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Electricity Distribution Price Control Review Initial 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 current 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 Initial Proposals for the revenues the companies should be allowed to earn in the next five years. We set out the new obligations and incentives we propose**.** We are consulting on our proposed approach to setting the cost of capital and the overall balance of risk and reward in the settlement. We will review responses to this document over the autumn and set out our final proposals for the next price control in the winter.

If the companies accept our proposals they will come into force in April 2010.

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Context

This document outlines our initial view of the revenues each DNO should be allowed to collect from customers between 2010 and 2015. We explain the outputs and behaviours customers expect from the DNOs over this period and the incentives and obligations we propose to use to achieve them. We will publish Final Proposals in the winter. If the DNOs accept them, then the new arrangements will come into effect on 1 April 2010. If they do not we may refer the matter to the Competition Commission.

This document provides a relatively concise overview of our Initial Proposals and is intended to be accessible to a wide range of interested parties. We are also publishing three more technical documents which explain the methodologies and rationale we have applied in arriving at our Initial Proposals in much greater detail. These documents are targeted primarily at the DNOs and those stakeholders who require a more in depth understanding of our proposals in some or all areas.

We are consulting separately on the treatment and incentives placed on the DNOs to manage the costs associated with DNO pension schemes.

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

In February 2009 all DNOs submitted updated forecasts for the final two years of the current electricity distribution price control (DPCR4) and the five years of the distribution price control review for 2010-15 (DPCR5). Their forecasts reduced from their initial level in August 2008, but still showed a significant forecast increase in both network investment and operating costs between DPCR4 and DPCR5. We identified significant issues with the forecasts and sought further information from the DNOs to justify their forecasts.

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 June 2009, all DNOs submitted further updated forecasts for the final two years of DPCR4 and the five years of DPCR5, which we have used to develop our Initial Proposals view of appropriate allowed revenues for each company.

As we develop Final Proposals for the winter we will continue to work closely with the team undertaking the review of how we regulate electricity and gas, transmission and distribution, networks in the future (RPI-X@20 review). The next transmission price control will be our first opportunity to apply the ideas from RPI-X@20. The RPI-X@20 team intend to publish their Emerging Thinking in winter 2009.

Associated Documents

Update letter of the DPCR5 process (151/08)

Electricity distribution price control review. Initial consultation document (32/08)

Electricity distribution price control review. Policy Paper (159/08)

Electricity distribution price control review. Methodology and Initial Results Paper (47/09)

Regulating energy networks for the future: RPI-X@20 Principles, Process and Issues (13/09)

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Summary

Electricity distribution costs have, on average, been rising since 2005, largely to fund the replacement of assets installed in the 1950s and 1960s, and to maintain network reliability. During this severe recession it is more important than ever that the price control provides strong incentives on the companies to improve efficiency and keep any price rises to a minimum. But we must also make sure DNOs can afford to invest to keep the networks in good working order and provide good customer service. And we must deliver the networks we will need in a low carbon economy and encourage the DNOs to play an active role in tackling climate change.

We have spent the last year reviewing carefully the DNOs' view of network expenditure for the DPCR5 period. Our Initial Proposals involve cutting the company bids by up to 19 per cent, bringing total DPCR5 network expenditure to £13bn. In general we think the DNOs are looking to make appropriate volumes of network investment but the companies' own evidence suggest their forecast costs for delivering these volumes are too high. Twenty years after privatisation, there is still a wide range of operational efficiency between DNOs. Our Initial Proposals means that where companies are not as efficient as the leading companies, shareholders, not customers will fund the difference while they catch up.

We do not agree with the DNOs that the prices they pay for materials and labour will rise significantly in excess of inflation over the 2010 to 2015 period. We are currently in the most severe global recession in over seventy years with output contracting significantly in all major economies. Even when the economic recovery begins, it will take time for output to reach previous levels. We therefore expect DNOs to be able to negotiate to keep their costs at or below inflation.

