecasting £39 million and £21 million for RML works respectively. ENW, CN East and EDFE SPN are forecasting between £20 million and £23 million for BT21CN and EDFE EPN are forecasting £34 million. Full details of the forecast non-core network investment expenditure are given in Table2.4.

Table 2.4 - Non-core network investment forecasts (£m 2007-08 prices)

£m	DPCR4	DPCR5									Change DPCR4 to DPCR5 (%)
		Non-core ex-ante allowance					Non-coresubject to reopeners/logging-up			Total	
DNO	Non-core	Flooding	QoS (excl. WSC)	BT21CN	Environmental (excl. AONB & losses)	Technical losses	HILP	CNI	RML		
CN West	33	2	9	9	0	2	6	3	0	31	-4%
CN East	30	8	4	23	2	1	0	3	0	42	39%
ENW	19	7	0	20	2	0	3	0	0	32	71%
CE NEDL	18	3	2	2	1	0	0	4	4	17	-7%
CE YEDL	22	30	8	3	2	0	0	9	6	57	160%
WPD S Wales	18	11	4	3	3	0	0	2	0	22	23%
WPD S West	14	7	11	1	7	0	0	1	0	27	96%
EDF LPN	13	4	8	0	3	0	51	7	1	73	453%
EDF SPN	37	6	15	22	7	0	0	9	1	60	61%
EDF EPN	68	8	21	34	8	0	0	21	1	92	35%
SP Distribution	31	3	10	2	6	0	5	6	39	69	124%
SP Manweb	25	11	8	11	5	0	4	8	21	67	164%
SSE Hydro	12	3	0	0	1	0	0	6	2	11	-9%
SSE Southern	19	9	18	0	2	0	0	8	5	42	121%
Total	**359**	**112**	**117**	**129**	**47**	**4**	**68**	**86**	**78**	**642**	**79%**

Net change to Network Investment forecasts since Initial Proposals

2.23. Since Initial Proposals the DNOs have made some amendments to their forecast business plans. The changes made to network investment forecasts are summarised in the tables below.

Table 2.5 - Movements in forecasts for Network Investment (£m 2007-08 prices)

	Initial Proposals (June)	IP (Sept update)	Final Proposals	IP to FP (%)
CN West	670	670	674	1%
CN East	672	674	675	0%
ENW	616	605	603	-2%
CE NEDL	406	411	415	2%
CE YEDL	530	563	570	8%
WPD S Wales	227	222	217	-5%
WPD S West	349	344	333	-4%
EDF LPN	581	584	581	0%
EDF SPN	602	609	602	0%
EDF EPN	776	784	769	-1%
SP Distribution	456	458	453	-1%
SP Manweb	630	618	614	-3%
SSE Hydro	225	226	223	-1%
SSE Southern	695	697	695	0%
Total	**7436**	**7468**	**7423**	**0%**

Table 2.6 - Movements in forecasts for Network Investment by building block (£m 2007-08 prices)

	Initial Proposals (June)	Change					Final proposals
		Gen Reinf	Other LRE	Asset Repl	Other core NLRE	Non-core	
CN West	670	1	1	2	0	0	674
CN East	672	1	2	1	0	0	675
ENW	616	0	-13	0	0	0	603
CE NEDL	406	0	0	0	5	4	415
CE YEDL	530	0	0	0	9	31	570
WPD S Wales	227	0	0	-2	0	-9	217
WPD S West	349	0	0	-3	0	-12	333
EDF LPN	581	0	1	0	0	0	581
EDF SPN	602	0	1	0	0	-1	602
EDF EPN	776	0	0	0	0	-8	769
SP Distribution	456	0	0	0	0	-4	453
SP Manweb	630	0	0	0	0	-17	614
SSE Hydro	225	0	0	0	0	-3	223
SSE Southern	695	0	0	0	0	0	695
Total	**7436**	**2**	**-8**	**-2**	**13**	**-17**	**7423**

2.24. CN and SSE have submitted relatively minor changes to their forecast business plans since June. Other DNOs have made more material changes including:

- ENW has reduced the forecast by £12.8m for customer specific demand connections,
- CE YEDL and CE NEDL have increased their forecast expenditure on operational IT and Telecoms (£9.0m increase for CE YEDL and £4.6m for CE NEDL),
- CE YEDL have increased their forecast expenditure on flooding defences by £21.8m. CE YEDL and CE NEDL have increased their forecast expenditure on black start capability (£9.0m increase for CE YEDL and £3.7m for CE NEDL).
- EDFE EPN has reduced the forecast for BT21CN by £7.9m,
- WPD S Wales and WPD S West have reduced their forecast expenditure on low loss equipment (£8.5m reduction for WPD S Wales and £11.8m for WPD S West),
- WPD S Wales and WPD S West have reduced their forecast expenditure on asset replacement (£1.9m reduction for WPD S Wales and £3.4m for WPD S West), and
- SP Distribution and SP Manweb have reduced their forecast expenditure on BT21CN (£4.0m reduction for SP Distribution and £17.3m for SP Manweb).

DPCR5 forecast analysis - Operational Costs

2.25. We have categorised Operational Costs in the same way as Initial Proposals, splitting them into four cost categories for the purpose of understanding the DNOs' forecasts:

- network operating costs (NOCs),
- indirect costs,
- non-operational capex, and
- real price effects (RPEs) and workforce renewal.

2.26. NOCs include the following activities: faults; inspections and maintenance; tree cutting; and 'other' activities consisting of traffic management costs, substation electricity and dismantlement.

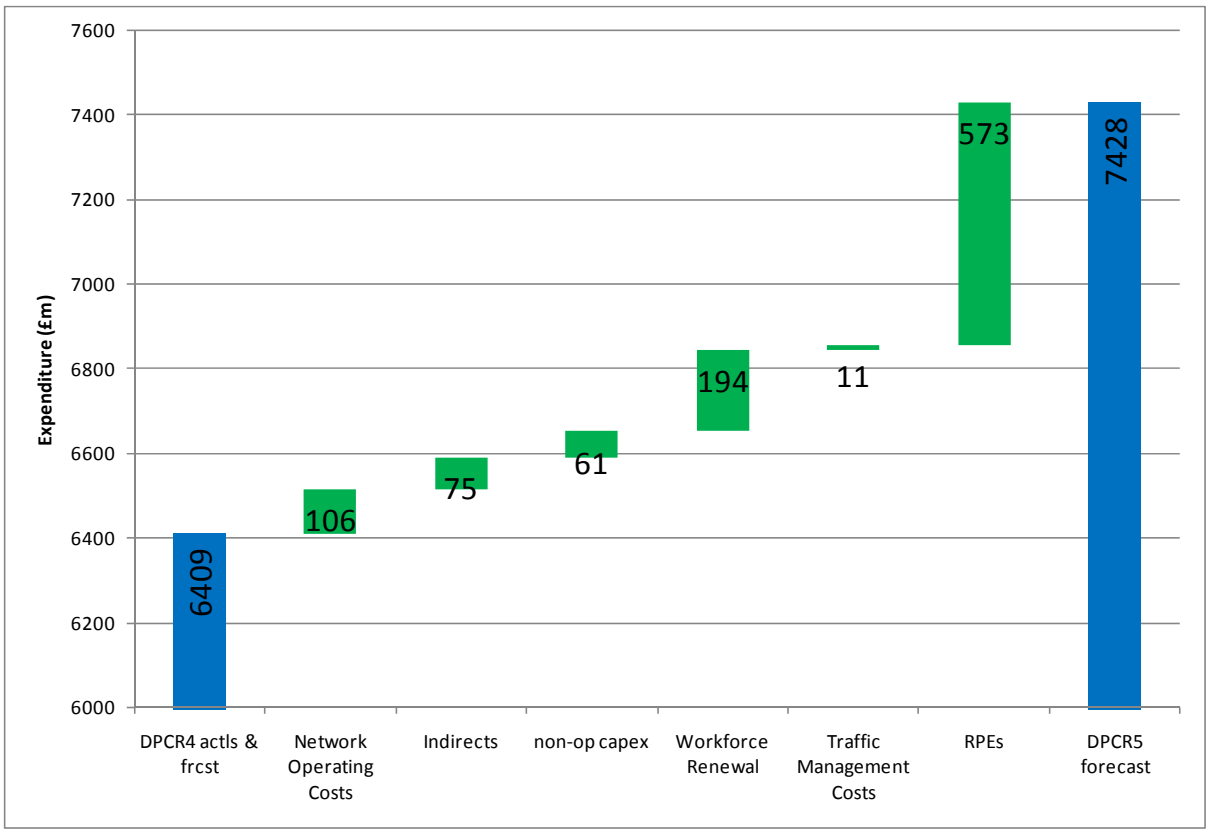
2.27. Indirect costs include those activities which are more closely aligned to Network Investment (network design, project management, call centre, system mapping, etc) and those which provide a more general level of business support (IT, finance and regulation, HR, etc). Although costs for each subgroup are reported in the FBPQ submissions as Engineering Indirects, Network Investment Support and Business Support; the data presented in Table 2.9 as indirects is the combination of all three.

2.28. Non-operational capex includes the purchase of new or replacement items not recognised as part of the system assets (vehicles, tools, machinery, office equipment, non-operational IT, etc).

2.29. Since Initial Proposals, the DNOs have amended their FBPQ submissions. There has been a reduction of 1.6 per cent from the total Operational Cost forecasts submitted in advance of Initial Proposals. Further details of the amendments since Initial Proposals are included later in this chapter.

2.30. Figure 2.7 shows the total outturn costs expected for DPCR4 together with the changes in costs in the DPCR5 period, split between the cost categories noted above. The total cost forecast by the DNOs for DPCR5 compared to DPCR4 is £7.4bn, representing an increase of £1bn (16 per cent).

Figure 2.7 – Changes in key cost areas for DPCR5 compared to DPCR4 (£m 2007-08 prices)

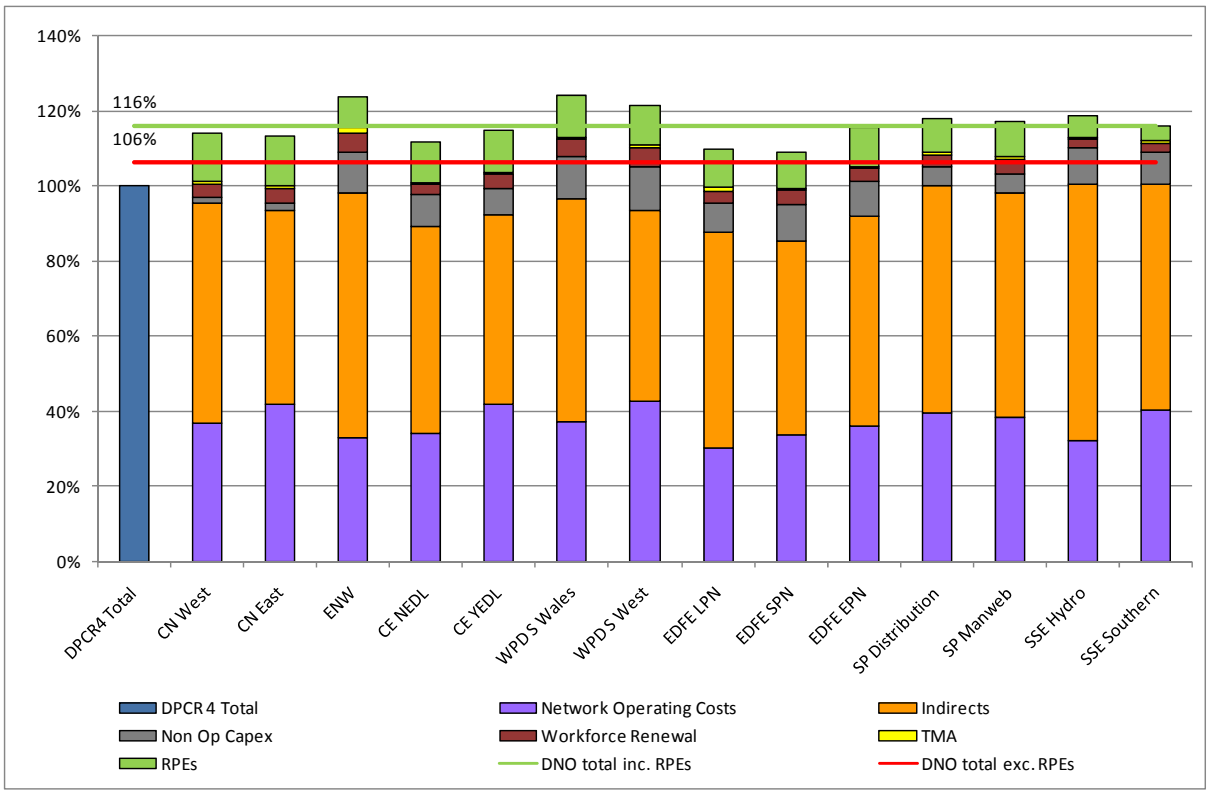


2.31. The largest increase in forecast costs compared with DPCR4 actuals arises from increases in RPEs (including workforce renewal.) The increase in RPEs accounts for 56 per cent of the increase over DPCR4. The next largest increase in forecast costs is due to Business Support of £194m (19 per cent). The increase in Network Operating Costs is forecast at £106m over the five year period represents just 10 per cent of the total increase compared to DPCR4.

2.32. The following sections present the forecasts on a per DNO basis compared to DPCR4. First we present the changes for total Operational Activities, followed by the three subgroups identified above – network operating costs, indirects and non-operational capex.

2.33. Figure 2.8 illustrates the changes in costs on a per DNO basis split between the high level cost categories. Overall, the DNOs are forecasting a 16 per cent increase in costs compared to DPCR4. If RPEs are excluded, this figure is just 6 per cent. This split is largely unchanged from the DNO forecasts at Initial Proposals.

Figure 2.8 - Network Operating Costs, Indirects and Non-Operational capex as percentage of DPCR4 totals



2.34. Indirect costs represent 49 per cent of the total forecast Operational Activities for the DNOs in DPCR5, with Network Operating Costs the next highest at 32 per cent.

Table 2.7 – DPCR5 forecast expenditure for Operational Activities compared to DPCR4 outturn (£m 2007-08 prices)

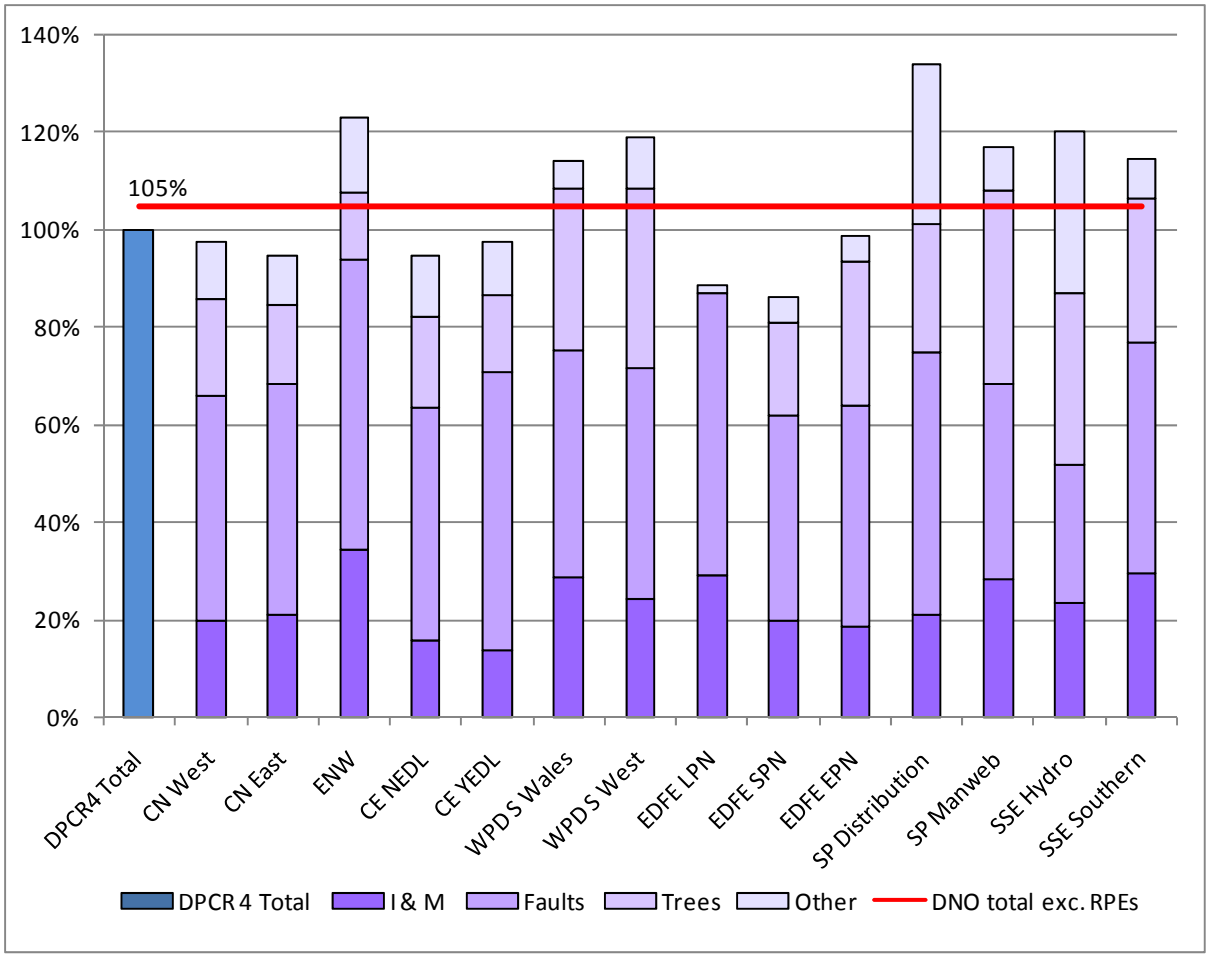
DNO	DPCR4 Total	DPCR5							DPCR4 to DPCR5
		Network Operating Costs	Indirects	Non Op Capex	Workforce Renewal	TMA	RPEs	Total	
	£m	£m	£m	£m	£m	£m	£m	£m	£m
CN West	528	195	308	9	18	4	68	603	14%
CN East	495	208	256	10	18	4	65	560	13%
ENW	491	163	319	53	26	6	41	608	24%
CE NEDL	338	115	186	29	10	1	37	377	12%
CE YEDL	423	178	213	30	16	1	48	486	15%
WPD S Wales	286	106	170	32	13	2	32	354	24%
WPD S West	393	167	201	46	19	3	42	478	22%
EDFE LPN	469	142	269	36	15	5	47	514	10%
EDFE SPN	481	162	248	47	18	3	46	525	9%
EDFE EPN	777	279	434	72	27	5	81	899	16%
SP Distribution	424	168	257	22	13	4	38	501	18%
SP Manweb	431	165	258	22	16	4	40	505	17%
SSE Hydro	295	94	201	29	7	1	16	350	18%
SSE Southern	577	234	345	50	15	3	23	670	16%
Total	6,409	**2376**	**3666**	**484**	**233**	**45**	**624**	**7428**	**16%**

2.35. When RPEs are excluded there are five DNOs (CN West, CN East, CE NEDL, EDFE LPN and EDFE SPN) who are forecasting costs for DPCR5 at or below their DPCR4 levels.

Network operating costs

2.36. Network operating costs cover the activities of inspections and maintenance, faults, tree cutting and other. The industry forecasts are 5 per cent above the DPCR4 figures, although 7 of the DNOs (CN, CE and EDFE) have forecast costs below DPCR4 levels.

Figure 2.9 - Network Operating Cost as percentage of DPCR4 totals



2.37. The largest forecast increases in costs are for NOCs relating to tree cutting; where the DNOs have forecast a 31 per cent increase on average. As noted in Initial Proposals, an increase in costs was expected as the DNOs implement the new requirements for the Electricity Safety, Quality and Continuity Regulations 2002 (ESQCR), as amended in 2006.

2.38. SP Distribution have the largest forecast increase in NOCs at 34 per cent, which can largely be attributed to their increase in tree cutting costs. EDFE SPN forecast a decrease of 14 per cent, while EDFE has provided decreased forecast costs for many areas from Initial Proposals to their final version of the FBPQ, the largest decrease within their NOCs is due to a 29 per cent decrease in fault costs forecast for DPCR5.

2.39. Excluding RPEs, CN, CE, and EDFE have forecast a drop in NOCs compared to DPCR4. Only CE have explained in their FBPQ narrative that they have built in efficiencies within their forecasts, which explains their decrease in spend compared to their DPCR4 level. CN and EDFE have not provided any specific reasons for their decrease in costs relating to NOCs.

Table 2.8 – DPCR5 forecast expenditure for Network Operating Costs compared to DPCR4 outturn (£m 2007-08 prices)

DNO	DPCR4 Total	DPCR5					DPCR4 to DPCR5
		I & M	Faults	Trees	Other	Total NOC	
	£m	£m	£m	£m	£m	£m	%
CN West	200	40	92	40	24	195	-3%
CN East	219	46	104	35	23	208	-5%
ENW	132	46	79	18	20	163	23%
CE NEDL	121	19	58	23	15	115	-5%
CE YEDL	182	25	104	28	21	178	-2%
WPD S Wales	93	27	43	31	5	106	14%
WPD S West	141	34	67	52	15	167	19%
EDFE LPN	161	47	92	0	3	142	-12%
EDFE SPN	188	37	79	36	10	162	-14%
EDFE EPN	283	53	128	84	14	279	-1%
SP Distribution	125	26	67	33	41	168	34%
SP Manweb	141	40	56	56	13	165	17%
SSE Hydro	79	19	22	28	26	94	20%
SSE Southern	204	61	97	60	17	234	15%
Total	**2270**	**520**	**1087**	**525**	**244**	**2376**	**5%**

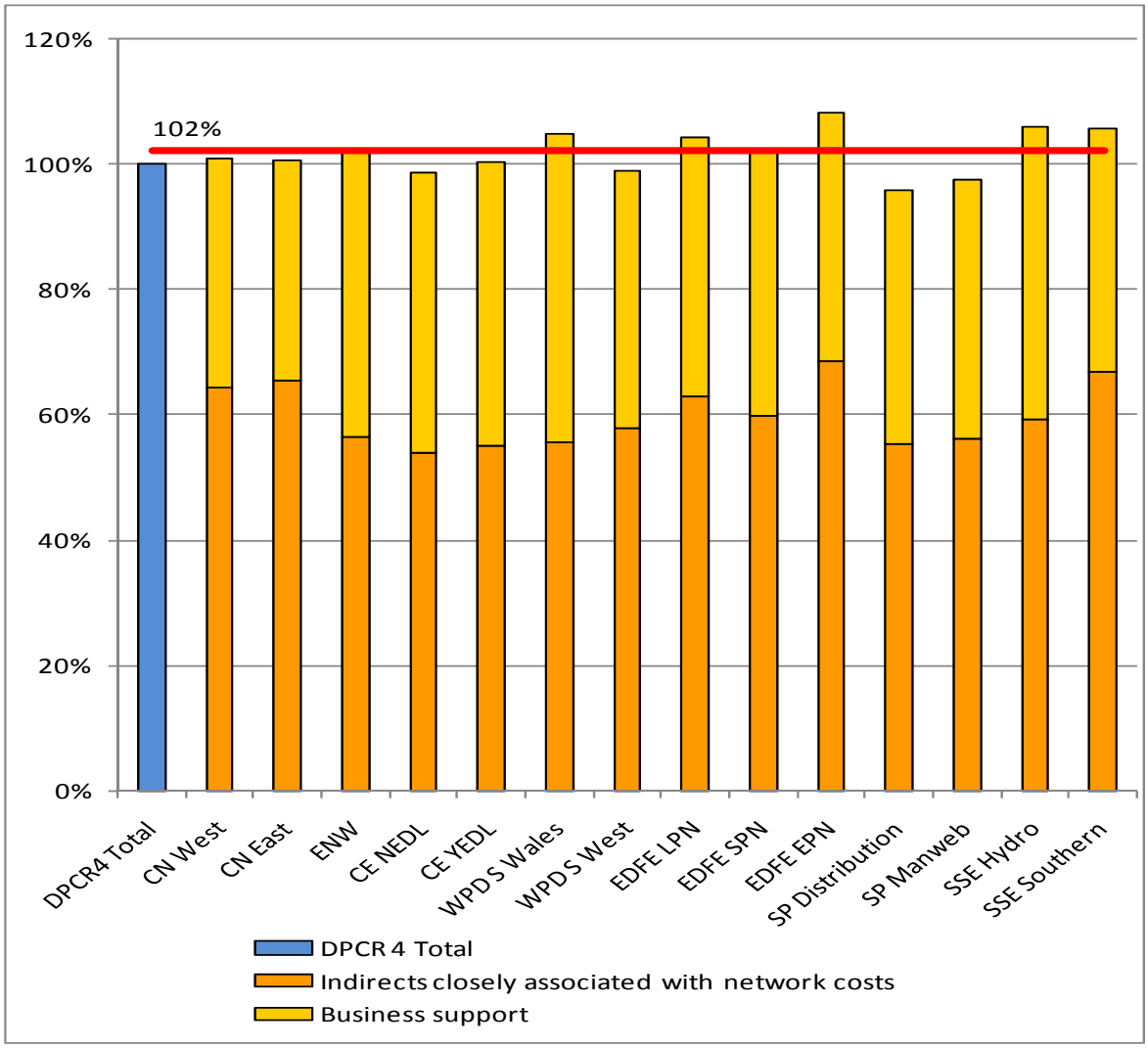
2.40. There are wide variations in the change of forecast costs between DPCR4 and DPCR5 for each of the activities included within NOCs:

Indirect costs

2.41. Indirects costs cover the three categories referred to in the FBPQ as Indirects Closely Associated with Network Costs, and Business Support. These groupings of activities are:

- Indirects Closely Associated with Network Costs - network design, project management and engineering management & clerical support, network policy, control centre, system mapping, call centre, stores, vehicles & transport and health, safety & operational training, and
- Business support: IT & telecoms, property management, HR & non-operational training, finance & regulation and CEO etc.

Figure 2.10 - Indirects as percentage of DPCR4 totals



2.42. Four of the DNOs (CE NEDL, WPD S West, SP Distribution and SP Manweb) forecast Indirect costs below the DPCR4 levels. The biggest increases are recorded for EDFE EPN at 8 per cent.

