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Electricity Distribution Price Control Review Final Proposals

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

Overview:
Ofgem regulates the 14 monopoly regional DNOs to protect the interests of present and future consumers. We set a price control every five years that sets the maximum revenues that each DNO can collect from customers at a level that allows an efficient business to finance its 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. This document sets out our Final Proposals for the revenues the companies should be allowed to earn from 2010 to 2015. We set out the new obligations and incentives that we will introduce. We also outline our decision on the base cost of capital and the range of equity returns that an efficient network business can earn based on their performance and consistent with the overall balance of risk and reward in the settlement.

The companies have until Wednesday 6 January 2010 to accept or reject our proposals. If the companies accept our proposals, we will publish a statutory consultation on the licence conditions by February 2010 to bring these proposals into force. If any company rejects our proposals then we intend to refer the matter to the Competition Commission.

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Context

This document sets out our final decisions on the revenues each of the 14 DNOs should be allowed to collect from their business and domestic customers between 2010 and 2015. We explain the outputs and levels of service customers can expect from the DNOs over this period in return for what they pay. We also explain the incentives to improve performance and the obligations on DNOs that we will introduce as part of the price control settlement.

This document attempts to provide an accessible overview of our Final Proposals. It is aimed at a wide range of interested parties. We have followed the approach we took at Initial Proposals and alongside this document have published four longer, more technical documents. These documents set out the reasons, evidence, analysis and methodologies we have used in arriving at all of the decisions we have reached. These technical documents are targeted primarily at the DNOs and other stakeholders who require a more in depth understanding of our proposals and the rationale underpinning them in some or all areas.

In December 2008 we published our Policy Paper. This focussed on three key themes: environment, customers and network and set out our views on the overall approach to setting the price control, our proposed methodologies, the structure of incentives and the new regulatory arrangements we considered appropriate.

In February 2009 all DNOs submitted updated forecasts for the final two years of distribution price control review four (DPCR4) and the five years of DPCR5. These were reduced from their initial level in August 2008, but still showed significant forecast increase in network investment and operating costs between DPCR4 and DPCR5. We identified significant issues with the forecasts and sought further information from DNOs to justify their forecasts and the significant increases in costs.

In May 2009, we published our Methodology and Initial Results document, which set out details of our cost assessment methodology and 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. We sought views on the outputs we expect and the behaviours we want to encourage from the DNOs and the mechanisms we propose to achieve them. We sought views on our initial view of the proposed revenues for the 2010 to 2015 period, and on the scope for shareholders to out or underperform our allowed rate of return within the price control period.

In September 2009, we published an update letter focussing on those areas of cost which we were not able to include in Initial Proposals because we required further information from the DNOs and other parties to form a view on the appropriate baseline revenue allowance.

In October 2009 we provided a written update to each of the DNOs on our view of allowed costs and revenues. We published these letters for stakeholders to consider.

While developing Final Proposals, we have taken into account views raised by stakeholders throughout the price control review. We have also continued to work closely with the RPI-X@20 review team, who are undertaking a root and branch review of the way we regulate electricity and gas, transmission and distribution networks in the future.

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)

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Summary

Customers expect the DNOs to maintain the high levels of network reliability they currently enjoy. This will mean a significant rise in investment and maintenance over the next five years. Assets installed in the 1950s and 1960s need to be replaced and additional capacity has to be built where use of the network is growing.

Further investment in the electricity distribution networks is required to make the transition to a low carbon economy. The distribution networks have an important role to play in encouraging energy efficiency as smart meters are installed in customers' premises. They will need to adapt so they do not prevent the take up of low carbon technologies such as electric vehicles. DNOs also have an important customer facing role. When they provide connections, restore outages and respond to complaints, customers expect to be given the information they require and that DNOs will deliver the service they have promised to reasonable timescales.

In reaching our Final Proposals for 2010 to 2015 we have developed a package that provides companies with incentives to deliver on all of these requirements. We think the proposals set out in this document provide each DNO with the revenues and potential to earn returns that they need to maintain and improve network reliability, to get ready for the low carbon economy and to improve the level of service and reliability they provide to their customers. The companies have until 6 January 2010 to accept or reject our proposals. If the companies accept, we will consult on the licence conditions to bring these proposals into force. If any company rejects our proposals then we intend to refer the matter to the Competition Commission.

We are allowing revenues of around £22bn over the five years, and £14bn expenditure on the networks. The DNOs will be able to raise their charges by 5.6 per cent per annum on average with a range of between -4.3 per cent to 11.1 per cent across the country. For a typical household, this represents an extra £4.30 a year. The DNOs are also introducing new charging arrangements on 1 April 2010 that will alter the share of revenues collected from different types of customer. The new charges will reflect better the costs of serving different types of customer. They will reward customers who make less use of the network by installing generation or who are more energy efficient. Suppliers will decide how to reflect these changes in their customers' bills. The actual increases that business and domestic customers will see will differ from these average figures.

Our network cost allowances are 8 per cent lower than the companies asked for, although these cuts have not fallen equally across the companies. We have generally agreed with the companies' forecasts of the amount of investment they need to make. But there is still a wide variation in their relative efficiency. We have given our most efficient DNOs - WPD and SSE - cost allowances that broadly match their forecasts. We have reduced the allowances of the least efficient DNOs, such as EDF, by up to 14 per cent. Twenty years after privatisation and in the middle of the worst recession in 70 years we think that shareholders, not customers, should carry the costs if this performance gap cannot be closed quickly.

Our allowed revenues include £1.7bn for pension costs including £1.0bn to fund pension deficits over the next five years. The current macroeconomic and financial

market conditions make the size of these deficits very uncertain. We therefore think it is prudent for customers to fund these deficits over 15 years. We have looked to replicate the incentives faced by other regulated utilities and unregulated companies to manage their future pension costs and liabilities. But we have also taken account of the restrictions on changing pensions terms and conditions put in place at privatisation that still cover just under half of all the DNOs' employees.

We have set a 4.7 per cent vanilla rate of return (4.0 per cent post tax) to allow DNOs to fund the cost of debt and equity. This is 25 basis points (bps) lower than the cost of capital in the last price control we set for the gas distribution companies. There is strong market evidence that the credit crunch has not impacted significantly on the cost to the DNOs of raising debt. We think it is reasonable to conclude on the available market evidence that the cost of equity has not risen above its long term average as a result of the financial crisis. This view is shared by the Bank of England's Monetary Policy Committee. Given rising prices and the recession it is important that the base level of return is reasonable and does not over-reward shareholders at customers' expense.

Our baseline return on equity is 6.7 per cent (post tax). To mimic the incentives that unregulated companies have, we have given shareholders an opportunity to enhance returns by improving network efficiency, reliability or customer service. Shareholders in a company that significantly improves performance in all of these areas could earn shareholder returns of up to 13 per cent. Shareholders in a mismanaged, inefficient company performing poorly could earn as low as 3 per cent and customers will pay lower prices.

For the first time, we have set out clearly the agreed outputs we expect the DNOs to deliver in return for the revenues we allow them to collect from customers. This will make sure that companies do not outperform the settlement by allowing the general health of the network to deteriorate requiring greater investment and higher prices for customers in the future.

DNOs will have to offer much better customer service to earn these returns. In response to feedback from customers and suppliers we have introduced tougher new standards for all stages of the connections process, tougher targets for network reliability that reflect customers' willingness to pay and a new broad measure of customer satisfaction. DNOs will have to meet all their licence and statutory obligations. If a company breaches any of its licence conditions we will look to set penalties to have a proportionate impact on shareholder returns.

We are also introducing a £500m new fund - the Low Carbon Networks fund - to stimulate culture change, innovation and trialling of the new technologies, commercial and operating arrangements the DNOs will need to deliver a low or zero carbon electricity sector. We are also putting pressure on the DNOs to do more to tackle climate change for example by reporting on their business carbon footprint, giving due consideration to using demand side management to address network constraints and by requiring them to provide simpler information to local generators who are looking to connect to their networks.

1. Introduction

Chapter Summary

This chapter summarises the scope and structure of our Final Proposals documents and sets out the context for this price control review. It also summarises our revenue allowances for each DNO and the implications for customers' bills.

1.1. Electricity customers currently pay £3.6bn annually for electricity distribution. This amounts to approximately 15 per cent of an average domestic customers' bill, or around £76 per year. Business customers face a wider range of electricity distribution bills, with smaller businesses paying around £270 per year, medium businesses around £2,000 per year and larger businesses paying as much as £28,000 per year.

1.2. In return for this money, customers expect a reliable supply of electricity and expect their distribution network operator (DNO) to act swiftly to repair faults and respond effectively to complaints, queries and requests for new connections or alterations. Customers also expect DNOs to play a full role in tackling climate change and to consider how they need to adapt to changes so that they can continue to provide security of supply into the future.

1.3. The 14 DNOs are regional monopolies. Customers rely on Ofgem to regulate them effectively as they cannot, for example, switch their network provider if they do not like the price or service they are offered. We set the total revenues that DNOs can collect from customers and we place incentives on DNOs to innovate and find new ways to improve their efficiency and quality of service. This is achieved through a price control which is set every five years. The current price control expires on 31 March 2010.

1.4. This document sets out our Final Proposals for the controls for the 2010 to 2015 period.

1.5. The focus for DPCR5 has been to address the following three issues:

- The behaviours that customers expect from DNOs and how we can encourage these. Our proposals in this area are set out in **Chapter 2**,
- The revenues that DNOs need in order to meet their legal and statutory objectives, as well as the specified behaviours. Our allowed revenue proposals are set out in **Chapter 3**, and
- The appropriate balance of risk and reward in the settlement, including the scope for the DNOs to outperform or underperform on the returns offered to shareholders. Our analysis and proposals are set out in **Chapter 4**.

1.6. The companies have until Wednesday 6 January 2010 to accept or reject our proposals. If the companies accept our proposals, we will publish a statutory consultation on the licence conditions by February 2010 to bring these proposals into force. If any company rejects our proposals then we intend to refer the matter to the Competition Commission. Further details of our plan for the licence conditions, statutory instruments (SIs) and regulatory instructions and guidance (RIGs) are included in Appendix 2 of the Incentives and Obligations document.

1.7. This document provides an overview of our Final Proposals and we hope provides an accessible and relatively non-technical summary. We are also publishing four longer, more technical documents. These set out in greater detail the methodologies, evidence and analysis we have used in reaching our conclusions and decisions to arrive at our Final Proposals. The technical documents are aimed primarily at the DNOs and any other stakeholders who require a more in depth understanding of our proposals in some or all areas. This follows the same structure as our August Initial Proposals and the positive feedback we received from a range of stakeholders on this approach.

1.8. All figures included within the Final Proposals documents are in 2007-08 prices, unless stated otherwise.

The price control mechanism

1.9. The £22bn allowed revenues in our proposals have been set so that an efficient company can cover its costs over a five year period, including the cost of financing the business through a combination of debt and equity. Our analysis suggests that a company that runs its network at the level of costs we have allowed should earn "baseline" shareholder returns on equity of between 7.1 and 9.6 per cent.

1.10. The control is designed so that DNO shareholders keep some of the benefits if the business is able to run at a lower cost or exceed target levels of network performance or customer service at the same cost. We think it is plausible that a well performing company could earn up to 13 per cent equity returns within the DPCR5 period. Conversely, shareholder returns will be below our baseline rate if costs exceed our forecasts and/or network performance or customer service fall below target levels. We think that a poorly performing company could make equity returns as low as 3 per cent. We think this range of returns is appropriate and will reward efficient companies delivering exceptional customer service and provide strong incentives on inefficient companies or those offering poor service to improve rapidly. More detail on our analysis of the plausible returns to shareholders is contained in Chapter 4.

1.11. These arrangements provide strong incentives for shareholders and management to explore how to improve efficiency either in how they operate the company, invest in the network and/or finance the business. Where companies are successful in improving efficiency, some of this is automatically shared with customers over the next five years. Under our proposals customers will share

between 49 and 55 per cent of any efficiency gains associated with network costs in the DPCR5 period and this will be reflected in lower prices. At subsequent controls, customers see all of the benefit as we reset allowances. The way in which we consider the interaction between actual expenditure and future revenue constraints is being considered as part of our RPI-X@20 review of future regulatory frameworks. More information on how we set the allowed revenues, and our Initial Proposals for the revenues per DNO for DPCR5, are contained in Chapter 3.

1.12. Within the five year period, actual allowed revenue for each DNO varies depending on how well they perform against a number of incentives. We propose a number of mechanisms to ensure that the DNOs do not focus on cost cutting at the expense of the service customers receive, or other things valued by customers such as measures to reduce the environmental impact of the networks. In the 2010 to 2015 period, the DNOs will be rewarded or penalised according to the number of customer interruptions (CIs) and customer minutes lost (CMLs) through interruptions each year. Similarly, DNOs may earn additional revenue or lose allowed revenue according to how well they perform against a broad measure of customer satisfaction. They will also earn lower returns and have to compensate customers if they fail to meet new standards of service for the speed of providing quotes and completing work to connect existing or new customers to their networks. Further mechanisms reward or penalise the DNOs according to the percentage of units that are lost in distributing electricity to customers and according to the efficiency of connection of distributed generation (DG). We calibrate these mechanisms to reflect a range of factors including customers' willingness to pay for improved service, the cost of carbon and our assessment of the appropriate overall scope for out/under performance against the price control settlement. More information on the proposed incentive mechanisms for DPCR5 is contained in Chapter 2.

1.13. In setting allowances for a five year period there will always be a number of uncertainties. We have exposed the DNOs to the risks that they are well placed to manage and have put in place mitigation mechanisms where appropriate. We have included a £428m adjustment to allowed revenues to account for the expectation that input prices will increase in real terms over the next five year period after taking account of moves in ongoing efficiency. This allowance is much lower than the forecasts submitted by the companies. Nevertheless we think this adjustment is reasonable and have set out our evidence and reasoning in the Cost Assessment document. Similarly, we have put in place a suite of new measures to protect the companies against demand risks associated with connections and general reinforcement. We have also introduced a mechanism to adjust allowed revenues if there are changes to corporate tax rates.

1.14. The price control mechanism contains a number of reopeners to allow the companies to recover the costs of a range of items (such as costs associated with the introduction of permitting schemes under the Traffic Management Act) where there is not sufficient information at this time for us to set an upfront allowance. We understand that mid-period adjustments can lead to undesirable volatility of charges for customers and suppliers. To mitigate this effect we have decided to introduce application windows for reopeners and have set materiality thresholds before there are any mid-period adjustments. These measures should limit the frequency of any

reopeners, provide Ofgem with comparative information at the time of any reopeners and provide greater predictability over prices.

1.15. After consultation with the DNOs we have agreed it is not appropriate to protect the DNOs against the risk that their cost of debt exceeds that which we have assumed in setting allowed revenues. We think that it is important to maintain some incentive on the DNOs to manage financing costs. Our view, on balance, is that it is better for the DNOs to have a fixed allowance than to introduce triggers in this area. More detail on these measures for handling uncertainty is contained in Chapter 3.

1.16. The price control settlement should allow companies to earn additional returns if they continue to increase efficiency, excel at managing risk and/or are highly successful in delivering for customers. Conversely those that are not efficient or deliver poor quality of service may not achieve the expected shareholder returns. In practice, we would not expect this to occur over a sustained period as we would expect shareholders to change management and/or would expect someone to make an offer to take over a poor performing company. We have sought in this review to calibrate the settlement so there is a close relationship between reward and performance so that companies only earn above baseline returns where they have made tangible improvements that customers value. We have developed a new measure of DNO performance - Return on Regulatory Equity (RoRE) - which we have used to help us take a more holistic approach in calibrating the settlement. Our views on the scope for outperformance, the risks that companies face and the circumstances in which a DNO may earn above or below the baseline shareholder returns are set out in Chapter 4.

Context and overview of our proposals

1.17. Three factors had a significant bearing on DPCR5: the economy, the environment and the networks themselves. We outline below the ways that we have taken these into account in developing our Final Proposals.

The economy

1.18. This price control review has been conducted during a period of significant economic uncertainty, turning to deep economic recession in the later months. In this context, DNOs initially argued that the financial crisis warranted an increase in cost of capital above the level set at DPCR4, which would have been significantly higher than our most recent price control settlement (GDPCR). As the issuance rates - particularly for utilities - have fallen significantly in recent months DNOs have said that they need to maintain the cost of capital to at least DPCR4 levels. This would still be 50bps above the GDPCR vanilla[1] WACC.

[1] Vanilla WACC is the weighted average of the expected cost of debt (pre tax) and the expected cost of equity (post tax) and is used in our modelling to determine allowed revenues.

1.19. We are proposing a number of mechanisms which we think provide the DNOs with adequate protection against price and volume risk without passing all of this risk to customers. We have also considered the appropriate cost of capital for the DNOs, based on long term trends and recent developments in financial markets. Our research is set out in Chapter 3.

1.20. We are proposing a vanilla weighted average cost of capital of 4.7 per cent (4.0 per cent post tax). This would allow an efficient company to earn baseline returns to equity of between 7.1 and 9.6 per cent and the opportunity to earn significantly above these returns through better performance. We assume a cost of debt of 3.6 per cent (real). The evidence suggests that debt markets remain open to utilities and a number of energy networks have raised debt at long maturities in the last six months at rates consistent with this cost of debt. We also do not see evidence of re-pricing of equity risk, which is a view shared by the Bank of England Monetary Policy Committee and evidenced by recent transactions for shares in existing utilities.

1.21. The recession means that businesses and households are facing difficulties in paying their electricity bills and more people are at risk of becoming fuel poor. We have the interests of customers at the forefront of our minds and, as is set out in Chapter 3, we have looked to ensure that customers do not carry the cost of inefficient practices or uncompetitive input prices. It is also important that customers do not pay inflated returns to investors that do not reflect either the risk that DNOs are exposed to or are earned in return for improvements in efficiency or customer service. We propose to cut £1.3bn from the companies' view of costs over the 2010 to 2015 period and, where our analysis shows a company to be inefficient, we expect shareholders not customers to fund any period of catch up. We think this is reasonable 20 years after privatisation and against a backdrop of rising energy bills and a recession impacting on household and business budgets. More detail on our cost analysis is set out in Chapter 3.