We have set out for consultation the range for the cost of capital - the returns to shareholders and bondholders in the company - arrived at by our advisors. Our final decision on the cost of capital will have a significant impact on the prices that customers face. We think there should be a trade off between the cost of capital we use and the scope the settlement provides for shareholders to earn more through outperformance on incentive schemes. We invite comments on the balance we should strike. Recent events in the capital markets mean that there is considerable uncertainty around what will happen to the cost of raising debt finance over the next five years. We are not yet convinced that we need any new mechanism to accommodate this. However, we set out for consultation a number of measures we could introduce to handle this and other types of uncertainty. In the coming months we will be considering cost of capital, the calibration of incentives and measures to address uncertainty. Using our new Return on Regulatory Equity (RORE) tool we seek to arrive at a set of Final Proposals that provide an appropriate balance of risk and return to shareholders and a fair deal for customers.

Another decision that could have a big impact on customer prices is the treatment of defined benefit pension costs. DNOs forecast they will reach £2bn over the next five year period. We are consulting separately on the options we have for handling pension costs and will provide an update in the autumn.

Distribution prices would rise on average by around 5 per cent a year over the next five years, if for illustrative purposes, we assume the same cost of capital and

treatment of pension costs as in DPCR4. But this average masks wide variations across the country. The range of increases varies between a reduction of around 4 per cent in the South of Scotland to an increase of around 8.5 per cent in the South East and the Manchester areas. The price increase any individual consumer sees on 1 April will also depend on changes the distribution companies are making to the structure of their charges as they introduce a common, more cost reflective charging methodology. The DNOs are still finalising their new charges but we have written to ask them to do all they can to keep suppliers and customers informed.

Our proposals will make sure that customers get the improvements in the networks that they are paying for. In DPCR5 we will require each DNO to deliver a predefined set of outputs in a sustainable manner whilst continuing to meet all of their statutory and licence obligations. We will report annually on each DNO's progress towards its output targets, and on other key aspects of performance, in a format that is accessible to interested parties. If a company fails to meet the target output, we can take action against them or make sure that the shareholders and not customers carry the cost of catch up in future regulatory periods.

And in return for higher prices, customers will get better service. Customers complain frequently about poor service from DNOs, especially when they request a new connection. Competition in the connections market is still poorly developed so customers often have limited or no choice but to use the DNO. We propose a set of new guaranteed standards so DNOs have to compensate individual customers directly where service falls below an acceptable level. Companies will have to significantly improve their service levels to avoid penalties for poor service. We are also proposing new incentives on a broad measure of customer satisfaction reflecting all the services DNOs provide customers. This will reward companies for outstanding customer service and punish them for poor service.

Research we have run consistently shows that customers place a very high priority on tackling climate change. DNOs have an immediate role to play in managing their own carbon footprint and in working closely with those looking to implement low carbon and energy saving solutions such as demand side management and distributed generation. We propose a number of new and revised mechanisms to encourage DNOs to play a bigger role and make it easier and simpler to work out how to connect to their networks. This could see more than 10GW of local generation connect.

DNOs need to make sure that their networks and their business models adapt to the needs of a low carbon economy. Developments such as the take up of electric vehicles, further investment in heat pumps and a rapid expansion of distributed generation could mean profound changes for the way the networks are used, run and built. We propose to create a new £500m Low Carbon Networks Fund (LCN Fund) so that DNOs and their partners can try out smart grids and other technologies and test new commercial arrangements. These flagship projects should help the industry as a whole make the transformation necessary to play an active role in tackling climate change.

1. Introduction

Chapter summary

This chapter explains the structure and purpose of this document, provides an overview of the current price control and sets out the context for this price control review. We summarise our initial proposals for the revenue allowance for each DNO and set out how this could impact on customers' bills.

Introduction

1.1. Electricity customers pay around £3.6bn annually for the distribution of electricity from the high voltage national grid to homes and businesses. This accounts for approximately 16 per cent of domestic customer electricity bills, with a typical domestic customer paying around £67 a year. Business customers face a wide range of electricity distribution bills with small businesses typically paying around £270 a year, medium businesses around £2,000 and larger businesses paying as much as £28,000 a year. In return, customers expect to receive a reliable supply and that Distribution Network Operators (DNOs) will swiftly repair faults and respond effectively to requests for new connections, complaints and queries. They 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 continue to provide security of supply into the future.