Table 2.9 – DPCR5 forecast expenditure for Indirect Costs compared to DPCR4 outturn (£m 2007-08 prices)

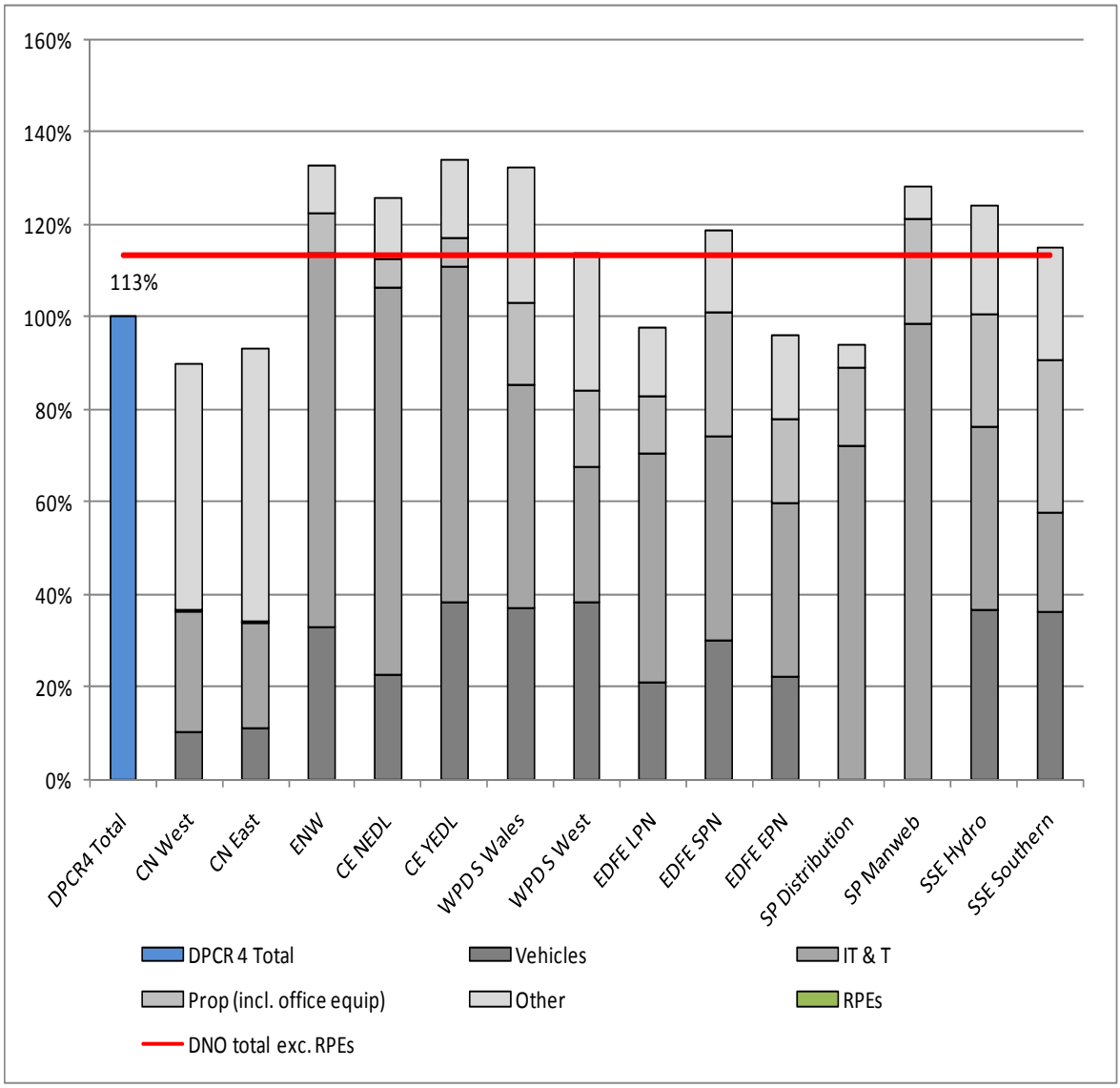
DNO	DPCR4 Total	DPCR5			DPCR4 to DPCR5
		Indirects closely associated with network costs	Business support	Total Indirects	
	£m	£m	£m	£m	%
CN West	306	197	111	308	1%
CN East	254	167	89	256	1%
ENW	312	176	143	319	2%
CE NEDL	189	102	84	186	-1%
CE YEDL	213	117	96	213	0%
WPD S Wales	162	90	79	170	5%
WPD S West	203	118	83	201	-1%
EDFE LPN	258	163	106	269	4%
EDFE SPN	243	146	103	248	2%
EDFE EPN	401	276	159	434	8%
SP Distribution	268	148	108	257	-4%
SP Manweb	264	148	109	258	-2%
SSE Hydro	190	113	89	201	6%
SSE Southern	327	218	127	345	6%
Total	**3591**	**2178**	**1488**	**3666**	**2%**

2.43. All DNOs are forecasting rises in Engineering Indirects, with the biggest increase reported from EDFE SPN at 21 per cent above DPCR4 (before RPEs). EDFE have explained this increase as principally driven by the further deployment of their alliance contracting (IDTs). EDFE explain that their IDTs provide support to both direct and indirect activities and the significant rise reflects the increase in workload. CN West is reporting a 2 per cent increase, for which we have not received any direct explanation. For network/investment support the values range from a decrease of 7 per cent for SP Distribution, which was a result of ongoing efficiencies, to an increase of 14 per cent for SSE Hydro which they explain as necessary to deliver their capex programme. There is a wide divergence of forecasts for the business support category. The biggest increase is reported by WPD S Wales at 10 per cent. There are numerous factors which contribute, the most significant being an increase in the IT & Telecoms indirect activity. While SP Distribution forecasted a decrease of 8 per cent against DPCR4, they have not provided a specific explanation of this.

Non-operational capex

2.44. This represents the expenditure DNOs make on purchases of new or replacement items not recognised as part of the system assets (vehicles, tools, machinery, office equipment, non-op IT, and non-operational property). The expenditure profile for this activity is typically “lumpy” and the largest spend is usually in the Non-Operational IT category. The increase overall between DPCR4 and DPCR5 is 13 per cent. ENW forecast a 33 per cent increase primarily due to investment in IT. They also are anticipating technology refreshes in order to amend and improve applications in line with business and industry developments. Most DNOs are showing increases above DPCR4 levels except CN and SP Distribution. We did not receive any specific narrative from CN or SP which would account for their decreased levels of spend in this area.

Figure 2.11 – Non-Operational Capex as percentage of DPCR4 totals



2.45. The DPCR5 total spend on non-operational capex is forecast to be £484m before RPEs, an increase of 13 per cent on DPCR4 levels. This represents a slight increase from forecasts made at Initial Proposals, when the forecast totalled £480m. The underlying uplift in non-operational IT expenditure is forecast to rise 33 per cent to a little over £200m across the DNOs. This compares to a forecast increase of 29 per cent at Initial Proposals. The forecast expenditure in the next biggest category, Vehicles, remains at 4 per cent below DPCR4. Expenditure on non-operational property is forecast to be 13 per cent above DPCR4.

Table 2.10 – DPCR5 forecast expenditure for Non-Operational Capex compared to DPCR4 outturn (£m 2007-08 prices)

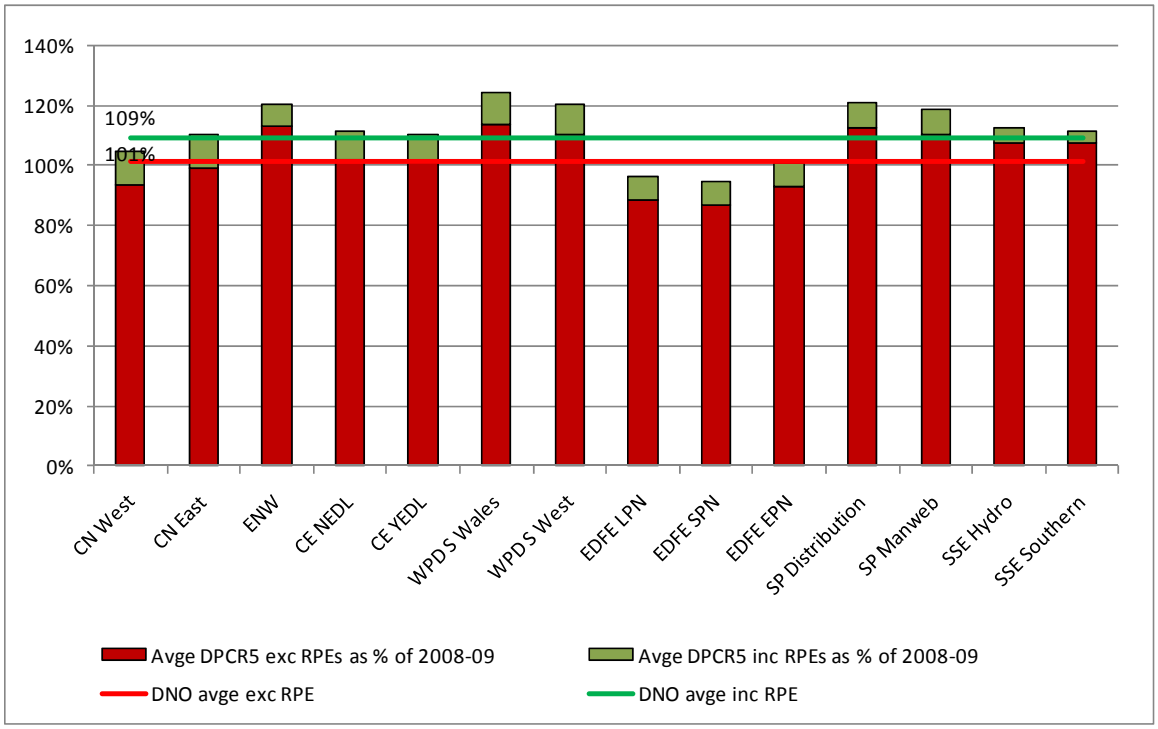
DNO	DPCR 4 Total	DPCR5					DR4 to DR5
		Vehicles	IT & T	Prop (incl. office equip)	Other	Total Non-op Capex	
CN West	10	1	3	0	5	9	-10%
CN East	11	1	2	0	6	10	-7%
ENW	39	13	32	3	4	52	33%
CE NEDL	23	5	19	1	3	28	26%
CE YEDL	22	9	16	1	4	30	34%
WPD S Wales	24	9	12	4	7	32	32%
WPD S West	40	15	12	7	12	46	14%
EDFE LPN	37	8	19	5	6	37	-2%
EDFE SPN	40	12	18	11	7	47	19%
EDFE EPN	75	17	28	14	14	72	-4%
SP Distribution	23	0	17	4	1	22	-6%
SP Manweb	17	0	17	4	1	22	28%
SSE Hydro	23	9	9	6	6	29	24%
SSE Southern	43	16	9	14	11	50	15%
Total	**427**	**113**	**211**	**74**	**86**	**484**	**13%**

DPCR5 average forecast compared to 2008-09.

2.46. The comparisons to date have considered DPCR5 costs relative to DPCR4. As noted at Initial Proposals, DPCR4 has been a period of increasing capex and DNOs have ramped up at different rates. Figure 2.12 compares the average DPCR5 forecasts against the actual costs in 2008-09. It shows markedly different results across the DNOs. RPEs lift the industry average to 8 per cent above the 2008-09 level, although ENW, WPD and SP report increases that are significantly higher than this.

2.47. Only EDFE is reporting forecast average DPCR5 costs (including RPEs) below or near their 2008-09 costs. However, excluding RPEs most of the DNOs are reporting DPCR5 average costs close to 2008-09 levels. The costs reported for the EDFE DNOs in 2008-09 are high compared to the other DPCR4 years, and therefore the comparison to DPCR5 average costs show the EDFE DNOs comparatively very low. Otherwise the comparisons show a similar picture to the total DPCR5 to DPCR4 comparison.

Figure 2.12 – Average DPCR5 opex as a percentage of 2008–09 opex



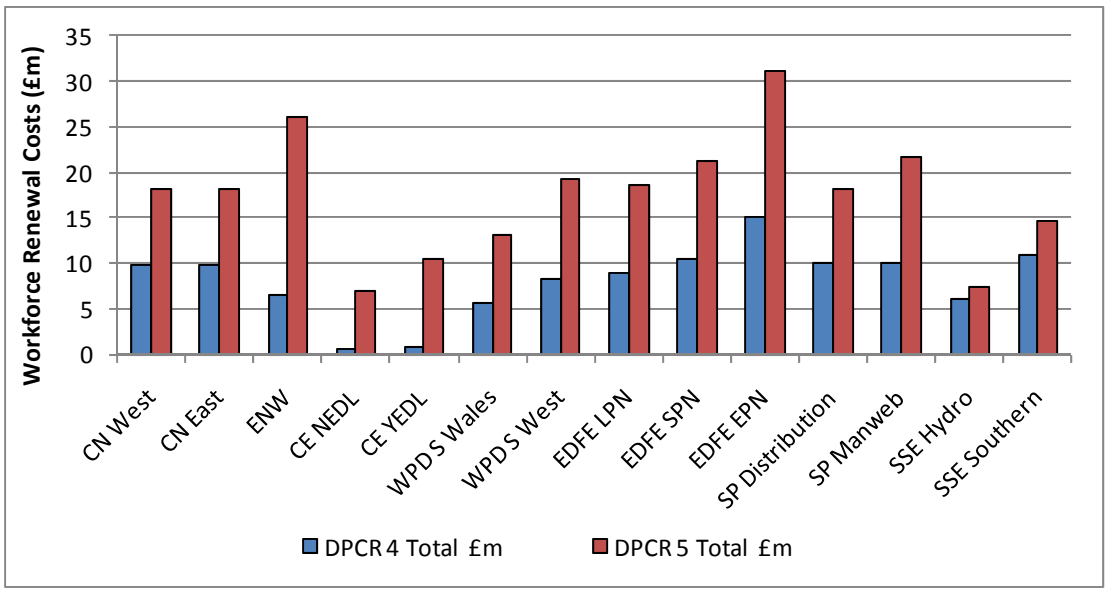
2.48. If we compare the average annual forecast for DPCR5 to 2008-09 actuals rather than average annual expenditure for the DPCR4 period, the increase is significantly smaller. This is because the expenditure for 2008-09, the last year for which we have actual costs for the DNOs, is significantly higher than the average cost for the DPCR4 period, due to RPEs. The increase compared to 2008-09 actuals excluding RPEs is just 1 per cent.

Workforce renewal

2.49. The cost increases reported above include a large increase for workforce renewal. Workforce renewal includes the costs of replacing staff leaving and increasing the workforce to manage the increase in workload forecast for DPCR5. Not only are the DNOs forecasting further increases in workload in DPCR5 but they also forecast a large increase in workforce retirements because of the numbers of staff recruited during the 1950's and 1960's who are now approaching normal retirement age.

2.50. Workforce Renewal costs have been reported in the FBPQs for both Network Investment and Operational Activities. Figure 2.13 shows the reported costs for Workforce Renewal in total for DPCR4 and DPCR5.

Figure 2.13 - Workforce Renewal actual and forecast costs (£ million 2007-08 prices)



2.51. The chart above shows that the DNOs are forecasting to spend significantly more on workforce renewal over the DPCR5 period that was spent in DPCR4.

Traffic Management Costs

2.52. Details of the movements for Traffic Management Costs from DPCR4 to DPCR5 are explained in Chapter 4.

Net change to Operational Costs since Initial Proposals

2.53. Since Initial Proposals the DNOs have made some amendments to their forecast business plans. The changes made to Operational Cost forecasts are summarised in the tables below.

Table 2.11 - Movements in forecasts for Operational Costs (£m 2007-08 prices)

	Initial Proposal	October Letter	Final Proposal	Initial Proposal
	£m	£m	£m	%
CN West	547	537	534	-2.4%
CN East	496	497	495	-0.1%
ENW	575	569	567	-1.4%
CE NEDL	333	358	340	2.2%
CE YEDL	433	469	438	1.1%
WPD S Wales	302	315	323	6.3%
WPD S West	442	436	436	-1.4%
EDFE LPN	502	479	467	-7.4%
EDFE SPN	516	480	478	-8.0%
EDFE EPN	860	824	818	-5.2%
SP Distribution	458	478	463	1.1%
SP Manweb	480	484	465	-3.1%
SSE Hydro	322	333	333	3.4%
SSE Southern	647	645	646	-0.1%
Total	**6912**	**6903**	**6804**	-1.6%

2.54. Table 2.11 shows that while the changes from Initial Proposals to Final Proposals have been relatively small for some DNOs, such as CN East and SSE Southern, the changes for others have been quite large, including the EDFE DNOs. Overall for the industry the change in forecasts for Operational Costs is minus 1.6 per cent.

2.55. For some other DNOs, including CE and SP, the overall changes mask a higher level of movements between Initial Proposals and the October Letter and then on to Final Proposals.

Table 2.12 - Movements in forecasts for Operational Costs disaggregated (£m 2007-08 prices)

	Initial Proposals	Change from Initial Proposals to Final Proposals						Final Proposals
		NOCs	Non-op capex	Closely associated indirects	Business Support Costs	Workforce renewal	TMA	
	£m	£m	£m	£m	£m	£m	£m	£m
CN West	547	3.8	-0.1	-7.5	0.0	0.0	-9.0	534
CN East	496	3.8	0.1	4.9	-0.4	0.0	-9.0	495
ENW	575	6.5	0.0	1.8	0.0	0.0	-16.2	567
CE NEDL	333	3.3	5.2	0.0	-0.0	3.0	-3.9	340
CE YEDL	433	5.5	1.6	0.0	0.0	5.9	-8.2	438
WPD S Wales	302	2.6	8.8	7.8	6.2	0.0	-5.0	323
WPD S West	442	5.8	-8.9	2.1	1.1	0.0	-6.2	436
EDFE LPN	502	-12.0	0.0	6.1	0.0	-3.6	-25.2	467
EDFE SPN	516	-16.5	0.0	-4.6	-1.1	-3.0	-12.8	478
EDFE EPN	860	-25.3	0.0	7.5	3.2	-3.9	-23.7	818
SP Distribution	458	23.5	0.0	3.7	-14.5	-4.6	-3.0	463
SP Manweb	480	3.0	0.0	5.0	-13.5	-5.7	-3.1	465
SSE Hydro	322	9.5	0.0	1.9	0.0	0.0	-0.1	333
SSE Southern	647	0.0	0.0	6.8	0.0	0.0	-7.1	646
Total	**6912**	**13**	**7**	**35**	**-19**	**-12**	**-133**	**6804**

2.56. Most DNOs have increased their forecasts for NOCs, while the EDFE DNOs have submitted significant decreases in forecasts in this area. EDFE have also submitted the largest decreases in TMA forecasts and substantial decreases for Workforce Renewal.

2.57. Most DNOs have not changed the forecasts for Non-Operational Capex. The exceptions are WPD, where certain costs were moved between WPD S West and WPD S Wales, and CE where significant increases are reported.

2.58. The movements in forecasts for Indirect Costs differ across the DNO. For most DNOs there are consistent increases or decreases while for the SP DNOs there are increases in indirects closely associated with network costs but a large decrease for business support costs.

2.59. Only EDFE and SP have submitted reduced Workforce Renewal costs prior to Final Proposals, while CE has increased their forecasts.

3. Network Investment

Chapter summary

This chapter gives an overview of the methodologies used in the assessment of Network Investment, our Final Proposals for Network Investment and key movements since Initial Proposals.

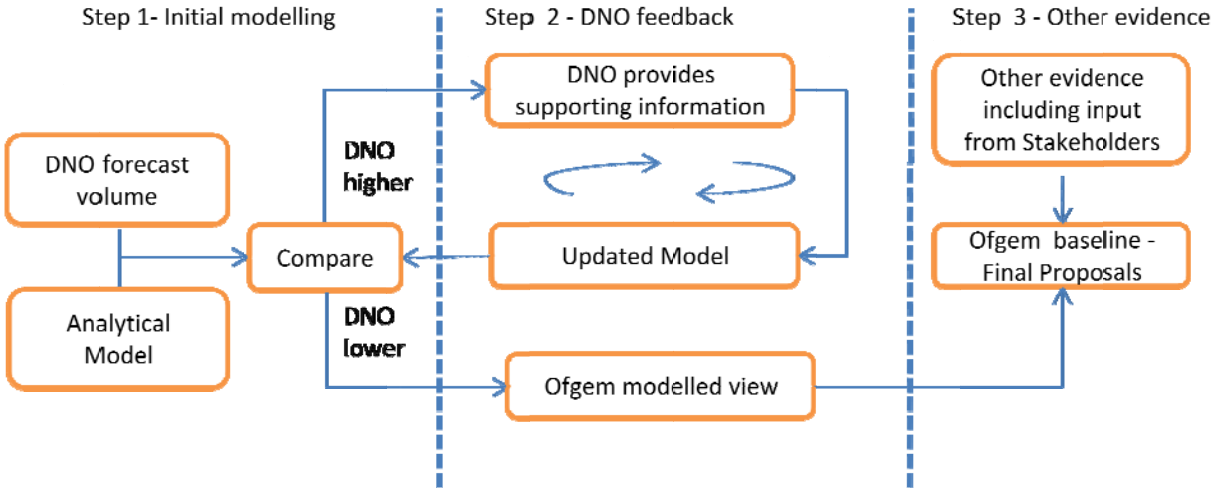
Overview of methodology

3.1. We set out our detailed methodology for the assessment of Network Investment in the May Methodology and Initial Results Paper. We provided an update in the Initial Proposals document and in the September Update letter. At a high level, the methodology has three key steps:

- initial modelling based on DNO data submissions,
- DNO feedback: submission of further evidence to support forecast expenditure, assessment of this evidence and update of the model where justified, and
- assessment of wider evidence including input from other stakeholders.

3.2. Figure 3.1 below shows an overview of the methodology.

Figure 3.1 - Network Investment methodology



3.3. The "analytical model" refers to a number of analytical techniques we have applied in assessing the Network Investment building blocks. The type of technique varies between different building blocks depending on the driver for investment and the data that is available. Some of the techniques that have been used are:

- an age based asset replacement model (survivor model) based on asset age profiles and the probability of assets failing for different ages,
- unit cost benchmarking,
- benchmarking the cost of adding capacity,

- benchmarking capacity added to demand growth,
- run-rate and trend analysis, and
- reconciliation of forecast volumes and output data using the load indices and health indices.

3.4. For areas of investment where we have been unable to apply an analytical model to the volume or unit cost forecast we have undertaken a qualitative review supported by our technical advisors.

Key issues raised by the DNOs

3.5. After the publication of the May Methodology and Initial Results Paper Ofgem held a series of bilateral meetings with the DNOs. The purpose of these meetings was to:

- give the DNOs an opportunity to provide feedback on the methodology and initial results,
- allow Ofgem to provide an initial view of the baseline for Initial Proposals, highlighting areas where there was a proposed reduction to the DNOs' forecasts, and
- agree the additional information each DNO would need to provide to support their forecast expenditure in order for us to move from our initial view.

3.6. The majority of issues raised by the DNOs related to the asset replacement modelling and the EHV and 132kV reinforcement modelling. Where appropriate we adjusted our approach for Initial Proposals accordingly.

Further work and changes since Initial Proposals

3.7. Since we presented our Initial Proposals the DNOs have had further opportunity to critique our assessment and provide additional evidence through further bilateral meetings and written submissions. The DNOs have raised specific issues relating to our modelling and assumptions - they have not questioned our overall methodology for Network Investment. Where we have accepted the DNOs' arguments we have incorporated these into our Final Proposals. Examples of the issues covered in the DNOs' representations are:

- the use of the lower of the adjusted median and the DNOs' own unit costs for asset replacement,
- the scope of work covered in each separately defined unit cost,
- costs that should be excluded from unit costs analysis and subject to separate review (non modelled costs),
- volume adjustments made to general reinforcement,
- the level of disaggregation required for ESQCR unit cost benchmarking, and
- recent trends in diversion expenditure during the final years of DPCR4.

3.8. The largest area of disagreement between us and the DNOs since Initial Proposals has been around the unit cost analysis for benchmarking asset replacement expenditure (the first three points above). We have reviewed in detail the issues that have been raised by the DNOs and in some cases we have requested further detailed data and made amendments to our analysis based on the data submitted. We consider that our approach is robust given we have:

- used the adjusted median not the upper quartile in recognition of the data imperfections,
- given the DNOs the opportunity to remove costs from the general unit cost analysis where they could justify them as being atypical or costs associated with the work that are not incurred by other DNOs (non-modelled costs),
- made adjustments where there are boundary issues or trade-offs between separately defined unit cost, and
- made adjustments for those DNOs with unit costs significantly below (outperforming) the median.

3.9. Examples of other updates to our baseline in response to issues raised by the DNOs include:

- applying volume adjustments to general reinforcement based on detailed reconciliation between the DNOs' forecast expenditure and their load indices,
- applying changes to demand connection baselines based on an updated categorisation of connections data, and
- updating the ESQCR cost benchmarking based on further disaggregation of unit costs.

3.10. In the following section we set out further details of the amendments we have made since Initial Proposals and our Final Proposals for Network Investment.

September Update to Initial Proposals

3.11. When we published Initial Proposals in early August 2009 we highlighted several areas of costs where we were still to receive the information that we needed from the DNOs and other parties to form a view on the appropriate baseline revenue allowance. These costs were in the following areas:

- core network investment: demand connections expenditure, and
- non-core Network Investment: High Impact Low Probability (HILP) events, flooding, BT 21st Century (BT21CN) expenditure, rising and lateral mains (RLM), black start capability and emergency batteries, critical national infrastructure (CNI), losses and discretionary expenditure.

3.12. We used the DNOs' forecasts as our modelling assumption for many of these costs.

3.13. We have updated the Initial Proposals baseline in this document to include the September Update as this represented our "Initial Proposals" for these costs. All costs presented in this chapter exclude RPEs. Chapter 2 provides further information on RPEs and ongoing efficiencies, including the DNOs' forecast and our baselines for these costs.

Network Investment Final Proposals

3.14. As discussed in Chapter 2 of this document we have categorised Network Investment in a similar manner to Initial Proposals, with Network Investment split into core and non-core expenditure. In addition non-core investment has been divided into costs covered by an ex ante allowance and those subject to logging up or reopener mechanisms. Further details of the logging up and reopener mechanisms are provided in Chapter 7.

3.15. Discretionary expenditure has been excluded from the DNOs' forecasts, and therefore our analysis in this chapter, as it is being separately addressed. Further details on discretionary expenditure are provided in Chapter 1 of the Incentives and Obligations document. This also applies to a subset of quality of service (non-IIS) expenditure in relation to worst served customers and a subset of environmental expenditure on undergrounding in areas of outstanding natural beauty (AONB), both of which are subject to a standalone (ex post) funding mechanism. For these areas we have not included any expenditure in our baseline proposals and have removed them from the DNOs' DPCR5 forecasts in calculating the IQI.

3.16. Table 3.1 below shows our Final Proposals for Network Investment in total across the industry. Also shown is the movement from Initial Proposals to Final Proposals for both the DNOs' DPCR5 forecast and Ofgem's baseline.

Table 3.1 - Final Proposals for Network Investment

All DNOs		Initial Proposals (IP)			Final Proposals (FP)			Change From IP to FP		
£m (07/08)	DPCR4 Actuals	DPCR5 Forecast	Baseline	Reduction (%)	DPCR5 forecast	Baseline Updated	Reduction (%)	DPCR5 forecast	Baseline	Reduction
Core (Ex-ante)										
Demand Connections	408.8	410.1	329.8	19.6%	400.6	345.7	13.7%	-9.5	16.0	-5.9%
Diversions	258.5	355.7	287.8	19.1%	356.9	320.8	10.1%	1.2	33.0	-9.0%
Reinforcement	1102.3	1464.2	1312.8	10.3%	1466.1	1376.8	6.1%	2.0	64.0	-4.2%
Fault Levels	41.2	135.1	125.8	6.9%	135.3	131.7	2.7%	0.2	5.9	-4.2%
Asset Replacement	2916.0	3893.9	3332.8	14.4%	3891.6	3589.4	7.8%	-2.3	256.6	-6.6%
Operational IT&T	84.7	106.2	95.8	9.7%	119.8	109.4	8.6%	13.6	13.6	-1.1%
Legal and Safety	170.3	414.6	265.6	35.9%	414.1	362.9	12.4%	-0.5	97.3	-23.6%
Total	4981.9	6779.8	5750.5	15.2%	6784.5	6236.7	8.1%	4.7	486.2	-7.1%
Non Core (Ex-ante)										
BT21CN	9.5	159.7	106.7	33.2%	129.4	106.7	17.6%	-30.3	0.0	-15.6%
Flooding	10.4	89.9	98.1	-9.1%	109.6	111.9	-2.1%	19.7	13.8	7.1%
QoS (IIS)	233.7	95.5	0.0	100.0%	95.5	0.0	100.0%	0.0	0.0	0.0%
QoS (Non IIS)	55.2	21.4	0.0	100.0%	21.4	0.0	100.0%	0.0	0.0	0.0%
Environmental	34.5	47.0	47.0	0.0%	47.0	47.0	0.0%	0.0	0.0	0.0%
Losses	0.2	24.0	15.6	34.9%	3.7	15.6	-317.9%	-20.3	0.0	-352.8%
Total	343.4	437.6	267.5	38.9%	406.8	281.2	30.9%	-30.8	13.8	-8.0%
Total (Ex-ante)	**5325.2**	**7217.3**	**6018.0**	**16.6%**	**7191.3**	**6517.9**	**9.4%**	**-26.1**	**500.0**	**-7.3%**
Non Core (Reopener/Logging up)										
HILP	0.2	67.9	6.1	91.1%	67.9	6.1	91.1%	0.0	0.0	0.0%
CNI security	4.8	15.8	0.0	100.0%	15.8	0.0	100.0%	0.0	0.0	0.0%
Black Start Capability	0.0	56.6	0.0	100.0%	70.0	0.0	100.0%	13.4	0.0	0.0%
Rising mains	10.7	78.3	26.0	66.7%	78.3	26.0	66.7%	0.0	0.0	0.0%
Total	15.7	218.6	32.1	85.3%	232.0	32.1	86.2%	13.4	0.0	0.8%
Total	**5340.9**	**7435.9**	**6050.1**	**18.6%**	**7423.3**	**6550.0**	**11.8%**	**-12.6**	**500.0**	**-6.9%**

3.17. In total our baseline reduces the DNO forecast by 11.8 per cent down from 18.6 per cent at Initial Proposals, increasing Network Investment baselines by £500 million in aggregate. The percentage cut includes the removal of costs subject to a reopener or logging up mechanisms. These costs are not being disallowed, they are simply being recovered through an alternative funding mechanism which in practice means the costs will typically be recovered at a later date in the DPCR5 period. The reduction to the DNOs' forecasts excluding the costs subject to reopener or logging up mechanisms is 9.4 per cent down from 16.6 per cent at Initial Proposals.