1.22. For DPCR5 we think it is crucial to expand customer service from a focus on the security of supply and interruptions performance to a mechanism that rewards or penalises DNOs according to their performance across the full range of services they provide the customers they serve. Our broad measure of customer satisfaction will be developed over the next two years, and come into force for the final three years of DPCR5. This will provide financial rewards and penalties to DNOs based on their service to customers, including the level and usefulness of stakeholder engagement, the number of complaints received and addressed, and their handling of other contact with their customers. We have designed this measure to be broadly similar to the way that companies in competitive sectors measure their customer service and improve their performance.

1.23. When considering the service delivered to customers, we need to balance the needs of both current and future customers. Our Final Proposals seek to encourage the DNOs to make sensible long-term choices based on the best needs of the networks and their customers.

Environment

1.24. From the outset the 2020 Climate Change targets, and government policy to decarbonise our energy use have provided a very important part of the context for this review. Customers have supported this focus. Our customer research, including further research we conducted after the credit crunch, shows that customers continue to place a high value on having DNOs that take an active role in tackling climate change.

1.25. DNOs can take action to reduce their own carbon footprint. The most significant aspect of this is electrical losses from the electricity network. We are proposing to revise and improve the DPCR4 losses incentive to ensure DNOs have an incentive to reduce losses on their network.

1.26. We also propose a range of measures aimed at encouraging DNOs to enable low carbon and energy saving developments to connect to their network. These include new obligations on the DNOs to improve the service and information they give to local low carbon generation developers and new arrangements that mean that DNOs do not overlook opportunities to free up network capacity through entering into demand side management contracts with customers. DNOs will continue to earn extra returns on investment used to connect distributed generation.

1.27. Responses to our previous documents support the view that the current networks should be able to cope with the likely uptake of distributed generation, electric vehicles and heat pumps over the 2010 to 2015 period. However, we need to ensure that the DNOs use this time to prepare for the more significant changes that will happen in the coming years. This will mean using the DPCR5 period to try out the new technology, new commercial and operating arrangements that the DNOs will need to adopt if they are to be fully ready for new low carbon initiatives and to ensure they do not stand in the way of moves to decarbonise our energy use. We will introduce a Low Carbon Networks fund which will allow the DNOs to spend up to a total of £500m over the five year price control period in order to trial new technology and commercial arrangements. The DNOs and their partners will have a chance to bid for a share of these funds following an annual call for proposals. Proposals will be assessed by a panel of experts and funding released only to the best bids. We will require the DNOs to capture and disseminate the learning from these trials to other DNOs so that the right decisions can be made in the future on a wider scale. Further details on our environmental proposals are outlined in Chapter 2 and in the Incentives and Obligations document.

Networks

1.28. We agree with the DNOs that significant investment is required on the electricity networks in order to maintain and/or replace the majority of assets that were installed during the 1950s and 1960s. Our own customer research shows that customers are not prepared to see any decline in quality of service. DPCR5 will provide £14bn in funding. The majority of this is likely to be used by DNOs to

replace ageing, unreliable or failing assets. However, a good portion of it is required to provide additional capacity where there are hotspots on the network where demand continues to grow. Some of this expenditure is also required to improve the resilience of the networks to flooding and to train up new people to replace those who are due to retire over the next five years.

1.29. Given the wider economic context, DNOs' investment needs to be at an efficient level to ensure that customers do not pay any more than is necessary. While we largely support the volume of work that the DNOs have forecast, benchmarking the different costs submitted by DNOs to carry out broadly the same types of investment shows that many of the DNOs can carry out their planned work at lower costs and this has led us to make the cuts to DNO bids.

1.30. We have worked with the DNOs throughout the review period to agree network output measures. These require the DNOs to make a qualitative assessment of the condition and loading of their network assets at the present time and to make predictions about their condition at the end of DPCR5 following planned investment. DNOs will be required to meet these output measures, or will need to submit evidence to Ofgem explaining the reasons for any changes from forecast. We do not intend to apply these targets rigidly and the DNOs will continue to be able to make the right investment decisions for their customers and networks. However, we will expect the DNOs to be able to demonstrate that any deviation from agreed outputs was justified as being efficient and in customers' interests. If the DNOs cannot prove this, then we will take this into account to ensure that company shareholders do not keep any portion of underspend in the DPCR5 period that was achieved at the expense of meeting its output targets. These adjustments only relate to ensuring that DPCR5 applies appropriately. As part of RPI-X@20 we are considering the appropriate approach to outputs for the DPCR6 period and other network price controls.

Customer prices

1.31. The impact of DPCR5 on customer prices depends on two factors, the change in revenue allowances for the relevant DNO and the impact of our work to introduce a common distribution charging methodology at lower voltages, both of which will come into force on 1 April 2010. In addition, the impact will be affected by any corrections for over/under recovery in DPCR4 and the final impact on customers on 1 April 2010 will also depend on pricing decisions taken by their supplier.

Changes in revenue allowances

1.32. DPCR5 will set the maximum amount of revenue that DNOs can recover from customers over the five year period from 1 April 2010. Our Final Proposals mean that (without factoring in the impact of implementation of a new common methodology) customer prices will increase, on average by 5.6 per cent a year for the next five years. However, there is wide variation across the 14 DNOs, with some areas having increases as high as 11.1 per cent per year and others seeing a decrease of 4.3 per

cent per year. Table 1.1 below sets out the average annual increase in revenue and the average for domestic customers' bills. Further details of the final revenue allowances are set out in Chapter 3 and in the Allowed revenues and Financial Issues document.

Table 1.1 - Average annual allowed revenue increase by region and illustrative impact on average domestic bill

	Constant X annual increase	Average annual increase (£)
CN West	4.3%	2.70
CN East	4.7%	2.75
ENW	8.5%	5.66
CE NEDL	7.7%	5.57
CE YEDL	6.5%	4.41
WPD S Wales	6.2%	5.67
WPD S West	7.5%	6.84
EDFE LPN	7.1%	4.36
EDFE SPN	8.8%	4.98
EDFE EPN	5.5%	3.52
SP Distribution	- 4.3%	- 3.95
SP Manweb	11.1%	8.98
SSE Hydro	4.3%	4.95
SSE Southern	3.9%	3.15
Total	5.6%	4.26

1.33. It is important to note that DNOs' performance against some incentives and some issues outside of their direct control could cause allowed revenues to vary from the annual figures set out in this document.

Profiling

1.34. We have decided to profile the new revenues for DPCR5 as a constant percentage for each DNO for each of the five years of DPCR5. This steady change each year reflects the DNOs' requirement for increased investment during the DPCR5 period but avoids issues that could arise from a large step up in the early years or a larger increase in later years. We have not front weighted the revenue changes (by having a larger change in the early years and a smaller change in the later years) recognising the current economic climate and the hardships experienced by customers faced with higher energy bills. We have not back weighted the revenue changes (through smaller changes in the early years and larger changes in the later years) because this could create significant price changes for customers as we move from the end of DPCR5 and the start of DPCR6.

1.35. The actual impact of DPCR5 on a customer's bill will depend on the tariff that they are on with their electricity supplier. Distribution use of system charges make up around 15 per cent of a domestic customer's electricity bill and, as a guide, approximately 20 per cent of the bill for other customers (businesses of different sizes). The DNOs charge suppliers to recover their revenue. The suppliers then recover these costs from their customers, via the relevant tariffs.

Impact of structure of charges project

1.36. In tandem with our work on DPCR5, we have been continuing work on the structure of charges project. The purpose of this project is to introduce a common distribution charging methodology to ensure that use of system charges are more cost reflective across the 14 DNOs. While DPCR5 sets the revenues that can be collected from all customers, the charging methodology determines how that revenue is collected from different customer groups.

1.37. We approved the common use of system charging methodology for lower voltages in November 2009, and charges based on the new models will be introduced from 1 April 2010. This means that suppliers will be exposed to a one-off increase in use of system charges for some tariffs on that date. To the extent that suppliers can pass on these costs to customers, this will impact on customer bills on 1 April 2010. As with DPCR5, the impact of the new common methodology varies by DNO. The one-off impact on tariffs for some customer groups is significant. The structure of charges project has been going for a number of years, and we flagged the likely impact on customers in our open letters to stakeholders in August and September 2009. We have asked the DNOs to do all they can to keep their customers and suppliers informed of potential price changes.

1.38. The DNOs have now provided updated charging models, which represents their best view of the model at this time. We have modelled the illustrative percentage changes in use of system charges between 2009-10 and 2010-11 against the current use of system charges DNOs levy on suppliers, factoring in our DPCR5 Final Proposals revenue allowances and expected DNO under or over-recovery of their allowed revenues.

1.39. The table below sets out the approximate percentage changes in bills between current charges and those anticipated on 1 April 2010. Note that the impact on final electricity bill is significantly lower than the percentages indicated in the table. For an estimate of the impact on domestic customers' bills the percentages in the table should be divided by six. The DNOs will formally confirm their indicative charges on or before 31 December 2009. The models underlying these charging outputs are published on the Energy Networks Association's website at http://2009.energynetworks.org/structure-of-charges/.

Table 1.2 - Illustrative percentage change in DUoS charges from 2009-10 to 2010-11

	CE NEDL	CE YEDL	CN East	CN West	EDFE EPN	EDFE LPN	EDFE SPN	ENW
Domestic Unrestricted	-1	-2	13	19	8	8	30	19
Domestic Two Rate	-6	-9	9	6	16	1	14	12
Domestic Off Peak (related MPAN)	-28	27	78	-56	-75	-40	-36	-49
Small Non Domestic Unrestricted	9	2	-8	0	5	-28	0	-3
Small Non Domestic Two Rate	36	17	9	-1	16	-45	6	28
Small Non Domestic Off Peak (related MPAN)	0	115	-18	-29	-72	-76	-47	
LV Medium Non-Domestic	25	14	-11	-13	-10	-22	-23	-28
LV Sub Medium Non-Domestic	1							-29
HV Medium Non-Domestic	104	113	-12	-15				-62
LV HH Metered	10	15	-15	4	-15	20	-14	-10
LV Sub HH Metered		93			92			13
HV HH Metered	56	57	3	27	44	28	66	-1
HV Sub HH Metered		140						-4
NHH UMS	90	19	4	16	52	5	21	167
LV UMS (Pseudo HH Metered)	78	10	-4	7	6	65	27	81

	SP Distribution	SP Manweb	SSE Hydro	SSE Southern	WPD S Wales[3]	WPD S West[3]	Average impact on DUoS charge	MPAN share (%)[4]
Domestic Unrestricted	7	21	6	7	11	7	11	73.77
Domestic Two Rate	-26	3	24	3	-3	-3	3	16.26
Domestic Off Peak (related MPAN)	-58	-78	34	0	-56	-70	-29	1.71
Small Non Domestic Unrestricted	-13	3	-40	-11	-3	13	-5	5.56
Small Non Domestic Two Rate	-34	6	-21	-4	-14	-23	-2	1.57
Small Non Domestic Off Peak (related MPAN)	-73	-82	6	-21	-62	-63	-33	0.14
LV Medium Non-Domestic	-28	11	-7	-27	-26	-32	-13	0.51
LV Sub Medium Non-Domestic		4				-15	-10	0.01
HV Medium Non-Domestic	-48	-70	-6	-49	-51	-44	-13	0.00
LV HH Metered	10	19	21	16	-3	-8	4	0.26
LV Sub HH Metered		34				6	48	0.03
HV HH Metered	46	11	71	41	47	15	37	0.07
HV Sub HH Metered		32					56	0.00
NHH UMS	4	-4	73	53	13	-3	36	0.11
LV UMS (Pseudo HH Metered)		-23		46	20	6	27	0.00

Notes:

1) Figures are illustrative and are based on the DNOs' volume forecasts for 2010/11. Figures reflect changes to allowed revenues, the move to the common distribution charging methodology (CDCM) and companies' forecast over/under recovery positions.

2) Figures refer to an average customer within a customer group. Consumption characteristics of an average customer vary across DNOs. Figures may not capture the impact on customers that experienced tariff migration due to the consolidation of customer groups.

3) For the purpose of this illustrative charge impacts Western Power Distribution (WPD) assumed that pre-2005 EHV distributed generation will not be charged. WPD's figures would change very slightly if they do impose charges on pre-2005 distributed generation.

4) National average.

Colour Coding
< -30%
-30% to 30%
30% to 80%
>80%

Consumer Challenge Group

1.40. In July 2007 we set up the Consumer Challenge Group, a panel of six consumer experts whose role is to advise the team on the consumers' perspective of the price control review and to act as a "critical friend" in challenging our proposals to ensure that we deliver the right package for present and future customers.

1.41. Given their industry and consumer knowledge we have been able to discuss with the Group the more complex elements of the price control review, where average consumers may have found it more difficult to engage. The DPCR5 team has held nine meetings with the Group over the last 17 months where we have briefed the Group on our emerging proposals and they have provided challenge, feedback and suggestions. The Group has offered valuable insight and advice on the consumer

focussed elements of the price control package. In particular they have helped us to develop and refine our proposals for:

- improving competition and service in connections for domestic, business and DG customers and those competing with DNOs to provide connections services,
- environmental measures, particularly the scope and mechanics of the Low Carbon Networks fund (LCN fund) and the losses incentive,
- the three components of the broad measure of customer satisfaction: customer satisfaction survey, complaints metric and DNO stakeholder engagement,
- the "use it or lose it" allowance for improving service to worst served customers, and
- the introduction of network output measures, where DNOs must commit to achieving a defined set of outputs in return for the money that they receive from customers. The Group was keen to ensure that customers are able to understand what they will receive in return for their distribution charges and that those DNOs who fail to deliver these outputs, without good reason, are held to account.

1.42. As we have developed Final Proposals the Group has been able to inform our discussions on the overall DPCR5 package and particularly the calibration of incentives and how we should apply our analysis of RoRE in arriving at a decision on the cost of capital. We have also benefited from the perspective that the business representatives on this panel have brought to the debate on the treatment of pension costs.

1.43. The Group has stressed throughout the review that it is important for us to provide appropriate narrative in our DPCR5 documents explaining how our thinking has developed over time and how we have reached our final decisions. This includes outlining the issues we have considered and how we have taken account of the views raised by stakeholders.

1.44. The Group published their own interim report[2] in tandem with our Initial Proposals in August 2009. This report summarised the Group's role and the issues that they had focussed on. The Group plans to publish a final report shortly following Final Proposals.

Data, reporting and stakeholder engagement

1.45. As part of DPCR5 we are undertaking a review of the information that DNOs provide us annually to allow us to monitor their performance against the price

[2] http://www.ofgem.gov.uk/Networks/ElecDist/PriceCntrls/DPCR5/Documents1/CFconsumerchallengegroup.pdf

control. As over the DPCR4 period, we intend to publish a detailed annual report containing this data and a commentary on it. We are also committed to publishing some of this information in a more accessible format to enable stakeholders, such as consumer groups, local businesses and local development agencies, to assess how the DNOs are performing in areas such as customer service, tackling climate change, connections and network investment. We will shortly consult on the content and format of this new annual report, and are looking to road test it with our consumer panel.

1.46. We hope this new annual report will better inform stakeholders about the services they are paying for, allow them to make comparisons across networks and result in a richer discussion between the network companies and their stakeholders when they come to formulate their business plans. We also intend to provide information about the options available to stakeholders if they are not satisfied with the service they are getting for example, through the guaranteed standards of performance, by seeking a determination from Ofgem on a connections dispute or by contacting the Energy Ombudsman.

RPI-X@20

1.47. RPI-X@20 is our root and branch review of how we will regulate energy networks in the future. The review is considering the future regulatory framework for electricity and gas transmission and distribution. We are publishing our Emerging Thinking consultation paper in the New Year, setting out our vision for the future regulatory framework. Further information on the review can be found in our February Principles, Process and Issues consultation paper[3] and our current thinking working papers on our web forum[4].

1.48. DPCR5 is outside the scope of RPI-X@20, but the two reviews have been running in parallel with a shared vision of what future energy networks need to deliver. In RPI-X@20 we will take account of the initiatives developed in DPCR5, considering how they can be enhanced and applied to all four energy network sectors[5]. The project teams have worked closely since the inception of RPI-X@20, and particularly in recent months in the run up to Final Proposals.

1.49. The framework that emerges from RPI-X@20 will apply to the distribution network operators from DPCR6. We will be working up the detail of this framework for our summer 2010 recommendations to the Authority. When working up the details we are mindful of the need to consider how best to transition from the framework set out here.

[3] http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=1&refer=Networks/rpix20/publications/CD
[4] http://www.ofgem.gov.uk/Networks/rpix20/forum/Pages/forum.aspx
[5] Gas and electricity, transmission and distribution

2. Behaviours, Incentives, Funds and Obligations

Chapter Summary

This chapter sets out the incentives and mechanisms we are putting in place to encourage the services and behaviours that consumers have told us they expect and would like from the DNOs over the 2010 to 2015 period.

Introduction

2.1. The price control review provides us with an opportunity to review the entire regulatory framework to ensure that it encourages the services and types of behaviours that consumers expect from the DNOs over the next five year period. We have consulted extensively on the objectives for the DPCR5 period and have received wide ranging support for a regulatory framework that addresses the following three themes:

- Environment: encouraging DNOs to play a fuller role in helping to tackle climate change, both directly through managing their own carbon footprint and indirectly by facilitating new uses of the networks that are likely to arise as we move to a low carbon economy,
- Customers: encouraging all DNOs to pay more attention to all aspects of customer service. These include the quality of service provided by their call centres, the speed and cost of new connections as well as the number and length of any interruptions to customers' supply,
- Networks: encouraging DNOs to invest efficiently, so that they provide 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 into account how those needs might change.

2.2. We have arrived at a package of measures aimed at meeting each of our three objectives based on public consultation and through detailed working groups comprised of DNOs and other key stakeholders. We have also based our Final Proposals on consumer research we have undertaken at various stages of the price control review[6] and feedback from our Consumer Challenge Group.