1.2. A map showing the GB electricity distribution licence areas is included in Appendix 2.

1.3. The 14 DNOs are regional monopolies and customers rely on regulation by Ofgem, rather than choice and competition, to get the service they require at a reasonable price. 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 we set every five years. The current price control expires on 31 March 2010 and we are conducting a review (the fifth distribution price control review, or DPCR5) to set the controls for 2010 to 2015.

1.4. This document sets out our initial proposals for the next price control. We seek views on the following three areas:

- The outputs we expect and behaviours we want to encourage from the DNOs and the mechanisms we use to achieve them,
- The revenues the DNOs are allowed to collect from customers over the 2010 to 2015 period, and

- The scope for shareholders to outperform or underperform our allowed rate of return within the price control period and the circumstances in which this may happen.

1.5. These matters are discussed in detail in Chapters 2, 3 and 4 respectively. Once we have considered responses to the proposals in this document we will publish our Final Proposals in the winter. The DNOs will have until the first week of January 2010 to consider our Final Proposals. If they accept them they will come into effect through changes to the distribution licences on 1 April 2010. If they do not consider our proposals are appropriate we can refer the matter to the Competition Commission for review.

1.6. This document provides a concise overview of our Initial Proposals and is intended for the full range of interested parties. In parallel we are publishing three more technical documents which explain the methodologies and rationale we have applied in arriving at our Initial Proposals and set out the proposals in detail. These documents are targeted primarily at the DNOs and other stakeholders who require an in depth understanding of our proposals in some or all areas. We are consulting separately on a range of different approaches we could take towards the treatment of the costs associated with DNO pension schemes and arrangements.

1.7. All figures included within the document are in 2007-08 prices, unless stated otherwise.

The price control mechanism

1.8. We set allowed revenues so that an efficient company can cover its forecast costs over a five year period, including the cost of financing the business through a combination of debt and equity. The control is set up 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. Conversely, shareholder returns will be below our allowed rate if costs exceed forecasts or network performance or customer service fall below target levels. This encourages the DNOs to improve efficiency 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. Ofgem is also able to take the revealed lower costs into account when setting revenues for the next price control period, providing another way for customers to benefit from efficiency improvements over time. 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.

1.9. Within the five year period, allowed revenue for each DNO varies depending on how well they perform against a number of indicators. Mechanisms have been introduced 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. Currently the DNOs are 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 score against a survey of customers who contacted the company by telephone. Further mechanisms reward or penalise the DNOs according to the percentage of units that are lost in distributing electricity to end users and according to the amount of distributed generation (DG) they connect over the period. 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 customer research we have carried out and the proposed incentive mechanisms for DPCR5 is contained in Chapter 2.

1.10. In setting allowances for a five year period there will always be a number of uncertainties and we have to take a view as to what risks the DNOs are well placed to manage and which they should be protected against. Although allowed revenues are indexed by inflation (RPI) there is a risk that costs increase in real terms, leaving shareholders to finance the additional costs. There is a risk that we underestimate the volume of investment required on the networks, leaving shareholders to fund the extra investment cost. There is also a risk that our view on the cost of capital underestimates the costs companies face in financing their businesses. In each of these cases there is a converse risk that we have overestimated the costs the DNOs need to run their businesses and that customers pay more for electricity distribution than is necessary. The DNOs have argued that recent volatility in key economic indicators, if continuing into the 2010-15 period, will mean that managing uncertainty is particularly challenging in the next price control.

1.11. The price control formula should mean that companies that continue to increase efficiency, excel at managing risk and/or are highly successful in delivering for customers can earn additional returns. Conversely those that are not efficient or deliver poor quality of service may not achieve the expected shareholder returns. An important objective for Ofgem is 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) - to help us take a more holistic approach as we finalise the details of the settlement. Our initial thoughts on the scope for outperformance, the risks that companies should face and the circumstances in which a DNO may not earn the baseline shareholder returns are set out in Chapter 4.

Structure of charges

1.12. DNOs' charging methodologies determine how these allowed revenues are recovered from different customer groups. DNOs have to submit their methodologies to Ofgem and we can veto their proposals if we think they do not meet defined objectives set out in their licences. These objectives include that charges reflect the costs that different customers impose on the network and that charges are transparent.