3.18. Table 3.2 below shows our Final Proposals for Network Investment in total for each DNO.

Table 3.2 - Final Proposals by DNO

DNO		Initial Proposals (IP)			Final Proposals (FP)			Change From IP to FP		
£m (07/08)	DPCR4 Actuals	DPCR5 Forecast	Baseline	Reduction (%)	DPCR5 forecast	Baseline Updated	Reduction (%)	DPCR5 forecast	Baseline	Reduction
CN_West	517.4	669.8	560.1	16.4%	673.8	590.6	12.3%	4.0	30.5	-4.0%
CN_East	493.7	672.1	566.5	15.7%	675.4	593.3	12.2%	3.3	26.9	-3.6%
ENW	438.6	615.9	477.3	22.5%	603.1	548.4	9.1%	-12.8	71.1	-13.4%
CE_NEDL	270.7	405.9	343.4	15.4%	414.8	373.1	10.0%	8.9	29.7	-5.3%
CE_YEDL	352.4	530.1	447.9	15.5%	569.8	496.7	12.8%	39.8	48.8	-2.7%
WPD_S_Wales	156.8	227.2	199.2	12.3%	216.7	231.4	-6.8%	-10.5	32.2	-19.1%
WPD_S_West	252.2	348.6	301.3	13.6%	333.4	349.1	-4.7%	-15.2	47.8	-18.3%
EDFE_LPN	399.3	580.6	438.0	24.6%	581.1	482.7	16.9%	0.5	44.6	-7.6%
EDFE_SPN	387.3	602.2	471.7	21.7%	601.8	498.0	17.2%	-0.4	26.3	-4.4%
EDFE_EPN	632.8	776.4	575.7	25.9%	768.8	629.8	18.1%	-7.6	54.2	-7.8%
SP_Distribution	354.8	456.3	371.6	18.6%	452.7	377.4	16.6%	-3.6	5.8	-1.9%
SP_Manweb	388.9	630.2	521.1	17.3%	613.8	537.9	12.4%	-16.4	16.9	-5.0%
SSE_Hydro	177.3	225.4	201.9	10.4%	222.7	207.5	6.9%	-2.7	5.6	-3.6%
SSE_Southern	518.7	695.2	574.3	17.4%	695.2	634.0	8.8%	0.0	59.7	-8.6%
Total	**5340.9**	**7435.9**	**6050.1**	**18.6%**	**7423.3**	**6550.0**	**11.8%**	**-12.6**	**500.0**	**-6.9%**

3.19. Ofgem's baseline for network investment across the industry is a 22.6 per cent or £1.2bn increase on DPCR4 levels of investment. The changes from DPCR4 actual expenditure range from a 47.6 per cent increase for WPD South Wales to a 0.5 per cent reduction for EDFE EPN, the only DNO receiving a lower baseline than in DPCR4.

3.20. The majority of this increase, 56 per cent, is driven by increases in network replacement activity, with increases in general reinforcement activity and increases in expenditure to comply with legal and safety requirements accounting for most of the remainder of the increase from the DPCR4 period.

3.21. There are a number of reasons why there is such a large range in the forecast increases from DPCR4 to DPCR5 across the DNOs including:

- where the DNO is on the replacement cycle for condition based replacement reflecting the current condition and remaining life of their assets,
- the mix of assets that require replacement and their relative unit costs,
- differences in the current utilisation and therefore capacity headroom to accommodate load growth,
- differences in regional growth and connection forecasts,
- differential impacts of the ESQCR regulations on required levels of investment, and
- the impact of different regional requirements such as the requirements for flood protection or site security.

3.22. Table 3.3 shows the key movements from Initial Proposals to Final Proposals split by the main areas of Network Investment. We also show the impact of the September Update on our baseline split between reductions that are due to further efficiency adjustments and taking costs out because they will be recovered through logging up mechanisms or reopeners. The latter costs are not being disallowed. We are simply unable to establish a baseline for them because of significant uncertainty and an efficient level of costs will be recovered later from customers.

Table 3.3 - Key movements from Initial Proposals to Final Proposals by investment area by DNO (£m 2007-08 prices)

	Baseline IP	Reopener/ logging up Costs Adj	Efficiency Adj	Baseline IP (Septmber Update)	Change IP to FP					Baseline FP
					Gen Reinf	Other LRE	Asset Repl	Other core NLRE	Non-core	
CN West	575.6	-8.6	-6.9	560.1	9.5	4.2	14.3	2.5	0.0	590.6
CN East	578.7	-3.0	-9.3	566.5	10.3	1.1	12.4	3.1	0.0	593.3
ENW	506.9	-2.8	-26.8	477.3	3.3	22.7	35.8	9.2	0.0	548.4
CE NEDL	355.5	-2.4	-9.7	343.4	-4.7	1.9	27.2	5.3	0.0	373.1
CE YEDL	443.8	-3.5	7.6	447.9	-2.8	8.4	30.4	12.8	0.0	496.7
WPD S Wales	198.6	-2.0	2.6	199.2	0.0	0.0	26.9	5.3	0.0	231.4
WPD S West	302.6	-1.4	0.1	301.3	0.0	3.5	38.6	5.6	0.0	349.1
EDF LPN	495.2	-57.9	0.7	438.0	10.1	-0.1	33.6	1.0	0.0	482.7
EDF SPN	494.3	-10.0	-12.5	471.7	8.6	0.0	-1.5	19.2	0.0	498.0
EDF EPN	623.7	-21.5	-26.5	575.7	29.7	3.3	7.1	14.1	0.0	629.8
SP Distribution	405.9	-32.7	-1.6	371.6	0.0	-0.3	5.4	0.6	0.0	377.4
SP Manweb	553.8	-22.9	-9.8	521.1	0.0	2.7	8.7	5.5	0.0	537.9
SSE Hydro	210.4	-6.9	-1.6	201.9	0.0	0.8	3.2	1.6	0.0	207.5
SSE Southern	591.5	-11.0	-6.2	574.3	0.0	6.7	14.3	25.0	13.8	634.0
Total	6336.6	-186.5	-100.0	6050.1	64.0	54.8	256.6	110.9	13.8	6550.0

3.23. Since Initial Proposals, taking account of the September Update, the baseline has increased by £500m, with the main movement in asset replacement and other non-load related expenditure (NLRE) (mostly legal and safely). In most cases we adjusted our view of the baseline in response to further supporting information provided by the DNOs since Initial Proposals. More information on the reasons behind our adjustments is set out below. We have not changed our overall methodology but we have taken account of the improved information and refined our approach.

3.24. We discuss further details of the movements in core (ex ante), non-core (ex ante) and non-core (reopener/logging up) expenditure, by DNO, in the sections below. A more detailed explanation by building block is provided in the Cost Assessment Appendix.

Core Network Investment

3.25. Table 3.4 below shows our baseline for core network investment. We also set out actual expenditure in DPCR4 and the DNOs' final DPCR5 forecast.

Table 3.4 - Core Network Investment baseline by DNO

Core Network Investment								
DNO £m (07/08 prices)	DPCR4 actuals	DPCR5 Forecast	Increase (%)	Baseline	Reduction from DNO Forecast	Reduction (%)	Increase DPCR4 to Baseline	Increase (%)
CN_West	484.7	642.5	32.6%	579.5	63.0	10%	94.8	19.6%
CN_East	463.8	633.8	36.7%	565.6	68.2	10.8%	101.8	22.0%
ENW	419.9	571.1	36.0%	517.4	53.7	9.4%	97.5	23.2%
CE_NEDL	252.7	398.0	57.5%	366.2	31.8	8.0%	113.5	44.9%
CE_YEDL	330.5	512.6	55.1%	460.2	52.5	10.2%	129.7	39.2%
WPD_S_Wales	138.6	194.4	40.2%	214.8	-20.4	-10.5%	76.2	55.0%
WPD_S_West	238.3	306.1	28.5%	334.9	-28.8	-9.4%	96.6	40.6%
EDFE_LPN	386.2	508.6	31.7%	476.1	32.5	6.4%	89.9	23.3%
EDFE_SPN	350.1	541.9	54.8%	469.1	72.8	13.4%	119.0	34.0%
EDFE_EPN	564.8	677.0	19.9%	587.9	89.1	13.2%	23.1	4.1%
SP_Distribution	324.0	383.8	18.5%	349.1	34.7	9.1%	25.1	7.7%
SP_Manweb	363.6	547.0	50.4%	499.5	47.5	8.7%	135.8	37.4%
SSE_Hydro	165.0	214.2	29.8%	204.6	9.6	4.5%	39.6	24.0%
SSE_Southern	499.8	653.5	30.8%	611.9	41.6	6.4%	112.1	22.4%
Total	**4981.9**	**6784.5**	**36.2%**	**6236.7**	**547.8**	**8.1%**	**1254.8**	**25.2%**

3.26. Ofgem's baseline for core Network Investment across the industry is a 25.2 per cent, or £1.25bn, increase on current levels of investment. This represents a 8.1 per cent reduction to the DNOs' forecasts, ranging from a 10.5 per cent uplift for WPD South Wales and a 13.4 per cent reduction for EDFE SPN.

3.27. Overall we have increased WPD's forecast for asset replacement because of frontier performance on unit costs beyond the upper quartile. This adjustment ensures that they are not penalised in terms of the scope for outperformance for being efficient. This is discussed in more detail in paragraph 3.44 and the Cost Assessment Appendix.

3.28. Table 3.5 below shows the reduction to each DNO's forecasts for each building block.

Table 3.5 - Network Investment reductions by building block – by DNO

DNO £m (07/08 prices)	Demand	Diversions	Reinforcement	Fault Levels	Asset Replacement	IT&T	Legal & Safety	Total
CN_West	5.5	7.8	12.5	0.4	36.6	0.0	0.1	63.0
CN_East	4.2	7.3	19.3	0.0	37.4	0.0	0.0	68.2
ENW	3.4	0.3	3.1	0.0	30.0	1.4	15.4	53.7
CE_NEDL	8.8	2.7	4.7	0.0	15.4	0.0	0.0	31.8
CE_YEDL	14.2	5.1	2.8	0.0	28.1	0.0	2.3	52.5
WPD_S_Wales	0.0	0.0	1.6	0.0	-24.9	1.8	1.1	-20.4
WPD_S_West	0.1	0.8	0.0	0.0	-34.3	1.8	2.7	-28.8
EDFE_LPN	0.6	0.5	0.0	0.0	31.5	0.0	0.0	32.5
EDFE_SPN	6.5	3.8	16.9	0.0	41.1	0.0	4.5	72.8
EDFE_EPN	9.0	0.7	17.4	3.2	41.7	0.0	17.0	89.1
SP_Distribution	0.0	1.1	0.0	0.0	31.3	1.0	1.3	34.7
SP_Manweb	0.0	4.3	2.2	0.0	33.5	0.8	6.8	47.5
SSE_Hydro	0.5	1.1	1.1	0.0	5.7	1.2	0.0	9.6
SSE_Southern	1.9	0.7	7.7	0.0	28.9	2.4	0.0	41.6
Total	**54.9**	**36.2**	**89.4**	**3.7**	**302.2**	**10.3**	**51.2**	**547.8**

3.29. As can be seen in Table 3.5 the majority of the reduction we have made to DNOs' forecasts of core Network Investment relates to asset replacement expenditure. In general this is driven by cuts we have made to the DNOs' forecast unit costs, and in most cases we have made no changes to the volume of replacement in the DNOs' plans. We have also made reductions to some of the DNOs' forecasts for general reinforcement (volume and unit costs), demand (unit costs), legal and safety (unit costs) and diversion (volume).

3.30. Table 3.6 below shows the key movements in Ofgem's baseline (as updated in September) and our Final Proposals.

Table 3.6 - Key movements in Ofgem's baseline

£m (07/08)	Baseline IP (Sept)	Demand connections	Diversions	Reinforcement	Fault levels	Asset Replacement	Operational IT&T	Legal and safety	Total	Baseline FP
CN West	549.0	0.0	-1.7	9.5	5.8	14.3	0.0	2.5	30.5	579.5
CN East	538.7	0.4	0.7	10.3	0.0	12.4	0.0	3.1	26.9	565.6
ENW	446.3	12.1	10.6	3.3	0.0	35.8	0.0	9.2	71.1	517.4
CE NEDL	336.5	0.1	1.7	-4.7	0.0	27.2	4.6	0.7	29.7	366.2
CE YEDL	411.4	0.2	8.2	-2.8	0.0	30.4	9.0	3.8	48.8	460.2
WPD S Wales	182.6	0.0	0.0	0.0	0.0	26.9	0.0	5.3	32.2	214.8
WPD S West	287.1	0.0	3.5	0.0	0.0	38.6	0.0	5.6	47.8	334.9
EDF LPN	431.4	-0.1	0.0	10.1	0.0	33.6	0.0	1.0	44.6	476.1
EDF SPN	442.8	0.0	0.0	8.6	0.0	-1.5	0.0	19.2	26.3	469.1
EDF EPN	533.8	3.3	0.0	29.7	0.0	7.1	0.0	14.1	54.2	587.9
SP Distribution	343.2	0.0	-0.3	0.0	0.0	5.4	0.0	0.6	5.8	349.1
SP Manweb	482.6	-0.1	2.8	0.0	0.0	8.7	0.0	5.5	16.9	499.5
SSE Hydro	199.0	0.0	0.8	0.0	0.0	3.2	0.0	1.6	5.6	204.6
SSE Southern	565.9	0.0	6.7	0.0	0.0	14.3	0.0	25.0	45.9	611.9
Total	**5750.5**	**16.0**	**33.0**	**64.0**	**5.9**	**256.6**	**13.6**	**97.3**	**486.2**	**6236.7**

3.31. In total the baseline has increased by £486.2m from Initial Proposals. One of the largest increases in the baseline was for asset replacement, which was driven by:

- updating our age based modelling to take account of the age profile data for the 2008-09 period,
- taking account of further information provided by the DNOs in support of their forecast volumes,
- detailed reconciliation provided by the DNOs between volumes, unit costs and total expenditure, and
- updating our unit costs analysis to take account of the above and any further information.

3.32. The key movements for each DNO group are discussed below.

Central Networks

3.33. The main increases in our baselines since Initial Proposals for CN have been in the areas of general reinforcement and asset replacement. For general reinforcement CN was able to show that the 'new build' unit costs schedule they provided in the FBPQ was uniformly higher than the underlying costs used in their scheme by scheme forecast. We re-ran our analysis using the CN corrected unit costs which no longer indicated a reduction for CN. On this basis we reversed the 7.5 per cent unit costs reduction applied at Initial Proposals.

3.34. For asset replacement the majority of the increase in our baseline was as a result of making a lower unit cost adjustment than at Initial Proposals. There were also increases for fault levels (further information) and ESQCR (updated unit cost benchmarking).

Electricity North West

3.35. The main increases in our baseline since Initial Proposals for ENW have been for asset replacement, demand connections, diversions and legal and safety. For asset replacement the majority of the increase was as a result of reduced unit cost adjustments for overhead pole lines based on an update in the categorisation of activities and an increase in modelled volumes as a result of additional supporting information.

3.36. For demand connections the increase was the result of a correction to ENW's FBPQ, which previously allocated connections to the wrong voltage level.

3.37. For diversions the majority of the increase was the result of further information on a large one-off project which has now been included in the baseline.

3.38. For legal and safety the increase results from an additional volume of ESQCR clearance work for marginal sites, which will be subject to ongoing re-measurement. Our updated position was informed by further information provided by ENW and a discussion with the Health and Safety Executive. The baseline for ESQCR costs has also increased as a result of updated unit cost benchmarking.

CE Electric

3.39. The main increases in our baselines since Initial Proposals for CE have been for asset replacement, diversions and operational IT&T. There has also has been a reduction to general reinforcement.

3.40. For asset replacement the increase was as a result of reduced unit cost adjustment based on an updated reconciliation between volumes and forecast expenditure.

3.41. Diversions increased as a result our updated approach taking account of more recent trends in diversions activity.

3.42. For operational IT&T we have increased our baseline as a result of an increase to CE's forecast accompanied by a detailed justification.

3.43. Since Initial Proposals we have made reductions to CE's baseline allowance for general reinforcement totalling £4.7m for NEDL and £2.8m for YEDL. These reductions were made as a result of further analysis on the updated network outputs data provided by CE, which identified volume efficiencies not reflected in the baseline allowance.

Western Power Distribution

3.44. The main increase in our baselines since Initial Proposals for WPD South West and South Wales relates to asset replacement, in which we have applied a unit cost adjustment for frontier performance beyond the upper quartile. Further details of the unit cost adjustment are provided in the Cost Assessment Appendix document, Appendix 4, paragraph 1.74 onwards. There was also an increase for legal and safety (ESQCR) following updated unit cost benchmarking.

EDF Energy

3.45. The main increases in our baselines since Initial Proposals for EDF Energy have been for asset replacement (LPN), general reinforcement and legal and safety (EPN and SPN). For asset replacement the majority of the increase was as a result of a reduced unit cost adjustment for LPN. This was based on an updated reconciliation between volumes and forecast expenditure, which results in a reduction to EDF Energy's forecast unit costs.

3.46. The increase for general reinforcement has been as a result of our transfer of some expenditure into the high value project (HVP) mechanism (the HVP mechanism is discussed in paragraph 3.67), as well as an increase in volume supported by EDFE's detailed load index information for SPN received as part of the outputs process.

3.47. There was also an increase for legal and safety (ESQCR) following updated unit cost benchmarking.

Scottish Power

3.48. The main increase in our baselines since Initial Proposals has been for asset replacement (minor movements in volume and unit cost) and legal and safety (ESQCR - updated unit cost benchmarking).

Scottish and Southern Energy

3.49. The main increases in our baselines since Initial Proposals for SSE have been for legal and safety and asset replacement (Southern). For legal and safety, since Initial Proposals SSE have provided a cost-benefit analysis supporting installation of LV Aerial Bundled Conductor (ABC) to avoid ongoing tree cutting costs.

3.50. For asset replacement the increase is mainly driven by a reduced unit cost adjustment for rebuilding overhead lines with BLX and replacement of Consac cable (LV mains)

Non-core Network Investment

3.51. Table 3.7 below shows our baseline for non-core Network Investment. We also show actual expenditure in DPCR4 and the DNOs' final DPCR5 forecast. Overall our ex-ante baseline for the DPCR5 for non-core Network Investment is £45.7m and 12.7 per cent below the levels of expenditure in the DPCR4 period overall.

3.52. As can be seen in Table 3.7 below, the lower baseline reflects our decision not to award upfront allowances in respect of expenditure related to interruptions and other areas of quality of service. We consider that improvements to quality of service will be adequately rewarded through the interruptions incentive mechanism and other elements of the quality of service arrangements.

3.53. However, we are awarding the companies significantly higher baselines in the DPCR5 period to cover expenditure related to flood protection, to adjust to the changes that will come about through the BT21st century project and to make investment in low loss equipment.

Table 3.7 – Non-core Network Investment baseline by DNO

Non Core Network Investment							
DNO £m (07/08 prices)	DPCR4 actuals	DPCR5 Forecast	Reopener/logging up costs	Adjusted Forecast	Baseline	Reduction from Adj Forecast	Reduction (%)
CN_West	32.7	31.3	8.6	22.7	11.1	11.5	51%
CN_East	30.0	41.6	3.0	38.7	27.7	10.9	28.3%
ENW	18.7	32.0	2.8	29.2	31.0	-1.8	-6.2%
CE_NEDL	18.1	16.8	6.1	10.8	6.9	3.9	35.8%
CE_YEDL	22.0	57.2	12.5	44.7	36.5	8.2	18.3%
WPD_S_Wales	18.2	22.3	2.0	20.3	16.6	3.7	18.3%
WPD_S_West	13.9	27.3	1.4	25.9	14.2	11.7	45.3%
EDFE_LPN	13.1	72.5	57.9	14.6	6.6	8.0	54.8%
EDFE_SPN	37.2	59.9	10.0	49.9	28.9	21.0	42.1%
EDFE_EPN	68.0	91.8	21.5	70.3	41.9	28.4	40.4%
SP_Distribution	30.8	68.9	32.9	36.0	28.3	7.7	21.3%
SP_Manweb	25.3	66.8	23.5	43.4	38.4	4.9	11.4%
SSE_Hydro	12.3	8.5	6.9	1.6	2.9	-1.3	-77.1%
SSE_Southern	18.9	41.7	11.0	30.7	22.1	8.6	28.0%
Total	**359.0**	**638.8**	**200.0**	**438.9**	**313.3**	**125.5**	**28.6%**

3.54. Costs subject to reopener or logging up mechanisms are not being disallowed - they will be recovered through an alternative funding mechanism, which in practice means the costs will typically be recovered at a later date in the DPCR5 period. Table 3.7 above therefore shows DNOs' adjusted forecasts with these costs removed.

3.55. Ofgem's proposed level of non-core Network Investment across the industry is a 28.6 per cent reduction to the DNOs' adjusted forecast, ranging from a 77.1 per cent (£1.3m) increase for SSE Hydro to a 54.8 per cent (£8m) reduction for EDFE LPN.

3.56. Table 3.8 below shows the reduction to each DNO's forecast for each area of non-core investment split by those which will be funded ex ante and those which will be subject to logging up or reopeners.

Table 3.8 – Reductions to Non-Core Network Investment by building block – By DNO

DNO £m (07/08 prices)	Reduction to Non-core (ex-ante allowance)					Cost Removed from Non-core (subject to logging -up/reopeners)				Total
	Flooding	QoS (excl. WSC)	BT21CN	Environmental (excl. AONB & losses)	Technical losses	HILP	CNI security	Black Start Capability	Rising mains	
CN_West	0.0	9.0	2.3	0.0	0.3	5.7	2.4	0.5	0.0	20.2
CN_East	0.0	3.8	7.0	0.0	0.1	0.0	2.4	0.5	0.0	13.9
ENW	0.0	0.0	0.0	0.0	-1.8	2.8	0.0	0.0	0.0	1.0
CE_NEDL	1.4	2.4	0.0	0.0	0.0	0.0	0.0	3.7	2.4	9.9
CE_YEDL	0.6	7.6	0.0	0.0	0.0	0.0	0.0	9.0	3.5	20.7
WPD_S_Wales	0.0	3.8	0.0	0.0	0.0	0.0	0.0	2.0	0.0	5.7
WPD_S_West	0.5	11.3	0.0	0.0	0.0	0.0	0.0	1.4	0.0	13.1
EDFE_LPN	0.0	8.0	0.0	0.0	0.0	50.8	0.0	6.6	0.5	65.9
EDFE_SPN	0.0	15.0	6.0	0.0	0.0	0.0	0.0	9.0	1.0	31.0
EDFE_EPN	0.0	20.9	7.5	0.0	0.0	0.0	0.0	21.0	0.5	49.9
SP_Distribution	0.5	9.9	0.0	0.0	-2.7	1.0	5.0	0.7	26.2	40.6
SP_Manweb	0.0	7.5	0.0	0.0	-2.6	1.6	6.0	1.6	14.3	28.4
SSE_Hydro	-0.2	0.0	0.0	0.0	-1.0	0.0	0.0	6.0	0.9	5.6
SSE_Southern	-5.0	17.7	0.0	0.0	-4.1	0.0	0.0	8.0	3.0	19.6
Total	**-2.3**	**116.9**	**22.8**	**0.0**	**-11.9**	**61.9**	**15.8**	**70.0**	**52.2**	**325.5**

3.57. For flooding our baseline is based on updated information provided by SSE which supports expenditure greater than the forecast set out in the table above. For technical losses our baseline is based on the Ofgem scenario rather than the DNO's own scenario submitted in their forecasts. This means that for some DNOs our baseline is greater than their forecast DNO scenario. Further details are set out in the Cost Assessment Appendix document, Appendix 5, paragraphs 1.9 to 1.17 and 1.26 to 1.31.

3.58. There has been a £13m movement since Initial Proposals (including the September Update) to Final Proposals. All of this increase relates to an increased flooding allowance for SSE Southern as they were able to provide a detailed expenditure forecast. There have been no other movements since Initial Proposals.

Network outputs

3.59. In this price control review we have placed a strong emphasis on the need for DNOs to develop and commit to delivering suitable network output measures as part of the DPCR5 settlement. This is to ensure that DNOs undertake the necessary network investment required on the network and to deliver what customers have paid for via the DPCR5 settlement.

3.60. This ensures that the cost incentives effectively bind on the DNOs. In the absence of such output measures, it is difficult to distinguish between those companies that have innovated and found ways to deliver more efficiently what customers need and expect, and those that have deferred investment at the expense of network health and/or network loading.

3.61. In Initial Proposals we explained that our Network Investment allowances for asset replacement and general reinforcement were contingent on the quality of supporting network outputs information, and that if DNOs could not adequately quantify and reconcile the outputs associated with their network we may make further reductions to their forecasts or amend the outputs accordingly.

3.62. The DNOs have updated their outputs data since Initial Proposals, in a two-step process. Firstly, we undertook a detailed process with the DNOs to fully reconcile the outputs with their investment plans. Secondly, the DNOs updated the outputs to take into account the reduction in volumes that we applied to their investment plans based on our network investment assessment. We made it clear to the DNOs that we would not accept changes to the outputs to take account of our unit cost adjustments - in our view these unit cost adjustments represent an efficiency challenge that should not be addressed via a reduction in volumes.

3.63. Based on the work undertaken since Initial Proposals, we now have network outputs for all 14 DNOs that are fully consistent with our Network Investment allowances as set out in these Final Proposals. The DNOs' outputs are provided as a set of Excel spreadsheets on the Ofgem website with Final Proposals, and form part of the overall DPCR5 package. These outputs will become the 'agreed network outputs' (i.e. the baseline, relevant for assessment purposes), subject to the DNOs' agreement to the Final Proposals package.

3.64. Further details on network outputs are provided in the Incentives and Obligations document, Chapter 19.

High-value projects (HVP)

3.65. DNOs are proposing to undertake a significant number of large investment projects each in excess of £15m, which together account for around £0.7bn of Network Investment during DPCR5. Most of these projects relate to large general reinforcement schemes, predominantly but not exclusively in London and the South East. There are also a number of asset replacement projects which also exceed £15m, including expenditure to deal with BT21CN.

3.66. There is some uncertainty over whether these projects will go ahead during DPCR5 or whether issues such as planning consents or resourcing constraints will delay them. We are concerned that our output measures will not fully capture whether these specific projects have gone ahead, and we need to ensure that customers only pay where investment has been made.