2.3. We have sought to make sure that we create a balanced package of incentives so that DNOs are not encouraged to concentrate efforts on one area of their performance at the expense of others. The additional shareholder returns that can be earned or lost through the incentive schemes, and funding available to encourage

[6] We commissioned Accent to undertake consumer research for DPCR5. We have published two of their reports, one outlining the quantitative findings (106/08) and one focussing specifically on worst served customers (133/08). We published the latest research findings on 3 August 2009, focussing on a review of customer priorities for service improvements and indicators of willingness to pay.

behaviours, are set out in the Table 2.1. We have decided to cap and collar shareholder exposure to most of the incentive mechanisms and where this is the case, we have indicated in the table.

Table 2.1 - Materiality of DPCR5 mechanisms

Behaviours	Mechanisms	Materiality across DPCR5	Pre-tax RORE exposure across DPCR5	
			Upside	Downside
Environment				
Undertake the trialling and innovation DNOs need to transition to a low carbon economy	Low Carbon Networks fund	£500m		
Provide Distributed Generation with simple, accessible information and connect them quickly and efficiently	Mandatory information provision DG Incentive			
Manage and reduce transmission connection point charges	Hybrid mechanism: pass-through with incentive			
Manage an efficient level of network losses	Revised incentive based on an output mechanism		97 bps	97 bps
Manage DNOs' greenhouse gas emissions	Annual reporting and comparative performance league tables			
Improve visual amenity where customers are willing to pay	Allowance for undergrounding in Areas of Outstanding Natural Beauty	£61m		
Customers				
Maintain and improve customer satisfaction across all services and for all different types of customer	Broad measure: customer satisfaction, complaint handling and stakeholder engagement		42 bps	42 bps
	Telephony incentive		1 bp	7 bps
Facilitate competition in connections	Allow margin for competitive connections	£40m (estimate)		
Improve service to customers seeking a demand or generator connection	Revised Standards of Performance Overarching licence condition		None	100 bps
Be proactive and innovative in engaging with all stakeholders, and particularly worst served and vulnerable customers	Customer service reward scheme	£5m		
	Worst served customer mechanism	£42m		
Improve quality of service by reducing the number and length of interruptions	Interruptions incentive scheme		Uncapped	139 bps
Networks				
Make business decisions based on what is right for the network	Equalisation of incentives for operating and capital costs			
Undertake technical research and development	Continuation of Innovation Funding Incentive (IFI) mechanism	£100m		
Deliver on agreed outputs in return for the price control settlement and maintain long term network health	Output measures addressing asset condition ('Health Indices') and substation utilisation ('Load Indices')			
Encourage investment in a sustainable workforce	Allowance for workforce renewal	£213m		

2.4. Below we provide an overview of the mechanisms against each of the three objectives. More detail on each of our proposals, and an explanation of how they have changed since our Initial Proposals document, is contained in the Incentives and Obligations document.

Environment

Behaviours

2.5. The need for DNOs to play a more active role in tackling climate change, and to make sure that their networks adapt in line with the changed use of the networks brought about by low carbon initiatives is a very important consideration in this price control review. We would like to encourage the DNOs to:

- Reduce their own environmental impact: DNOs can reduce their own environmental impact by monitoring and taking steps to reduce their own business carbon footprint, improving visual amenity where customers are willing to pay for this and reducing the proportion of electricity that is lost on the distribution network. Distribution losses account for 1.5 per cent of total GB Greenhouse Gas emissions.

- Enable customers to adopt low carbon or energy saving measures over the next five years: DNOs have an influence on how easy it is for those looking to implement demand side management or to invest in low carbon technologies such as distributed generation. These initiatives are often being taken by parties who are not familiar with the energy industry and who are small scale businesses or households that cannot afford to buy in this expertise. We think that the information the DNOs provide on their websites, the relationships they build and the processes and systems they use all need to adapt and be made simpler and more accessible to meet this changing landscape.

- Make sure they prepare and adjust in a timely manner to the profound changes to electricity network use that are anticipated over the next five years and beyond. Low carbon initiatives such as the take up of electric vehicles, significant investment in more local community or household generation, increased use of heat pumps and the use of demand response as a balancing tool could mean that the networks need to use new technology and be operated in a different way than at present. DNOs may need to take on new roles and enter into new commercial arrangements. While the DNOs expect the main effect will begin to be felt only after 2015, the extent of change anticipated and the lead time involved in installing new equipment means they must take steps now to get a clear understanding of what they need to do on their networks and with other aspects of their business.

Mechanisms

2.6. Our proposal is to continue with the undergrounding arrangements currently in place and, apart from some minor changes, to retain the incentive on DNOs to connect distributed generation (DG). These Final Proposals include several revisions to the DPCR4 losses incentive to make it more effective and proportionate. We also propose to introduce a new Low Carbon Networks fund (LCN fund) that will make up to £500m of funding available to encourage DNOs to form partnerships in order to trial the new technologies and new commercial arrangements needed to serve the low carbon economy.

2.7. We will place several new requirements on DNOs, including to:

- report their carbon footprint on an annual basis,
- Improve the information available to DG developers. We have worked closely with DG developers of different sizes to establish the information that is most useful to them,
- Undertake a review of their existing contracts with distributed generators to ensure that users' rights are clear and that charging is non-discriminatory in nature. This is critical with the expected change in network use, and
- Take a more holistic view of network costs by exposing them to transmission network interface costs. This is important given the potential for non-network solutions with increasing distributed generation and demand side management.

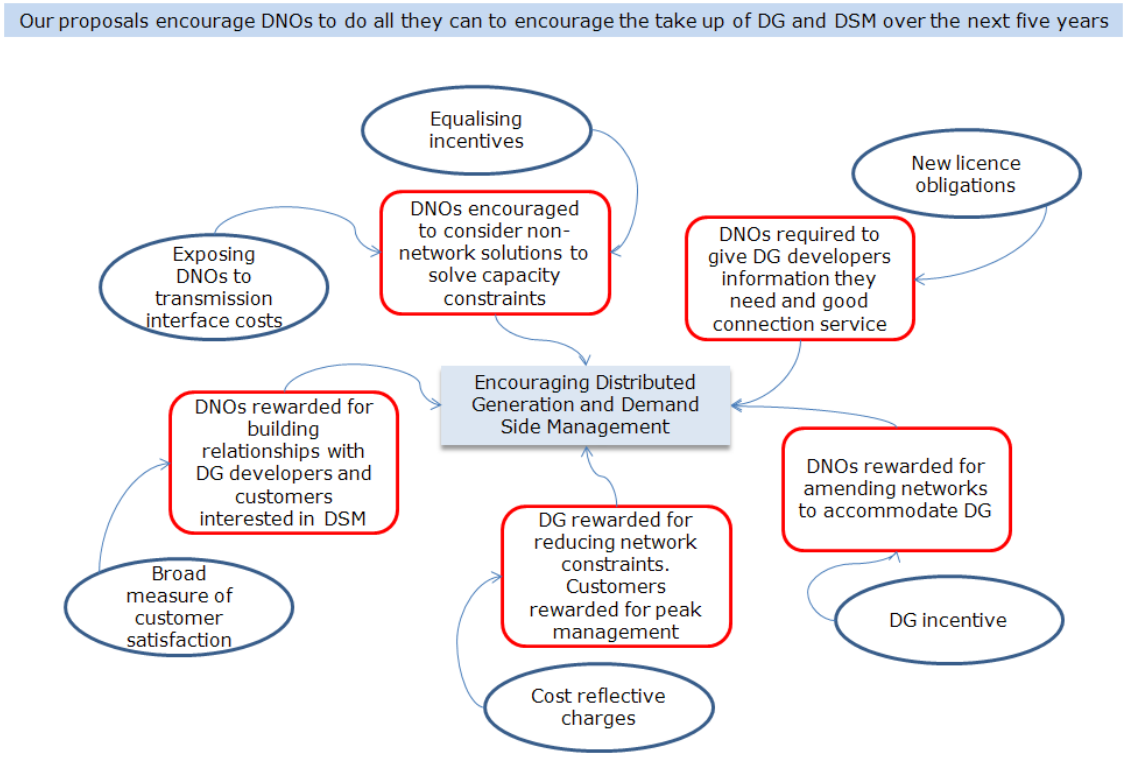
2.8. We have taken a number of decisions, set out later in this chapter, to encourage DNOs to work closely with those customers that want to make a demand side contribution and to ensure that DNOs facilitate the take up of distributed generation. We have equalised the incentive rate across network investment and operating costs. We have also introduced a broad measure of customer satisfaction which rewards companies according to how well they engage with the full range of stakeholders, including those looking to connect local generation or invest in other low carbon or energy saving technologies.

2.9. If accepted by the DNOs, our proposals will come into effect on 1 April 2010 along with new charging methodologies. These will, for the first time, ensure that distributed generation is adequately rewarded where it allows DNOs to avoid or delay network reinforcement.

2.10. Our proposed arrangements have been designed so that there is nothing within the price control that prevents the DNOs transforming their networks and businesses over time to serve low carbon or energy saving initiatives. The DG incentive gives the DNOs revenue to match the efficient costs of connecting DG and is not restricted by volume. Therefore, if the capacity of DG connected during DPCR5 is significantly greater than forecast, the incentive will still apply to each MW connected. The combined reopener for general reinforcement and high value one-off connections

(described in Chapter 4), means that DNO allowed revenues will increase if, for example, the take up of electric vehicles or heat pumps is more rapid than the DNOs have forecast and they have to carry out much more investment in new capacity than anticipated in their plans or if they have to install smart devices to accommodate more load with the same network capacity.

Figure 2.1 - How our proposals encourage DG and demand side management (DSM)



2.11. The most significant developments are in the losses incentive and the new LCN fund. Both are discussed below.

Losses incentive

2.12. The current losses incentive rewards or penalises DNOs at a rate of £48 per MWh[7] if losses are lower or higher than a target based on historic losses on the DNO's system. This is designed to incentivise the DNO to invest in lower loss

[7] Please note this value is in 2004-05 prices.

equipment, to change the way they operate their systems to reduce losses and to detect theft and unregistered meters. Under DPCR4 some DNOs have received very high rewards under this incentive with one company earning £25m per year on average over the first four years of DPCR4 and one DNO group has lost an average of £8m per year.

2.13. There are a number of problems with the current incentive, but essentially they revolve around the difficulty in getting an accurate measure of losses and the difference in the techniques the DNOs use in calculating and reporting losses. Our approach is to address these problems so that customers only pay and DNOs are only rewarded for real improvements.

2.14. The two key features of the revised losses incentive are as follows:

- Companies will be provided with £16m of upfront funding for low loss investments where they have made a business case using the electricity wholesale price including the Government's shadow price of carbon. This should allow DNOs to finance these investments while ensuring that customers only pay for schemes that have a robust investment case. We have allowed £16m of investment. Companies will then be set tougher targets to make sure the investments deliver the losses reductions they claim,

- We will retain an incentive that rewards or penalises each DNO according to how they perform against a losses target. The incentive will be set at a higher rate of £60 per MWh. We will change the incentive mechanism to remove some of the problems with measuring losses. For example, we will require all DNOs to use a common approach for reporting losses and we will introduce caps and collars in the mechanism, in recognition that performance at the extremes could be driven by other factors. This will mean that DNOs will not be able to earn or lose more than 97 basis points (pre tax) in shareholder returns through the losses incentive, including the five year losses rolling retention mechanism. More detail on the specific revenue caps and collars per DNO is set out in the Incentives and Obligations document.

2.15. We also plan to retain enough flexibility in the arrangements so that if any DNO is successful in finding a better way of measuring losses on their network (for example by installing more smart metering equipment on their network), the cap on rewards will be removed and the collar may be tightened further. We would like DNOs to take seriously the role they can play in improving industry data, including that used for settlement. We would like to see them work with suppliers and other parties to achieve improved industry data and to develop better arrangements to help detect and reduce levels of theft.

Low carbon networks fund

2.16. We are putting in place arrangements for a £500m fund to encourage the DNOs to innovate to deliver the networks that users will need in a low carbon economy. The low carbon networks fund (LCN fund) will allow the DNOs to trial new

technologies, systems and commercial and network operating arrangements. Without this there is a risk that the DNOs inhibit the take up of low carbon initiatives such as electric vehicles.

2.17. A condition of participating will be that DNOs will have to share learning (including the lessons learned from projects that "fail") to maximise industry benefit. DNOs can enter into partnerships for projects receiving finance through the fund, to give them access to additional expertise, allow them to leverage other sources of finance and to help them trial new commercial arrangements with customers, equipment and software manufacturers and other industry players such as suppliers. We have already received significant interest in the scheme from potential partners, including technology providers and suppliers. If we become aware that DNOs are not engaging with these interested parties, we will consider if we need to take further action, including introducing a new licence condition that would allow Ofgem to require DNOs to let other parties run trials on their networks.

2.18. Up to 90 per cent of project finance will be covered by the LCN fund with DNOs expected to fund the balance. Some of the fund (Tier 1 - around £80m) will be allocated directly to each DNO to use for small scale projects. DNOs will then compete for an allocation of the majority of the fund (Tier 2 - around £320m). We would expect a small number of flagship projects to receive this funding. Around £100m of the total fund amount would be available to provide discretionary awards to both Tier 2 projects that successfully deliver against a set of pre-agreed criteria and to those Tier 1 and Tier 2 projects that bring particularly valuable learning to the industry.

2.19. DNOs that do not apply the lessons learnt from the projects conducted during DPCR5 will not be funded to conduct their own trials in future price control periods. Subject to the outcome of our RPI-X@20 project we will continue to consider the interactions between the learning that DNOs take from these projects and our review of the business plans submitted for DPCR6.

2.20. We will continue to engage with stakeholders to progress the details of the LCN fund. We intend that the necessary documentation and processes will be in place to allow Tier 1 schemes to begin at the start of DPCR5, with the first Tier 2 projects being approved before the end of 2010.

Customers

Behaviours

2.21. Customer research and contact we have with customers and other stakeholders on a regular basis suggest they would like DNOs to:

- Provide appropriate and efficient security and availability of supply to all customers. The consumer research has suggested that customers do not want

any deterioration in security and availability of supply but they are not willing to pay for significant improvements,

- Provide customer satisfaction for all of their customer facing activities,
- Significantly improve the level of service to customers seeking a connection to the distribution network,
- Do all they can to enable effective competition in connections in their area, and
- Be proactive in engaging with all stakeholders to inform their plans and business decisions.

2.22. In general, despite current incentives, there is a perception that DNOs do not pay enough attention to customer service beyond that related to interruptions to customers' supply. There are concerns that not all DNOs have adequate information about their customers or are equipped with the skills needed to communicate with customers across the full range of services they carry out. At the moment this manifests itself primarily in complaints from customers seeking a connection. However, as we move to a low carbon economy it will be more important that DNOs understand what users of the network want and have the systems and skills in place to communicate with them. We are looking closely at options for encouraging networks to engage with users and consumers in our RPI-X@20 review.

Mechanisms

2.23. We have a number of mechanisms in place to encourage the DNOs to consider and deliver the quality and level of service that customers require. There is an interruptions incentive mechanism, a number of guaranteed standards including those related to interruptions and licence conditions related to the speed with which customers receive quotes for connections. We also have a discretionary reward scheme to encourage DNOs to consider the needs of vulnerable customers in particular and a mechanism that penalises or rewards DNOs according to the satisfaction scores from a survey of customers who have contacted the company by telephone.

2.24. We have reviewed these mechanisms and propose to make a number of changes to encourage the behaviours noted above. We propose to:

- Revise the interruptions incentive scheme (IIS) to better reflect customers' willingness to pay for further service improvements. We have not given DNOs any ex-ante allowances for improvements in interruptions performance,
- Introduce a worst served customer (WSC) fund to encourage DNOs to improve interruptions performance for this group of customers. This will operate as a "use it or lose it" fund and we propose it will be worth £42m across all DNOs over the price control. We currently propose a cap of £1,000 on the amount that can be spent on any individual worst served customer to ensure the benefits of the fund are spread across a number of worst served customers,

- Introduce an incentive that rewards or penalises the DNOs according to how they fare on a broad measure of customer satisfaction. This should encourage DNOs to consider all aspects of customer service including stakeholder engagement,

- Introduce new guaranteed standards and licence conditions relating to connections service, including the connection of distributed generation. This will entitle customers to compensation if they do not receive connection quotes within a defined timeframe and if their connection is not energised within the timeframe agreed with the DNO. DNOs will not be able to recover the cost of making compensation payments and, if they do not succeed in rapidly improving on current performance levels, shareholder earnings could be reduced by up to 100 basis points (pre-tax) over the five year period,

- Allow DNOs to earn a margin on certain categories of connections in order to support greater competition in connections,

- Retain the existing broad categories of the annual £1m customer service reward scheme but refocus within the categories to include communication with worst served customers, ongoing stakeholder consultation and assistance for other categories of customers, such as vulnerable customers. We will also incorporate a requirement for DNOs to meet a given proportion of the best practice that was recognised during DPCR4 as part of the minimum requirements for the DPCR5 scheme.

2.25. We provide more information on our proposals for connections and the new measure of customer satisfaction below.

Connections package

2.26. We propose to take measures to improve the connections service DNOs provide in return for allowing them to earn a regulated margin of four per cent on competitive connections activities. We think this regulated margin could be worth around £40m to DNOs over the first three years of DPCR5. In return they will be governed by new guaranteed standards on connections, requiring them to pay out to customers directly if the standards are not met. We will introduce a new licence condition that requires the DNOs to meet these standards in at least 90 per cent of each of the three specific segments set out in the Incentives and Obligations document. DNOs will only be able to earn the regulated margin once they demonstrate, via an independent audit, that they have all the relevant systems and processes to accurately record connections guaranteed standards of performance and connections related price control data. We expect all DNOs to have these systems and processes in place by no later than October 2010. DNOs will not be able to earn unregulated margins if they fail to meet the new licence conditions and will see a reduction to their allowed revenues up to a cap of 100 RoRE basis points across DPCR5 if they do not meet the new guaranteed standards of performance on their connection service.

2.27. To encourage DNOs to do all they can to stimulate effective competition in connections, we will allow them to earn an unregulated margin on their competitive activities if they pass a competition test. We will judge whether a DNO has passed this test having looked at a range of indicators typically used by competition authorities (including Ofgem) when assessing whether competition is effective. These will include: market shares, price, service quality, barriers to entry. We will consult whenever assessing whether a DNO has passed the test before reaching our final decision. We will also conduct a full competition review of any outstanding market segments that have not been judged by the end of December 2013 and may refer any matters of concern to the Competition Commission.