1.13. For several years now we have been working with DNOs to encourage them to adopt better charging methodologies in time for the start of the next price control

period. We think this is important because more cost reflective charges could reduce the level of investment that is required on the network by encouraging those customers with some flexibility over their location to connect where there is spare capacity, and encourage customers to think carefully about using energy management to reduce peak demand.

1.14. In July of this year, and after several rounds of consultation, a new licence condition came in to effect requiring the DNOs to implement a common, more cost reflective methodology and an open governance procedure to charges for customers connected to the low voltage network from 1 April 2010. The DNOs are now working together to meet this deadline. We expect their proposals to be submitted to us on 1 September 2009.

1.15. We would also like DNOs to adopt a common, cost reflective methodology to charges for customers on the extra high voltage (EHV) network. However, it has been difficult to reach agreement between DNOs on the most appropriate methodology to use. As an interim step for the DPCR5 period, we propose to require DNOs to implement one of two defined methodologies (Long Run Incremental Cost model – LRIC - and the Forward Cost Pricing model FCP) by 1 April 2011.

1.16. We have already consulted on why we think the LRIC model gives clearer signals to customers about the cost of the decisions about network use. We proposed a collective licence modification to implement this model but it was opposed by Scottish and Southern Energy and Scottish Power. Even though the other five DNO groups accepted the condition, we were not able to implement it because of the two Scottish companies' opposition. We have therefore decided that DNOs can choose which of the two models to implement. But where DNOs adopt the FCP model we will, at the end of the DPCR5 period, scrutinise the DNO investment decisions to make sure they have not led to inefficient capital expenditure because of poorer cost signalling than under the LRIC approach.

Context and Overview

1.17. Three factors have had a very important bearing on our initial proposals for DPCR5. They are the economy, the environment and what is happening on the networks themselves.

The economy

1.18. The recession and recent volatility in the capital markets mean that there is considerable uncertainty around costs the DNOs will incur over the DPCR5 period. There is particular uncertainty over the cost of raising new capital to finance the significant investment that is needed on the networks and some stakeholders have indicated that they perceive a greater risk of rising interest costs over the next five years than they did at previous reviews. In Chapter 4 we set out alternative ways we could respond to this uncertainty. We expect to focus much of our work between now and the publication of Final Proposals on considering the mechanisms for managing uncertainty, in deciding on the most appropriate cost of capital for the

DPCR5 period and in agreeing what scope there should be for shareholders to earn in excess of or below our assumed equity returns.

1.19. 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 sought to ensure that customers do not carry the cost of inefficient practices, uncompetitive input prices or unnecessary investment. Similarly, where customer service is below acceptable standards, as it is in many cases in the area of connections, our proposal is that shareholders carry the cost of bringing performance up to scratch and that customers receive financial compensation for poor performance. We think it is important that the DNOs are held accountable for the service they provide to customers and we propose to improve reporting and transparency around DNO performance within the price control period.

1.20. In these Initial Proposals we have sought to balance the needs of current and future customers. Even in difficult economic times, there is a limit to how much investment can be deferred without impacting on the security and reliability of supply that future customers will receive. It is also important that today's customers pay for research and trialling that will mean the networks are better able to accommodate customers' changing needs and the challenge of reducing carbon emissions. Our proposals are geared to ensuring that this money is spent in a way that is to the long term benefit of customers and the environment in which we live.

The environment

1.21. The challenge associated with meeting the climate change targets for 2020 and beyond forms an important part of the context for this review. Customers also tell us that they place a high value on creating DNOs that are taking a more active role in tackling climate change.

1.22. There are a number of implications for DPCR5. Most obviously it is important that the DNOs, like all other businesses, manage their carbon footprint, by far the biggest component of which is the electrical losses from the distribution network. Moreover, the introduction of electric vehicles, the uptake of heat pumps, investment in additional wind generation, household and community micro-generation and other initiatives to decarbonise our energy use could have a profound impact on the nature and pattern of demand on the distribution networks. To maintain reliability, DNOs may need to actively manage intermittent and two way flows of electricity on their networks and to enter into new commercial arrangements. The very significant changes in electricity generation and demand technologies that we anticipate means that, more than ever, the distribution networks will need to be designed and operated in a way that is flexible to changing needs.