3.67. In Initial Proposals we set out a number of options for the treatment of these costs, as follows:

- provide an ex ante allowance in line with what the company has requested and conduct an ex post review to confirm whether the project went ahead and was carried out efficiently,
- provide an ex ante allowance but require the DNOs to provide scheme specific output measures with an ex post review to confirm the outputs are delivered, or
- provide only part of the required funding up front with an ex post adjustment to allowances during the price control (DPCR5) depending on the actual investment made. We would set a cap in advance on the total amount of funding that we would allow for each project.

3.68. Taking into account responses to Initial Proposals, further discussion with the DNOs, and some further thinking, we propose that HVPs be subject to the following treatment for DPCR5:

- an ex ante allowance will included in our baselines (subject to an efficiency adjustment where appropriate),
- the DNOs will be required to commit to project specific outputs, and
- if outputs are not delivered an adjustment will be made based on the 'outputs gap'.

3.69. In addition, if the total spend on HVPs is +/- 20 per cent of the total ex ante allowance and all outputs are delivered then the HVPs will be eligible for a reopener. Further details of how the reopener will be applied to HVP are discussed in Chapter 7 on dealing with uncertainty.

3.70. Our assessment of output delivery for the projects and calculation of any 'output gap' will be consistent with the approach developed for general reinforcement and asset replacement, as described in the Incentives and Obligations document, Chapter 19.

3.71. Table 3.9 shows the total number of HVP schemes and our baseline expenditure for these projects. Expenditure in DPCR4 and forecast expenditure in DPCR6 are shown for information only. Only expenditure within DPCR5 will be subject to the treatment outlined above.

Table 3.9 - Summary of HVP expenditure

DNO (£m 07/08)	Number of Schemes	DPCR4	DPCR5	DPCR6	Total
CN_West	0	0.0	0.0	0.0	0.0
CN_East	3	0.6	70.2	0.0	70.8
ENW	2	7.0	39.1	0.0	46.1
CE_NEDL	0	0.0	0.0	0.0	0.0
CE_YEDL	2	6.4	27.3	0.0	33.7
WPD_S_Wales	0	0.0	0.0	0.0	0.0
WPD_S_West	0	0.0	0.0	0.0	0.0
EDFE_LPN	10.5	17.5	209.0	19.0	245.4
EDFE_SPN	3	3.6	52.9	4.6	61.1
EDFE_EPN	8.5	19.7	180.6	40.4	240.6
SP_Dist	0	0.0	0.0	0.0	0.0
SP_Manweb	2	4.5	25.3	0.0	29.8
SSE_Hydro	0	0.0	0.0	0.0	0.0
SSE_Southern	3	0.0	82.4	10.6	93.0
Total	**34**	**59.1**	**686.7**	**74.5**	**820.3**

3.72. For each HVP, DNOs have provided narrative covering the driver for the project, the proposed solution and the outputs which will be delivered. The information provided also includes details on the overall phasing of approval/sign off, procurement process and physical construction including key project risks.

4. Operational activities

Chapter summary
This chapter provides an overview of the methodologies we have used in the assessment of operational activity costs, our Final Proposals for DPCR5 baselines for those costs and highlights the key movements since Initial Proposals.

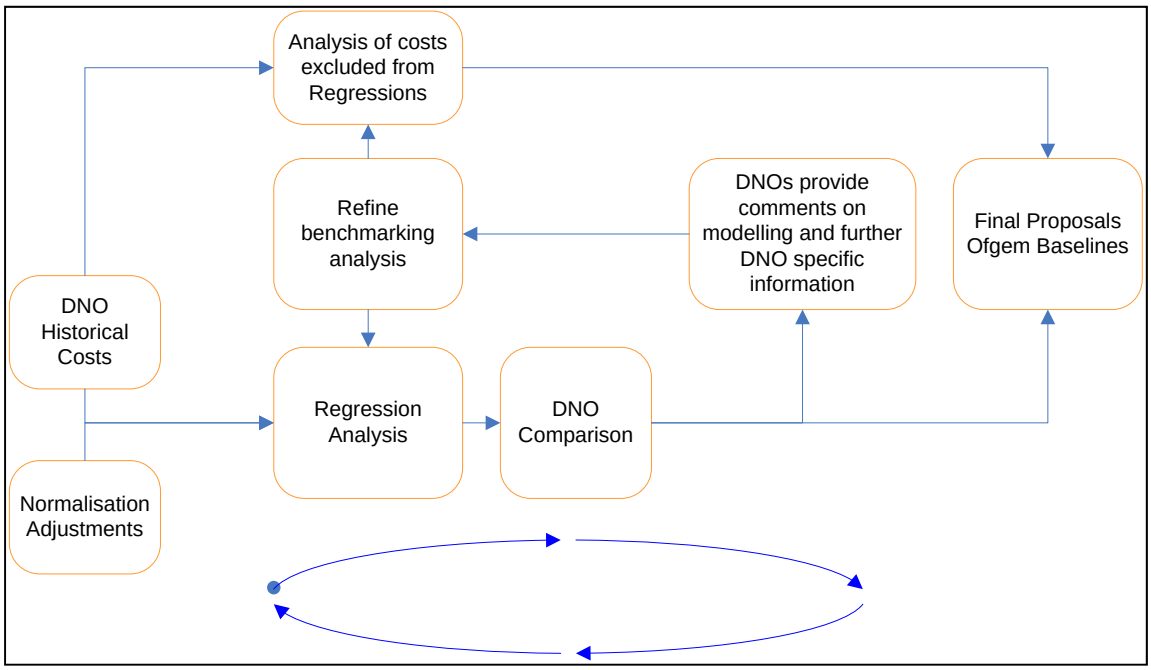
Overview of methodology

4.1. We set our methodology for assessing Operational Costs in the May Methodology and Initial Results Paper and updated it in Initial Proposals and the October update letter. In general the methodology consists of three key steps:

- initial modelling using regression analysis and other methods based on DNO data submissions,
- refining that modelling based on feedback from the DNOs and submission of updated information, and
- taking into account further information to determine baselines for these costs.

4.2. Our approach has been to analyse historical costs and other data and to take an objective view of our benchmarking and other analysis to form a view of efficient costs in the 2008-09 base year. We have rolled this forward to determine baselines for the DPCR5 period, taking into account changes in the volume of work, ongoing efficiencies and changes in real input prices.

Figure 4.1 - Operational Cost methodology overview



4.3. In Initial Proposals we reported that we had met with each of the DNOs in a series of bilateral meetings and developed our analysis in key areas including:

- incorporating the 2008-09 cost data submitted by the DNOs,
- determining the treatment of pensions and related party margins,
- determining the functional form for the regressions,
- continuing development of DNO specific cost adjustments, and
- reaching a better understanding of the key drivers of DNO costs.

4.4. Since Initial Proposals the DNOs have had further opportunities to comment on our assessment methodology and results through further bilateral meetings with the Ofgem team and the GEMA Authority sub-committee and through written submissions. We have also provided DNOs and other stakeholders with two updates to our analysis since Initial Proposals which have provided transparency over how we were taking comments on Initial Proposals into account and allowed for further scrutiny and questioning from the DNOs.

4.5. Details of where we have amended our analysis are included in the following sections. The main changes since Initial Proposals are that we have:

- taken into account DNOs' changes to their historical and forecast data as submitted in their business plans,
- made some minor amendments to the data requirements in the FBPQs,
- included baseline figures for vehicles and for small tools and equipment (STE) driven by Network Investment in Operational Cost baselines. These costs had been incorrectly omitted from Initial Proposals,
- used the results of our IT consultant's work to set baseline allowances for those costs,
- included an adjustment to normalise for the indirect costs included within reported contractor direct costs,
- removed the Integrated Delivery Team (IDT) adjustment that we had included for EDFE in Initial Proposals,
- included an adjustment to exclude the set-up costs for alliance contracts at EDFE from the regressions,
- removed the indirect costs relating to high value projects in the EDFE LPN area,
- amended our approach to property management and dismantlement to amend an error and take into account additional information from the DNOs,
- revised the cost drivers for the indirect cost activities so that they better reflect the costs we are assessing,
- moved Traffic Management Act (TMA) admin cost into the Engineering Management and Clerical Support activity to avoid boundary issues and amended the FBPQ data request accordingly,

- refined the approach for rolling forward indirect costs to take account of movements in Network Investment. This involved changing the starting point for Network Investment that we use for rolling forward the indirect costs into the DPCR5 period,

- adjusted the cost baselines for substation electricity for CE Electric in response to a late reduction in their forecasts,

- applied an adjustment to cost baselines for SP to take account of an error in the data that they reported to us which was distorting their baseline downwards, and

- applied a cap to the overall baselines for DNOs that perform below the overall benchmark in the regression analysis.

4.6. The DNOs have on the whole been supportive of our methodology and approach to setting the baseline allowances for operating costs although there are mixed views in relation to certain aspects of our analysis, particularly some of the normalisation and other adjustments.

- Some DNOs did not favour the inclusion of a regional labour and contractor adjustment for all DNOs. We maintain our position of running our analysis both with the adjustment across all the DNOs and for only the LPN region, and our overall view takes account of both.

- Some DNOs did not favour including non-load related cable replacement with underground faults. We have maintained our position of running our analysis both with non-load cable replacement and without, our overall view takes account of both.

- Some DNOs have suggested that we should apply the results of our benchmarking analysis to categories of costs outside the benchmarking. We do not consider this appropriate as we identified these costs as unsuitable for benchmarking and have used alternative techniques to assess them.

- DNOs asked us to consider including cost baselines for the cost of additional obligations under DPCR5. The DNOs provided us with estimates of the additional costs they forecast to incur in meeting new obligations. We reviewed the additional information and are not persuaded that that additional costs are needed. We allow a significant increase in indirect costs over the period compared to DPCR4 and the majority of these costs relate to work the DNOs should already be carrying out.

- Some DNOs expressed views that we should not split our analysis between Network Operating Costs (NOCs) and Indirects, because of boundary issues and differences in insourcing and outsourcing arrangements. We have since improved our analysis by the inclusion of an insourcing/outsourcing adjustment. We maintain our decision to apply different analysis to these areas given differences in the appropriate cost drivers.

4.7. We are satisfied that our methodology is robust and is demonstrably fair and transparent. We have:

- balanced being tough on efficiency with ensuring that efficient companies are suitably funded for substantial investment in their networks,

- provided updates on our analysis and consulted with the DNOs and others throughout the process,

- considered all DNO comments received as our methodology developed and in response to consultation documents,

- run a large range of regressions for Operational Costs to take account of differing views of the most appropriate costs and drivers to be included in the analysis, and

- considered our cost baselines for Operational Costs in historical context and in relation to the levels of capital investment required in the DPCR5 period.

4.8. The results of our analysis of Operational Costs are consistent with the results of the analysis of Network Investment. Overall there is a consistency between the DNOs that perform well and those that perform poorly in both areas of analysis.

4.9. We have set challenging baseline allowances that reward the most efficient DNOs, ensuring that all efficiency improvements are not clawed back at the start of DPCR5 in order to encourage companies to make yet further efficiency improvements. Our baselines and the rolling incentive mechanism in the price control provide an incentive for all DNOs to achieve improved shareholder returns by improving efficiency.

Operational activities Final Proposals

4.10. We present our Final Proposals for the cost baselines for the Operational Activities at a total level and disaggregated by cost category. The following tables provide our Final Proposals compared to the DNOs' latest forecasts and their expected outturns for DPCR4.

4.11. Table 4.1 compares our baseline Operational Costs on a per DNO basis to the DNOs' own forecasts and their expected DPCR4 outturns. It also highlights the changes in both the DNOs' forecasts and our baselines since Initial Proposals. The costs are presented excluding Real Price Effects (RPEs) and pre Information Quality Incentive (IQI).

4.12. Table 4.2 provides the same overall Operational Cost performance data but disaggregated into the key cost areas.

4.13. Tables 4.3 to 4.8 provide the data in the same format as Table 4.1 disaggregated into the key areas of:

- Network Operating Costs (NOCs),
- Indirects Closely Associated with Network Costs,
- Business Support Costs,
- Non-Operational Capex,
- Workforce Renewal, and
- Traffic Management Costs.

4.14. All the cost data in this chapter excludes RPEs and pension costs and are expressed in 2007-08 prices. Our analysis and baselines for RPEs are set out in Chapter 5.

Table 4.1 - Final Proposals for Operational Costs by DNO (£m 2007-08 prices)

	DPCR4 Updated	Initial Proposals				Final Proposals				Difference From Initial Proposals	
		DPCR5 Forecast	Ofgem Baseline	Difference	Difference	DPCR5 Forecast	Ofgem Baseline	Difference	Difference	DPCR5 Forecast	Ofgem Baseline
	£m	£m	£m	£m	%	£m	£m	£m	%	%	%
CN West	522	547	466	-81	-15%	534	524	-10	-2%	-2%	12%
CN East	490	496	497	1	0%	495	542	46	9%	0%	9%
ENW	488	575	467	-108	-19%	567	526	-41	-7%	-1%	13%
CE NEDL	334	333	316	-16	-5%	340	364	24	7%	2%	15%
CE YEDL	418	433	430	-4	-1%	438	464	25	6%	1%	8%
WPD S Wales	282	302	292	-10	-3%	323	314	-9	-3%	7%	7%
WPD S West	388	442	389	-53	-12%	436	434	-2	-0%	-1%	12%
EDFE LPN	465	502	474	-28	-6%	467	466	-1	-0%	-7%	-2%
EDFE SPN	478	516	467	-49	-9%	478	477	-1	-0%	-7%	2%
EDFE EPN	771	860	722	-139	-16%	818	753	-65	-8%	-5%	4%
SP Distribution	422	458	379	-80	-17%	463	424	-40	-9%	1%	12%
SP Manweb	429	480	409	-71	-15%	465	457	-8	-2%	-3%	12%
SSE Hydro	293	322	287	-35	-11%	333	332	-1	-0%	4%	16%
SSE Southern	577	647	648	2	0%	646	686	40	6%	0%	6%
Total	**6,357**	**6,912**	**6,242**	**-670**	**-10%**	**6,804**	**6,761**	**-43**	**-1%**	**-2%**	**8%**

4.15. For the industry as a whole our Final Proposals of £6.8bn represent an increase over the DPCR4 expected outturn of £404m (6 per cent).

4.16. Compared to the latest DPCR5 forecasts, our Final Proposals represent a cut of £43m (1 per cent). This varies across the DNOs from an increase of 9 per cent for CN East to a reduction of 9 per cent for SP Distribution.

Table 4.2 - Operational Costs baselines by cost area (£m 2007-08 prices)

	DPCR4 Updated	Initial Proposals (IP)				Final Proposals				Difference from Initial Proposals	
		DPCR5 Forecast	Ofgem Baseline	Difference	Difference	DPCR5 Forecast	Ofgem Baseline	Difference	Difference	DPCR5 Forecast	Ofgem Baseline
	£m	£m	£m	£m	%	£m	£m	£m	%	%	%
Network Operating Costs	2,270	2,362	2,410	48	2%	2,376	2,477	101	4%	1%	3%
Closely associated Indirects	2,091	2,143	1,759	-384	-18%	2,178	2,136	-43	-2%	2%	21%
Business Support Costs	1,500	1,507	1,383	-123	-8%	1,488	1,475	-13	-1%	-1%	7%
Non-Operational Capex	423	477	452	-25	-5%	484	458	-26	-5%	1%	1%
Workforce renewal	39	245	150	-95	-39%	233	173	-60	-26%	-5%	16%
Traffic management costs	33	177	88	-90	-51%	45	42	-2	-5%	-75%	-52%
Total	**6,357**	**6,912**	**6,242**	**-670**	**-10%**	**6,804**	**6,761**	**-43**	**-1%**	**-2%**	**8%**

4.17. The table shows that the cost baselines do not represent a uniform cut to DNOs' forecasts; while the cost baselines are 4 per cent above DNO forecasts for NOCs they are between 1 and 2 per cent below forecasts for Indirect Costs.

4.18. Our cost baselines represent significant reductions to forecasts for Indirects and non-operational capex where we are still pressing hard on inefficient overheads.

4.19. The increase above forecasts for NOCs are largely due to the growth factors applied in the cost baselines for underground faults and Inspections & Maintenance and to the inclusion of an allowance for one-in-twenty year storm events.

4.20. Historical Workforce Renewal costs were included within the benchmarking for network operating costs and indirects so there is an element of Workforce Renewal costs in the baselines for each of these areas. The cut to Workforce Renewal of 26 per cent significantly overstates the actual cut. Taking into account both the Workforce Renewal costs in the other cost baselines and the specific additional allowance our cost baseline for Workforce Renewal is £213m. This represents an 8 per cent cut to the DNOs' forecasts. Further details of our analysis of workforce renewal is included later in this chapter and in Table 4.16.

4.21. The changes in traffic management costs are largely due to:

- permitting costs being addressed through a reopener,
- traffic management costs associated with connection work funded by the connectee being excluded from the price control, and
- TMA admin costs being included within the regression analysis under the Engineering Management and Clerical Support activity.

4.22. For some DNOs and for some of the disaggregated costs our cost baselines are higher than the DNO forecasts. There are a number of key drivers for this:

- where DNOs have achieved particularly good performance in one category by investing in other areas, e.g. where investment in non-operational capex results in better performance for NOCs or Indirects. In such cases we may propose baseline costs above forecast in one area but below forecast in other areas,
- where a DNO's performance exceeds what can be expected for the industry as a whole across the different operational cost categories such DNOs are provided some reward for outperformance through the benchmarking,
- we have formed our own view of growth in activity for particular areas of costs. In some cases these may be greater than the DNO view,
- differences in the split of costs across activities due to reporting inconsistencies,
- some DNO's forecast decreases in costs in the DPCR5 period compared to DPCR4,
- we have allowed a growth factor for costs such as Faults and I&M to allow for unexpected costs,
- we have allowed a growth factor for Indirect costs relating to changes in Network Investment,
- Ofgem's allocation of Non-Operational Capex cost baselines, and
- most DNOs have benefited on a relative basis from an error in data provided by one DNO group. We have not reduced the cost baselines for those other DNOs.

Capping cost baselines for inefficient DNOs

4.23. For DNOs that are shown to be inefficient in the regression analysis but where the cost baselines are higher than the DNOs' own forecasts we have limited the overall allowances to their forecasts.

Network Operating Costs

Table 4.3 – Final Proposals baselines for network operating costs by DNO (£m 2007-08 prices)

	DPCR4 Updated	Initial Proposals				Final Proposals				Difference From Initial Proposals	
		DPCR5 Forecast	Ofgem Baseline	Difference	Difference	DPCR5 Forecast	Ofgem Baseline	Difference	Difference	DPCR5 Forecast	Ofgem Baseline
	£m	£m	£m	£m	%	£m	£m	£m	%	%	%
CN West	200	191	183	-8	-4%	195	205	10	5%	2%	12%
CN East	219	204	214	9	5%	208	234	26	13%	2%	10%
ENW	132	156	158	2	1%	163	164	2	1%	4%	4%
CE NEDL	121	112	116	4	4%	115	130	15	13%	3%	12%
CE YEDL	182	172	180	8	5%	178	181	3	2%	3%	0%
WPD S Wales	93	103	113	10	10%	106	115	10	9%	3%	2%
WPD S West	141	161	174	12	8%	167	174	7	4%	4%	0%
EDFE LPN	161	154	160	6	4%	142	142	-	-	-8%	-11%
EDFE SPN	188	179	169	-10	-6%	162	162	-	-	-9%	-4%
EDFE EPN	283	304	303	-1	-0%	279	303	24	9%	-8%	-0%
SP Distribution	125	144	130	-14	-10%	168	151	-17	-10%	16%	16%
SP Manweb	141	162	145	-18	-11%	165	157	-8	-5%	2%	9%
SSE Hydro	79	85	96	11	13%	94	106	12	12%	11%	10%
SSE Southern	204	234	270	36	15%	234	252	19	8%	-	-6%
Total	**2,270**	**2,362**	**2,410**	**48**	**2%**	**2,376**	**2,477**	**101**	**4%**	**1%**	**3%**

4.24. Table 4.3 highlights notable changes in DNOs' own forecasts of Network Operating Costs for the DPCR5 period since Initial Proposals. While overall there has been a 1 per cent change, the range across the DNOs varied from an increase of 16 per cent for SP Distribution and a reduction of 9 per cent for EDFE SPN.

4.25. In addition to the reasons listed above we have also included an adjustment to the NOC baselines for the Scottish Power DNOs as detailed later in this chapter.

4.26. There is a significant range in the differences between the Ofgem baselines and forecasts across the DNOs. For DNOs such as CN East and CE NEDL the baselines are notably higher than their forecasts because they perform well in the regressions and their forecasts are below their DPCR4 spend. The Scottish Power owned DNOs perform poorly in the regressions and have forecast significant increases (in excess of 30 per cent) over their DPCR4 spend and so the Ofgem baselines are below their forecasts.

Indirects closely associated with network costs

Table 4.4 – Final Proposals baselines for indirects closely associated with network costs by DNO (£m 2007-08 prices)

	DPCR4 Updated	Initial Proposals				Final Proposals				Difference From Initial Proposals	
		DPCR5 Forecast	Ofgem Baseline	Difference	Difference	DPCR5 Forecast	Ofgem Baseline	Difference	Difference	DPCR5 Forecast	Ofgem Baseline
	£m	£m	£m	£m	%	£m	£m	£m	%	%	%
CN West	199	204	165	-39	-19%	197	194	-3	-2%	-4%	17%
CN East	175	162	169	7	4%	167	196	29	18%	3%	16%
ENW	159	174	107	-68	-39%	176	142	-34	-19%	1%	34%
CE NEDL	101	102	91	-11	-11%	102	110	8	8%	-	21%
CE YEDL	113	117	115	-2	-1%	117	133	16	14%	-	16%
WPD S Wales	88	83	76	-7	-8%	90	80	-11	-12%	9%	5%
WPD S West	119	115	85	-30	-26%	118	118	0	0%	2%	38%
EDFE LPN	152	157	153	-4	-3%	163	163	-0	-0%	4%	7%
EDFE SPN	140	150	130	-20	-13%	146	146	0	0%	-3%	12%
EDFE EPN	251	268	199	-69	-26%	276	227	-49	-18%	3%	14%
SP Distribution	151	145	108	-37	-26%	148	133	-15	-10%	3%	24%
SP Manweb	147	144	108	-35	-24%	148	146	-3	-2%	3%	35%
SSE Hydro	100	111	77	-34	-31%	113	111	-2	-2%	2%	45%
SSE Southern	197	212	176	-36	-17%	218	237	18	8%	3%	35%
Total	**2,091**	**2,143**	**1,759**	**-384**	**-18%**	**2,178**	**2,136**	**-43**	**-2%**	**2%**	**21%**

4.27. Table 4.4 shows that we have cut the DNOs' forecasts for indirects closely associated with the network by 2 per cent. This varies across DNOs between an 18 per cent increase for CN East and a 19 per cent cut for ENW.

4.28. The revisions we have made to our analysis have increased the baseline by 21 per cent compared to the baseline in Initial Proposals, ranging from an increase of 5 per cent for WPD S Wales to an increase of 45 per cent for SSE Hydro. The overall increase in baselines is partly due to the inclusion of TMA administration costs within these costs.

Business Support Costs

Table 4.5 – Final Proposals business support costs baselines by DNO (£m 2007-08 prices)

	DPCR4 Updated	Initial Proposals				Final Proposals				Difference From Initial Proposals	
		DPCR5 Forecast	Ofgem Baseline	Difference	Difference	DPCR5 Forecast	Ofgem Baseline	Difference	Difference	DPCR5 Forecast	Ofgem Baseline
	£m	£m	£m	£m	%	£m	£m	£m	%	%	%
CN West	107	111	92	-20	-18%	111	100	-12	-10%	0%	9%
CN East	80	89	84	-5	-6%	89	88	-1	-1%	-0%	5%
ENW	153	143	137	-6	-4%	143	148	5	3%	-	8%
CE NEDL	87	84	81	-3	-3%	84	87	3	4%	-0%	7%
CE YEDL	100	96	101	5	5%	96	108	11	12%	-	6%
WPD S Wales	74	73	69	-5	-6%	79	73	-7	-9%	8%	6%
WPD S West	84	82	73	-9	-11%	83	84	0	0%	1%	15%
EDFE LPN	107	106	108	2	1%	106	106	-	-	-	-1%
EDFE SPN	103	104	108	4	4%	103	103	-	-	-1%	-5%
EDFE EPN	150	156	124	-31	-20%	159	149	-9	-6%	2%	20%
SP Distribution	117	123	101	-22	-18%	108	104	-4	-4%	-12%	3%
SP Manweb	117	123	111	-12	-10%	109	117	7	7%	-11%	6%
SSE Hydro	91	89	73	-16	-18%	89	78	-11	-12%	-	7%
SSE Southern	129	127	122	-5	-4%	127	130	3	2%	-	7%
Total	**1,500**	**1,507**	**1,383**	**-123**	**-8%**	**1,488**	**1,475**	**-13**	**-1%**	**-1%**	**7%**

4.29. Table 4.5 shows that the cost baselines represent a reduction to the DNOs' forecasts for business support costs of 1 per cent. This varies across DNOs between a 12 per cent increase for CE YEDL and a 12 per cent cut for SSE Hydro. The revisions we

made to our analysis and listed earlier in this chapter have increased the Business Support cost baseline by 7 per cent, ranging from a decrease of 5 per cent for EDFE SPN to a 20 per cent rise for EDFE EPN.

4.30. The table also displays the amendments made to the DNOs' own forecasts in DPCR5 for Business Support Costs. The total net reduction of 1 per cent comprises of a reduction of 12 per cent for SP Distribution to an increase of 8 per cent for WPD S Wales.

Non-Operational Capex

Table 4.6 – Final proposals non-operational capex baselines by DNO (£m 2007-08 prices)

	DPCR4 Updated	Initial Proposals				Final Proposals				Difference From Initial Proposals	
		DPCR5 Forecast	Ofgem Baseline	Difference	Difference	DPCR5 Forecast	Ofgem Baseline	Difference	Difference	DPCR5 Forecast	Ofgem Baseline
	£m	£m	£m	£m	%	£m	£m	£m	%	%	%
CN West	10	9	10	1	8%	9	10	0	4%	-1%	-5%
CN East	11	10	16	6	62%	10	11	1	9%	1%	-32%
ENW	38	53	37	-16	-30%	53	46	-7	-13%	-	24%
CE NEDL	22	23	23	-0	-2%	29	28	-0	-1%	22%	23%
CE YEDL	22	28	25	-3	-10%	30	28	-2	-6%	6%	11%
WPD S Wales	24	23	23	-0	-1%	32	35	3	9%	38%	51%
WPD S West	40	55	41	-13	-25%	46	43	-3	-6%	-16%	4%
EDFE LPN	37	36	32	-4	-10%	36	36	0	0%	-	12%
EDFE SPN	39	47	42	-5	-11%	47	46	-0	-1%	-	11%
EDFE EPN	73	72	56	-16	-22%	72	52	-20	-28%	-	-8%
SP Distribution	23	22	24	2	11%	22	20	-1	-6%	-	-15%
SP Manweb	17	22	24	2	11%	22	20	-1	-6%	-	-15%
SSE Hydro	23	29	35	6	22%	29	31	2	7%	-	-12%
SSE Southern	43	50	64	14	29%	50	53	3	7%	-	-17%
Total	**423**	**477**	**452**	**-25**	**-5%**	**484**	**458**	**-26**	**-5%**	**1%**	**1%**

4.31. Table 4.6 shows that we have cut the DNOs' forecasts for Non-Operational Capex costs by 5 per cent. This varies across DNOs between a 9 per cent increase for CN East and WPD S Wales and a 28 per cent cut for EDFE EPN. In addition to the reasons for these differences stated above, our cost baselines use a ten year average rather than the five year forecast. DNOs that had higher than the ten year average Non-Operational Capex expenditure in DPCR4 would be more likely to have cost baselines above their DPCR5 forecast.