2.28. Expenditure on "sole use" and "shared use" connections assets will receive different price control treatment. The cost of providing sole use connections assets that are paid directly by the connecting customer will not be funded through the price control allowed revenues. Net expenditure on shared asset connections will be recoverable through the price control and allowed revenues will reflect the number of high volume low cost connections. There will be a reopener for large one-off connections combined with general reinforcement. This is explained in more detail in Chapter 4.

Broad measure of customer satisfaction

2.29. We are seeking to introduce a broader customer satisfaction measure to better capture the full range of interactions that customers have with DNOs. This will be based on the sort of broad measures of customer service that companies operating in competitive markets use to measure their performance and make sure that they are offering an appropriate level of service.

2.30. We also want to capture the experience of customer groups such as suppliers (who depend on DNOs for information about changes to use of system charges, for example), those owning distributed generation (DG) and the new players in the market such as Independent Distribution Network Operators (IDNOs) who rely upon connection services from the DNOs. Companies will be incentivised to improve their performance and will be rewarded for good service and penalised for poor service against this measure.

2.31. We will need the first two years of the new price control period to pilot the broader measure. After this period, the broad measure will replace the telephony incentive. The survey of customer satisfaction will be conducted quarterly and performance will be assessed on an annual basis. Ofgem will include the results in its new annual report of DNO performance.

2.32. We have worked with industry and consumer representatives to develop the broad measure of customer satisfaction and its features are set out in the table below.

Table 2.2 - Proposed scope of the broader measure

Component	Focus	Target customers	Pre-tax RoRE bps	Industry average base demand revenue (%)
Customer satisfaction survey	Interruptions, connections and general enquiries	Domestic, non-domestic, IDNOs, ICPs, DG customers, developers and customers dealt with by messaging.	+33/-21	+0.8/-0.5
Complaints metric	Unresolved and repeated complaints, decisions made by the Ombudsman	All customer complaints (including domestic, non-domestic, DG, IDNOs, ICPs, developers)	-21	-0.5
Stakeholder engagement	Stakeholder views of the DNOs' approach to engagement and outcomes from the engagement	All relevant stakeholders including suppliers, IDNOs, ICPs, Local Authorities, developers, DG customers, environmental, planning and regional development organisations	+8	+0.2

Networks

Behaviours

2.33. There are a number of behaviours we want to encourage from the DNOs when it comes to investing in and operating their networks. In particular, we would like them to:

- Invest efficiently, so that they provide 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 into account how those needs might change,
- Ensure the safety of employees and the public,
- Consider the whole life cost of alternative solutions when making business decisions, and weigh up non-network (or asset based) solutions such as contracting with DG or customers for demand side management (DSM), alongside the option of making further network investment,

- Research and develop new technologies and asset management techniques in order to look for ways of continually improving network performance,

- Provide clarity on, and be accountable for delivering, agreed network outputs that are associated with the investment and maintenance the DNO undertakes over the five year period, and

- Invest in a sustainable workforce. We are making an allowance for workforce renewal as part of Final Proposals. DNOs will be required to report on recruitment and training of their workforce as part of their annual submissions and we will include this information as part of our annual report.

2.34. Current regulatory arrangements may provide DNOs with a skewed incentive to solve network performance or constraint problems through further investment in transformers and cables, rather than maintaining existing assets to prolong their life or seeking to reduce or manage load, even when the latter solution is cheaper. This is because, relative to the arrangements for network investment, the DNO can currently keep a much higher proportion of underspend against the regulatory operating cost allowance, and is not able to pass onto customers any of the overspend. The same incentive arrangements mean that DNOs may invest in high cost "fix and forget" assets that do not require much in the way of maintenance even where there are alternative solutions with lower whole life costs or which bring other benefits. These arrangements also provide DNOs with an incentive to reclassify costs from operating expenditure to network investment where the associated incentives are lower. A significant amount of our time in running the annual cost reporting process is spent on policing the boundaries between these categories.

2.35. It is particularly important that we get the balance of incentives right given the large increases in forecast cost for the DPCR5 period. We want to ensure that DNOs give appropriate consideration to innovative solutions, including the use of new techniques to safely and efficiently defer greater volumes of work and doing more to actively manage and monitor levels of risk. We acknowledge the uncertainty going forward over the long term development of the network and the demands that future customers will place on it e.g. due to electric heating and vehicles. In some circumstances there may be greater value in delaying investment and extending asset lives until there is greater certainty of the future demands on the networks. This may be more expensive in the short term but could result lower long term charges to customers as there may be fewer stranded assets.

2.36. As well as having an eye to the total costs customers will need to pay to fund DNO investments, we are concerned to make sure there is no regulatory barrier to DNOs adopting network management arrangements that are compatible with tackling climate change. Some network problems could be addressed by the DNO contracting with DG (this could, for example, help the DNO to reduce losses on the network, or address local network constraints) or with large customers for DSM.

2.37. A further concern is that there are currently few measurements in place to ensure that the DNOs act as good stewards of the network over the regulatory

period. We reward or penalise the DNOs according to the number and duration of interruptions on the network. However, this is a lagging indicator of the health of the network and, in reality, only a fraction of network investment is directly related to interruption performance. Without a measure of how well the DNOs maintain and invest in the networks, there is a risk that DNOs will underspend. This could lead to deteriorations in network health and increase volumes of faults and risks of major network outages in subsequent periods. It could also involve higher bills for customers in subsequent price controls as companies have to invest to catch up.

Mechanisms

2.38. We propose the following mechanisms to encourage these behaviours:

- We will equalise the incentive rate associated with network operating costs, network investment and closely associated indirects to remove these distortions,
- We will continue with the Innovation Funding Incentive (IFI)[8] we introduced in 2005 to encourage the DNOs to conduct research and development. This fund allows each DNO to spend up to 0.5 per cent of allowed revenues on these activities which should amount to a total sum of around £20m per year under the new price control,
- Using the new output framework we have developed with the industry, we will require each DNO to commit to achieving a predefined package of output measures associated with network loading and network health by 2015.
- We are providing a specific allowance for workforce renewal given the ageing profile of the workforce and growth in volumes of Network Investment. Our total baseline is £213m. We consider that it is important that DNOs take appropriate steps to manage workforce renewal and therefore they should not gain undue benefits from deferring expenditure in this area. As such we propose that this element of our allowances should be 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.

2.39. We discuss the equalisation of incentives and the new output measures below.

Equalisation of incentives

2.40. Our methodology is to treat all network investment, network operating costs and closely associated indirect costs in the same way. This means that a fixed proportion of costs across all these activities will be funded through a return on the company's Regulatory Asset Value (RAV) and depreciation, and the same sharing factor will apply between customers and the DNO for any over or underspend against allowances. This should remove the distortions discussed above and mean there are less cost boundaries for us to monitor over the DPCR5 period.

[8] The IFI is additional to the Low Carbon Networks fund.

2.41. Business support costs (management and overheads, for example) would continue to be funded directly from revenues in the DPCR5 period and we propose to keep strong incentives on DNOs to contain these costs. DNOs will bear the full cost of any overspend and will be able to keep the full benefit of any efficiencies they can make in the DPCR5 period.

2.42. Our decision is that 85 per cent of all costs (other than business support costs) will be capitalised, and that customers will fund DNOs for this proportion of the DPCR5 investments over a 20 year period. This is our estimate of the proportion of costs that would have been funded through this route under the DPCR4 arrangements.

2.43. The proportion of any overspend or underspend that is carried/enjoyed by customers will vary from DNO to DNO depending on how closely the DNO bid matches our view of the efficient costs it needs for the DPCR5 period. We achieve this through the IQI which is set out in detail in the Incentives and Obligations document.

Network Output measures

2.44. In return for the revenues they receive from customers over DPCR5, DNOs will be required by the end of 2015 to have delivered an agreed (or equivalent) package of output measures, including:

- A Load Index (LI) relating to general reinforcement expenditure. Using criteria unique to their internal planning processes, DNOs have ranked each applicable site (e.g. substation) from 1 to 5 where 'LI1' represents sites with significant spare capacity and 'LI5' captures sites that are fully utilised and require intervention.

- A Health Index (HI) relating to asset replacement expenditure. Using established criteria DNOs have assigned their assets a ranking from 1 to 5 based on an internal assessment, where 'HI1'represents an asset that is new or as new and has a low risk of failure and 'HI5' captures assets at the end of their serviceable life that require intervention.

- Fault rates - fault rates will be used as a secondary network output measure for asset replacement expenditure, for specific asset classes where the DNO does not presently have HI capability, and/or it is not economic to collect a full set of HI data.

2.45. Since Initial Proposals the DNOs have updated their outputs data. We now have a set of outputs for all 14 DNOs that are fully consistent with our network investment allowance as published in these Final Proposals. We are publishing the

DNOs' proposed outputs for DPCR5 together with our Final Proposals, and those interested in this area can access this information on our website.[9]

2.46. The new output measures allow DNOs to report their delivery in a consistent format which can be tracked over time. At the end of DPCR5, DNOs will be required to demonstrate that their actual level of network investment in asset replacement and general reinforcement has delivered an agreed level of outputs (or an equivalent).

2.47. We acknowledge there may be circumstances, for example the availability of new information on assets, or significant changes in input and/or asset prices where it is in the customers' interest for the DNO to reprioritise or change their plans. In the absence of holistic network output measures (i.e. system-wide risk metrics, also called "tier 1" measures), DNOs will need to demonstrate that where they have changed their investment plans, this was in the best interests of customers. We are committed to working with the DNOs to develop tier 1 network output measures over DPCR5, by building on or aggregating the measures which have been developed for the DPCR5 settlement.

2.48. If a DNO can demonstrate it has satisfactorily delivered its outputs (or an equivalent) over DPCR5 there will be no further action taken under this framework and the normal sharing factor and rolling incentive will be applied to outturn costs[10]. After carefully considering responses to Initial Proposals we think there must be financial consequences in place for DPCR5 for a DNO who fails to deliver the agreed outputs (or an equivalent) and cannot demonstrate this was in customers' interests. Otherwise, customers are not adequately protected. For example, DNOs would continue to retain between 50 and 60 per cent of any underspend achieved over the period even if this simply reflected a failure to deliver on agreed outputs.

2.49. Our proposed methodology, developed in consultation with the DNOs, values any 'network outputs gap' and then applies a sharing factor to calculate a revenue adjustment to apply at DPCR6. We have set the financial consequences for a failure to deliver at a level sufficient to encourage delivery of outputs ex-ante. That is, the incentive rate applied to the network outputs gap will be slightly 2.5 per cent higher than would apply for a normal underspend so that, at the margin, DNOs have an incentive to spend money to deliver outputs rather than cutting expenditure and failing to achieve the output measures.

2.50. Providing an incentive to deliver a package of outputs consistent with what customers have paid for through the price control settlement represents a significant step-forward in the RPI-X framework of this price control review, resulting in a more effective cost incentive that only rewards genuine efficiencies.

[9] The outputs workbooks are located together with the Cost Assessment document.
[10] The final allowed capital expenditure may be subject to a review of the DNOs' structure of charging methodology.

2.51. Further details are provided in the Incentives and Obligations document. This document also contains a qualitative review of the network outputs regime.

3. Revenues

Chapter summary

This chapter sets out our Final Proposals for the allowed revenues of each DNO and explains how we have arrived at these proposals based on the building blocks of network investment, operational costs, Real Price Effects (RPEs) and the financial policies we are applying.

Revenue allowances

3.1. Our Final Proposals are that DNOs collectively should be allowed revenues of £22bn over the DPCR5 period. This represents a 28 per cent increase over the allowed revenue for the DPCR4 period. It represents a 5.6 per cent average annual increase over each of the next five years. A summary of the Final Proposals for each DNO and a comparison with allowed revenues over DPCR4 is set out below.

3.2. We set allowed revenue at an overall level for each DNO. While we have published detailed information on the analysis we have conducted and how our Initial Proposals are built up by cost category, we do not set allowances for each cost category. DNOs must manage their costs in the way they consider appropriate to meet their obligations including relevant outputs.

3.3. We have arrived at our Final Proposals after coming to a view on the efficient levels of network investment, network operating costs, indirect costs and non-operational capital expenditure in the 2010 to 2015 period and the financial policies that should apply including the efficient cost of financing the businesses (weighted average cost of capital - WACC) and the treatment of pension costs.

Network expenditure

3.4. 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 our cost assessment. Since we published Initial Proposals we have taken into account further information and evidence from the DNOs supporting their forecasts, have considered comments on our methodology and refined our approach to both the operational cost assessment and network investment analysis.

3.5. We propose to cut the DNOs' network cost expenditure forecasts in aggregate by 8 per cent. This is made up of a 15 per cent cut to their network investment forecasts (including real price effects (RPEs) and costs that we are now proposing should be recovered through logging up or reopener mechanisms) and a 1 per cent cut to their operational cost forecasts (including RPEs). After applying the Information Quality Incentive (IQI) mechanism which sets allowed revenues as a weighted average of the DNO bid and the Ofgem view, our proposals give DNOs allowances that are 20 per cent higher than in the current period.

3.6. These cuts do not fall equally on all DNOs. The two most efficient DNOs received broadly what they asked for in their forecasts. In total we have made a 0.2 per cent increase on SSE's forecast and reduced WPD's bid by 1 per cent. By contrast we have reduced EDFE's bid by 13 per cent and CN's by 10 per cent.

Financial policies

3.7. Our allowed revenue proposals are based on our assessment of the efficient cost of financing the businesses - a 4.7 per cent vanilla (4.0 per cent post tax). Our decisions on other financial matters also have an important bearing on our final revenue allowances.

3.8. Pensions are a significant cost, particularly in respect of deficit repair, with deficits amounting to £2.6bn as at September 2009. We have assumed a 15 year notional deficit repair period with £1.0bn of funding provided in DPCR5. Ongoing costs add a further £650 million to the pensions cost. As at Initial Proposals we are allocating 85 per cent of costs (excluding business support, non-operational capex and deficit repair which are all treated as fast money) to be added to the RAV (slow money) and a depreciation rate of 20 years. We have allowed for cash tax payments at the current corporation tax rate of 28 per cent.

3.9. Further details of the cost assessment methodology we have used is set out in the Cost Assessment document. The assumptions we have made regarding cost of capital and other financial issues are set out in the Allowed Revenues and Financial Issues document.

Table 3.1 - Allowed revenues per DNO, DPCR5 compared to DPCR4

£m (2007-08)	DPCR4	DPCR5	Total change from DPCR4 to DPCR5	Average annual X
CE NEDL	885.6	1,187.2	34.1%	7.7%
CE YEDL	1,156.8	1,521.0	31.5%	6.5%
CN East	1,390.0	1,745.2	25.6%	4.7%
CN West	1,366.7	1,712.0	25.3%	4.3%
EDFE EPN	1,652.8	2,121.6	28.4%	5.5%
EDFE LPN	1,294.3	1,752.2	35.4%	7.1%
EDFE SPN	967.6	1,422.1	47.0%	8.8%

£m (2007-08)	DPCR4	DPCR5	Total change from DPCR4 to DPCR5	Average annual X
ENW	1,265.5	1,813.2	43.3%	8.5%
SP Distribution	1,662.6	1,549.5	-6.8%	- 4.3%
SP Manweb	990.5	1,455.5	46.9%	11.1%
SSE Hydro	962.1	1,187.6	23.4%	4.3%
SSE Southern	1,923.3	2,323.0	20.8%	3.9%
WPD S Wales	829.2	1,046.7	26.2%	6.2%
WPD S West	1,016.3	1,355.1	33.3%	7.5%
Total	17,363.3	22,192.1	27.8%	5.6%

Ofgem network cost assessment

DPCR5 network expenditure and key drivers

3.10. We set out our view of the efficient level of network expenditure[11] for each DNO over the DPCR5 period below with a comparison to the DNO's own forecast and their expenditure in the DPCR4 period. We also explain the key changes in our cost assessment analysis since Initial Proposals and the impact that this has had on our overall baselines.

3.11. We have challenged robustly each DNO on its business plan and think we have taken a firm but reasonable approach. We have sought to strike a balance between: the need for further investment to maintain the high levels of network reliability customers currently enjoy and expect, and other outputs associated with network investment; and our duty to ensure that customers do not carry the cost of unnecessary investment or any operational inefficiencies nearly twenty years after the companies were privatised.

3.12. Our Final Proposals entail a total cut in DPCR5 forecast expenditure of £1.3bn or 8 per cent across all the DNOs including an estimated £187m relating to activities which will be funded through "reopeners" or "logging up" mechanisms rather than through an ex-ante allowance. This compares with an overall cut of £2.1bn or 14 per cent we set out in Initial Proposals.

[11] It is important to note that this does not cover pension costs or pass through costs.