4.32. Table 4.6 shows a 1 per cent difference in both the DNO's forecast and Ofgem baselines from Initial Proposals. Within the DNOs' own forecasts the majority of DNOs did not revise their forecasts, but for those that did, they ranged from a net reduction of 16 per cent for WPD S West to a rise of 38 per cent for WPD S Wales. The change for WPD is explained by the movement of Non-Operational Capex costs between their DNOs at our request.

4.33. The table also shows that the differential between the baseline consists of changes that range from a 32 per cent decrease for CN East to a 51 per cent increase for WPD S Wales.

Workforce Renewal

Table 4.7 – Workforce Renewal cost baselines by DNO (£m 2007-08 prices)

	DPCR4 Updated	Initial Proposals				Final Proposals				Difference From Initial Proposals	
		DPCR5 Forecast	Ofgem Baseline	Difference	Difference	DPCR5 Forecast	Ofgem Baseline	Difference	Difference	DPCR5 Forecast	Ofgem Baseline
	£m	£m	£m	£m	%	£m	£m	£m	%	%	%
CN West	2	18	12	-6	-34%	18	11	-7	-38%	-	-6%
CN East	2	18	10	-8	-44%	18	10	-8	-46%	-	-5%
ENW	2	26	21	-6	-22%	26	20	-7	-25%	-	-5%
CE NEDL	1	7	4	-3	-38%	10	8	-2	-19%	43%	86%
CE YEDL	1	11	6	-4	-42%	16	13	-3	-21%	57%	115%
WPD S Wales	2	13	9	-4	-30%	13	9	-4	-28%	-	3%
WPD S West	3	19	13	-6	-32%	19	13	-6	-31%	-	2%
EDFE LPN	4	19	7	-12	-65%	15	14	-1	-6%	-19%	116%
EDFE SPN	5	21	8	-13	-62%	18	17	-1	-6%	-14%	114%
EDFE EPN	8	31	16	-15	-47%	27	17	-11	-39%	-13%	2%
SP Distribution	3	18	11	-7	-41%	13	11	-2	-14%	-26%	8%
SP Manweb	3	22	17	-5	-24%	16	14	-2	-15%	-26%	-17%
SSE Hydro	1	7	5	-2	-26%	7	5	-2	-30%	-	-6%
SSE Southern	2	15	11	-4	-26%	15	10	-4	-30%	-	-5%
Total	**40**	**245**	**150**	**-95**	**-39%**	**233**	**173**	**-60**	**-26%**	**-5%**	**16%**

4.34. Table 4.7 shows that we have cut the DNOs' forecasts for Workforce Renewal costs by 26 per cent. This varies across DNOs between a 6 per cent cut for EDFE LPN and SPN and a 46 per cent cut for CN East.

4.35. Table 4.7 shows the Ofgem baseline to be 16 per cent greater compared to Initial Proposals. This varies from a decrease of 17 per cent for SP Manweb to an increase of 116 per cent for EDFE LPN. Despite being below the DNOs' forecasts, we believe that the baselines are adequate for the DNOs to implement their Workforce Renewal strategies. Paragraphs 4.104 to 4.111 provide further information regarding our assessment of Workforce Renewal.

4.36. Table 4.7 also highlights the net movement in the forecasts for the DNO groups CE, EDFE and SP that produce the overall decrease of 5per cent compared to Initial Proposals. This varies from a decrease of 26 per cent for SP Distribution and SP Manweb to an increase of 57 per cent for CE YEDL.

Traffic Management costs

Table 4.8 – Traffic management cost baselines by DNO (£m 2007-08 prices)

	DPCR4 Updated	Initial Proposals				Final Proposals				Difference From Initial Proposals	
		DPCR5 Forecast	Ofgem Baseline	Difference	Difference	DPCR5 Forecast	Ofgem Baseline	Difference	Difference	DPCR5 Forecast	Ofgem Baseline
	£m	£m	£m	£m	%	£m	£m	£m	%	%	%
CN West	3	13	4	-8	-68%	4	4	1	19%	-72%	3%
CN East	3	13	4	-8	-66%	4	3	-1	-17%	-72%	-31%
ENW	3	22	8	-15	-66%	6	5	-1	-12%	-73%	-30%
CE NEDL	1	5	1	-4	-79%	1	1	0	3%	-83%	-15%
CE YEDL	1	10	2	-8	-84%	1	2	0	9%	-85%	1%
WPD S Wales	0	7	2	-5	-74%	2	1	-0	-8%	-77%	-18%
WPD S West	1	9	3	-7	-72%	3	2	-1	-35%	-68%	-26%
EDFE LPN	6	30	15	-15	-51%	5	4	-0	-7%	-84%	-70%
EDFE SPN	3	16	11	-4	-28%	3	2	-0	-10%	-82%	-78%
EDFE EPN	6	29	22	-7	-24%	5	5	-1	-10%	-82%	-78%
SP Distribution	2	7	5	-2	-25%	4	4	0	2%	-46%	-26%
SP Manweb	3	7	5	-3	-35%	4	4	-1	-16%	-42%	-26%
SSE Hydro	0	1	1	-0	-32%	1	1	-0	-2%	-8%	33%
SSE Southern	1	10	6	-4	-38%	3	4	1	31%	-69%	-35%
Total	**33**	**177**	**88**	**-90**	**-51%**	**45**	**42**	**-2**	**-5%**	**-75%**	**-52%**

4.37. Table 4.8 shows that we have cut the DNOs' forecasts for costs associated with traffic management by 5 per cent. This varies across DNOs between a 31 per cent increase for SSE Southern and a 35 per cent cut for WPD S West.

4.38. The total DNO forecasts for costs associated with traffic management have reduced by 75 per cent since Initial Proposals, ranging from a decrease of 8 per cent for SSE Hydro to a decrease of 85 per cent for CE YEDL. Our baseline has reduced by 52 per cent, representing a decrease of 78 per cent for EDFE SPN and EDFE EPN to a rise of 33 per cent for SSE Hydro. These significant changes stem from the removal of permitting costs from the analysis (these will be dealt with via a reopener) and the removal of costs associated with connections outside the price control by some DNOs. We have also removed TMA admin costs from the analysis and instead analysed them as part of indirect costs to ensure consistent treatment across the DNOs.

4.39. We introduced annual reporting during DPCR4 to ensure we had data on a consistent basis for the DPCR5 review. We have made significant progress toward this goal but there remain some unexplained inconsistencies in reporting. We will introduce new Reporting Instructions and Guidance (RIGs) to further improve consistency of reporting. We will collect all the data required to undertake our analysis on an annual basis.

4.40. Our analysis of TMA costs including our decision to include a reopener for permitting costs is set out in paragraphs 4.114 to 4.120.

Specific cost movements

4.41. This section provides further details of the specific areas where our baselines have changed since Initial Proposals and provides an explanation of the work undertaken in those areas to facilitate those changes. An overview of the changes since Initial Proposals is included in Table 4.9.

Table 4.9 – Specific cost adjustments by DNO (£m 2007-08 prices)

	PLUS: STE & Vehicles	PLUS: Substation Electricity	CHANGE: Tree Cutting	CHANGE: IT Costs	CHANGE: Wayleaves	CHANGE: TMA	CHANGE: Workforce Renewal	MOVEMENT FROM ISSUES	Movement from other analysis	TOTAL MOVEMENT
	£m	£m	£m	£m	£m	£m	£m	**£m**	£m	**£m**
CN West	19	-0	-	8	0	0	-1	**27**	31	**58**
CN East	18	-0	-	2	-0	-1	-0	**17**	29	**46**
ENW	11	5	0	7	2	-2	-1	**23**	38	**61**
CE NEDL	11	3	0	8	1	-0	4	**27**	20	**48**
CE YEDL	12	6	0	3	2	0	7	**30**	4	**34**
WPD S Wales	8	-0	0	1	2	-0	0	**11**	11	**22**
WPD S West	22	-0	1	7	4	-1	0	**32**	11	**43**
EDFE LPN	6	3	-	-4	-0	-10	8	**2**	-10	**-8**
EDFE SPN	9	4	-	-5	0	-9	9	**9**	0	**9**
EDFE EPN	13	6	-	19	-1	-17	0	**20**	13	**33**
SP Distribution	15	18	1	0	3	-1	1	**37**	9	**46**
SP Manweb	15	2	1	-0	3	-1	-3	**17**	32	**49**
SSE Hydro	22	-0	1	10	1	0	-0	**33**	12	**45**
SSE Southern	39	-0	0	4	0	-2	-1	**41**	-2	**39**
Total	**221**	**46**	**5**	**60**	**17**	**-45**	**23**	**327**	**198**	**525**

4.42. Table 4.9 shows that we have increased the overall baseline costs for the DNOs since Initial Proposals by £525m for the DPCR5 period, ranging from an increase of £61m for ENW to a decrease of £8m for EDFE LPN.

4.43. The largest increase in our baselines stem from the inclusion of additional costs for vehicles and STEs. In Initial Proposals we had incorrectly excluded vehicles and STEs relating to Network Investment from our total expenditure (totex) baselines. As part of our October 5 letter revisions we added these costs back into our Operational Cost baselines.

4.44. A large proportion of the overall change is explained by corrections and refinements to the regression analysis, revisions to our analysis for costs excluded from the benchmarking and updating our approach to rolling forward indirect cost from the base year to DPCR5 taking into account movements in Network Investment. The largest beneficiary from the inclusion of STE and vehicles is SSE Southern (£39m) and from the movements in the regressions is ENW (£38m).

Methodology update

4.45. The key to setting cost baselines for the DNOs for the DPCR5 period is our understanding of the DNOs' actual expenditure in the DPCR4 period and their expenditure requirements in DPCR5. We have used comparative benchmarking analysis to inform our view of 'efficient' costs in 2008-09 for each DNO and then roll forward those efficient costs into DPCR5. However, comparative analysis is not appropriate for all costs and for these we rely on other techniques.

4.46. This section provides a summary of the areas where we have updated our analysis since Initial Proposals.

Changes to analysis

Changes to FBPQ data

4.47. Table 4.1 above highlighted the net change in the DNOs' own FBPQ submissions from Initial Proposals to Final Proposals. These figures, range from an increase of £20m (7 per cent) to a decrease of £42m (5 per cent). These changes, although large, do not fully show the extent of the difficulties because they:

- do not highlight the movements in costs between Initial Proposals and our October Update and then from the October Update to Final Proposals, and
- do not show the level of changes at the different levels of analysis we have undertaken.

4.48. The changes in Operational Costs in absolute terms from Initial Proposals to the October Update and from the October Update to Final Proposals are significantly higher than what was identified in Table 4.1. They range from £142m (20 per cent) for EDFE EPN to £24m (5 per cent) for EDFE LPN.

4.49. When considering the changes at a disaggregated level in absolute terms between Initial Proposals, the October Update and Final Proposals the changes in costs are notably higher. The largest gross changes are for EDFE EPN at £224m (32 per cent) with the smallest for WPD S Wales at £70m (25 per cent). In pure percentage terms the largest absolute change is at EDFE SPN at 40 per cent and the smallest at EDFE LPN at 16 per cent.

4.50. The high level of changes to reported costs in the DNOs' own FBPQs is a matter of concern to us and we will use the opportunity after the DPCR5 review to develop improved annual reporting systems to minimise the potential for such changes in the future price control reviews. We will also ensure that as part of our ongoing review of annual reporting that we identify any changes to the data submitted by the DNOs as part of this price control review.

Vehicles and Small Tools & Equipment

4.51. We set out in Initial Proposals how we had developed our methodology to include vehicles and STE costs with the activities to which they relate. However, we omitted vehicles and STEs relating to Network Investment in our baselines at Initial Proposals.

4.52. We have not been able to include these costs within Network Investment cost baselines because the unit cost analysis was too far advanced. The vehicles and STE costs relating to Network Investment activities have therefore been included within the Non-Operational Capex baselines. To determine the appropriate values to include in our baselines, we have adjusted the DNOs' own forecasts in line with the changes to baselines for Network Investment.

IT Costs

4.53. We have now used the results of the review undertaken by our specialist consultant, Mouchel, to determine our cost baselines for IT costs. Their work provided us with adjustments to the DNOs' forecasts for IT opex and informed our assessment of the appropriate adjustments for IT Non-Operational Capex.

Indirect costs within contractors

4.54. We have introduced this adjustment to our analysis to account for the differences in indirect costs reported due to different approaches to outsourcing. The adjustment normalises the indirect costs for the variation in the amount of indirect cost included within the contractor cost type for direct activities.

4.55. We based the adjustment on a specific data request on a standard template developed with the co-operation of the DNOs. The template identified the assumed values of materials and indirect costs included within the reported contractor costs for all direct activities.

4.56. We have used the data collected in this manner to normalise the DNOs' indirect costs to an average level of outsourcing rather than to a closed-book basis. To determine the adjustment we:

- eliminated the value of materials identified by the DNOs to estimate the non-materials contractor costs,
- normalised the proportion of indirect costs presented by the DNOs to allow for inconsistencies in approach,
- compared the normalised level of indirects to an 'average outsourcing model' for each DNO to determine the indirects that would be incurred if each DNO outsourced to the industry average, and
- subtracted the 'average outsourced indirects' from the DNOs own normalised outsourced indirect costs.

4.57. In determining this adjustment we treated the EDFE alliance contracted costs as if they were insourced because for those contracts the indirect costs were already reported within the indirect activities.

Removal of the IDT adjustment

4.58. In Initial Proposals we included an 'IDT adjustment' for EDFE to take account of the alliance contracting arrangements they have implemented during DPCR4. Their new arrangements mean that a large proportion of their contractors' indirects are reported as part of the indirect costs in the RRP and FBPQ rather than within their direct costs. We stated in Initial Proposals that the adjustment was a temporary measure in lieu of developing a better adjustment for differing contracting arrangements.

4.59. We have replaced the IDT adjustment with an adjustment for indirect costs within contractor costs and an adjustment for alliance setup costs.

Excluding EDFE Alliance set-up costs

4.60. We have determined from discussions with EDFE that they have incurred significant additional set-up costs in DPCR4 to facilitate the new alliance contracting arrangements. These costs are atypical in nature and are not recurring. We have decided to exclude these costs from the regressions to ensure that the benchmarking is not distorted, and that EDFE are not funded for these activities in the DPCR5 period.

Indirect costs relating to high value schemes

4.61. We have agreed to exclude the costs of particular high value schemes in the EDFE LPN area from the unit cost analysis for Network Investment. To ensure consistency of approach we have also decided to exclude the indirect costs relating to those schemes from our regression analysis.

4.62. We have set baseline allowances for these indirect costs at the level forecast by the DNO consistent with the approach we have applied for the Network Investment element of these projects.

Costs outside the benchmarking

4.63. We set out our criteria for costs to be included in the benchmarking in Initial Proposals. We have not changed those criteria, but we have identified some additional areas which we have excluded from the regressions. This section highlights the key differences in the costs that we have excluded from the regressions for Final Proposals compared to those identified in Initial Proposals.

4.64. We recognise that where we exclude cost categories from benchmarking this may potentially skew the overall results. However we think this potential problem is outweighed by the benefits of only applying benchmarks to cost categories which are suitable for this type of analysis. We have also tested the impact of alternative inclusions and exclusions on our results.

4.65. In Initial Proposals we included a table showing those costs that were excluded from the benchmarking. Table 4.10 compares those costs excluded from the regressions in Final Proposals to those at Initial Proposals.

Table 4.10 - Operational Costs excluded from the regression analysis

Initial Proposals	Final Proposals
Wayleaves	Wayleaves
Submarine cables	Submarine cables
Low volume high value faults	Low volume high value faults
Non QoS faults	Non QoS faults
Remote location generation	Remote location generation
Substation electricity	Substation electricity
Terrorism insurance	Terrorism insurance
Urban specific costs	Urban specific costs
Pressure assisted cables	Pressure assisted cables
3rd Party damage recovery	3rd Party damage recovery
Dismantlement	Dismantlement
Severe Weather 1-in-20 event	Severe Weather 1-in-20 event
Property rents	Property Management
	IT and Telecoms

4.66. Table 4.11 below shows the costs incurred by the DNOs in 2008-09 for those activities excluded from the regression analysis.

Table 4.11 - 2008-09 costs incurred for activities excluded from the regression analysis (£m 2007-08 prices)

	Wayleaves	Submarine Cables	Low Volume High Value Faults	Remote Location Generation	Substation Electricity	Terrorism Insurance	Urban Specific	Pressure Assisted Cables	Non QofS Faults	3rd Party Cable Damage Recovery	Dismantlement	Property Management	IT and Telecoms	**Total**
	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	**£m**
CN West	3	-	2	-	-	-	-	2	2	-2	2	5	9	**24**
CN East	3	-	2	-	-	-	-	1	4	-2	1	4	6	**19**
ENW	2	-	2	-	-	-	-	0	2	-1	0	5	10	**19**
CE NEDL	2	-	2	-	-	-	-	1	3	-2	0	3	6	**14**
CE YEDL	3	-	2	-	-	-	-	1	7	-3	1	3	6	**21**
WPD S Wales	2	-	1	0	1	-	-	-	1	-0	-	2	5	**12**
WPD S West	3	-	2	1	1	-	-	-	2	-1	0	3	6	**15**
EDFE LPN	1	-	1	-	1	1	0	2	7	-2	-	6	8	**24**
EDFE SPN	2	-	2	-	1	0	-	1	5	-4	-	6	8	**22**
EDFE EPN	4	-	4	-	1	0	-	2	11	-5	-	7	11	**34**
SP Distribution	2	-	1	-	-	-	-	0	2	-2	1	4	6	**14**
SP Manweb	3	-	0	-	-	-	-	-	1	-2	-	4	7	**14**
SSE Hydro	3	-	1	2	1	-	-	0	0	-0	-	2	9	**17**
SSE Southern	4	-	2	-	1	-	-	2	2	-2	-	4	9	**22**
Total	**35**	**-**	**23**	**3**	**5**	**1**	**0**	**13**	**50**	**-26**	**5**	**56**	**106**	**270**

4.67. We have made some changes to the treatment of costs outside the benchmarking since Initial Proposals. We have changed the treatment of:

- property management (including property rents), and
- dismantlement.

Property Management (including Property Rents)

4.68. In Initial Proposals we excluded property rents from the benchmarking analysis and the adjustments to the DNOs' forecasts based on our specialist consultant's work. For Final Proposals we have used our consultant's work to determine the cost baselines for all Property Management opex costs.

4.69. Our property consultants, Drivers Jonas, provided a benchmark property cost forecast for each DNO. Where the costs were below the DNO's own forecast we determined an adjustment factor calculated as:

$$\frac{1 - (\text{Forecast} - \text{Benchmark})}{\text{Forecast}}$$

4.70. We applied the adjustment factor to each year of those DNOs' forecasts to determine the cost baselines. For DNOs with a forecast at or below the consultant's baseline we allowed the DNOs their forecast.

Dismantlement

4.71. We considered evidence provided by some DNOs for projects they have included in their forecasts to remove specific assets from their networks. We have decided to fund those specific schemes at the levels forecast.

4.72. We have also recognised that some DNOs did not specifically identify dismantlement schemes prior to the reporting year 2006-07. We have therefore decided that for dismantlement the calculation of the average actual costs that we use in our analysis should be for the years 2006-07 to 2008-09 rather than from 2005-06.

Update to regression analysis

Normalisation adjustments

4.73. We apply normalisation adjustments to the raw historical data to benchmark on a like-for like basis. In Initial Proposals we set out an explanation of each of the normalisation adjustments we considered were appropriate at the time. The adjustments were:

- labour and contractor rates,
- Non-Operational Capex,
- recognition of indirect costs,
- cable replacement,
- interconnected network,
- sparsity, and
- urban working.

4.74. Since Initial Proposals we have undertaken further work in this area and have amended our view of the recognition of indirect costs reported within contractors as described in paragraphs 4.54 to 4.57 above.

4.75. The following tables compare the normalisation adjustments at Initial Proposals and Final Proposals. Table 4.12 sets out or final normalisation adjustments and compares these with our adjustments at Initial Proposals.

Table 4.12 - Normalisation adjustments (£m 2007-08 prices)

	Regional Labour & Contractors		Non Op Capex		Recognition of Indirects		Cable Replacement		Interconnected Network		Sparcity		Urban Working		**Total**	
	Initial Proposals	Final Proposals	Initial Proposals	Final Proposals	Initial Proposals	Final Proposals	Initial Proposals	Final Proposals	Initial Proposals	Final Proposals	Initial Proposals	Final Proposals	Initial Proposals	Final Proposals	**Initial Proposals**	**Final Proposals**
	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	**£m**	**£m**
CN West	4	4	1	0	0	1	6	7	0	0	0	0	-1	-1	**9**	**11**
CN East	2	2	1	1	0	2	1	2	0	0	0	0	-0	-0	**3**	**7**
ENW	1	2	5	5	0	1	13	13	0	0	0	0	-1	-1	**19**	**20**
CE NEDL	2	2	1	1	0	2	6	6	0	0	0	0	-0	-0	**9**	**11**
CE YEDL	2	2	2	1	0	3	11	11	0	0	0	0	-0	-0	**14**	**17**
WPD S Wales	2	2	2	3	0	-1	1	1	0	0	0	0	0	0	**5**	**5**
WPD S West	2	3	5	3	0	-1	5	5	0	0	0	0	-0	-0	**12**	**9**
EDFE LPN	-15	-20	-1	-1	-4	-3	2	2	0	0	0	0	-3	-3	**-21**	**-25**
EDFE SPN	-4	-5	2	2	-1	-1	4	4	0	0	0	0	-0	-0	**-0**	**-1**
EDFE EPN	-3	-3	-1	-1	-6	-4	4	4	0	0	0	0	-1	-1	**-6**	**-4**
SP Distribution	-0	-0	1	1	0	2	13	13	0	0	0	0	-1	-1	**13**	**15**
SPN Manweb	3	3	3	3	0	3	10	10	-1	-3	0	0	-0	-0	**14**	**15**
SSE Hydro	1	2	-1	-1	0	-2	0	0	0	0	-2	-2	0	0	**-1**	**-2**
SSE Southern	-3	-3	0	0	0	-3	12	12	0	0	0	0	-1	-1	**9**	**6**
Total	**-6**	**-10**	**20**	**17**	**-11**	**0**	**89**	**90**	**-1**	**-3**	**-2**	**-2**	**-9**	**-8**	**80**	**85**

Benchmarking techniques and methodology

4.76. The overall methodology and benchmarking techniques we have used for our analysis have remained unchanged since Initial Proposals. We have spent a significant amount of time explaining our methodology and techniques to the DNOs and justifying those choices compared to other options.

4.77. The areas where we have made changes to the detail of our methodology are in:

- the choice of cost drivers,
- assessment and analysis of outliers,
- the choice of statistical tests we use to assess the robustness of our analysis, and
- driver weighting.

Cost drivers

4.78. We have not changed our overall view of the key drivers for our cost analysis from Initial Proposals. However, we have refined our application of the cost drivers so that they are consistent with the cost groupings we are analysing. Since we are assessing the efficiency of total indirect costs rather than just indirect costs that fall within the price control, we have based our load and non-load cost drivers on gross-load related expenditure rather than net-load related expenditure. Our final cost drivers are set out

in Table 4.13 below. Full details of how we have determined the appropriate drivers for costs are included in Appendix 8.

Table 4.13 – Final cost drivers used in the benchmarking

Cost Grouping	Core Drivers	Alternative Drivers	
Top-Down	MEAV/ Load & Non-Load Costs	Modern Equivalent Asset Value (MEAV)	
Single Group	Direct Costs/ MEAV	MEAV	
Group 1	MEAV/ Load & Non-Load Costs	Load & Non-Load Costs	MEAV
Group 2	Direct Costs/ MEAV	Direct Costs	MEAV
Group 3	MEAV/ Direct Costs	MEAV	
LV & HV OH	Overhead Faults		
LV & HV UG	UG Faults/ Line Replaced	UG Faults	
I&M	Asset Manhours		
Tree Cutting	Spans Cut/Spans affected		

Driver weightings

4.79. Given limitations in the available data it is not practical to include all possible relevant drivers in our analysis. We address these by using our judgement informed by discussions with the DNOs to determine which drivers are primary and which are secondary in terms of their influence on the activities.

4.80. Where we have used multiple cost drivers we have used multivariate regressions to derive the appropriate weightings of those drivers in accordance with the methodology set out in Appendix 8. We have only constrained this to ensure that the weighting of the primary driver is at least 50 per cent. We have not set a minimum weighting for the secondary driver which could in some cases be zero.

4.81. Where we have constrained the weightings we have run analysis both with the constrained weights and weights freely determined by the regressions. This allows us to assess the impact of alternative weightings and consider them in our analysis.

4.82. Table 4.14 uses our 'core' analysis as an example to demonstrate the weightings we have used for our analysis. The weightings used in each alternative of our analysis and the definition of what we term the 'core' analysis are included in Appendix 8.

Table 4.14 - Driver weightings for Final Proposals

Cost Grouping	Core Drivers	Prime Driver	Secondary Driver
Top-Down	MEAV/ Load & Non-Load Costs	MEAV	Load & Non-Load Costs
		63%	37%
Single Group	Direct Costs/ MEAV	Direct Costs	MEAV
		52%	48%
Group 1	Load & Non-Load Costs/MEAV	Load & Non-Load Costs	MEAV
		100%	0%
Group 2	Direct Costs/ MEAV	Direct Costs	MEAV
		50%	50%
Group 3	MEAV/ Direct Costs	MEAV	Direct Costs
		66%	34%
LV & HV OH	Overhead Faults		
LV & HV UG	UG Faults/ Line Replaced	UG Faults	Line Replaced
		78%	22%
I&M	Asset Manhours		
Tree Cutting	Spans Cut/Spans affected	Spans Cut	Spans affected
		100%	0%

4.83. For Group two, the statistical calculation of the weightings for direct costs and Modern Equivalent Asset Value (MEAV) suggests a lower weighting for the primary driver than 50 per cent. In those cases we have set the weighting of the primary driver at 50 per cent.

4.84. For Group one and tree cutting the statistical analysis suggested a zero weighting for the secondary drivers.

Consideration of outliers

4.85. In Initial Proposals we identified statistical outliers from our analysis of the regressions but we did not include the results of the regressions excluding these outliers in our results. For Final Proposals we have included those subsequent regressions.

4.86. Where a DNO has been shown to be a 'high cost outlier' in a regression we have calculated their efficient cost using the slope and intercept of the regression line excluding that DNO's data. Where a DNO is a `low cost outlier' we have used their actual costs in 2008-09 as their efficient costs for that year.

4.87. We have had further discussions with our academic advisor in relation to the use of statistical tests on our analysis. These discussions have resulted in a change to the model specification test – the RESET test. The version of the test reported in Initial Proposals was not robust to heteroscedasticity. We have therefore adopted a Wald Test

which is robust to heteroscedasticity. The version of the test used checks where the squared fitted values from a regression are statistically significant when they are included as an additional driver in the original regression.

DNO specific adjustment to baselines

Scottish Power adjustment to Underground Cable Faults cost baselines

4.88. Very late in our analysis process, Scottish Power (SP) highlighted errors in the data they had provided relating to faults. The error meant that the cost drivers used for the SP DNOs in 2008-09 were significantly undervalued.

4.89. By the time we were informed of this error there was not time to rerun all of our analysis and provide the DNOs with time to respond to the updated results. We decided, in the circumstances, it was appropriate to consider making an amendment to the cost baselines for SP.

4.90. We do not think it was reasonable to make adjustments to other DNOs' allowances as these would not be based on a full re-run of our benchmarking analysis and they would not have had the opportunity to challenge and make representations on the effects of this revised analysis on their allowances.

4.91. We undertook a rerun of a limited number of regressions to make the best estimate we could in the time available of the probable impact the correct SP figures would have on DNO cost baselines for SP. Our analysis suggested that the impact would be an additional £45m in allowances for SP for the DPCR5 period.