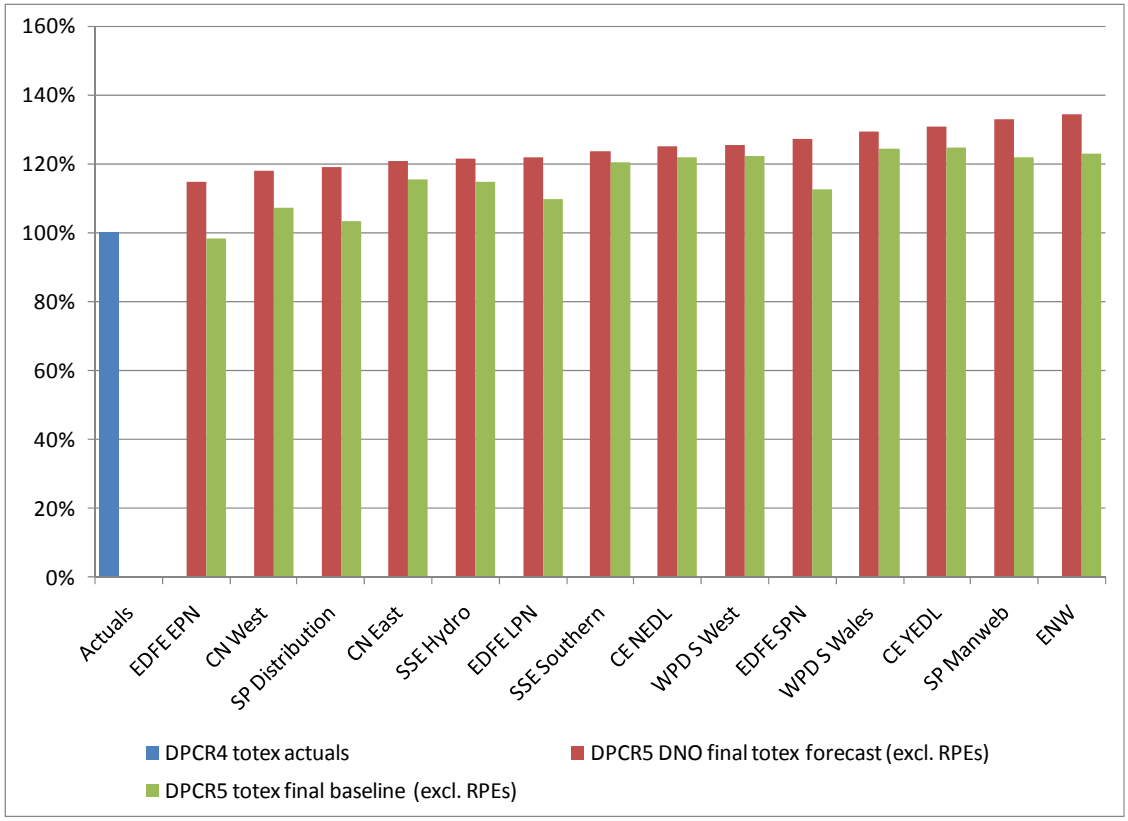
Table 3.2 - Ofgem cost baselines relative to DNOs' DPCR4 actuals and DPCR5 forecast

	Network investment				Network operating costs				Totex				
	DPCR4 actuals	DPCR5 forecasts	Ofgem baseline (post-IQI)	% change relative to forecasts	DPCR4 actuals	DPCR5 forecasts	Ofgem baseline (post-IQI)	% change relative to forecasts	DPCR4 actuals	DPCR5 forecasts	Ofgem baseline (post-IQI)	% change relative to actuals	% change post-IQI relative to forecast
CN West	512	720	597	-17%	528	603	573	-5%	1040	1322	1171	13%	-11%
CN East	492	728	606	-17%	495	560	582	4%	987	1288	1187	20%	-8%
ENW	431	638	554	-13%	491	608	574	-5%	922	1246	1128	22%	-9%
CE NEDL	271	454	378	-17%	338	377	392	4%	608	831	771	27%	-7%
CE YEDL	352	624	508	-19%	423	486	503	4%	775	1110	1012	30%	-9%
WPD S Wales	155	224	224	0%	286	354	345	-3%	440	578	569	29%	-1%
WPD S West	249	345	339	-2%	393	478	477	0%	642	823	816	27%	-1%
EDFE LPN	400	623	493	-21%	469	514	501	-3%	868	1137	994	14%	-13%
EDFE SPN	387	650	520	-20%	481	525	513	-2%	869	1174	1034	19%	-12%
EDFE EPN	634	825	657	-20%	777	899	819	-9%	1410	1724	1476	5%	-14%
SP Distribution	348	450	384	-15%	422	501	465	-7%	770	951	849	10%	-11%
SP Manweb	381	630	547	-13%	429	505	498	-1%	810	1135	1045	29%	-8%
SSE Hydro	174	226	207	-8%	295	350	360	3%	469	576	567	21%	-2%
SSE Southern	515	707	644	-9%	577	670	746	11%	1093	1377	1390	27%	1%
Total	5300	7844	6658	-15%	6403	7428	7350	-1%	11703	15272	14008	20%	-8%

3.13. There are a number of reasons for our increased cost baselines and a narrowing of the gap to the DNOs' forecasts in Initial Proposals. The DNOs have come forward with significant additional information supporting their forecasts, we have refined our analysis and corrected errors in our approach. Further details are set out in the Cost Assessment document.

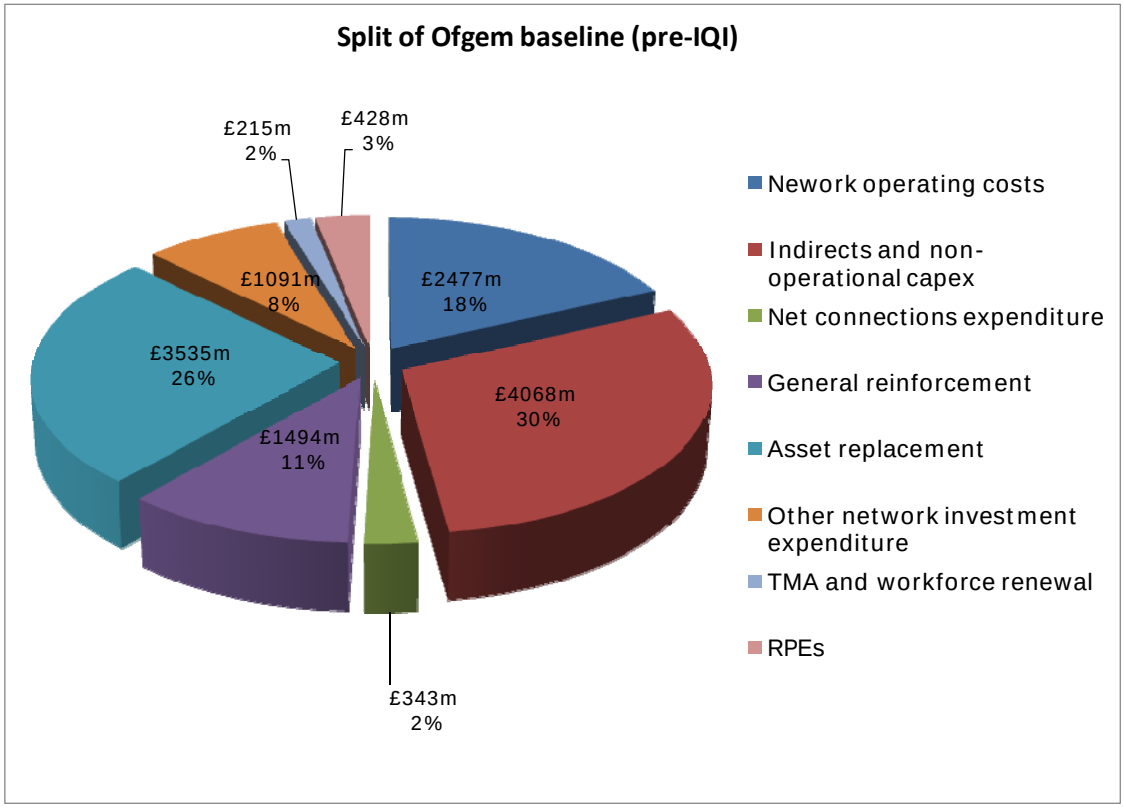
3.14. Figure 3.1 below sets out the DNO forecasts and the Ofgem totex baselines as a proportion of the DPCR4 actual expenditure. The majority of the cut relates to reductions in network investment expenditure, primarily associated with asset replacement unit costs and general reinforcement, but there have also been significant cuts in RPEs. There is more of a mixed picture on operational activities where we have made significant reductions to the least efficient DNO but also applied increases for the most efficient DNOs, who are significantly outperforming our benchmarks.

Figure 3.1 - DNO forecasts and Ofgem baselines relative to DPCR4 actuals (pre-IQI and excluding RPEs)



3.15. The make-up of our baseline for network expenditure (pre-IQI) is shown in Figure 3.2 below.

Figure 3.2 - Breakdown of Ofgem's baseline for network expenditure (pre-IQI)



3.16. The pie chart illustrates that most of the £14bn spending on the networks in the DPCR5 period is required to replace ageing assets and to provide reinforcement or take other measures where capacity is constrained. While we expect around £5bn of investment for this purpose, a further £4bn of expenditure on indirects and non-operational capex funds the network design, systems expenditure and project management which accompanies this programme of investment. In comparison the ongoing costs to maintain the network, restore supply after interruptions etc is likely to account for around £2.5bn of the £14bn expenditure. Our baselines also include: traffic management costs associated with complying with legislation introduced to manage congestion and disruption on the road network and the cost of training and apprenticeships to renew the workforce. Other network investment expenditure includes legal and safety expenditure and diversions and non-core investment such as flood protection.

3.17. Network expenditure in DPCR5 will be around 23 per cent higher than in the DPCR4 period, although this varies from DNO to DNO depending on the age and condition of assets. This expenditure is expected to fund the replacement of roughly 5 to 10 per cent of assets on the networks over the next five years (with this figure varying significantly between asset categories).

3.18. Having conducted our own investment modelling and a thorough review of each company's asset condition data, we accept the need for the majority of the forecast volumes of work although there are some specific areas where we have cut back some DNO forecasts. We are persuaded that without this volume of replacement there would be an unacceptable deterioration in network health over the DPCR5 period. The network health index we will introduce, and which is explained in Chapter 2, will ensure that the DNOs use their allowed revenues to carry out the necessary investment over the DPCR5 period.

3.19. On average 11 per cent of network expenditure is required to provide this reinforcement, representing an increase of 32 per cent on DPCR4 levels. The network load index we will introduce, and which is explained in Chapter 2, will ensure that DNOs build the extra capacity that is required over the DPCR5 period.

3.20. A range of new requirements and standards on the DNOs, such as changes to the Electricity Safety, Quality and Continuity Regulations (2002) and the need to invest in flood defences following the recommendations of the Pitt Review also drive network expenditure. For some of these areas of expenditure we have awarded the companies an upfront allowance as part of our baselines. This expenditure accounts for around 4 per cent of our view of the network expenditure required over the 2010 to 2015 period. For other areas of expenditure such as emergency batteries and the majority of spend associated with rising mains and laterals[12] we have been unable to specify an allowance upfront. These costs will be recovered through logging up or reopener mechanisms. As such the proportion of this expenditure is likely to grow through DPCR5.

3.21. We think that efficient DNOs should be able to deliver this additional network investment with only a 6 per cent increase on current operational costs (network operating costs, indirect costs and non-operational capex combined) from DPCR4, accounting for 50 per cent of network expenditure over the DPCR5 period.

3.22. We think that DNOs should be able to contain increases in this area of costs through further efficiency improvements that we have identified through comparative benchmarking and ongoing efficiencies of around 1 per cent per annum. We note that some of the most efficient companies in the sector expect to achieve on-going efficiency improvements over the DPCR5 period and work commissioned by the DNOs also identified such efficiencies[13].

Real price effects

3.23. We commissioned a series of work from CEPA on real price effects, most recently to take account of any new evidence on macro-economic trends in real

[12] The rising and lateral electricity mains in large scale housing estates built by local authorities/developers during the 1950s and 1960s are reaching the end of their lifespan and require regular inspections and maintenance. There is some uncertainty as to the ownership of these assets. Further details are set out in the Cost Assessment document.
[13] "The rate of Frontier shift affecting electricity DNOs", report prepared for the DNOs by First Economics, July 2008. The report was also updated for WPD in December 2008 and May 2009.

prices since Initial Proposals and further evidence from the DNOs. The CEPA report suggests that overall we should apply a lower RPE assumption than proposed by the DNOs and lower than the assumption we used at Initial Proposals. We have reviewed CEPA's work and further representations from the DNOs and have concluded that CEPA's assumptions are appropriate.

3.24. On average we assume that DNOs face average RPEs of 1.1 per cent a year for network investment and 1.4 per cent a year for operational activities. 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. We have made a £428m adjustment to allowed revenues to accommodate these above inflation increases, after accounting for ongoing efficiencies.

3.25. We think that our assumptions for RPEs are reasonable based on the available evidence. The RPI is likely to increase significantly relative to the CPI measure of underlying inflation used by the Bank of England to set monetary policy. This is because the RPI includes mortgage interest repayments (and CPI does not). These repayments are likely to rise significantly as interest rates move from their current historic lows to long-run averages. DNOs will benefit from revenues rising faster than their input costs and from the resulting increase in RAV. The DNOs have typically struck pay deals in the last year that that are well above inflation - as measured by RPI which is usually used in wage negotiations. This should provide some headroom for below inflation price rises in subsequent years to maintain the level of real wages unless there are productivity improvements that would then be reflected in real wage increases. We are allowing a small premium for specialist labour and an allowance for workforce renewal. But we have not accepted the DNOs' arguments of significantly above average increases in specialist labour wages over the next five years. Although there may be short term labour shortages DNOs should be able to train new staff and/or attract skilled workers from abroad to counter to counteract any skilled labour shortages.

Review of network investment

3.26. Our review of the companies' forecasts for network investment has been highly detailed and robust. We developed and improved network investment models used in previous price control reviews. For network 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.

3.27. We think that many of the DNOs still have an inflated view of the unit costs they will face over the DPCR5 period. There is a very large range in the unit cost assumptions made by different DNOs to carry out broadly the same work. We have applied reasonable benchmarking to set each DNO a set of unit costs at the lower of

the DNOs' forecast or the median level. This has cut network investment expenditure by 12 per cent from the DNO's forecasts (pre-IQI and before adding in RPEs). After applying the IQI and adding back RPEs our total cut to network investment expenditure is 15 per cent.

3.28. 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 are 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 DNOs are planning to undertake but will still allow the companies to achieve their planned network health and fault levels by 2015.

Review of network operating and indirect costs

3.29. Our review of operational costs strikes an appropriate balance between being tough on inefficiency and ensuring that efficient companies have the resources they need to carry out their activities and manage substantial increases in investment in their networks.

3.30. 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 EDFE EPN and 70 per cent for the most efficient company by this measure SSE Hydro. The efficiency score for indirect costs vary between 119 per cent for EDFE EPN and 83 per cent for the most efficient company by this measure SSE Southern.

3.31. We have not made any allowance for inefficient companies to "catch up" with the most efficient companies. We have set them allowances based on our upper third and upper quartile baselines for network operating costs and indirects respectively in the first year of the next price control period. As overall cost allowances are increasing for every DNO this should make it easier for management to restructure and close any performance gap quickly. In early price controls allowances were lower than in previous years. Companies were given more time to close any efficiency gap in recognition of the time it takes to restructure and the costs of doing so. But even if it will take companies more than a year to close any efficiency gap, we do not think it is appropriate for customers to fund this catch up. Shareholders and management have had 20 years since privatisation to close any efficiency gaps and where they have not, we think it is fair that shareholders and not customers should fund any costs of remaining inefficiency.

3.32. We recognise the need for DNOs to be able to manage increasing levels of network investment during DPCR5. We have assumed that efficient indirect costs associated with investment will increase at one third of the rate of increase of network investment.

3.33. We are confident that we have applied a fair, robust and transparent process. 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 of the relative efficiency of the DNOs. We have provided more updates and opportunities for interaction with each of the DNOs than in any other review and have worked systematically through their comments. We have rewarded the most efficient DNOs and set challenging allowances for the least efficient.

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

The IQI mechanism

3.35. We propose that most costs (the exception being mainly business support costs) will be subject to the IQI mechanism. The IQI encourages the DNOs to submit good quality forecasts by providing lower returns to companies that over-forecast their expenditure requirements. The IQI achieves this by:

- setting an expenditure allowance one quarter of the way between our baseline, and the company forecast,
- providing additional income to the DNOs based on how close their forecasts are to the Ofgem baseline. The further the forecast is from the Ofgem baseline the lower is the additional income (this becomes negative where there is a sufficient gap), and
- varying the incentive rate that applies to any underspends or overspends depending on the gap between the Ofgem baseline and the company forecast. The larger the gap the lower is the incentive rate meaning that such companies have to pass on to customers a larger proportion of any underspend. The range in the DPCR5 period is 49 per cent to 55 per cent.

Handling uncertainty

3.36. As noted in Chapter 1, when we set the cost allowances for the five year period there is always a degree of uncertainty about the network costs the DNOs will face. The macroeconomic conditions mean there is more uncertainty in DPCR5 than in previous reviews; particularly around the impact the recession will have on demand on the networks and the need for reinforcement.

3.37. The mechanisms we put in place to account for uncertainty will limit the extent to which allowed revenues and costs move out of alignment with each other. They can be structured to work symmetrically to protect both DNOs (from cost increases substantially beyond their control) and customers (from funding windfall gains where actual costs fall significantly below the level expected when the price control was set but do not reflect any action from management and/or genuine efficiency), or to protect only one of the two parties. DPCR4 contains the following mechanisms:

- the capex rolling incentive shares DNO under and out performance against the capital expenditure allowance between customers and DNOs,
- allowed revenue varies according to customer numbers and units (kWh) distributed,
- an ex post adjustment for efficiently incurred defined benefit pension scheme costs, to the extent these turn out to be higher or lower than assumed in setting revenue allowances ex ante, and
- a reopener under which the DNOs can apply to recover the cost of meeting new legislation (the Traffic Management Act 2004 (TMA) and the Electricity Safety, Quality and Continuity Regulations 2002 (ESQCR).

3.38. In DPCR5 we propose to make a number of changes. We have extended the category of costs subject to the rolling incentive as discussed in Chapter 2. Later in the chapter we set out our decisions for managing uncertainty associated with financial issues such as tax liabilities and pensions.

3.39. We are removing the DPCR4 drivers for units distributed and customer numbers. Instead, we have decided that demand side risks will be captured by the following:

- Sole use connections will be removed from the price control and will be treated as an excluded service.
- Volume drivers on the number of high-volume low-cost connections involving shared assets. These volume drivers will also true-up for changes in the proportion of gross costs that are recovered through up-front connection charges thereby avoiding DNOs' making windfall gains or losses through such changes.
- A combined reopener for general reinforcement expenditure and high-cost low-volume connections capex involving shared assets.

3.40. We have decided to retain the reopener for TMA costs which will focus on costs arising from the introduction of permitting schemes as there still remains significant uncertainty over the level and timing of these costs. We are introducing additional reopeners that will consider high-value projects, rising and lateral mains, black start capability, emergency batteries and critical national infrastructure, and repowering Shetland.

3.41. There will also be application windows for the reopeners during DPCR5. These windows are designed to help suppliers and customers by reducing the unpredictable volatility of distribution network charges. They will also allow us to make comparisons between DNOs at the time of reopeners.

3.42. We have a general duty to ensure that efficiently run licensees are able to finance their activities. Therefore, if any event not covered by a specific mechanism

threatened an efficient DNO's ability to finance its activities, we would have to give serious consideration to any request to reopen the price control. Our policy principles are set out in guidelines document for responding to deteriorating financial distress for a networks company[14].

3.43. Further details of our approach to managing cost and volume uncertainty can be found in the Cost Assessment document.

Pension Costs

3.44. A significant element of the DNOs' costs is the cost of servicing deficits on defined benefit pension schemes and funding the on-going costs associated with these and defined contribution schemes. In total in DPCR5 we have allowed £1.7bn of funding for pensions, £1.05bn for deficit repair and £650m for ongoing costs.

3.45. We established a set of pension principles in 2003 to provide a consistent framework to deal with pension costs across all our regulated network companies. These are subject to minor adjustment in each price control to reflect the particular circumstances of each control. After applying the principles to all types of network operators that we regulate and in preparation for DPCR4 we instigated a review of the principles in 2008.

3.46. This review has been lengthy, spanning 16 months and has included three consultation documents and three well attended seminars. The review has taken place against an external environment of significant changes in pension terms and provision in the private and public sector and increasing costs for defined benefit schemes.

3.47. The majority of the DNOs' pensions cost base relates to the servicing of legacy defined benefit pension schemes. Although all but one of the DNOs has closed their legacy defined benefit scheme to new members these schemes are still open to existing members. The cost of maintaining these schemes can be divided into two elements - the ongoing costs and the cost of deficit repair.

3.48. In our third and final consultation in the review of pensions, issued on 16 October we set out our minded to position relating to the ongoing costs and the cost of deficit repair. In the remainder of this section we summarise our minded to position, comment briefly on the views we received and set out our Final Proposals. Further detail is provided in our Allowed Revenues and Financial Issues document.

3.49. Our pensions consultation was relevant for all network operators (NWOs). In this document we particularly focus on how our decisions affect the DNOs over the DPCR5 period. We will issue a further document next year to provide more details on how our decisions will affect other NWOs.

[14] Arrangements for responding in the event that an energy network company experiences deteriorating financial health: Draft guidance document, document ref (49/09), May 2009.

On-going costs

3.50. The ongoing costs relate to the cost of meeting pensions liabilities that will be generated based on accrued service during DPCR5. DNOs have made their cost projections on the basis of their existing contribution rates, which range from 20 per cent to 35 per cent of pensionable salary. We have made adjustments to these projections to reflect amounts relating to excluded services and sole use connections, which are not recovered via distribution use of system charges, but have accepted the projections other than for these adjustments without any benchmarking.

3.51. These projections amount to £650m over the price control period.

3.52. In our minded to position we made two proposals in respect of on-going costs.

- We stated that we intended to ensure that for all future reviews pension costs would be included as part of our benchmarking of total employment or total costs.
- For DPCR5 we concluded that it was too late to introduce pension costs into the benchmarking and therefore we proposed the introduction of a specific incentive scheme with 50:50 sharing of any deviations from the DNO's forecast costs after our adjustments explained above.

3.53. Most respondents said that it was difficult to disagree with benchmarking ongoing pension costs in principle and it has been a feature of our pensions principles since they were first introduced. There was some concern that benchmarking needed to be appropriate to the situation and further details were requested. We have therefore concluded that we will for future reviews benchmark on-going pension costs as part of total employment or total costs. We will set out further details on how we will undertake the benchmarking nearer the time.

3.54. Turning to the specific DPCR5 incentive scheme, respondents to our consultation highlighted that for the DNOs most of the pension costs relate to members who are protected by the protected person legislation, which limits the flexibility that they have to mitigate cost increases.

3.55. We asked the DNOs for detailed information on the number of members that they expect to be in each of their different defined benefit and defined contribution schemes in each year of DPCR5. We also asked them to set out how many members of their defined benefit schemes were covered by the protected persons legislation put in place at privatisation. Analysis of this data is set out in our Allowed Revenues and Financial Issues document.

3.56. Our analysis revealed that over the DPCR5 period less than 50 per cent of employees are protected persons. But we were persuaded by the DNOs' evidence that the protections put in place at privatisation leave them very little scope to manage the pension costs of these employees. In the light of this evidence, we still

think it is appropriate to mimic the incentives that other utilities and unregulated companies face to manage their pension costs. But given the limited scope that DNOs have to manage the costs for just under 50 per cent of their employees, we propose a sharing factor of 20 per cent for any increase in costs over the forecast level and 50 per cent for any reduction in costs below forecast. We think these sharing factors are appropriate given the control DNOs have over pension costs based on the information they submitted on the number of staff in the different schemes.

3.57. The DPCR5 Financial Methodologies document sets out in more detail how the incentive scheme is likely to be evaluated in DPCR6.

Deficit Costs

3.58. With defined benefit schemes there is always a degree of uncertainty about the future liabilities that will need to be funded. This is because future pension costs depend on a number of factors that need to be forecast over a long period of time of at least 50 years. These include: how long members and their dependents live, inflation over this period and for those members still working their final salary and length of service on ceasing to be an active member.

3.59. The assets required to meet these uncertain future liabilities are also uncertain as the level required today is based on an estimate of the future returns that the scheme will earn on its various assets.

3.60. Over the last two years the world economy has gone through the most severe downturn in over 70 years and deficits have increased rapidly, many businesses and organisations in the public and private sector have had to make changes to the schemes terms and conditions to manage costs. The National Association of Pension Funds published the results of a survey on 27 November which highlighted changes that have taken place and the expectation of most DB schemes that there will be further significant change ahead.

3.61. As a result of the increased deficits and the reduced ability of companies to finance significant repair payments we have seen the average repair period increase from 6 to 8 years (as reported by the Pensions Regulator[15]) and increased use of other mechanisms such as back-end loading of repair payments and the use of contingent assets.

3.62. In our minded to position we made it clear that we are committed to allowing the network operators to recover through regulated revenues, all of the pension liabilities they have accrued to the end of the current price controls. In the case of DNOs this means we are committed to allowing the companies to recover the full value of their deficits accrued at the 31 March 2010.

[15] Scheme Funding: An analysis of recovery plans, published by the Pensions Regulator, Nov 2009.

3.63. However, we are concerned about the timeframe over which customers repair this deficit and we explained why we thought it was appropriate for customers to pay for the deficit repair over a 15 year repair period. We explained that deficits had increased rapidly over the last two years but have started to reduce, and, since April, quite dramatically. A long repair period allows the possibility that economic recovery would further reduce deficits without the need for consumers to make a contribution. This reduces the risk that business and domestic consumers would face higher bills than necessary in the next five years during a deep recession.

3.64. Our regulated network companies are also very different to most other companies. Generally in competitive markets trustees will want to repair any deficits as soon as possible because any company operating in competitive markets can quickly run into financial difficulty. The DNOs are different. They have a natural monopoly in providing an essential service. Even if a business is poorly managed and/or inappropriate financing is put in place and it has to enter into administration, it will continue operating as it provides an essential service. There is therefore not the same risk or urgency to ensure deficits are repaired as soon as possible.

3.65. Respondents to our consultation have generally accepted that is appropriate for us to set a notional repair period rather than funding on the basis of the current repair periods agreed with trustees that displayed a wide range between 6 and 11 years across the 14 DNOs. However, most respondents expressed concern over the length of our notional repair period. Concerns were raised that our proposed 15 year period was longer than the maximum period set by the Pensions Regulator and that we were attempting to place undue pressures on trustees, although both Centrica and Consumer Focus supported our position.

3.66. We have been in discussion with the Pensions Regulator (TPR) on the interaction of the regulatory frameworks for gas and electricity markets and for work-based pensions. TPR recognises that the treatment of pension costs, including pension deficits, in regulatory pricing decisions is a matter for the economic regulators. It notes the wide range of approaches by Ofgem and other economic regulators to this issue.

3.67. TPR is clear however that the approach of trustees to setting funding targets and deficit recovery plans, including cash demands on the employer, is independent of the decisions taken by the economic regulators on pricing. Trustees need to form their own view on the strength of the employer covenant and the affordability of deficit recovery payments. TPR intends to communicate shortly with the trustees of schemes with employers subject to economic regulation.

3.68. Although we set a notional repair period for the purpose of assessing the allowed revenues over DPCR5 we do not seek to set the repair period that trustees will actually agree with their scheme sponsor. There is therefore the potential for a difference between the repair period agreed between trustees and their sponsoring company and the notional repair period we use to establish DNOs funding. This has always been the situation. Even if we accepted DNO repair periods in existence at the beginning of a price control there is no guarantee that there would be a match over the whole price control as schemes will always have a triennial valuation

midway through any five year price control which may result in a change in deficit recovery plans.

3.69. We have listened to the views expressed and noted that most DNOs would accept a notional repair period of 10 years. However, reducing the repair period to 10 years from 15 years would increase charges to consumers, in DPCR5, by over £430m. In the context of the increasing distribution charges that are due from 2010 and the difficulties that many consumer and businesses are facing at present, we do not think this is appropriate.

3.70. We have therefore decided to maintain our proposed 15 year notional deficit repair period.

3.71. If DNOs agree faster repair payments with their trustees than the 15 years we use, we will adjust allowed revenues over the remaining portion of the 15 years to keep the companies whole on a Net Present Value (NPV) neutral basis. DNOs, sponsoring companies and the Pensions Regulator will only agree to a shorter repair period if the DNOs can afford to make the additional payments, as affordability is a major factor in the agreement of repair plans.

Valuation

3.72. In order to estimate the deficit funding required we need to agree on the appropriate valuation to estimate the current deficit to apply the 15 year notional deficit repair period to. We set out our minded to position to use the latest update available to us which the DNOs provided as at 30 September 2009.

3.73. Most respondents accepted that using the latest updated valuations was appropriate. There was some support for an exception to this approach, if a full valuation had taken place within a year of the price control commencing. Three schemes are in this position. Whilst we understand the arguments for adopting this approach, we think that the significant movement in scheme deficit valuations since March 2009 requires us to use the latest updated valuation.

3.74. In our Final Proposals we have used the valuations in September 2009 from all DNOs as a proxy for the March 2010 deficit and estimated appropriate funding for deficit repair payments from these values. As we have stated that we will fund deficits on service accrued until the end of the current price control, we will adjust in DPCR6 for any differences, providing they are efficient and economical, between the September deficits we have used and those that are actually reported in March 2010.

Efficiency review trigger

3.75. The final minded to proposal that we made in our October pensions consultation relating to deficit funding was to introduce a trigger mechanism to determine whether a full efficiency review would be required into any movements in deficit over the DPCR5 period. We set out our minded to position to compare the

movement in the deficit of each scheme to the movement in the PPF 7800 index[16]. This would provide a clear and unambiguous trigger and would reduce the risk network operators face about the circumstances that could lead to us disallowing all or part of any deficit movement.

3.76. Most respondents to our consultation considered that the PPF7800 index was not an appropriate mechanism to act as a trigger. Some highlighted weaknesses in using the PPF7800 including its tendency to be rebased from time to time and suggested that in practice it might lead to efficiency reviews for all DNOs. Other respondents suggested that inefficient schemes may pass the trigger test and thus avoid a full efficiency test. There was strong support from respondents to commission a report from the Government Actuary's Department (GAD) to assess the efficiency of the schemes as we had done as part of the Pensions Principles Review.

3.77. We have been persuaded by the views expressed and have amended our approach to the trigger mechanism. Rather than use the PPF 7800 index as the trigger mechanism we will use GAD to review the movement in the deficits of schemes to assess whether or not there would appear to be a case for a full efficiency review of any of the DNO deficits.

Financial Issues

Cost of capital

3.78. The cost of capital is the financial return expected by investors - both debt and equity - if an efficient company is delivering an acceptable level of performance, in accordance with its statutory obligations and licence conditions. Regulators typically make an allowance for efficiently incurred financing costs by calculating an allowed return on the capital employed in the business (i.e. the RAV) at least equal to the weighted average cost of capital (WACC).

3.79. As set out in the December 2008 Policy Paper, we think that, while the cost of capital is an important component of the allowed return, it is only one element which can drive overall financial performance. In this review we have said that we will take a more holistic approach to determining the allowed return for DPCR5 taking into consideration a number of factors including the market evidence, the incentive packages, our assessment of the potential returns on regulated equity, consultants' views, the investors' survey and our financeability tests.

3.80. The table below sets out our range for the cost of capital and the final spot position we have used in setting allowed revenues.

[16] This index tracks movements of deficits across 7400 pension funds and is published by the Pension Protection Fund.

Table 3.3 - Cost of capital range

	DPCR5: Ofgem view		
	Low	**High**	**Final Proposals**
Cost of debt	3.3%	3.7%	3.60%
Cost of equity	6.3%	7.0%	6.7%
Gearing	65%	62.50%	65%
WACC (vanilla)	**4.3%**	**4.9%**	**4.7%**
WACC (post-tax)	3.7%	4.3%	4.0%

NB: Numbers may not add due to rounding

3.81. In this section we set out in summary the market evidence that we have considered (with our full analysis in the Allowed Revenues and Financial Issues document) and in Chapter 4 we discuss how this has been used in conjunction with our assessment of the overall risk/reward balance of the settlement to reach an overall view on the appropriate cost of capital.

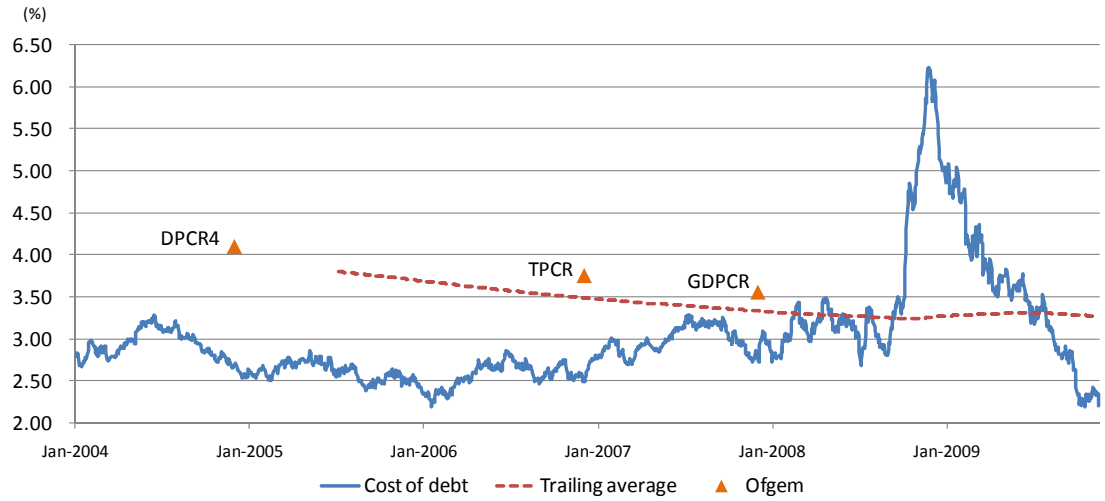
3.82. Although in Initial Proposals we used the DPCR4 WACC for modelling purposes our starting point for our assessment of the market evidence was our last assessment of the cost of capital which we undertook as part of the gas distribution review (GDPCR) in 2007. At GDPCR we set a vanilla WACC of 4.9 per cent (4.3 percent, post tax). The report we published at Initial Proposals from our consultants set out a vanilla WACC range of 3.5 to 5.6 per cent (3.0 to 4.9 per cent post tax). There were two reasons why we set out such a wide range at Initial Proposals compared with the same point in previous price control reviews. The first was that we were unable to apply our new, more holistic approach (based on our analysis of the Return on Regulated Equity) as many of the incentive schemes had not been calibrated and we were therefore unable to assess the potential risks and rewards in the overall package. The second was the ongoing uncertainty in the macroeconomic and financial market conditions.

3.83. Since Initial Proposals we have received an updated report from our consultants PwC, which has also considered, at a high level, the relative risk of the DPCR5 package against both the DPCR4 package and the gas distribution package. We have also considered updated analysis from NERA working on behalf of the ENA, CEPA working on behalf of Centrica, submissions from the companies and other respondents to our Initial Proposals and evidence from the financial markets.

Cost of debt and debt trigger

3.84. We have a consistent approach to setting the cost of debt over successive price control reviews. This is an important factor in providing the companies we regulate with predictability and stability over time. Our traditional approach is to largely base our cost of debt on the 10 year trailing average of a mixture of BBB and A graded bonds with a small margin. The graph below shows the movement in the 10 year trailing average.

Figure 3.3 - Ofgem estimate of the real cost of debt since 2004



3.85. There is a large degree of conformity in the estimates of the cost of debt ranges put forward by the various consultants as shown in the table below

Table 3.4 - Cost of debt ranges

Consultant	Rate %
PwC	3.3 - 4.0
CEPA	3.3 - 3.6
NERA	3.7 - 3.8

3.86. We received arguments that as a result of the credit crisis that the world economy is still emerging from that that we should allow a margin for the higher than usual transaction costs that companies are incurring and that due to liquidity issues companies are required to access debt markets earlier than necessary and thus carrying a higher than usual carry cost.

3.87. We note that many of the network companies that we regulate have in recent months accessed the capital markets at rates below the trailing average and there does not appear to be any liquidity issues. The table below sets out examples of recent issues.

Table 3.5 - Recent sterling issuance by utility companies

Issuer	Month in 2009	Amount (£m)	Maturity (yrs)	Nominal Coupon (%)	Real Coupon (%) - est
Northern Gas	June	200	10	5.875%	3.1%
ENW Finance	July	200	12	6.125%	3.3%
SSE	September	500	9	5.000%	2.2%
Enel	September	850	15	5.625%	2.8%
Enel	September	1400	31	5.750%	3.0%
Scotia Gas	October	300	9	5.125%	2.4%
EDF Energy	November	350	27	6.000%	3.2%
EDF Energy	November	300	22	6.125%	3.3%
EDF Energy	November	300	7	5.125%	2.4%
			Weighted average (%)	**5.6%**	**2.8%**
NB: We deflate the nominal coupons by 2.7% , which is the average of a range of inflation forecasts provided to us by City analysts.					