4.92. SP was the only DNO to submit such a significant change to their data so late in the process. As a direct result, we were not able to re-run all of our analysis to determine the correct adjustment for SP and any corresponding reductions for other DNOs. We decided in the circumstances that it would not be appropriate to allow the full increase in allowances for SP. Providing timely and accurate information as part of the price control is vital to the integrity of the process. We decided it was appropriate to limit the adjustment to £25m and this figure has been added to the cost baselines for SP.

CE Electric adjustment to Substation Electricity

4.93. CE provided a late adjustment to their forecasts for substation electricity. As a result we have reduced their cost baselines by £20m. CE's losses targets will be adjusted by their revised forecast of substation electricity usage.

Benchmarking results

Overall results

4.94. To determine our view of comparative efficiency scores we have considered the results of our core analysis and a range of alternative analyses we have undertaken to test various assumptions in the core analysis. We have made a judgement about the overall scores taking into account the results of all the analysis rather than selecting any specific analysis. We are currently applying:

- a 9.1 per cent weighting for top-down regression using a single regression,
- a 45.5 per cent weighting to Single Group results, encompassing a single regression for indirects and separate regressions for each of the main network operating cost activities,
- a 45.5 per cent weighting to Groups results, encompassing 3 regressions for indirect activities and separate regressions for each of the main network operating cost activities.

4.95. Table 4.15 shows the overall results of our benchmarking shown for NOCs and Indirects. We present the overall results of our benchmarking as a ratio of the actual costs reported by the DNOs for 2008-09 compared to the modelled costs.

4.96. Details of the core and alternative results we have used to determine our overall view of comparative efficiency are included in Appendix 8.

Table 4.15 - Overall scores from benchmarking

DNO	Initial Proposals		Final Proposals		Difference	
	NOCs	Indirects	NOCs	Indirects	NOCs	Indirects
CN West	135%	103%	104%	117%	-31%	14%
CN East	101%	85%	88%	92%	-13%	7%
ENW	86%	117%	93%	107%	7%	-10%
CE NEDL	108%	91%	100%	95%	-8%	4%
CE YEDL	111%	79%	122%	88%	11%	9%
WPD S Wales	91%	97%	91%	105%	0%	8%
WPD S West	98%	88%	97%	95%	-1%	7%
EDFE LPN	91%	120%	100%	97%	9%	-23%
EDFE SPN	114%	105%	124%	102%	10%	-3%
EDFE EPN	107%	126%	128%	119%	21%	-7%
SP Distribution	112%	98%	97%	99%	-15%	1%
SP Manweb	115%	106%	93%	98%	-22%	-8%
SSE Hydro	59%	104%	70%	102%	11%	-2%
SSE Southern	77%	79%	93%	83%	16%	4%
Upper Quartile	**91%**	**89%**	**93%**	**95%**	**2%**	**6%**
Upper Third	**93%**	**93%**	**93%**	**96%**	**0%**	**3%**

4.97. We consider that our approach is robust and produces an intuitively sensible range between the most efficient and least efficient DNOs. We still have some concerns with the underlying operational cost data we have received from the DNOs and have reflected this in our decision to benchmark at the upper quartile for indirects and upper third for NOCs.

Determining disaggregated scores for top down regressions

4.98. In Initial Proposals we used our judgement to determine the overall scores for NOCs and Indirects based on a weighted average of results from Single Group and Groups regressions with an overall adjustment to those results to take account of the impact of alternative top-down regressions. We have carried out further work since

Initial Proposals to refine the approach for reflecting different variants of our top-down results to inform the overall scores for NOCs and Indirects.

4.99. In essence, we look at the impact of changing some of the assumptions for the core top-down regressions on the efficiency scores. For example, using alternative cost drivers or totex regressions. We then adjust our bottom-up assessment of efficiency to consider these differences forming a more balanced view of the DNOs' efficiency. The details of the algorithm we have used are set out in Appendix 8.

Determining our view of efficient costs for 2008-09

4.100. We use the efficiency scores for NOCs and Indirects to determine the adjustments to each of the DNOs' 2008-09 reported costs and our view of efficient costs for 2008-09. For NOCs we have adjusted DNOs' costs to the upper third (66th percentile). For Indirect costs we have adjusted all DNOs' costs in 2008-09 to the upper quartile.

4.101. For Non-Operational Capex the adjustments are the same as for NOCs or Indirects, depending on whether the costs relate to direct or indirect activities (e.g. vehicles are direct but property is indirect) but the adjustments are made to the average cost for the period 2005-06 to 2014-15 because those are the costs included within the benchmarking.

4.102. We recognised in Initial Proposals that the comparative scores for NOCs shows a larger range than for Indirects. Since Initial Proposals we have been considering how to deal with this difference and have decided it is more appropriate to adjust the DNOs to a common upper third benchmark, which is more relaxed than the upper quartile. We consider that the banded approach that we introduced in Initial Proposals could lead to perverse incentives as those companies performing marginally worse than the average and forecasting large cost reductions would have been given a lower baseline than those performing marginally better than the average and forecasting large increases in costs excluded from the regression analysis.

Refining our approach for rolling forward indirect costs to take account of movements in network investment

4.103. In Initial Proposals we used the actual cost of Network Investment in 2008-09 as the starting point for rolling forward indirect costs. We received evidence from some DNOs showing that the costs incurred in that year were particularly high because of specific costly schemes that do not require increased significant indirect work. As a result some DNOs would be disadvantaged in how we roll forward the indirect costs. We reviewed the evidence and agreed that there was the potential for disproportionate treatment of some DNOs in such cases.

4.104. We have decided that the starting point for the roll forward of Indirect Costs should be a weighted average of the historical data. We weighted the data as follows:

- 2008-09 weighting 57 per cent
- 2007-08 weighting 29 per cent
- 2006-07 weighting 14 per cent
- 2005-06 weighting 0 per cent

Workforce Renewal and Traffic Management costs

4.105. This section sets out the revisions to our analysis for Workforce Renewal and Traffic Management costs and our final baselines for these areas.

Workforce Renewal

4.106. As explained in Initial Proposals we recognise that there is a need for increased expenditure on workforce renewal given the ageing profile of the workforce and growth in volumes of Network Investment. At Initial Proposals we included a total expenditure on workforce renewal of £221m in setting our baselines.

4.107. Since Initial Proposals we have been reviewing and updating our analysis, taking into account revised forecasts from the DNOs and comments on our approach from the DNOs and other parties.

4.108. In general, most respondents, including all of the DNOs, supported our proposals to include allowances for workforce renewal as part of our baselines. However, there were concerns at the adjustments we had applied to the DNOs' forecasts, how we had taken account of load-related capex and the extent to which some of the DNOs' plans were realistic given low levels of training in the past.

4.109. We have identified an inconsistency in the completion of the workforce renewal forecasts which is impacting on our analysis. Most DNOs (WPD, SSE, CN, and ENW) have included no contractor workforce renewal costs in their FBPQ workforce renewal tables because they consider that such costs are already factored into the schedules of contractor rates or RPEs. However, SP, EDFE and CE have all included such costs in the workforce renewal tables. We have excluded these costs from our baselines on the basis that contractors should be managing their own workforce renewal costs and factoring this into their charges and we have allowed for price increases greater than RPI through our RPE assumptions.

4.110. We have reviewed the relationship between workforce renewal costs associated with growth in activity and the underlying costs of each building block. We have then adjusted the figures to apply efficiency savings to the underlying costs.

4.111. The ageing profile of the workforce is an issue that DNOs have been aware of for a long time and some DNOs have taken greater steps than others during DPCR4 to address it. It is important that DNOs that have taken earlier steps to manage this issue (and have done so at their shareholders' costs) are not disadvantaged compared to late movers who are seeking larger allowances in DPCR5. Figure 4.1 below sets out the actual costs of workforce renewal to replace leavers in DPCR4 and the forecast costs for DPCR5 as a proportion of total expenditure across the two periods. It is clear that CE NEDL and YEDL and to a lesser degree ENW, EDFE LPN and SPN are spending less in DPCR4 as a proportion of the total requirement for the two periods. We have adjusted the forecasts for all DNOs which have spent less than the average proportion of costs in DPCR4. The difference will have to be funded by shareholders in DPCR5.

4.112. Our revised baselines for workforce renewal are set out in Table 4.16 below together with the movement from Initial Proposals.

Figure 4.1 – Workforce renewal costs to manage increasing numbers of leavers

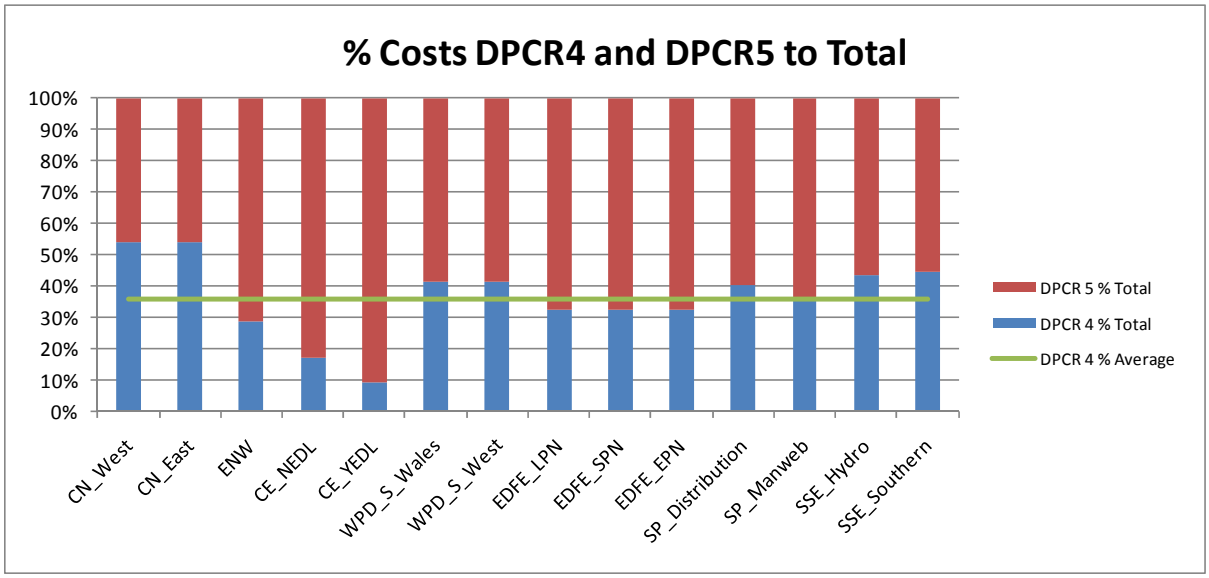


Table 4.16 – Final Proposals Workforce Renewal baselines (£m 2007-08 prices)

DNO	DNO			Ofgem						
	Growth	Leavers	Total	Growth	Leaver	Total	% Adjustment to forecast	Movement IP to FP	Amount included in baselines	Additional cost allowances
CN_West	10	8	18	8	8	16	12%	-1	5	11
CN_East	10	8	18	8	8	16	12%	-1	6	10
ENW	11	15	26	10	14	23	11%	0	4	20
CE_NEDL	3	7	10	3	5	8	19%	3	0	8
CE_YEDL	6	11	16	6	7	13	21%	6	0	13
WPD_S_Wales	7	6	13	7	6	13	3%	0	3	9
WPD_S_West	10	9	19	9	9	18	5%	0	5	13
EDFE_LPN	1	14	15	1	13	14	6%	-3	0	14
EDFE_SPN	1	17	18	1	16	17	6%	-3	0	17
EDFE_EPN	1	26	27	1	24	26	6%	-3	9	17
SP_Distribution	0	13	13	0	13	13	0%	-1	2	11
SP_Manweb	0	16	16	0	16	16	1%	-4	2	14
SSE_Hydro	2	5	7	2	5	7	9%	0	2	5
SSE_Southern	5	10	15	3	10	13	11%	-1	3	10
Totals	**68**	**165**	**233**	**59**	**155**	**213**	8%	-8	**41**	**173**

4.113. It is important that DNOs take appropriate steps to renew their workforce and do not gain undue benefits from deferring expenditure in this area. We have decided that the Workforce Renewal element of our Operational Cost baselines will be treated on a "use-it-or-lose it" basis. The DNOs will need to demonstrate that the allowance has been used appropriately and efficiently to recruit and train new staff or for other means of Workforce Renewal. As part of the annual cost reporting requirements DNOs will be required to report on Workforce Renewal in terms of the number of FTEs, costs involved and details of how the Workforce Renewal has been implemented to date and plans for future years. This will build on our FBPQ tables and will reflect information needed by EU Skills in this area to avoid duplication in reporting.

Traffic Management costs

Overview of our approach to Traffic Management costs for DPCR5

4.114. We set out in Initial Proposals some of the difficulties we were having understanding the different forecasts put forward by the DNOs for their Traffic Management Costs. These difficulties mainly stemmed from two issues which we have addressed with the engagement of the DNOs:

- DNOs had interpreted the introduction of permitting schemes in very different ways, and
- DNOs had taken very different approaches to the reporting of connections related Traffic Management Costs (some of which lie outside the price control).

4.115. There is still a great deal of uncertainty over the impact of permitting schemes. The two schemes that have been approved so far by the Department for Transport (DfT), from Kent County Council and Transport for London (TfL) plus a collection of London boroughs, have significantly different permit fees. This suggests that authorities will have significant discretion in setting the fees for different kinds of permits which will affect DNOs in different ways. For example, Kent has decided not to charge for permits associated with several types of activities.

4.116. Given the continued uncertainty over the timing and level of permit fees we have decided to set out proposals for Traffic Management Costs on the following basis:

- we will set an ex-ante allowance for traffic management excluding any permitting costs, and under the assumption that no permitting schemes will be introduced, and
- we will consider additional costs arising from the introduction of permitting schemes to be assessed as part of a reopener during DPCR5 (where DNOs put forward an application during the window) or at DPCR6.

4.117. We discuss our approach to the reopener in Chapter 7. We set out below our approach to setting the ex-ante allowance.

Setting the ex-ante allowance for Traffic Management costs

4.118. We have received updated Traffic Management Cost submissions from the DNOs since the September update. These revised submissions present Traffic Management Costs on a more comparable basis between DNOs. The biggest change in these submissions is the consistent treatment of Traffic Management Costs associated with connections that are outside the price control.

4.119. In setting our revised allowances for these costs we have adopted the following process:

- we have used the volumes forecast by the DNOs for the number of notifications and inspections. We have assumed that the inspection fee of £50 in 2009-10 will increase by RPI thereafter.

- for notification and inspection penalties we have conducted the following analysis:
    - examined the forecast penalty rates of the DNOs (i.e. the proportion of notifications and inspections expected to result in a penalty) and set a benchmark equal to the 33rd percentile. This gives a benchmark of 4 per cent for notifications and 6.8 per cent for inspections.
    - we have assumed that 90 per cent of notification penalties (FPNs) will be paid within 28 days. This gives a weighted average FPN fee of £84 in 2009-10. We have assumed that this fee will increase with RPI for DPCR5. We have assumed that the 2009-10 inspection penalty of £142 will also increase in line with RPI.
- we are also only allowing costs that are not expected to be recharged to contractors, e.g. a DNO that recharges all inspection penalties to contractors does not receive an allowance for these costs. This is to ensure that costs are not double counted within our assessment. The contractors' costs will already include any expected penalties that will be recharged.
- for other costs (one-off set up costs, lane rentals, overstay fines, and congestion charge payments) we have allowed the DNOs' forecasts.

4.120. Our final TMA are included in Table 4.17 below. These figures exclude admin costs associated with traffic management - these costs are included within indirect costs to ensure consistency of reporting between DNOs and across periods.

Table 4.17 - Traffic Management Costs allowances excluding permitting schemes and admin costs (£m 2007-08 prices)

	Total
CN West	4.2
CN East	3.0
ENW	5.3
CE NEDL	0.8
CE YEDL	1.6
WPD S Wales	1.4
WPD S West	1.9
EDFE LPN	4.4
EDFE SPN	2.5
EDFE EPN	4.7
SP Distribution	3.7
SP Manweb	3.5
SSE Hydro	1.2
SSE Southern	4.2
Total	**42.4**

5. Real price effects and ongoing efficiency

Chapter Summary

This presents our assumptions for ongoing efficiency improvements and real price effects for DPCR5.

Overview

5.1. In our cost assessment chapters we have developed our baselines for Network Investment based on 2007-08 costs and on 2008-09 costs for Operational Activities. In assessing necessary expenditure for 2010-11 onwards in DPCR5 we have made assumptions about efficiency improvements and input price inflation to roll our baselines forward. Our assessment of the path of expenditure for the frontier companies during DPCR5 is made up of two separate components:

- An ongoing efficiency assumption: this accounts for productivity improvements that are expected to be made over the course of DPCR5. This assumption measures the expected change in input volumes required to achieve the same outputs. For example, an assumption of 1 per cent a year would imply that expenditure on an activity could fall by 1 per cent a year if input prices remained constant.

- Assumptions for RPEs: these measure the expected real input price inflation of the DNOs.

5.2. The path for expenditure is given by the difference between these two assumptions i.e. the change in expenditure is equal to the RPEs assumption minus the ongoing efficiency assumption. Where the two factors are equal this implies that expenditure will go in line with RPI inflation, and if the RPEs assumptions are greater than the efficiency assumption then expenditure will increase by more than RPI inflation.

5.3. At Initial Proposals we made separate assumptions for the two items when considering Operational Activities but for Network Investment we assumed that the two factors would net off. For Final Proposals we have amended our approach to Network Investment so that it is consistent with our approach to Operational Activities i.e. we now have separate assumptions for ongoing efficiency and RPEs for Network Investment. Our assumptions can be summarised as follows:

- 1 per cent a year ongoing efficiency improvement for both Operational Activities and Network Investment,

- average RPEs of 1.1 per cent a year for Network Investment, and

- average RPEs of 1.4 per cent a year for Operational Activities.

5.4. In addition to these factors discussed above, the path of expenditure is also governed by changes in volumes of activity - this chapter does not consider this issue. Chapters 3 and 4 on Operational Activities and Network Investment discuss our approach in this area.

Ongoing efficiency

5.5. We have decided to continue with our Initial Proposals assumption of 1 per cent a year ongoing efficiency improvements for both Operational Activities and Network Investment. This 1 per cent assumption is consistent with:

- Ofgem's own productivity analysis for operating activities presented in the May methodology paper.
- The assumptions made by First Economics in its report for the DNOs, where they forecast:
    - productivity improvements of between 0.7 and 1.4 per cent a year by the frontier companies for Operational Activities, and
    - productivity improvements of 1 per cent a year for Network Investment.

5.6. We have received limited challenge from the DNOs to these figures.

Real price effects

5.7. We based Initial Proposals for RPEs on the following:

- the RPE assumptions contained within CEPA's April 2009 report for Ofgem which forecasted input price inflation for the DPCR5 period, and
- the DNOs' own mix of different inputs contained within their FBPQ forecasts.

5.8. For Final Proposals we have updated our approach in both of these areas. We have published an updated report from CEPA which examined the responses we had received from stakeholders to their April report and produced revised forecasts in the light of these responses and the most up to date information available at the time.[2] We have also moved away from the DNOs' input mix weights towards a standardised input mix assumption. We have done this so as not to create perverse incentives by, for example, allowing less efficient companies to outperform the settlement relative to more efficient companies simply by adjusting their inputs. We do not want to encourage any particular type of organisational structure and there were inconsistencies in some of the figures submitted by some of the DNOs, in particular some DNOs had included significant amounts of materials costs within the contractor costs. The section below sets out our approach in more detail.

Revised forecasts of RPEs

5.9. We have based our assumptions for RPEs on the recommendations provided by CEPA's November report to Ofgem. CEPA's April report to Ofgem considered forecasts for three different macroeconomic scenarios and we based Initial Proposals assumptions on one of these scenarios. For the November report we asked CEPA to focus on a single

[2] Available from http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=343&refer=Networks/ElecDist/PriceCntrls/DPCR5

scenario representing the economic consensus view for the path of the economy for DPCR5. Table 5.1 below presents CEPA's recommended forecasts of RPEs for DPCR5.

Table 5.1 - RPE forecasts recommended by CEPA's November report (%)

	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15
General labour	0.0	1.9	1.6	1.5	1.4	1.4	1.4
Specialised labour	0.0	2.6	2.3	2.2	2.1	2.1	2.1
General materials	4.1	0.9	0.6	0.6	0.6	0.6	0.6
Specialised materials	8.6	-3.7	-0.5	0.2	0.7	0.6	0.6
Equipment and plant	3.6	-5.2	-2.9	-2.4	-2.0	-2.0	-2.0

5.10. We have continued to assume that other cost items move in line with RPI.

Assumed input weights

5.11. At Initial Proposals we used the DNOs' own input mixes as forecast in their FBPQs. We have reconsidered this approach and decided to switch to a common input mix for all DNOs. There is a wide variation in reporting of these figures between DNOs which stems from different organisational structures and practices in terms of reporting materials costs within contractor costs. This results in significantly different RPE allowances between DNOs. We would expect DNOs to respond to any movements in the relative prices of insourced vs. outsourced labour and costs. If we set RPE allowances based on particular organisational structures, we may reward inefficient structures or give greater opportunities for less efficient companies to outperform the settlement simply by shifting their structure to those other companies already have in place. Given the variation between DNOs we see adopting common weights as the only pragmatic approach given the data available, to reduce the risk of creating these perverse incentives or rewards.

5.12. We have calculated these common weights using the following method:

- We took the DNO specific weights from their FBPQ tables as the starting point.
- We normalised these weights for the DNOs where the sum of the various weights was not 100 per cent.
- We calculated the average weights of the various inputs across all DNOs for the DPCR5 period.
- Pensions were removed from the weights by uplifting the remaining weights appropriately.
- Labour and contractor weights were then summed to give a combined labour weight.
- We assumed that the combined labour weight is split between general and specialist labour using the following ratios: 67:33 for Operational Activities and 50:50 for Network Investment[3].

[3] These are the same splits between general and specialist labour that were used by First Economics in its reports for the DNOs.

- We assumed that materials for Operational Activities were solely general materials. For Network Investment we assumed the following breakdown: 29 per cent general materials, 43 per cent specialised materials, and 29 per cent equipment and plant.[4]

- The remaining weights that were not labour or materials were grouped into the "other" category.

5.13. Table 5.2 below presents the weights calculated from the above analysis.

Table 5.2 - Assumed input weights

	Load related expenditure	Non-load related expenditure	Network operating costs	Closely associated indirects	Business support costs	Non-operational capex
General labour	30%	32%	59%	51%	45%	31%
Specialised labour	30%	32%	30%	25%	22%	16%
General materials	9%	10%	8%	11%	4%	53%
Specialised materials	14%	15%	0%	0%	0%	0%
Equipment and plant	9%	10%	0%	0%	0%	0%
Other	7%	1%	3%	13%	29%	0%

5.14. We recognise that the calculated weights are biased towards reporting higher weights for labour (and lower materials weights) as some DNOs reported materials within their contractor costs. Given the greater RPEs assumed for labour over materials, we have decided to err on the side of caution and not make any adjustment for this as it is a difficult process for the DNOs to understand the input mix of their contractors within the constraints of the DPCR5 process. If we pursue similar approaches at future reviews we will look to resolve this issue.

RPEs by expenditure category

Table 5.3 below presents the RPEs by expenditure category by combining the data in the two tables above on RPEs by input and the various input weights.

Table 5.3 - RPEs for the different expenditure categories (%)

	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15
Load related expenditure	2.0	0.3	0.9	1.0	1.1	1.1	1.1
Non-load related expenditure	2.0	0.4	1.0	1.1	1.1	1.1	1.2
Network Investment (total)	**2.0**	**0.4**	**0.9**	**1.1**	**1.1**	**1.1**	**1.1**
Network operating costs	NA	2.0	1.7	1.6	1.5	1.5	1.5
Closely associated indirects	NA	1.7	1.5	1.4	1.3	1.3	1.3
Business support costs	NA	1.5	1.3	1.2	1.1	1.2	1.2
Non-operational capex	NA	1.5	1.2	1.1	1.1	1.1	1.1
Operational activities (total)	**NA**	**1.8**	**1.5**	**1.4**	**1.3**	**1.3**	**1.3**

5.15. The table does not report RPEs for 2008-09 for the Operational Activities because our benchmarking of these costs was carried out on expenditure in 2008-09 which did not have RPEs removed from them. Therefore when we roll these costs forward for the

[4] These splits for materials were used by CEPA in their April report.

DPCR5 period the RPEs for 2008-09 do not need to be added back in as they are already embedded within the benchmarks. The same is not the case for Network Investment - our benchmarking of these costs relates to the cost of undertaking investment in 2007-08 so our roll forward needs to include RPEs for 2008-09.

5.16. On average the assumed RPEs are:

- 1.1 per cent a year for Network Investment over the 2008-09 to 2014-15 period, and
- 1.4 per cent a year for Operational Activities over the period 2009-10 to 2014-15 period.

5.17. Both of these averages are greater than our 1 per cent a year ongoing efficiency assumptions meaning that we are assuming expenditure rises above RPI inflation.

Our allowances for RPEs

5.18. We have used the following method to calculate our RPE allowances:

- We converted the RPEs for the different inputs in Table 5.1 into prices indices by compounding the annual growth rates. For the operational activities we did not use the data for 2008-09 as these RPEs are already included within our baselines.
- We then combined these price indices (with a base of one) using the weights in Table 5.2 to calculate price indices for the different elements of expenditure. It is from these price indices that we calculated the annual RPEs presented in Table 5.3.
- To calculate the RPEs allowances we multiplied our expenditure allowance in each category by the category's price index minus one.
- For Network Investment our baselines do not incorporate our ongoing efficiency assumption - we have incorporated this assumption into our allowances for RPEs associated with Network Investment by multiplying the Network Investment price indices by a factor that compounds the 1 per cent a year improvement over time. Our baselines for Operational Activities already include our 1 per cent year assumption for ongoing efficiency improvement and so no such adjustment is required.

5.19. Table 5.3 and 5.4 below present our RPE allowances for Operational Activities and Network Investment.

Table 5.3 - RPE allowances for Operational Activities (£m, 2007-08 prices)

	Network operating costs	Closely associated indirects	Business support costs	Non-operational capex	Total
CN West	14.2	11.8	5.2	0.5	31.6
CN East	16.2	11.9	4.6	0.5	33.2
ENW	11.3	8.6	7.6	2.0	29.5
CE NEDL	8.9	6.7	4.5	1.4	21.5
CE YEDL	12.5	8.1	5.6	1.3	27.4
WPD S Wales	8.0	4.9	3.8	1.7	18.3
WPD S West	12.1	7.2	4.4	2.1	25.7
EDFE LPN	9.8	9.7	5.5	1.8	26.9
EDFE SPN	11.2	8.7	5.3	2.3	27.5
EDFE EPN	20.9	13.7	7.7	2.6	44.9
SP Distribution	10.5	8.1	5.4	1.0	25.0
SP Manweb	10.9	8.8	6.0	1.0	26.8
SSE Hydro	7.3	6.7	4.0	1.4	19.5
SSE Southern	17.3	14.3	6.7	2.5	40.8
Total	**171.0**	**129.0**	**76.5**	**22.1**	**398.6**

Table 5.4 - RPE allowances for Network Investment (£m, 2007-08 prices)

	Load related expenditure	Non-load related expenditure	Total	Load related expenditure (net of 1% ongoing efficiency)	Non-load related expenditure (net of 1% ongoing efficiency)	Total (net of 1% ongoing efficiency)
CN West	11.7	21.4	33.1	0.4	2.2	2.6
CN East	15.6	17.5	33.2	0.5	1.8	2.3
ENW	7.1	23.1	30.2	0.2	2.4	2.6
CE NEDL	4.5	16.7	21.2	0.1	1.7	1.9
CE YEDL	6.6	21.4	28.0	0.2	2.2	2.4
WPD S Wales	2.0	11.2	13.2	0.1	1.1	1.2
WPD S West	3.0	17.0	20.0	0.1	1.7	1.8
EDFE LPN	11.2	15.0	26.2	0.4	1.5	1.9
EDFE SPN	8.5	19.4	27.9	0.3	2.0	2.3
EDFE EPN	16.5	18.1	34.6	0.5	1.9	2.4
SP Distribution	5.7	15.7	21.4	0.2	1.6	1.8
SP Manweb	7.8	22.3	30.1	0.3	2.3	2.5
SSE Hydro	2.1	9.5	11.6	0.1	1.0	1.0
SSE Southern	11.7	23.7	35.4	0.4	2.4	2.8
Total	**113.9**	**252.0**	**366.0**	**3.7**	**25.8**	**29.5**

5.20. Across all activities we are providing total RPE allowances of £765m. Netting of the efficiency adjustment for network investment reduces this figure to £428m. It is this £428m figure that feeds through the working of the rest of the Final Proposals documents and the financial model for calculating allowed revenues.

Key issues

5.21. Overall we see our approach as being reasonable, consistent with the evidence and the forecasts of our consultants. We think our approach errs on the side of caution in favour of the DNOs but that this is reasonable given the unprecedented uncertainty about when the UK and the world economy will emerge from recession and return to

recent levels of growth. We are assuming overall average expenditure trends of RPI+0.1 for Network Investment RPI+0.4 for Operating Activities. The above RPI trends are greater than one would expect for the average industry in the economy, which suggests that we expect electricity distribution to be facing slightly higher cost pressures than the rest of the economy.

5.22. We have received conflicting evidence from the DNOs on our assumptions in this area:

- The 1 per cent a year ongoing efficiency assumption in our analysis is in line with the assumption made by First Economics in its reports for the ENA and individual DNOs. Some DNOs have argued that this assumption is too demanding but have not provided a supporting critique of either our analysis or First Economics' analysis in this area.

- We have also received mixed evidence from the DNOs in terms of RPE forecasts for DPCR5. First Economics has argued strongly for higher RPE forecasts, particularly for labour in 2008-09 and 2009-10. Another DNO has submitted a report by its own consultants which includes lower RPE recommendations for "internal" labour than CEPA's recommendations for all years, including 2008-09 and 2009-10.

- Another DNO in its responses to us on these matters has suggested that the Initial Proposals assumption of Network Investment RPEs and ongoing efficiencies netting off remains appropriate. Maintaining this assumption would reduce our allowances by £30m across the industry.

5.23. If anything, we would say that our 1 per cent a year efficiency assumption is conservative - the introduction of measures such as the equalisation of incentives should open up opportunities for savings that have not been worthwhile in the past due to the differential treatment of opex and capex.

5.24. We have also identified a number of further arguments that support our view that our approach is reasonable and that no further adjustments to our RPE forecasts are necessary:

- There appears to be an upside risk to RPI during DPCR5 from potential increases in mortgage interest rates and VAT. Increases in both of these items could result in significant increases in RPI without a similar increase in the input costs faced by the DNOs.

- The DNOs have argued that wage deals struck for 2009-10 should be passed through into our RPE assumptions. We have several concerns with doing so:

    - Many of these wage deals were struck relative to the previous year's RPI inflation and now look generous in hindsight - we would expect lower real wage growth going forward to restore the level of real wages unless there are further productivity improvements.

    - Any wage deals may have been accompanied by other measures that could have made them self financing e.g. agreements for longer working hours or reduced benefits in kind - as CEPA point out, without this information it is hard to assess some of the numbers submitted by the DNOs.

- If the DNOs believe that wage settlements should be higher than our assumptions then our response is that such wage growth should be self-funded by productivity growth beyond our 1 per cent efficiency assumption. We have already included a premium for specialists since Initial Proposals (discussed further below) and see no further reason to make any more upward adjustments.

- There is no concrete evidence of a wage premium for specialist engineering labour. In the data that CEPA present, there is only evidence for a wage premium in the recent past, over a longer period there is no such evidence. Much of the evidence presented by the DNOs has focussed on this recent evidence and ignores the long-term trend. Given this, and the fact that any skills shortages are partially within the DNOs' control (they can train new staff - for which there is an explicit inclusion in the baseline - or recruit from other sectors or trained skilled labour from within or outside the EU[5]) we would once again be inclined to say that the inclusion of a wage premium in our RPE adjustment is conservative.

5.25. We acknowledge that there are upside and downside risks with respect to RPEs and ongoing efficiencies but in the light of the arguments presented above we think that our assumptions are reasonable based on the available evidence and that they take account of the uncertainty.

[5] For example, WPD has recruited staff from other countries within the EU.

6. Shetland

Chapter summary

This Chapter discusses our final proposals relating to the additional costs of meeting electricity demand on Shetland.

Supply on Shetland

Continuation of the Current Arrangements

6.1. Shetland is not connected to the main electricity distribution network. During the introduction of the British Electricity Trading and Transmission Arrangements it was agreed that Scottish Hydro Electricity Power Distribution (SHEPD) would administer the electricity supply on the island, so that prices to Shetland's customers would remain in line with those on the mainland[6]. As there are higher costs associated with wholesale electricity balancing on Shetland, at the time of DPCR4 it was agreed that the cost differential should be recovered from all SHEPD customers.

6.2. The resulting cross subsidy fluctuates from year to year due to the variability of some of its calculation inputs. The cost of this cross-subsidy totalled £15.4m in 2007-08 but reduced to £11.4m in 2008-09. Of the latter, £8.4m was the allowance assumed in the DPCR4 settlement in prices of the day and £3.0m corresponded to surplus costs that were not already recovered through the relevant DPCR4 allowance and that were passed through to all SHEPD customers.

6.3. SHEPD has asked for a continuation of the existing cross-subsidy beyond the current price control period to meet the costs of the existing arrangements. This will be continued at its 2008-09 levels i.e. the £8.4m (adjusted for inflation) plus the pass-through costs.

Options for Future Arrangements

6.4. The Lerwick Power Station (LPS), which currently supplies customers on Shetland, was first commissioned in 1955, and is becoming increasingly expensive to operate and maintain. Due to the age and condition of the LPS, SHEPD expects to need to replace the LPS in 2013-2015 as it will no longer be economic to retain. SHEPD has indicated that retaining LPS beyond that time will incur very substantial environmental compliance costs.

6.5. SHEPD and Ofgem have discussed options for securing the most efficient future supply on the island. We have examined two options: (i) running a competitive tender process or (ii) applying an incentive mechanism on SHEPD.

6.6. In the DPCR5 Initial Proposals document we sought views on the two options with the aim of choosing the most efficient and effective option, minimising the cost of the existing cross subsidies and ensuring the security of supply on the island. Apart from a short submission from SHEPD, no other submissions were received in response to this.

[6] *See* The Electricity Act 1989 (Uniform Prices in the North of Scotland) Order 2005 (S.I. 2005/490).

Developments since Initial Proposals

6.7. In its submission to Initial Proposals SHEPD indicated that while it is not opposed to a competitive tender process, if Ofgem is intent on progressing this option, it may be better for the tender to be run by a third party as a 'turnkey' project including tendering for the role of distribution system operator (DSO).

6.8. SHEPD also indicated that it does not believe that such a tender process is necessary or desirable. In its view, incentivising SHEPD to develop an integrated, whole-of-island solution will not only provide immediate clarity, but will also involve market-based solutions. SHEPD will need to access the market, through tenders as appropriate, to identify and procure demand-side options such as storage devices as well as the conventional generation assets. Furthermore, it would seek the involvement of suppliers, manufacturers and the island community regarding options such as district heating and the installation of heat pumps.

6.9. SHEPD believes that as at this stage the replacement solution for the island is unclear, it is not feasible to deal with the relevant costs ahead of finalising DPCR5 and as such this will have to be addressed through a re-opener mechanism.

Mechanism to Secure Supply on Shetland

6.10. The renewal of supply on Shetland offers a significant opportunity for innovation and the trialling of new and innovative technologies and commercial arrangements that we will then need to deploy on the mainland as we seek to reduce significantly the carbon emissions of the electricity industry. The Low Carbon Network (LCN) fund will be available for SHEPD and other companies to seek funding for this purpose to help reduce the need for and scale of any cross-subsidy. SHEPD has indicated that it intends to develop a proposal for submission under the LCN fund in due course. We expect that this would demonstrate that SHEPD is actively encouraging partnerships with other parties to develop such solutions. At this stage there is no guarantee that SHEPD will be awarded funding through this mechanism. Proposals from SHEPD will be considered in the same manner as other proposals for the LCN fund as set out in Chapter 1 of the Incentives and Obligations document.

6.11. We will require SHEPD to demonstrate that the most efficient supply option was delivered and that the cost of the cross subsidies was minimised. We would also require SHEPD to demonstrate that this was achieved through competitive processes (i.e. through tenders as appropriate) and that it has engaged effectively with all interested parties, including the island communities and proponents of innovative solutions, to ensure that all alternative solutions have been identified and considered. SHEPD will also need to demonstrate that, in selecting its preferred option, it has assessed the total lifecycle costs (both capital and operational) of all identified options over the expected life of the assets employed.

Re-opener for an integrated plan to manage supply and demand on Shetland

6.12. We will require SHEPD to present an integrated plan to manage supply and demand on Shetland to the Authority by 31 January 2013. Such a plan must demonstrate that SHEPD has examined all available options to find the most efficient solution, has involved market-based mechanisms including tenders, and that it has developed partnerships and worked with local communities. The plan should identify a

solution based on the lowest lifecycle costs, taking into account environmental obligations.

6.13. The re-opener will be based around the development of an incentive mechanism to ensure maximum efficiency. Some form of pass-through may still be necessary for costs completely out of SHEPD's control. However, SHEPD will have to demonstrate that it has used its best endeavours to minimise all uncontrollable cost components, including by negotiating solutions that pass through or share cost risks with counterparties. Both the structure of the incentive mechanism and the need for any pass-though mechanism will be decided at the time of the reopener depending on the type of the solution proposed by SHEPD in its integrated plan.

6.14. To ensure a timely solution, if by 31 January 2013 SHEPD has not presented such a plan the Authority reserves the right to seek a competitive tender to manage supply and demand on Shetland. The re-opener processes will commence on 1 February 2013, irrespective of whether it is triggered by SHEPD or the Authority.

Logging up of Efficient Development Costs

6.15. The costs of identifying and developing the proposed solution (or solutions) will fall into DPCR5. We are putting in place a mechanism allowing SHEPD to log up efficiently accrued costs as they are incurred to fund the development works (including any tender and pre-construction costs) and these costs will be subjected to an ex post efficiency review.

7. Managing cost and volume uncertainty

Chapter summary

This chapter discusses our proposals for managing cost and volume uncertainty.

Overview

7.1. There are two main reasons why we are proposing a range of mechanisms to address uncertainty and to provide appropriate protection to both customers and DNOs.

7.2. First, for some categories of expenditure there are volume uncertainties where we acknowledge that volumes are partially outside of the control of the DNOs and consider some protection to be appropriate both on the upside to protect the DNOs and on the downside for the benefit of customers. An example of costs falling into this category is general reinforcement and low-volume high-cost connections expenditure where we are proposing an ex ante allowance with a reopener to protect against large deviations from expected demand and connection volumes.

7.3. Second, there are other expenditure items where we do not have sufficient information to set any allowances ex ante and will be relying on a reopener or logging-up mechanism to set the allowance once the relevant information has been revealed. The introduction of permitting schemes under the Traffic Management Act (TMA) is an example of this – we do not know the timing or the level of permitting fees that may be introduced by all the different highways authorities operating in Great Britain. For these types of expenditure we do not propose to set ex ante allowances and will rely on a reopener/logging-up mechanism to provide the appropriate revenues with a delay from when the expenditure was incurred.

7.4. For DPCR5 we are making the following changes from DPCR4 in relation to managing uncertainty:

- A larger basket of costs will be included within the Information Quality Incentive (IQI) and subject to its sharing factor. Our proposals in this area are discussed in more detail in Chapter 21 of the Incentives and Obligations document.
- We are removing the drivers for units distributed and customer numbers. Instead, demand side risks will be captured by:
    - Sole use connections being removed from the price control. (This will be an excluded service no longer linked to the Regulatory Asset Value (RAV)).
    - Volume drivers on the number of high-volume low-cost connections involving shared assets.
    - A reopener for general reinforcement expenditure and low-volume high-cost connections capex involving shared assets.
- A reopener for traffic management costs will be preserved but this will be limited in scope to costs arising from the introduction of permitting schemes.

- There will be additional reopeners for costs associated with high-value projects, rising and lateral mains, and repowering Shetland.

- Uncertain costs associated with Critical National Infrastructure (CNI), black start capability and emergency batteries will be subject to logging up to a materiality threshold and a reopener will apply beyond this threshold.

- There will be reopener windows for each of the proposed reopeners in order to reduce the volatility in charging from such mechanisms and also to allow Ofgem to make comparisons between DNOs at the time of the reopeners.

Mechanisms for DPCR5

7.5. The sections below set out the details of our proposals for managing uncertainty during DPCR5.

Sole-use connections

7.6. Expenditure on sole-use connections will be treated outside of the main price control as an excluded service no longer linked to the RAV additions. DNOs will have an opportunity to earn a regulated margin on the cost of contestable activities. If they pass a competition test they can then earn an unregulated margin. Further details of our proposals in this area are provided in the following sections of Final Proposals:

- Chapter 10 (Connections: Overview) of the Incentives and Obligations document,
- Chapter 3 (Excluded services) of the Financial Issues document, and
- Chapter 8 (Sole use connections) of the Financial Methodologies document.

Volume drivers on high-volume low-cost connections involving shared assets

7.7. For the purpose of these volume drivers we define the high-volume low-cost (HVLC) connections involving shared assets to include the following categories of connections as specified in the FBPQ[7]:

- Small scale LV domestic and one-off commercial,
- All other LV (with only LV work), and
- LV end connections involving HV work.

7.8. For these connections we have made an ex ante allowance based on the volume forecasts provided by the DNOs and our assessment of efficient unit costs. We have then applied our view of the appropriate ratio of net to gross costs to determine the net allowance. The details behind this assessment are provided in Appendix 4 of the Cost Assessment document.

7.9. At DPCR6 we will make a true-up adjustment to future revenues to reflect the difference between the actual number of connections made and the number assumed as part of our ex ante allowance. This difference will be combined with our unit cost assumptions to calculate the required adjustment to future revenue. This true-up will take into account the workings of the RAV rolling incentive so that expenditure is not

[7] Table LR1 - Demand metered connections.

double counted. As part of this mechanism we will also apply a true-up for the actual proportion of gross shared connection costs that are funded upfront through connection charges so that DNOs do not make a significant windfall gain or loss from such movements. This true-up will be symmetrical and will apply to under- and over-recoveries relative to our assumed proportion of costs to be funded by connection charges.

7.10. We may also make an adjustment for any loss of market share in the connections market. Such a loss in market share might result in the DNOs undertaking fewer connections subject to the volume driver, while adopting more low-volume high-cost (LVHC) connections carried out by a third party. An increase in adopted connections may lead to an increase in a DNO's expenditure beyond that provided by the LVHC ex ante allowance. At the end of DPCR5 any DNOs that consider an increase in competition has led to their expenditure on LVHC connections being significantly above their baseline can provide evidence of this for Ofgem to consider as part of the net to gross true-up. At a minimum the evidence will need to show, as a result of increased competition, there has been a fall in HVLC connections, an increase in LVHC connections and higher DNO expenditure than allowed by the LVHC ex ante allowance. This review will be undertaken at the same time as the volume true-up adjustment, but it may be included as part of the load related expenditure reopener if a DNO applies for it.

7.11. Overall, this mechanism is designed to work as a revenue driver but with a delay to the revenue adjustments. This is so that customer charges remain predictable over the DPCR5 period. Given the relatively small scale of expenditure in this area we do not expect this to create any financeability issues for the DNOs. Further details of how the adjustment will be made at DPCR6 are provided in Chapter 2 of the Financial Methodologies document.

Reopener windows

7.12. We are including two application windows within the DPCR5 period - DNOs will only be able to apply for the reopeners described in this chapter during these windows and in some cases at DPCR6 (but this will not affect charges during the DPCR5 period). These windows are designed to reduce the frequency of reopeners which will provide greater predictability in charges over the DPCR5 period and also so that Ofgem can consider the reopeners collectively and make suitable comparisons between DNOs to assess efficient levels of expenditure. We do not expect that restricting the proposed reopeners to the windows will introduce financeability issues for the DNOs.

7.13. We set out below the details of the two proposed windows.

7.14. The first window will run from 1 July 2012 to 31 July 2012 and applies to the following reopeners:

- traffic management permitting,
- logged up expenditure items (CNI, black start capability and emergency batteries), and
- rising and lateral mains.

7.15. Ofgem intends to make a determination on any reopener requests within four months of the close of the window, i.e. by 30 November 2012. A decision by this time

gives the DNOs a month to notify suppliers ahead of 31 December 2012 so that they can change their charges on 1 April 2013.

7.16. The second window will run from 1 January 2013 to 31 January 2013 and applies to the following reopeners:

- load related expenditure reopener (general reinforcement and low-volume high-cost connections),
- high-value projects, and
- repowering Shetland.

7.17. Again, Ofgem intends to make a determination within four months of the close of the window (31 May 2013). DNOs would then have a month to notify suppliers ahead of any changes to charges to be implemented on 1 October 2013.

7.18. The second reopener window is necessary for the following reasons:

- Ofgem will be conducting a mid-period review of outputs at the end of 2012 (see Chapter 19 in the Incentives and Obligations document for further details). The outcome of this review will have a key bearing on any assessment of the load related expenditure and high-value projects reopeners. The reopener window for these items must be scheduled after this mid-period review so that the DNOs and Ofgem can make use of its findings as part of any reopener.

- There will also be greater clarity on the options for Shetland and whether there is likely to be an interconnector.

- The second window also frees up more resources for Ofgem and the DNOs to be able to assess the various reopeners in proper detail without them all being reviewed at the same time.

7.19. The sections below set out further details of how the individual reopeners will operate. Chapter 2 of the Financial Methodologies document provides further details of how the different reopeners will be assessed and how we will make any adjustments to allowed revenues.

Load related expenditure reopener

7.20. There will be a reopener for load related expenditure associated with general reinforcement and the shared element of LVHC connections that is funded through distribution use of system (DUoS) charges. DNOs can trigger the reopener during the window if they can demonstrate a net 20 per cent greater efficient expenditure over the whole DPCR5 period (i.e. actuals plus forecasts for the remainder of the period) on connections and general reinforcement compared to the Ofgem baseline. The reopener and the threshold apply to the sum of LVHC connections and general reinforcement expenditure, i.e. there is a combined reopener for these costs rather than a separate reopener for each component. The Ofgem baselines for LVHC connections and general reinforcement are set out in Tables 7 and 9 of Appendix 1 of the Cost Assessment document. Table 9 on general reinforcement includes high value projects related to general reinforcement - for the purposes of this reopener the general reinforcement baselines will need to have removed from them the components relating to high value

projects when assessing the relevant threshold. The load related expenditure reopener does not consider high value projects.

7.21. The expenditure covered by the reopener that must meet the threshold includes expenditure already incurred during DPCR5 and the expenditure forecast for the remainder of the period. The additional funding required as part of the reopener would need to pass a 1 per cent of base demand revenue materiality threshold in order for it to be triggered.

7.22. The DNOs will be required to justify this increase in efficient expenditure requirement through use of the load index output measures and the volume of high cost connections. As part of this assessment we would also consider any offsetting impact from efficient demand-side management (DSM) activities to avoid general reinforcement so that DNOs would not be discouraged from undertaking these activities. Real price effects (RPEs) cannot be used as a justification for expenditure being greater than or less than the baseline - the risk of RPEs exceeding the assumptions included in the baselines is for the DNOs to manage. The reopener would allow the DNOs to recover any additional efficient expenditure above the 20 per cent threshold that would not otherwise be recoverable through the RAV rolling incentive scheme. No adjustment would be made for the efficient expenditure up to the 20 per cent threshold beyond the usual operation of the rolling incentive scheme which means that in practice the DNOs are only really exposed to around 10 per cent (assuming a 50 per cent incentive rate) of the Ofgem baselines due to demand risks.

7.23. The reopener is symmetrical and could be triggered by Ofgem at the end of the DPCR5 period if we determine that efficient expenditure is 20 per cent less than our assumption due to a change in demand and/or fewer high-cost connections. If a DNO had not already triggered the reopener during the DPCR5 window then it would also be allowed to activate the reopener at this time. The ex post assessment would also take into account the impact of efficient DSM activities to avoid general reinforcement. The same 1 per cent of base demand revenue materiality threshold would apply if the reopener mechanism were activated at this time.

7.24. We propose to conduct this ex post assessment, where appropriate at DPCR6. It will involve a forecast being made for demand and the volume of high-cost connections in 2014-15.

7.25. Prior to conducting this assessment we will issue a call for evidence inviting network users and suppliers to provide evidence that could be used to activate the reopener for the benefit of customers.

7.26. Further details on how will assess this reopener are provided in Chapter 2 of the Financial Methodologies document.

High-value projects

7.27. There will be a reopener for high-value projects which can be triggered at the second reopener window. The operation of this reopener is very similar to the load related expenditure reopener described above. The reopener applies to the totality of the high-value projects within the price control and not to individual projects. DNOs can trigger the reopener during the window if they can demonstrate that they have/will meet the associated outputs for these projects and that their net efficient expenditure over the

entire DPCR5 period on high value projects is 20 per cent greater than the Ofgem baseline presented in Table 3.9 in Chapter 3.

7.28. The expenditure covered by the reopener that must meet the threshold includes expenditure already incurred during DPCR5 and the expenditure forecasted for the remainder of the period. The additional funding required as part of the reopener would need to pass a 1 per cent of base demand revenue materiality threshold in order for it to be triggered.

7.29. The DNOs will be required to justify this increase in efficient expenditure requirement by demonstrating that they have or will meet the relevant outputs and that the total of efficiently incurred costs will be 20 per cent greater than the Ofgem baseline. Factors that can be used to demonstrate this include the requirements for the work being more complex, a different method being required to deliver the outputs and revised legislative requirements. For example, planning constraints might involve additional tunnelling work. RPEs cannot be used as justification for expenditure being greater or less than the baseline - the risk of RPEs exceeding the assumptions included in the baselines is for the DNOs to manage in this area.

7.30. Like the load related expenditure reopener, the reopener only allows the recovery of expenditure beyond the 20 per cent threshold. The reopener would allow the DNOs to recover any additional efficient expenditure above the 20 per cent threshold that would not otherwise be recoverable through the RAV rolling incentive scheme. No adjustment would be made for the expenditure up to the 20 per cent threshold beyond the usual operation of the rolling incentive scheme which means that in practice the DNOs are only really exposed to around 10 per cent (assuming a 50 per cent incentive rate) of the Ofgem baselines. Further details of this mechanism are set out in Chapter 2 of the Financial Methodologies document.

7.31. The reopener is symmetrical and could be triggered by Ofgem at the end of the DPCR5 period if we determine that efficient expenditure is 20 per cent less than our baseline. If a DNO had not already triggered the reopener during the DPCR5 window then it would also be allowed to activate the reopener at this time. The same 1 per cent of base demand revenue materiality threshold would apply if the reopener mechanism were activated at this time. We propose to conduct this ex post assessment at DPCR6 which will require us to make a forecast for efficient costs in 2014-15.

TMA permitting schemes reopener

7.32. Our allowances for traffic management costs (see Chapter 4) have not included any allowances for permitting schemes. These costs will be funded through the mechanism described in this section.

7.33. By default any costs associated with permitting will be logged-up and assessed at DPCR6[8] under the same rules as the reopener. DNOs may also initiate a reopener during the first application window if they have 6 months of cost data relating to permitting within the DPCR5 period. The reopener would only consider the impact of permitting schemes in areas with 6 months of supporting permitting data. Permitting costs in other areas without 6 months of data would continue to be logged-up and considered at

[8] This assessment at DPCR6 will involve Ofgem making a forecast of average permit fees in 2014-15 which will then be an ex-ante allowance with the normal incentives and not subject to an ex post true-up.

DPCR6. The additional funding required as part of the reopener would also need to pass a 1 per cent of base demand revenue materiality threshold in order for it to be triggered.

7.34. This reopener will provide the DNOs with protection against:

- the timing of the introduction of permitting schemes,
- the level of permit fees set by the relevant authorities,
- efficient one-off set-up costs associated with permitting (over and above those that are already funded),
- additional costs arising from the introduction of permit conditions (e.g. the London Code of Practice), and
- efficient additional administration costs associated with permitting.

7.35. The reopener will not provide protection against the following:

- volumes of activity, i.e. the number of works,
- the proportion of notices/permits that are subject to penalties, and
- any other changes to the traffic management regime, e.g. the level of any penalties, and the regimes for inspections and lane rentals.

7.36. Further details on how we would make our assessment for this reopener are provided in Chapter 2 of the Financial Methodologies document.

Logged-up expenditure items

7.37. There are two areas where we are proposing logging-up mechanisms with a threshold for a reopener:

- CNI, and
- black start capability and emergency batteries.

7.38. By default, we propose that these expenditure items will be logged up and considered at DPCR6.[9] However, there will be a materiality threshold of 1 per cent of base demand revenue for any adjustment to DPCR5 revenues. If a DNO can demonstrate that this threshold will be met over the DPCR5 period then a reopener can be triggered during the first application window. We propose that this materiality threshold would apply to the two expenditure items above in aggregate across the entire DPCR5 period.

7.39. If the reopener is triggered by a DNO, then these costs would cease to be logged-up and any funding provided by the determination would act as an ex ante allowance for the rest of DPCR5.

7.40. The September Update letter included high impact low probability (HILP) costs within this category. We have decided that a reopener is no longer required for these costs. Appendix 6 of the Cost Assessment document provides further details on the reasoning behind this decision.

[9] This assessment at DPCR6 will involve Ofgem making a forecast of efficient expenditure in 2014-15 which will not be subject to an ex post true-up at DPCR7 unless there is a material difference between the forecast and outturn.

Rising and lateral mains reopener

7.41. Appendix 6 of the Cost Assessment document sets out our assessment of costs in this area. As noted in Initial Proposals, some DNOs have forecast network investment costs for rising and lateral mains (RLM) in large scale housing estates. The extent of issues with RLM varies widely across the licensed areas, as does the extent to which ownership has been established. For the first two years of DPCR5 we provide some up-front funding for some DNOs to undertake replacement work in this area. During these two years we expect all DNOs to have made reasonable efforts to resolve ownership of these assets, assess the condition of the assets to determine the volume of activity, and estimate the costs that can be recovered from customers. All expenditure in this area will be logged-up until the reopener window when the reopener will be automatically triggered for all DNOs that have received some up-front funding or that have logged-up expenditure in this area. DNOs that do not meet these criteria for the automatic reopener may still qualify for the reopener if they can demonstrate they have made all reasonable efforts to resolve ownership and that the additional revenue provided by the reopener in this area will breach a 1 per cent of base demand revenue threshold.

7.42. At the reopener Ofgem will make an assessment of the efficient cost of work to be undertaken over the DPCR5 period and also will make an assumption on the proportion of that work that will be funded by customers. Ofgem will still make this assessment even if the DNOs have not been able to resolve ownership meaning that there is more risk exposure to such DNOs.

7.43. At DPCR6[10] we will make an end of period true-up to reflect the actual proportion recovered from customers - this true-up will be subject to a 10 per cent incentive rate - the DNOs will be exposed to 10 per cent of any under- or over-recoveries from customers beyond our assumption that the reopener. There will be no true-up at DPCR6 for differences between volumes assumed at the reopener and actual volumes of activity.

Repowering Shetland reopener

7.44. Shetland is not connected to the main electricity distribution network. During the introduction of the British Electricity and Transmission Trading Arrangement (BETTA) it was agreed that Scottish Hydro Electric Power Distribution (SHEPD) would administer the electricity supply on the island, so that prices to Shetland's customers remain in line with those on the mainland.