3.88. We also had submissions from the DNOs setting out their levels of embedded debt which averaged around 3.7 percent.

3.89. In our Final Proposals we are maintaining our traditional approach and largely base our cost of debt on the 10 year trailing average of a balance of BBB and A graded bonds plus a small margin. We apply a small margin to allow for a range of factors including a degree of embedded debt, transaction costs and any potential increase in the trailing average over the next five year period. The latter item could be dealt with instead by use of a debt trigger as we set out in Initial Proposals. There was limited support for the idea of a cost of debt trigger and we have therefore decided not progress with that idea at this stage. Further details are included in the Allowed Revenues and Financial Issues document and this concept will be explored further as part of our RPI-X@20 project.

3.90. In view of the evidence on the cost of embedded debt, the accessibility of debt at attractive rates and our expectations that DNOs will raise new borrowings over the DPCR5 period as the RAV increases we believe our traditional approach results in an appropriate cost of debt at 3.6 per cent.

Gearing

3.91. We think that shareholders, owners and management should have the freedom and incentives to find the most appropriate and efficient capital structure. We therefore assess the weighted average cost of capital on a notional gearing basis. Our consultants, PwC, recommended a range of 55 to 65 per cent. Other consultants have suggested a range from 60 to 62.5 per cent. We used 62.5 per cent the last time we set the cost of capital in gas distribution.

3.92. We have considered the relative risk of the package of measures available in DPCR5 compared to both DPCR4 and GDPCR, the level of debt being supported in licensed companies and their holding companies and the financeability of the DNOs.

3.93. All the evidence suggests that in DPCR5 the DNOs can comfortably support relatively high levels of gearing to their RAV, in part due to even greater certainty over allowed revenues (with the removal of the volume driver) and the high levels of depreciation within allowed revenues.

3.94. We have decided to use a notional gearing level of 65 per cent. There is evidence that companies can and do sustain much higher gearing ratios without seeing debt costs rise significantly whilst still maintaining their investment grade credit rating. However, given the financial market uncertainties, the advice from our consultants and previous precedents we think increasing to 65 per cent is reasonable.

Cost of equity

3.95. The cost of equity is a combination of three elements. The risk free rate, the equity beta and the equity risk premium.

3.96. In coming to our judgement on the appropriate risk free rate we have largely considered the movement in index linked gilts. Ten year index linked gilts are currently below 1 per cent and the 10 year trailing average is below 2 per cent. We have listened to the arguments that the rates on index linked gilts are currently depressed due to the impact of the Bank of England's Quantitative Easing programme and demand from pension funds and conclude that the rate is around 2 per cent.

3.97. Estimates of the equity beta are usually derived from analysis of stock market movements for individual firms relative to the market as a whole. Since none of the DNOs are directly listed on the UK market it is difficult to obtain direct market evidence for the equity beta. Most analysts use the traded water companies as the best proxy. We have looked at the evidence provided by PwC and have assessed the appropriate asset beta to be in the range 0.24 to 0.34.

3.98. We have converted these values into an equity beta using our notional gearing level and this indicates that the equity beta is less than one. The equity market risk premium represents the additional return that equity providers require to compensate them for the additional equity risk they face. This is the area where there has been most disagreement between the respective consultants. DNOs have argued that the recent credit shock and turmoil in the world economy has resulted in a fundamental re-pricing of equity risk. They point to the falls in the last year in the price of equity markets as evidence for this.

3.99. We have noted the there has been a strong recovery in equity prices since the low point of April this year. We note that many commentators including the Bank of

England Monetary Policy Committee have indicated that the cost of equity has returned in recent months to normal levels and our own analysis supports this view. We recognise that the recovery from recession will be not be straightforward or entirely predictable but we see no reason to believe that there has been a fundamental departure from the long-term trend in equity risk premium which is generally estimated by academics to be in the 3 to 5 per cent range.

3.100. Our overall view on the appropriate cost of equity taking into consideration our views on the risk free rate, equity market risk premium and equity beta is therefore in the range of 6.3 to 7 per cent. We have selected a point estimate (6.7 per cent) towards the top end of this range to reflect the current levels of market uncertainty and after considering the evidence that the equity beta is likely to be less than the market average.

Financeability

3.101. In Initial Proposals we set out the financeability test we traditionally use. The tests are set out in more detail in the Allowed Revenues and Financial Issues document. The purpose of our tests is to indicate whether on the basis of our proposal companies are likely to face any financeability issues if they are operating efficiently and are financed efficiently. In the light of our analysis of the level of gearing that can be supported by the DNOs our financeability test for RAV gearing of 65 per cent looks conservative. We are therefore increasing the threshold for this test to 70 per cent from 65 per cent. As set out in our publications over the last year associated with our review of arrangements for responding in the event that network companies experience financial distress, we interpret our duty to have regard to the need for companies to be able to secure the finance they need to apply to efficiently operating companies. We therefore apply our financeability tests on the basis of our notional capital structure and our view of the efficient level of costs.

3.102. All companies comfortably pass our financeability tests

Merger Policy

3.103. We are publishing an open letter on our merger and acquisition policy for consultation. This can be found on our website in the Networks Policy section.

4. Risks and Rewards

Chapter summary

This chapter sets out our analysis of the balance of risk and rewards in our proposals and explains how we have taken this into account in our decision on the cost of capital to award the DNOs for the 2010 to 2015 period.

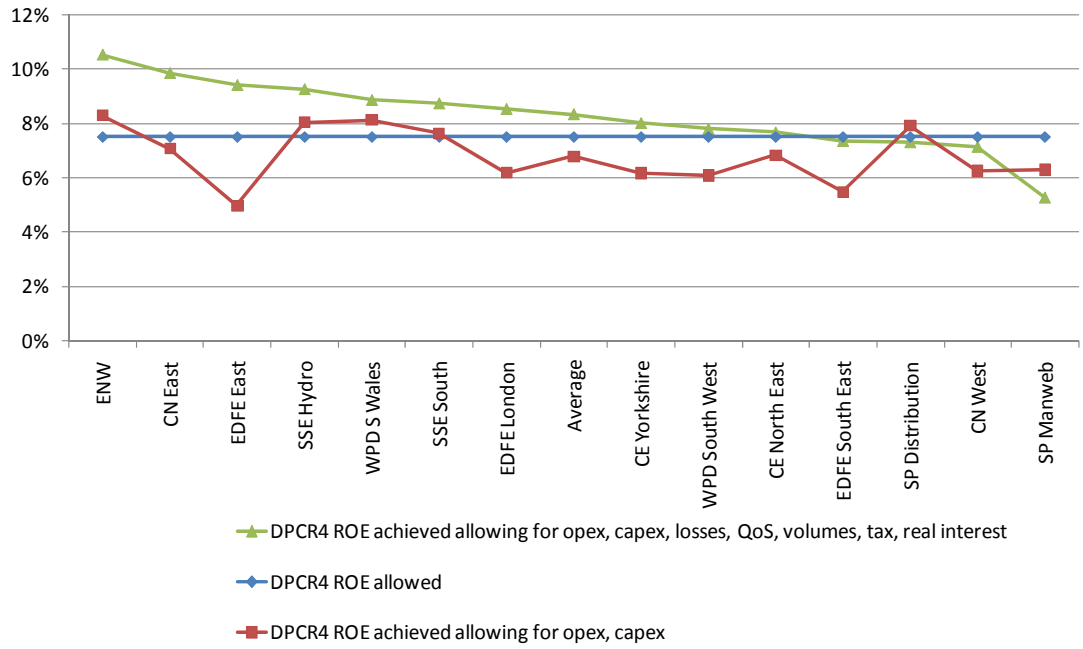
Introduction

4.1. DNO shareholder earnings within the price control period can vary widely from the baseline return on equity assumed in setting the WACC when the price control was set. This is because of the incentive mechanisms in the control, and uncertainty over how costs will move over the five year period. In general, we would expect shareholders of a well performing DNO to earn additional returns while those that perform poorly would not achieve the baseline return on equity. Some out performance and under performance will be driven by external factors that drive up or reduce costs below the level we anticipated when we set the control. The price control can contain indexes, triggers and re-opener mechanisms to constrain the scope for earnings to fluctuate according to these factors.

4.2. We have developed a measure of the return on regulatory equity (RoRE) and have been monitoring DNO performance in the DPCR4 period. This shows that in practice DNO earning has varied significantly from the DPCR4 assumed return on equity, with the majority of DNOs earning substantially in excess of the assumed return. As well as each DNO's performance in controlling costs, outturn RoRE has been driven by performance under the losses incentive, the interruptions incentive scheme (IIS), the volume driver, changes in corporate tax rate and deviations in real interest rates from those assumed when we set the price control[17].

[17] The RoRE so far in DPCR4 is set out in Figure 4.1 below. These returns do not reflect any additional returns DNOs may have earned from gearing at levels in excess of that assumed in the DPCR4 WACC.

Figure 4.1 – Forecast RoRE for each DNO in DPCR4



4.3. The scope for outperformance and underperformance of the assumed rate of return used in setting the WACC is often overlooked by companies and commentators at the time of price control reviews. The debate typically is focussed on the WACC Ofgem should apply in arriving at allowed revenues. Experience in DPCR4 illustrates that the incentives built into the settlement can yield significant returns for DNOs. These returns are, to a greater or lesser extent, funded by customers, either in the price control period or at a later date. Where factors outside the company's control can depress shareholder earnings, this represents an additional risk which may need to be factored in to our decision on WACC depending on the degree of risk mitigation included via reopeners, triggers and revenue drivers.

4.4. In this review we have taken a holistic view of all elements of the price control settlement and made sure that together they provide a fair balance of risk and reward for customers and DNO shareholders. We have used the RoRE measure to calibrate the strength of various incentives and other mechanisms in the settlement. We have also used it to assess the level of risk that DNOs are exposed to relative to the last price control. Along with the market evidence set out in Chapter 3, our RoRE analysis has been an important consideration in our decision on the cost of capital to apply in these Final Proposals.

4.5. Our basic unit for assessing variability in RoRE is the basis point. One hundred basis points equals one per cent. The baseline return on equity included in the WACC is 6.7 per cent. If incentive outperformance allows a company to earn 7.5 per cent then they have gained 80 basis points in additional RoRE. In this proposed

settlement, 40 basis points amounts to £9m per DNO on average over the five year period.

RoRE analysis

4.6. We have used the RoRE analysis to help us understand and calibrate the balance of risk and reward in these Final Proposals. This has involved looking at the full range of factors that could impact on shareholder returns over the DPCR5 period including:

- DNO performance against Ofgem cost baselines, including on-going pension costs
- DNO performance against Ofgem's assumed cost of debt
- DNO ability to earn extra allowed revenues through our package of incentives:
  - Interruptions incentive
  - Losses incentive
  - Broad measure of customer satisfaction
- DNO exposure to:
  - Changes in corporate tax
  - Payments under the guaranteed standards
- DNO decisions on gearing

4.7. As noted in Chapter 2 of this document, we have decided to place caps and collars on DNO exposure to each of the incentives[18] and have limited DNOs' exposure to changes in corporate tax and payments under the guaranteed standards. The reopeners we have for load related expenditure (see Chapter 3) also limit the extent to which DNOs are exposed to volume risk and the extent to which they can earn additional returns through a drop off from forecast load growth. Similarly, for cost items subject to the IQI mechanism, which account for around 85 per cent of total baseline costs, DNOs are only exposed to (or get to keep) between 45 and 51 per cent of any over (under) expenditure against our baselines.

4.8. Other than these specific caps, triggers and reopeners, we do not place any overall constraint on DNOs' ability to make or lose shareholder returns. We have not imposed a cap on the extent to which DNOs can outperform by being more efficient than assumed in our baselines, and we have not sought to limit shareholder exposure if a DNO lets costs get out of control. Similarly, there is no cap or collar on DNO exposure to financing risk, and DNOs can earn (or lose) shareholder returns through obtaining a lower (or higher) cost of debt than the 3.6 per cent pre tax we have assumed or through gearing the company at a different level to the notional gearing we assume in setting the cost of capital.

[18] In the case of the IIS we have not limited the earnings DNOs can make through outperformance.

Methodology

4.9. We have constructed a range of plausible DNO performance during the DPCR5 period, to help us understand the possible range of shareholder returns at different assumed cost of capital, as follows.

Upside scenario

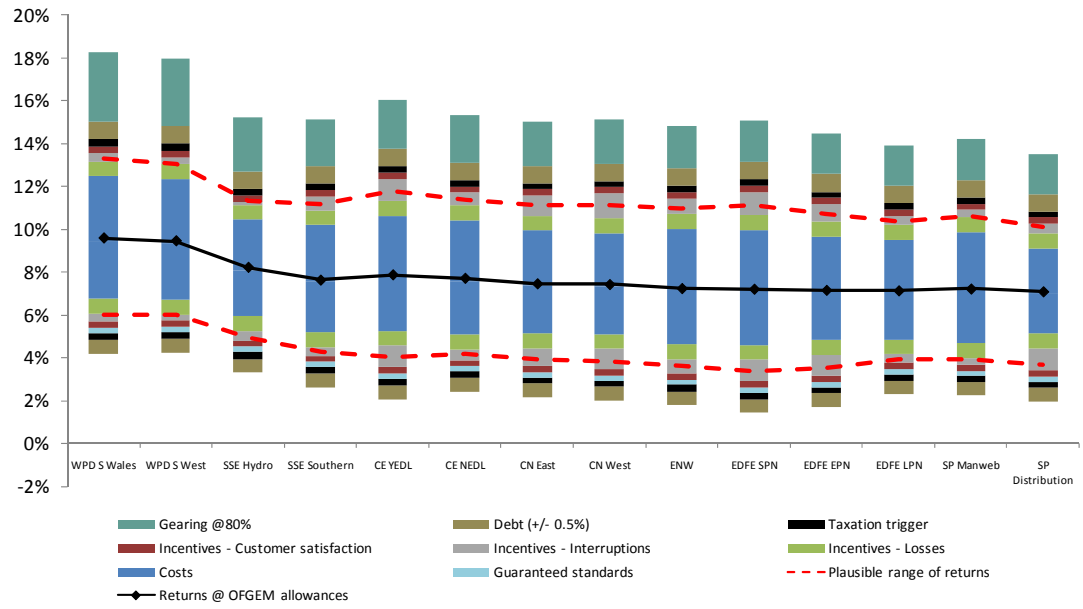
4.10. In the upside scenario, we have assumed that through measures implemented by current management, a change in management and/or through a change in corporate control, all DNOs can match the level of efficiency currently achieved by the two best performing companies (SSE on operating costs and WPD on network unit costs). In addition, the DNOs manage to contain their input costs to below the RPI through a combination of careful contracting, cost control, achieving further productivity or as a result of a benign economic environment. This performance alone (assuming no further upside from performance under the incentive mechanisms), at a WACC of 4.7 per cent vanilla would mean that every DNO in the industry would be able to earn in excess of 9 per cent return on regulatory equity. This is at least 230 basis points more than the baseline return and 200 basis points above our estimate of the highest plausible cost of equity at 7.0 per cent.

4.11. Our upside scenario also assumes that all DNOs can achieve industry best performance against the incentives. If all companies match the customer minutes lost performance currently achieved by WPD, were able to achieve their own best customer interruptions performance from DPCR4 in every year of DPCR5 and earn the cap on losses and customer satisfaction then they would be able to earn around another 110 to 210 basis points over the period. Assuming WACC at 4.7 per cent vanilla, this would mean shareholder returns at over 10 per cent for all DNOs.

4.12. We recognise that it is very unlikely that DNOs would be able to outperform all of their targets consistently across the five year control period. DNOs may incur costs above our baseline allowance in exceeding the interruptions incentives. We therefore think a plausible upside return denoted by the top dotted red line in Figure 4.2, is between 10 per cent and 13 per cent.

4.13. Further upside may be available for DNOs that increased gearing above our notional levels (say to 80 per cent) or achieved a lower cost of debt than the 3.6 per cent we have assumed.

Figure 4.2 - Potential equity returns (RoRE) at 4.7 per cent WACC (vanilla)



4.14. In our downside scenario we have assumed that DNOs are hit by price and/or volume shocks and that this is compounded by poor performance against all of our incentive mechanisms and poor cost control.

4.15. In this scenario DNOs may, for example, have underestimated the volume of activity such as tree cutting that is required on their network and faster than expected growth means they have to carry the cost of additional load related expenditure up to the point where the reopener is triggered. In addition, DNOs may have been unable to control the inflation of their input costs and find these increase above the real price adjustments of 1.4 per cent for operating costs and 1.1 per cent for network investment costs awarded in the settlement. Assuming they are unable to offset any of these price or volume shocks through efficiency improvements, and assuming a WACC of 4.7 per cent vanilla, then DNOs would, in general, earn regulatory returns of around 5 per cent, or 130 basis points below the low end of the cost of equity range.

4.16. If a DNO in this position achieved its worst interruptions performance from DPCR4 in every year of DPCR5 and hit the collar on the customer service and losses incentive and paid the maximum plausible amount under the guaranteed standards then, with vanilla WACC at 4.7 per cent we would see returns in most DNOs around 4 per cent. Further downside may be possible for DNOs that had not managed to achieve a cost of debt at or below 3.6 per cent, or were hit by changes in corporation tax.

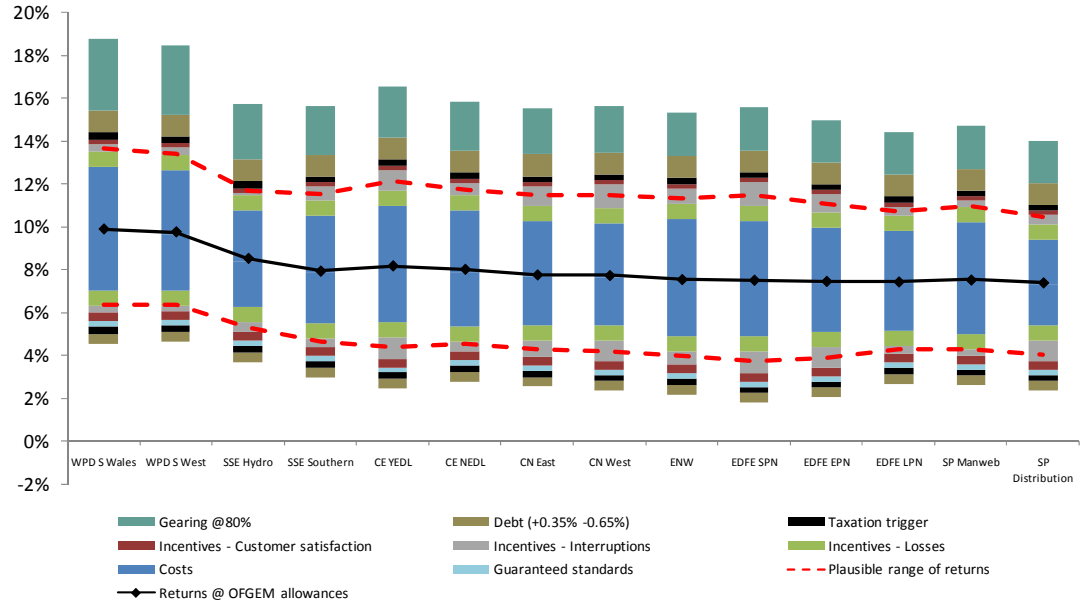
4.17. Once again we have considered the chances of all these factors occurring at once consistently across the entire DPCR5 period. Adjusting for this brings us to the likely view that the likely downside return lies between 3 and 6 per cent.

Assessment of results at different cost of capital

4.18. We conducted this analysis at different assumed cost of capital. We found that with vanilla WACC at or above 4.9 per cent, there would be insufficient risk of the DNOs earning shareholder returns below the likely cost of debt and it would be too easy for them to earn significantly above the likely cost of equity. At a WACC of 4.9 per cent, and using the upside scenario, DNOs could plausibly earn returns of at least 11 per cent before any financial engineering. While the upside scenario does entail good management by the DNOs across a range of metrics, this is performance that is by and large already being achieved by some DNOs in the industry. We do not think this would represent a fair settlement between customers and shareholders as DNOs would earn 400 basis points above the high end of the cost of equity range.

4.19. Similarly, at 4.9 per cent WACC, the downside scenario showed DNOs earning returns around or above the cost of debt. We do not think it is appropriate that in an industry with a notional gearing of 65 per cent companies that are performing poorly are only exposed to a degree of risk that would still allow them to earn at or above the cost of debt.

Figure 4.3 - Potential equity returns (RoRE) at 4.9 per cent WACC (vanilla)



4.20. We also looked to understand the risk reward balance with a vanilla WACC as low as 4.3 per cent and concluded that at that level there was potentially too much downside risk for the level of performance achieved.

Features of a well performing and poorly performing DNO

4.21. Our view is that with a vanilla WACC of 4.7 per cent we have struck an appropriate balance of risk and reward on the DNOs. Companies will be able to earn over 10 per cent return on regulatory equity, but only if they perform to bring real and significant benefits to all of the customers their network serves and meet the wider objectives we have set for this review. In particular, a company earning double digit returns would need to be doing most, or all, of the following:

- Carefully managing costs and achieving levels of efficiency above the current upper quartile industry performance,
- Keeping input price inflation well under control through for example, careful contract and cost control, delivering productivity improvements,
- Managing field staff and carefully maintaining and monitoring the network to keep interruptions and minutes lost through interruptions under control,
- Performing well in a survey of customer satisfaction, in managing customer complaints and be able to understand and respond to customer needs (where customers include suppliers, independent network operators and DG developers, as well as domestic and industrial users),
- Meeting its guaranteed standards in the vast majority of cases,
- Managing and reducing technical and non-technical losses on its system.

4.22. At vanilla WACC of 4.7 per cent the downside risk could involve returns of below 4 per cent for most DNOs before taking into account financing risk. We consider that this is an appropriate level of risk for DNO shareholders to bear. A company earning returns at this level would most likely have most or all of the following features:

- Be unable to achieve improvements in efficiency or productivity in order to offset price and volume shocks,
- Be unable to take measures to accommodate increases in load to avoid having to increase load related expenditure,
- Be unable to manage field staff, or to maintain or monitor the network in a way that allows them to achieve the targets set for them on interruptions,
- Perform badly in a survey of customer satisfaction and in managing customer complaints (where customers include suppliers, independent network operators and DG developers, as well as domestic and industrial users),
- Be failing to meet guaranteed standards to the extent that its payments hit the approx £20m (pre-tax) cap we have set on this liability,

- By failing to achieve the cost benchmarks used to set allowances,
- Falling well below targets set for technical and non-technical losses on its system.

DNO views on RoRE analysis

4.23. We have had a number of submissions from DNOs who have used the RoRE tool to conduct their own analysis of the risk reward balance in the proposed DPCR5 package. The DNO submissions were made in response to an early version of our analysis that we circulated in October ahead of the last round of formal meetings between the Ofgem team and DNOs.

4.24. In general, the DNOs have argued that the DPCR5 proposals are skewed and place more risk on the DNOs than opportunity to earn additional returns. Our analysis (shown above) suggests that there is at least 550 bps upside built into the settlement compared to around 470 bps downside risk. The key reasons for the difference between us and the DNOs are outlined below.

- In response to the DNO concerns, and since they last saw our analysis we have reduced their exposure to a number of mechanisms. We have:
    - Placed a tighter collar on the maximum penalty they can pay under the losses incentive from 115 to 70 post-tax bps at Initial Proposals,
    - Placed a limit on the maximum payments they will be required to make under the guaranteed standards,
- The DNOs did not fully factor in the protection offered by our uncertainty mechanisms, particularly those relating to demand risk,
- All DNOs consider there is a significantly greater downside than upside risk in terms of their cost performance against our cost baselines. This reflects the view of several DNOs that our cost baselines are unreasonable and our cost assessment has been too tough. DNOs have also argued that the chance to outperform against our baselines is reduced by the introduction of output measures and that the probability of the downside scenario is increased by recent developments in the macro economy.
- DNOs did not factor in the potential upside associated with increased gearing, although several were keen to point out the financing risk they are exposed to, which is included in our analysis. In practice, the opportunity to earn extra returns through financial engineering significantly outweighs the impact on shareholders if the DNO cost of debt exceeds the cost we have assumed in WACC.

4.25. We do not agree that the package is skewed on the downside as we are confident that we have set each DNO's baseline at a level it needs to operate efficiently. We do not think it would be appropriate to allow inefficient companies

that do not catch up with the more efficient companies to earn the assumed equity return for an efficient company. Our plausible upside scenario reflects levels of efficiency and performance already being achieved in the industry, and which we would hope the best performers will exceed in the DPCR5 period.

4.26. We acknowledge that DNOs' ability to outperform by delaying work should be constrained by output measures. But this is an important development in the regulatory contract which simply holds the DNOs to delivering what they have put in their business plans. They should not be able to earn the allowed equity return unless they do so. In this context we note two further things:

- We would expect a well run DNO to be able to achieve further efficiencies notwithstanding the output measures it will have to comply with.
- We have made it clear that if there is a significant increase in the real cost of DNO materials and (recognising that customers carry around 50 per cent of any cost overrun) a DNO considers it is in customers' best interest to delay some elements of its investment plan, we would consider this case when reviewing output performance in Chapter 19 of the Incentives and Obligations document.

4.27. As noted in Chapter 3, we consider that we have made an appropriate adjustment to the DNO baselines to cover the real price effects they may be exposed to. We do not agree that the risk of them being exposed to real price effects exceeds the chance of their labour or material prices growing at a rate below RPI, through management efforts or developments in the macroeconomy.

Relative risk DPCR4 and DPCR5

4.28. In support of a WACC at or above the DPCR4 levels, DNOs have also argued that there is more risk in the DPCR5 settlement than in DPCR4. The table below sets out our assessment of the risk and rewards under the two price controls.

Table 4.1 - Relative risk analysis of DPCR4 vs. DPCR5 using RoRE

RoRE Driver	Treatment in price control DPCR4	DPCR5	DPCR5: WACC - 4.7% DPCR4 experience Min	DPCR4 experience Max	DPCR5: WACC - 4.7% Ex-ante Min	Ex-ante Max
-Op-ex (100% incentive rate)	*Uncapped*	*Uncapped*	-2.9%	2.9%		
-Cap-ex (23-40% incentive rate)	*Uncapped*	*Uncapped*	-0.8%	0.8%		
Totex (45-51% incentive rate)[1]	Uncapped	Uncapped	-3.7%	3.7%	-2.0%	2.0%
Sliding scale additional income	Fixed	Fixed	0.0%	0.5%	0.0%	2.7%
IIS[2]	Capped	Capped (d/s only)	-0.8%	0.8%	-1.0%	1.0%
Losses	Uncapped	Capped	-3.5%	3.5%	-0.7%	0.7%
Volumes (DP4) / re-opener (DP5)	Uncapped	Capped	-1.2%	1.2%	-0.8%	0.8%
Broad Measure	n/a	Capped	n/a	n/a	-0.3%	0.3%
Guaranteed standards	n/a	Capped	n/a	n/a	-1.00%	0.0%
Tax	Uncapped	Capped	-0.8%	0.8%	-0.4%	0.4%
Cost of debt[3]	Uncapped	Uncapped	-0.5%	0.5%	-0.25%	0.25%
Pensions[4]	Uncapped	Uncapped	~ 0%	~ 0%	-0.15%	0.30%
		Total	**-10.5%**	**11.0%**	**-6.6%**	**8.4%**

1: DPCR5 range is based on DPCR4 performance under the DPCR5 rules
2: IIS will be uncapped in DPCR5. The upside is assumed to be symmetrically opposite to the 1% collared downside.
3: The range of upside or downside is assumed to be lower than in DPCR4 given that the cost of debt estimate is lower.
4: We assumed that the upside from pensions is £5m upside and £2.5m on the downside (total DPCR5)

4.29. In general we think there is less risk in DPCR5 because we have capped all of the incentive mechanisms that were uncapped at DPCR4 and the DNOs' exposure to changes in corporation tax. We have also substantially reduced the risk to DNOs of overruns in operating costs. In DPCR4 the DNO would bear 100 per cent of all excess expenditure whereas in DPCR5 DNOs are only exposed to up to 51 per cent. While the overall incentive rate on total costs has been kept unchanged, we think that (even after the introduction of outputs) in practice DNOs have greater control over their capital costs than their operating costs. We note in DPCR4, DNOs have overspent on opex by around 100bps on average and underspent on capex by 30 bps on average. The lower potential to make additional returns in DPCR5 is due to the cap on the losses incentive which we have introduced at the DNOs' request.

Appendices

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Appendix 1 – The Authority's Powers and Duties

1.1. Ofgem is the Office of Gas and Electricity Markets which supports the Gas and Electricity Markets Authority ("the Authority"), the regulator of the gas and electricity industries in Great Britain. This Appendix summarises the primary powers and duties of the Authority. It is not comprehensive and is not a substitute to reference to the relevant legal instruments (including, but not limited to, those referred to below).

1.2. The Authority's powers and duties are largely provided for in statute, principally the Gas Act 1986, the Electricity Act 1989, the Utilities Act 2000, the Competition Act 1998, the Enterprise Act 2002 and the Energy Act 2004, as well as arising from directly effective European Community legislation. References to the Gas Act and the Electricity Act in this Appendix are to Part 1 of each of those Acts.[19]

1.3. Duties and functions relating to gas are set out in the Gas Act and those relating to electricity are set out in the Electricity Act. This Appendix must be read accordingly[20].

1.4. The Authority's principal objective when carrying out certain of its functions under each of the Gas Act and the Electricity Act is to protect the interests of existing and future consumers, wherever appropriate by promoting effective competition between persons engaged in, or in commercial activities connected with, the shipping, transportation or supply of gas conveyed through pipes, and the generation, transmission, distribution or supply of electricity or the provision or use of electricity interconnectors.

1.5. The Authority must when carrying out those functions have regard to:

- the need to secure that, so far as it is economical to meet them, all reasonable demands in Great Britain for gas conveyed through pipes are met;
- the need to secure that all reasonable demands for electricity are met;
- the need to secure that licence holders are able to finance the activities which are the subject of obligations on them[21];
- the need to contribute to the achievement of sustainable development; and
- the interests of individuals who are disabled or chronically sick, of pensionable age, with low incomes, or residing in rural areas.[22]

1.6. Subject to the above, the Authority is required to carry out the functions referred to in the manner which it considers is best calculated to:

[19] Entitled "Gas Supply" and "Electricity Supply" respectively.
[20] However, in exercising a function under the Electricity Act the Authority may have regard to the interests of consumers in relation to gas conveyed through pipes and vice versa in the case of it exercising a function under the Gas Act.
[21] under the Gas Act and the Utilities Act, in the case of Gas Act functions, or the Electricity Act, the Utilities Act and certain parts of the Energy Act in the case of Electricity Act functions.
[22] The Authority may have regard to other descriptions of consumers.

- promote efficiency and economy on the part of those licensed[23] under the relevant Act and the efficient use of gas conveyed through pipes and electricity conveyed by distribution systems or transmission systems;
- protect the public from dangers arising from the conveyance of gas through pipes or the use of gas conveyed through pipes and from the generation, transmission, distribution or supply of electricity; and
- secure a diverse and viable long-term energy supply.

1.7. In carrying out the functions referred to, the Authority must also have regard, to:

- the effect on the environment of activities connected with the conveyance of gas through pipes or with the generation, transmission, distribution or supply of electricity;
- the principles under which regulatory activities should be transparent, accountable, proportionate, consistent and targeted only at cases in which action is needed and any other principles that appear to it to represent the best regulatory practice; and
- certain statutory guidance on social and environmental matters issued by the Secretary of State.

1.8. The Authority has powers under the Competition Act to investigate suspected anti-competitive activity and take action for breaches of the prohibitions in the legislation in respect of the gas and electricity sectors in Great Britain and is a designated National Competition Authority under the EC Modernisation Regulation[24] and therefore part of the European Competition Network. The Authority also has concurrent powers with the Office of Fair Trading in respect of market investigation references to the Competition Commission.

[23] or persons authorised by exemptions to carry on any activity.
[24] Council Regulation (EC) 1/2003

Appendix 2 - Glossary

A

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.

B

Business Carbon Footprint (BCF)

Total set of GHG emissions caused directly and indirectly by the operation of a business.

Benchmarking methodology for CI and CML

In order to take into account inherent and inherited factors when comparing quality of supply, Ofgem jointly with the Quality of Service Working Group, has developed a method for calculating benchmarks for CIs and CMLs. In essence this method involves grouping physically similar parts of networks together and then comparing performance at this more disaggregated level. Overall benchmarks are then calculated for each DNO based on the number of circuits it has in each group.

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.

C

Capital Expenditure (Capex)

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

Competition commission

An independent public body which conducts in-depth inquiries into mergers, markets and the regulation of the major regulated industries.

Customer interruptions (CIs)

The number of customers whose supplies have been interrupted per 100 customers per year over all incidents, where an interruption of supply lasts for three minutes or longer, excluding re-interruptions to the supply of customers previously interrupted during the same incident. It is calculated as:

$$\frac{\text{The sum of the number of customers interrupted for all incidents} * 100}{\text{The total number of customers}}$$

Customer minutes lost (CMLs)

The duration of interruptions to supply per year – average customer minutes lost per customer per year, where an interruption of supply to customer(s) lasts for three minutes or longer, calculated as:

$$\frac{\text{The sum of the customer minutes lost for all restoration stages for all incidents}}{\text{The total number of customers}}$$

Consumer prices Index (CPI)

It is the measure adopted by the Government for its UK inflation target.

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.

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

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

Fast money

Fast money is the revenue that is matched to the year of expenditure.

G

Gas Distribution Price Control (GDCPR)

Gas Distribution price control review. This price control runs from 1 April 2008 until 31 March 2013.

Greenhouse gas (GHG)

A collection of gases which absorb infrared radiation and trap its heat in the atmosphere.

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.

Government Actuary's Department (GAD)

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.

I

Independent distribution network operators (IDNOs)

Any electricity distributor whose licences were granted after 1 October 2001. IDNOs do not have distribution services areas.

Innovation Funding Incentive (IFI)

The IFI is intended to encourage DNOs to invest in appropriate research and development activities that are designed to enhance the technical development of distribution networks (up to and including 132 kV) and to deliver value (i.e. financial, supply quality, environmental, safety) to end consumers.

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.

K

Kilowatt (KW)

A measure of energy equal to one thousand watts.

L

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.

Load Index (LI)

Proposed output metric for substation loading similar to the health index (HI) but instead of capturing asset health the LI captures the loading risk on a substation taking account of load (MVA) over firm, duration over firm and forecast load growth.

M

Macroeconomic conditions

Economic factors that influence the state of the whole (aggregate) economy.

Megawatt (MW)

1.1. A measure of energy equal to one thousand Kilowatts.

Microgeneration

Microgeneration is the generation of zero or low-carbon heat and power by individuals, small businesses and communities to meet their own needs.

N

Net Present Value (NPV)

Net present value is the discounted sum of future cash flows, whether positive or negative, minus any initial investment.

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.

Regulatory instructions and guidance (RIGs)

A document that is published as part of the price control settlement which sets out further detail on how the price control is to be implemented and how compliance with it will be monitored.

Return on regulatory equity (RoRE)

Return on Regulatory Equity is a regulatory metric that we have developed to understand the returns available to shareholders in regulated networks from our price control packages. We include the effects of all material incentives, drivers and true-ups ,even where adjustments take place in a subsequent price control period. We maintain our notional gearing assumption, though, which may lead our results to differ from what companies achieve in practice.

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.

RPI-X@ 20

The RPI-X@20 review team was set up by Ofgem to undertake a review of how we regulate electricity and gas, transmission and distribution networks in the future.

S

Statutory instruments (SIs)

UK Government secondary legislation.

Slow money

Slow money is where cost costs are added to the RAV and revenues allow recovery of the costs over time (currently 20 years) together with the cost of financing this expenditure in the interim.

T

Traffic Management Act (TMA)

1.2. 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."25

U

Use of System charges (UoS)

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

V

Vanilla WACC

The weighted average of the expected cost of debt (pre-tax) and the expected cost of equity (post-tax)

W

Weighted Average Cost of Capital (WACC)

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

Worst served customer (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.

[25] Department for Transport: http://www.dft.gov.uk/pgr/roads/tpm/tmaportal

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:

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