7.45. The Lerwick Power Station (LPS), which currently supplies the load on Shetland, was first commissioned in 1955, and is becoming increasingly expensive to operate and maintain. Due to the age and condition of the LPS, SHEPD expects to need to replace the LPS in the 2013-2015 period as it will no longer be economic to retain. SHEPD has indicated that retaining LPS beyond that time will incur very substantial environmental compliance costs.

7.46. We will require SHEPD to present an integrated plan to manage supply and demand on Shetland to the Authority by 1 January 2013. Such a plan must demonstrate that SHEPD has examined all available options to find the most efficient solution, and that this has involved competitive processes including tenders, and, development of

[10] This assessment at DPCR6 will involve Ofgem making a forecast for the proportion of costs recovered from customers in 2014-15 which will not be subject to an ex post true-up.

partnerships and work with local communities. The plan should identify a solution based on the lowest lifecycle costs, taking into account environmental obligations.

7.47. The re-opener will be based around the development of an incentive mechanism to ensure maximum efficiency. Some form of pass-through may still be necessary for costs completely out of SHEPD's control. However, SHEPD will have to demonstrate that it has used its best endeavours to minimise all uncontrollable cost components, including by negotiating solutions that pass through or share cost risks with counterparties. Both the structure of the incentive mechanism and the need for any pass-though mechanism will be decided at the time of the reopener depending on the type of the solution proposed by SHEPD in its integrated plan.

7.48. To ensure a timely solution, if by 31 January 2013 (i.e. the close of the second application window) SHEPD has not presented such a plan the Authority reserves the right to seek a competitive tender to manage supply and demand on Shetland. The re-opener processes will commence on 1 February 2013, irrespective of whether it is triggered by SHEPD or the Authority.

London 2012 Olympic and Paralympic Games

7.49. In July 2005, the 2012 Olympic and Paralympic Games were awarded to London. The Olympic and Paralympic events will be held between July and September 2012 in London and at many locations throughout the United Kingdom. The scale of these events and the global interest that will be generated necessitate that the energy industry is focused on ensuring that energy supplies, and the infrastructure necessary to reliably deliver them, are robust. The Energy Emergencies Executive Committee (E3C) has therefore set up a 2012 Task Group to ensure that the industry is fully prepared for such a high profile event. The results of this Task Group are unlikely to be delivered before Q1 2010.

7.50. Ofgem has been party to these discussions and it is already clear that there are additional issues, costs and risks that will arise solely due to the Olympics. Our view is that all additional DNO costs (whether capital or operational) associated with the risk mitigation and successful delivery of the Olympics should be funded by the Olympic Delivery Authority (ODA) or the London Organising Committee of the Olympic Games and Paralympic Games (LOCOG). This is appropriate since they are the commissioning bodies for these outputs.

7.51. However we recognise that there may be Olympics related outputs that have residual value to customers after the Olympics. We do not consider it is appropriate at this stage to seek to identify and make provision for such costs and outputs related to the Olympics. It is also our view that these wide ranging issues should be the subject of a separate consultation once more detail is known.

7.52. Furthermore, there are mechanisms in place for dealing with changes to required outputs within a regulatory price control period. At the next price control review, DNOs will therefore have the option to identify efficiently and unavoidably incurred costs that were directly related to the Olympics but were not recovered from the Olympic organising (or other associated) bodies. Ofgem will then consider whether these unrecovered investments are of sufficient demonstrable value to customers to justify allowing such costs to be recovered through price controlled revenues.

7.53. We have therefore concluded that there is no need to include any Olympics related cost or outputs within DPCR5 Final Proposals.

Flooding

7.54. Ofgem's proposals for the expenditure on flood protection have been derived from analysis of the following cost categories:

- forecast expenditure on super grid, bulk supply points and primary substations,
- forecast expenditure on site surveys, and
- forecast expenditure for non site specific costs, such as portable flood defences.

7.55. We have analysed the forecast change in risk exposure to flooding. We have calculated the change in risk by combining the likelihood of flooding (1/100, 1/200 and 1/1000) with the number of customers at risk at each site. We have also factored in critical customers (such as hospitals) by applying a higher weighting to them, where they have been identified.

7.56. Given the range of sites and factors involved we have used the upper quartile £ per risk reduction as the benchmark which is 20 per cent higher than the average. Where the DNO's forecast is above the upper quartile £ per risk reduced we have scaled back their forecast by the percentage they are above the upper quartile £ per risk reduced. Where DNOs are below the upper quartile £ per risk reduced we have given them their own forecast.

7.57. As SSE Hydro were unable to provide sufficiently detailed information in time for on assessment of their forecast flood prevention expenditure to be taken into account for inclusion in DPCR5 allowances we are including a logging up mechanism for them. There will be a cap of £2.3 million (in 2007-08 prices) on allowed expenditure relating to the protection of substations against flooding during DPCR5. Where SSE Hydro's expenditure is above the upper quartile £ per risk reduced we will reduce the expenditure that is allowed into the logging up mechanism by the percentage they are above the upper quartile risk reduced.

8. Bringing the package together

Chapter summary

This chapter brings together the cost analysis presented in Chapters 3 and 4 and the Information Quality Incentive (IQI) to provide an overview of the aggregate cost allowances proposed for DPCR5.

Bringing together the cost assessment and the IQI

Costs within the IQI

8.1. Price control allowances for the majority of network-related costs are set through the IQI mechanism. The IQI mechanism combines the Ofgem baselines (presented in Chapters 3 and 4) with the DNOs' FBPQ forecasts to produce an expenditure allowance, an incentive rate that applies to any under- or over-spends, and an additional income term which helps ensure the incentive compatibility of the mechanism.

8.2. Since Initial Proposals, the following expenditures have been added to the IQI: flooding, BT21st Century and traffic management costs. The reasons for these changes are:

- Flooding was only excluded from the IQI at Initial Proposals due to an error. It was always intended that these costs would be included within the IQI.
- We conducted a cost assessment of BT21st Century costs and have decided that there is sufficient certainty surrounding these costs for them to be included within the IQI.
- Traffic management administration costs have been added to the regressions of Group II indirect costs. We did this for two reasons: some DNOs had not removed these costs from their historical engineering management and clerical support (EMCS) figures and thus were already included, and for the DNOs that did extract these costs there was a significant variation between them suggesting that the same activities were not being reported.

8.3. Table 8.1 below presents the inputs for the IQI mechanism. Across the industry as a whole, the final Ofgem baselines are 6 per cent lower than the forecasts submitted by the DNOs in their business plans for the DPCR5 period. The difference between the final Ofgem baselines and the DNOs' forecasts varies significantly by type of expenditure. The final Ofgem baselines are:

- 91 per cent of the industry's forecasts for network investment (in the IQI).
- 102 per cent of the industry's forecasts for network operating costs.
- 98 per cent of the industry's forecasts for closely associated indirect costs.

Table 8.1 - Inputs to the IQI mechanism - expenditure for the DPCR5 period (£m in 2007-08 prices)

	DNOs' FBPQ forecasts				Ofgem's baselines				
	Network investment	Network operating costs (including workforce renewal)	Closely associated indirects	Total	Network investment	Network operating costs (including workforce renewal)	Closely associated indirects	Total	Ofgem's baselines as a percentage of the DNOs' forecasts
CN West	649.2	213.1	196.9	1059.2	576.7	216.3	193.8	986.8	93%
CN East	661.7	226.0	166.9	1054.6	584.0	243.8	196.1	1023.9	97%
ENW	589.2	188.8	176.0	954.0	538.4	183.9	142.5	864.8	91%
CE NEDL	401.3	124.8	101.7	627.8	366.0	137.7	109.8	613.5	98%
CE YEDL	548.6	194.2	116.8	859.7	488.4	193.7	133.1	815.3	95%
WPD S Wales	210.8	119.1	90.4	420.3	227.1	125.0	79.7	431.8	103%
WPD S West	324.7	186.3	117.5	628.6	341.5	187.3	117.8	646.6	103%
EDFE LPN	520.3	157.0	162.9	840.2	480.7	156.1	162.9	799.7	95%
EDFE SPN	587.8	180.6	145.6	914.0	494.7	179.5	146.1	820.4	90%
EDFE EPN	741.7	306.3	275.6	1323.6	625.5	319.7	226.9	1172.0	89%
SP Distribution	396.9	181.2	148.5	726.5	355.5	162.2	133.2	650.9	90%
SP Manweb	573.8	181.4	148.5	903.7	522.3	170.8	145.9	839.1	93%
SSE Hydro	211.4	101.8	112.9	426.2	203.4	111.4	111.1	425.8	100%
SSE Southern	676.5	248.5	218.3	1143.2	626.8	262.7	236.7	1126.2	99%
Total	**7093.9**	**2609.1**	**2178.5**	**11881.5**	**6431.0**	**2650.3**	**2135.6**	**11216.9**	**94%**

8.4. We have applied the IQI at the DNO group level to ensure that all DNOs within a group have the same cost incentives. If this were not the case then the DNOs would be incentivised to allocate more expenditure within their group to the DNO with the weakest incentive strength. Table 8.2 below provides the results from our application of the IQI at this level. For example, the results for the Central Networks (CN) group DNOs are calculated as follows:

- The total CN group forecast is £2,114 million while the Ofgem baseline is £2,011 million giving a group level IQI ratio of 105 per cent.
- At the group level this gives the following IQI outputs:
    - an incentive rate of 47 per cent,
    - an expenditure allowance of £2,036 million, and
    - additional income of £37 million.
- At the DNO level:
    - CN West and CN East both receive the same 47 per cent incentive rate.
    - The expenditure allowance is set 25 per cent of the way between each DNO's baseline and their forecast giving £1,005 million for CN West and £1,032 million for CN East.
    - The additional income is allocated between the DNOs using their expenditure allowances as the weights giving them both over £18 million.

Table 8.2 - Outputs from the IQI mechanism (£m in 2007-08 prices)

	DNOs' forecasts	Allowed expenditure	Additional income	Incentive rate
CN West	1059.2	1004.9	18.1	47%
CN East	1054.6	1031.6	18.6	47%
ENW	954.0	887.1	9.3	45%
CE NEDL	627.8	617.1	12.0	48%
CE YEDL	859.7	826.4	16.1	48%
WPD S Wales	420.3	428.9	12.2	51%
WPD S West	628.6	642.1	18.3	51%
EDFE LPN	840.2	809.9	8.6	45%
EDFE SPN	914.0	843.8	9.0	45%
EDFE EPN	1323.6	1209.9	12.9	45%
SP Distribution	726.5	669.8	7.9	45%
SP Manweb	903.7	855.2	10.1	45%
SSE Hydro	426.2	425.9	10.0	49%
SSE Southern	1143.2	1130.5	26.6	49%

Costs outside the IQI

8.5. In addition to these costs within the IQI there are other elements that make up the remainder of price control:

- business support costs,
- non-operational capex,
- the remaining components of the network investment that are not subject to the IQI (e.g. rising and lateral mains),
- traffic management costs (excluding administration costs), and
- our assumptions for real price effects.

8.6. Our allowances for costs in these categories are provided in Table 8.3 below.

Table 8.3 - Cost allowances for expenditure outside the IQI (£m in 2007-08 prices)

	Business support costs	Non-operational capex	Network investment (not in the IQI)	TMA costs	RPEs	Total	Allowances as a percentage of the DNOs' forecasts
CN West	99.9	9.6	0.0	4.2	34.1	147.8	56%
CN East	87.8	10.9	0.0	3.0	35.5	137.1	59%
ENW	148.1	45.9	0.0	5.3	32.1	231.4	79%
CE NEDL	87.4	28.2	1.6	0.8	23.4	141.5	70%
CE YEDL	107.7	27.8	2.4	1.6	29.8	169.3	68%
WPD S Wales	72.5	34.8	0.0	1.4	19.5	128.3	81%
WPD S West	83.7	43.0	0.0	1.9	27.5	156.0	80%
EDFE LPN	106.3	36.0	0.0	4.4	28.8	175.5	59%
EDFE SPN	102.5	46.1	0.0	2.5	29.8	180.9	69%
EDFE EPN	149.5	51.9	0.0	4.7	47.3	253.4	63%
SP Distribution	104.4	20.3	16.0	3.7	26.8	171.1	76%
SP Manweb	116.8	20.3	9.5	3.5	29.4	179.5	78%
SSE Hydro	77.9	30.8	0.6	1.2	20.5	131.0	88%
SSE Southern	130.0	52.7	2.0	4.2	43.6	232.6	99%
Total	**1474.6**	**458.3**	**32.1**	**42.4**	**428.1**	**2435.5**	**72%**

Total price control cost allowances

8.7. Table 8.4 below brings together the expenditure allowances for all of the costs presented above. Pension costs are not included in this table.

Table 8.4 - Total price control allowances (£m in 2007-08 prices)

	Expenditure allowance	IQI additional income	Total	DNOs' FBPQ forecasts (total)	Ofgem's allowances as a percentage of the DNOs' forecasts
CN West	1152.8	18.1	1170.9	1322.3	89%
CN East	1168.7	18.6	1187.3	1287.8	92%
ENW	1118.5	9.3	1127.8	1245.8	91%
CE NEDL	758.6	12.0	770.6	831.1	93%
CE YEDL	995.7	16.1	1011.7	1110.2	91%
WPD S Wales	557.3	12.2	569.5	577.8	99%
WPD S West	798.1	18.3	816.5	822.6	99%
EDFE LPN	985.4	8.6	994.0	1137.1	87%
EDFE SPN	1024.7	9.0	1033.6	1174.4	88%
EDFE EPN	1463.3	12.9	1476.2	1723.9	86%
SP Distribution	840.9	7.9	848.9	951.3	89%
SP Manweb	1034.7	10.1	1044.9	1135.0	92%
SSE Hydro	557.0	10.0	567.0	575.7	98%
SSE Southern	1363.1	26.6	1389.7	1377.0	101%
Total	**13818.6**	**189.8**	**14008.4**	**15271.9**	**92%**

8.8. For the industry as a whole, our final allowances are 92 per cent of the expenditure forecast by the DNOs in their business plans. However, there is considerable variation

across the DNOs. For example, our allowance for SSE Southern is 101 per cent of their forecasted expenditure, but only 86 per cent for EDFE EPN.

Holistic assessment of our cost allowances

8.9. In addition to the individual strands of analysis that we have undertaken to form our baselines for operational expenditure and network investment, we have also reviewed and held discussions internally to see how these findings fit with other evidence including:

- How the results from the two areas of analysis fit with each other. For example, are the frontier companies in terms of operational activities also the frontier companies in our assessment of network investment? In making this assessment we recognise that there could be cost allocation and substitution considerations - for instance, between network investment and indirects.
- How the results of our analysis fit with the evidence from DPCR4.
- How our results fit with the output information we have received from the DNOs. For example, how embedded are the output measures in the processes adopted by the DNOs to run their businesses.
- How the analysis fits with information we have gained from the DNOs during the cost visits we have engaged in over DPCR4.

8.10. We have not used the findings from this holistic assessment to drive our cost analysis in any particular direction to support particular views that we may have. Instead, we have used it to check that our findings are internally consistent and can be explained by what we know about the companies.

8.11. Overall, we consider that the results of our analysis, and the ranking of companies that emerges when all elements are brought together, are consistent with what we know about the DNOs and the way that they run themselves. For example, the two DNO groups that have the smallest gap between our proposed allowances and their forecasts - SSE and WPD - both submitted relatively challenging forecasts at DPCR4 and have spent close to their DPCR4 allowances. These DNOs are also the leading performers in terms of quality of service. All the evidence from these companies reinforces the view that they are the frontier performers across a variety of metrics and this fits with the findings from our cost assessment.

8.12. Our cost assessment has shown that generally the DNOs with high capex unit costs also have relatively high costs in our benchmarking of either network operating costs or indirect costs. This suggests that there are not significant distortions arising from our separate analysis of network investment and operational activities which in turn reinforces the robustness of our analysis. This finding of similar cost performance across operational activities and network investment is not unexpected from a theoretical point of view as it suggests that management practices within DNOs have similar impacts across the range of activities, including quality of service. The fact that our different strands of analysis all point towards similar conclusions adds additional credibility to the results.

Appendices

Index

Supplementary appendices

Appendix 1 - Summary of responses to the Initial Proposals consultation document and September update letter

1.1. A summary of the responses received to the Initial Proposals documents and the September update have been included as Supplementary Appendices to the Final Proposals - Core document (144a/09).

Appendix 2 - Glossary

123

132 kV

Only covers assets at the 132 kV voltage level.

A

Areas of Outstanding Natural Beauty (AONB)

An AONB is an area of countryside with significant landscape value that has been designated by the Countryside Agency. The purpose of the designation is to conserve and enhance the natural beauty of the landscape; ANOBs rely on planning controls and practical countryside management.

Asset replacement expenditure

Investment made to replace assets on the network where the asset has reached a condition that it is no longer fit for purpose and replacement is the most economic solution. Also includes replacement of major plant items that have failed.

Atypical Costs

The DNOs report atypical costs as part of the annual RRP submissions. These costs include certain types of severance and restructuring costs as well as other one-off costs.

B

Business Support Costs (BSCs)

Consists of the following activities: IT & Telecoms, Property Management, HR & Non-Operational Training, Finance and regulation and CEO etc. The definitions of these activities can be found within the DPCR5 August Forecast Business Plan Questionnaire Rules.

BT 21st century networks (BT21CN)

Proposed changes to BT's commutation network which may impact on circuits leased by the DNOs for protection signalling and substation commutation.

C

Capital Expenditure (Capex)

Expenditure on investment in long-lived distribution assets, such as underground cables, overhead electricity lines and substations.

Critical National Infrastructure (CNI)

Sites vital to the normal operation of the network, taking account of Home Office and MI5 Protection of Critical National Infrastructure (PCNI) guidance.

D

Distributed Generation (DG)

Any generation which is connected directly into the local distribution network, as opposed to the transmissions network, as well as combined heat and power schemes of any scale. The electricity generated by such schemes is typically used in the local system rather than being transported for use across the UK.

Discretionary expenditure

Expenditure that is not ordinarily required for the ongoing operations of the company, but where the company can provide a business case as to why the benefits realised would justify the cost. For DPCR5 it covers alternative expenditure to that normally considered, which would enable the network to be more flexible in the future (with respect to connecting distributed generation, using demand side management or active network management etc.)

Distribution Network Operators (DNOs)

A DNO is a company which operates the electricity distribution network which includes all parts of the network from 132kV down to 230V in England and Wales. In Scotland 132kV is considered to be a part of transmission rather than distribution so their operation is not included in the DNOs' activities.

There are 14 DNOs in the UK which are owned by seven different groups.

Distribution Price Control Review 4 (DPCR4)

Distribution price control review 4. This price control runs from 1 April 2005 until 31 March 2010.

Distribution Price Control Review 5 (DPCR5)

Distribution price control review 5. This price control is expected to run from 1 April 2010 until 31 March 2015.

Distribution Price Control Review 6 (DPCR6)

Distribution price control review 6. This price control is expected to run from 1 April 2015 until 31 March 2020.

Demand side management (DSM)

Demand Side Management (aka Load Management) is any mechanism that allows a customer's demand to be intelligently controlled in response to events on the power system. Such events would include lack of network capacity or insufficient generation.

E

The Energy Emergencies Executive Committee (E3C)

This is a forum for discussion between government, National Grid, representatives of the gas and electricity industries and regulators.

Extra High Voltage (EHV)

Includes all voltage levels above 20kV up to but excluding 132kV.

Engineering Indirect Costs (EICs)

Consists of the following activities: Network Design, Project Management and Engineering Management & Clerical Support. The definitions of these activities can be found within the DPCR5 August Forecast Business Plan Questionnaire Rules.

Engineering management and clerical support (EMCS)

The office based activities of engineering and clerical support staff.

Electricity, Safety, Quality and Continuity Regulations 2002 (ESQCR)

The ESQCR specify safety standards, which are aimed at protecting the general public and consumers from danger. In addition, the regulations specify power quality and supply continuity requirements to ensure an efficient and economic electricity supply service to consumers.

F

Fault level expenditure

Expenditure on assets where the equipment fault rating is not adequate to met system requirements.

Forecast business plan questionnaire (FBPQ)

A major information request by Ofgem in the form of excel spreadsheets and associated narrative guidance. This captures key historical information and forecast information for the remainder of DPCR4 and DPCR5. We also obtained detailed explanatory narratives from each DNO.

Fixed Penalty Notice (FPN)

Notice offering a person the opportunity of discharging any liability to conviction for a fixed penalty offence (in relation to streetworks) by payment of a penalty.

G

General reinforcement expenditure

Investment to reinforce the network due to changes in general demand or generation background that is not directly attributable to a specific demand or generation connection.

H

Health Index (HI)

The HI is a framework for collating information on the health (or condition) of distribution network assets and tracking changes in network health over time. The HI will be used to inform an assessment of the efficiency of the DNOs' asset replacement investment decisions over the control period. Under the HI framework, each relevant asset is assigned a ranking of between HI1 and HI5 by the DNO based on an internal

condition assessment, and for the forecast period based on the DNO's views about future degradation and potential required intervention.

High impact low probability (HILP)

Electricity distribution networks are designed and built to ensure supply continuity for most customers during planned outages and faults that are considered to be credible events. There is a small risk that a more extreme event occurs that has a very high impact on the ability of the distribution system to provide supply continuity. Such an event could result in extended periods of supply interruption for a significant number of customers and is referred to as HILP.

High Voltage (HV)

Includes all voltage levels above 1kV up to and including 20kV.

High-volume low-cost / Low-volume high-cost (HVLC / LVHC)

These are different types of connections with varying volumes and cost.

High value project (HVP)

A large investment project with DNO total forecast expenditure in excess of £15m over one or more price control periods.

I

Interruptions Incentive Scheme (IIS)

On 1 April 2005 Ofgem introduced a revised interruptions incentive scheme which provides financial incentives to DNOs with respect to the average quality of service they provide in terms of:

- the number of interruptions to supply, and
- the duration of interruptions to supply.

DNOs may be rewarded or penalised by up to 3 per cent of revenue, depending on performance relative to their interruptions targets in each year of the scheme.

Information Quality Incentive (IQI)

The IQI is a mechanism for setting price control allowances that provides ex ante incentives for DNOs to submit accurate forecasts of their expected expenditure and provides incentives for efficiency improvements once the price control has been set.

L

Legal and Safety expenditure

Investment to meet specific legal or safety requirements not addressed via normal asset replacement. For example: site security, ESQCR safety clearance, asbestos removal.

Low Carbon Networks Fund (LCN Fund)

Funding to encourage the DNOs to innovate to deliver the networks we will need for a low carbon economy.

London Organising Committee of the Olympic Games and Paralympic Games (LOCOG)

The organisation that oversee the planning and development of the 2012 London Olympic Games.

Load related expenditure (LRE)

The installation of new assets to accommodate changes in the level or pattern of electricity supply and demand.

Low Voltage (LV)

All voltage levels up to and including 1kV.

M

Modern Equivalent Asset Value (MEAV)

The total rebuild cost of the network using modern equivalent assets.

N

Network Operating Costs (NOCs)

Consists of the activities of Faults, Inspections and Maintenance and Tree Cutting. The definitions of these activities can be found within the DPCR5 August Forecast Business Plan Questionnaire Rules.

Non-operational IT

Activities as defined in the RRP guidelines i.e. excludes IT equipment used exclusively in the real time management of network assets such as RTU units and communication equipment receivers at the control centre. Non-operational property - As defined in the RRP guidelines includes offices and depots. Substations and other operational premises are not included.

O

Olympic Delivery Authority (ODA)

The single deliver body responsible for creating the infrastructure for the London 2012 Olympic Games

Ordinary Least Squares (OLS)

This is a regression technique for estimating an equation to fit a set of data. The equation is estimated by minimising the sum of the squared residuals between the actual variable of interest and the fitted values predicted by the regression equation.

Ongoing efficiency improvements

Efficiency improvements in an industry can be separated into two components: a catch-up element which captures the effect of firms implementing practices already adopted by the more efficient firms, and ongoing efficiency improvements that will be made by the industry as a whole. These ongoing efficiency improvements reflect the improvements

that would be expected of the most efficient firms in the industry. Ongoing efficiency improvements are sometimes known as frontier shift.

R

Regulatory asset value (RAV)

The value ascribed by Ofgem to the capital employed in the licensee's regulated distribution or (as the case may be) transmission business (the 'regulated asset base'). The RAV is calculated by summing an estimate of the initial market value of each licensee's regulated asset base at privatisation and all subsequent allowed additions to it at historical cost, and deducting annual depreciation amounts calculated in accordance with established regulatory methods. These vary between classes of licensee. A deduction is also made in certain cases to reflect the value realised from the disposal of assets comprised in the regulatory asset base. The RAV is indexed to RPI in order to allow for the effects of inflation on the licensee's capital stock. The revenues licensees are allowed to earn under their price controls include allowances for the regulatory depreciation and also for the return investors are estimated to require to provide the capital.

Rising and lateral mains (RLM)

The rising and lateral mains are the means by which electricity is taken to customers in individual dwellings.

Real price effects (RPE)

Increase in prices over and above increases in the Retail Price Index (RPI). For example, increases in the cost of copper, steel, direct or contract labour over and above increases in RPI.

RPI-X

The form of price control currently applied to network monopolies. Each company is given a revenue allowance in the first year of each control period. The price control then specifies that in each subsequent year the allowance will move by 'X' per cent in real terms.

Regulatory reporting pack (RRP)

The price control review information submitted annually to Ofgem under standard licence condition 52 in accordance with (and in the form and content prescribed by) the price control review reporting rules.

S

T

Time Series Data Regression Technique

Time series panel data regressions are estimated using data from more than one time period. The additional data can allow better estimation of the effect of cost drivers than is possible using a single year's data.

Traffic Management Act (TMA)

The Traffic Management Act was introduced in 2004 to tackle congestion and disruption on the road network. The Act places a duty on local traffic authorities to ensure appropriate movement of traffic on their road networks. It gives authorities additional tools to manage the coordination of street works.

Transmission exit charges (TEC)

Transmission exit charges are charges paid by DNOs to National Grid (in its role as GB System Operator) for the financing and operating costs of the assets that connect the distribution network to the transmission network (the transmission exit point).

Total expenditure (Totex)

Measure of expenditure including network investment as well as operational costs

U

Use of System charges (UoS)

Charges paid by generators and demand customers, usually via suppliers, for the use of the distribution network.

Use of system network reinforcement cost

Expenditure on the network that is required to connect DG but where the reinforcement will also be utilised by other users of the network and therefore the cost is included in the generation use of system charges rather than being borne solely by the connecting DG.

W

Weighted Average Cost of Capital (WACC)

This is the weighted average of the expected cost of equity and the expected cost of debt.

Work force renewal (WFR)

Operational costs incurred to renew the workforce either due to an ageing workforce or a growth in activity.

Worst Served Customers (WSC)

Customer experiencing greater than or equal to five higher voltage interruptions on average over a three year period i.e. 15 or more over three years. Additional caveat of a minimum of three higher voltage interruptions in each year.

Appendix 3 - Feedback Questionnaire

1.1. Ofgem considers that consultation is at the heart of good policy development. We are keen to consider any comments or complaints about the manner in which this consultation has been conducted. In any case we would be keen to get your answers to the following questions:

- Does the report adequately reflect your views? If not, why not?
- Does the report offer a clear explanation as to why not all the views offered had been taken forward?
- Did the report offer a clear explanation and justification for the decision? If not, how could this information have been better presented?
- Do you have any comments about the overall tone and content of the report?
- Was the report easy to read and understand, could it have been better written?
- Please add any further comments?

1.2. Please send your comments to:

Andrew MacFaul
Consultation Co-ordinator
Ofgem
9 Millbank
London
SW1P 3GE
andrew.macfaul@ofgem.gov.uk