1.23. Industry expects that current network technology and operating techniques will be able to accommodate most of the changes in network use expected over the next five year period. However, it is clear that at the very least, DNOs must use the 2010 to 2015 period to test out the new operating and commercial arrangements they will

have to put in place to meet the challenges of the new low carbon economy beyond that time horizon. A priority in our work has been to ensure that the regulatory arrangements encourage DNOs to begin this transformation and that there is sufficient flexibility to allow companies to adopt new technologies and business practices if this is required in the 2010-2015 period. We also think there should be implications for those companies that, by the end of the price control period, have not done all they can to ensure they are ready to meet the challenges over the following period.

1.24. An important part of the proposals in this document involves creating a new £500m fund that will be available to DNOs who come forward with well considered proposals for trialling new technology and commercial arrangements to meet the needs of the low carbon economy. We expect that this will fund a number of large flagship projects, including smart grid projects, from which the entire industry can learn. Companies that do not adopt the learning and reflect this into their business plan will not be funded in future regulatory periods to conduct repeat trials. Our proposal is that the allowed revenues of the DNOs will flex to allow them to fund any costs associated with an uptake in distributed generation, as we recognise that Government's recent announcement to introduce a clean energy cash back scheme from next year could have this effect. Similarly, DNOs will be allowed to collect more revenue if substantial reinforcement is required in excess of the DNOs' own forecasts already allowed in their plans, for example, due to the increased introduction of electric vehicles. A more complete explanation of our environmental proposals is set out in Chapter 2.

The networks

1.25. Further investment on the distribution networks in Great Britain is unavoidable. Many of the assets we rely on to distribute electricity were installed in the 1950s and 1960s and have already exceeded their expected lives. While advances in asset maintenance have enabled lives to be extended, there are classes of assets in poor condition and which will have to be replaced if we are to maintain the quality of service that we enjoy today and expect in the future. Our research and the stakeholder engagement undertaken by the DNOs[1] confirm that customers are not prepared to see any reduction in the quality of supply they currently receive. Having completed an in depth review of the DNO asset information we consider that the majority of asset replacement volumes forecast by the DNOs are required to maintain current levels of performance. For example, we think that around 10 per cent of HV, EHV and 132kV switchgear and 6 per cent of EHV and 132kV transformers will need to be replaced over the 2010 to 2015 period.

[1] As part of DPCR5 each of the DNOs undertook stakeholder engagement on a regional basis with their customers and stakeholders. We provided a summary of the stakeholder engagement completed by each DNO in our Policy Paper (159/08) and discussed how useful this seemed to have been from Ofgem and the DNOs' perspectives.

1.26. There are other drivers of investment. Although the volume of electricity being distributed has fallen over the past year and is projected to do so over the DPCR5 period, there are "hot spots" on the network where demand continues to grow and where reinforcement will be required. In other areas of the networks, capacity is yet to catch up with demand growth over recent years. In these cases DNOs have managed the increase through short-term operational measures but reinforcement is now needed continue to meet security of supply standards. Additional investment is also required to meet new safety and other standards[2]. Overall we expect that reinforcement is required across approximately 10 per cent of substations in the country, which represents those that are most heavily loaded.

1.27. We have challenged the DNOs hard to ensure they are not funded for more network investment than is necessary to keep the network in good working order. We have closely examined the unit cost of investment and will only allow companies to recover from customers an amount needed to fund investment made at an efficient cost. We have also made a firm but fair assessment of the operating costs an efficient DNO needs to run its business. We have also taken a reasonable view of what might happen to the real price of new network assets over the upcoming five year period, assuming that improvements in efficiency offset any increases in these prices above the rate of inflation. Our initial proposals result in a cut of £2.1bn from the DNOs' bid of £15.4bn for network expenditure.

1.28. Our proposal is that each DNO will be required to commit to meeting a set of network investment output measures in return for its revenues in DPCR5. These output measures will capture the health of network assets (how close they are to requiring replacement) and the loading of the network (how close it is to full capacity) and are explained in more detail in Chapter 2. The use of output measures means that we will be able to hold the DNOs more accountable for delivery and customers will have more clarity than before about what DNOs are being funded to provide over the next five years.

1.29. We recognise that there is need for increased expenditure for workforce renewal due to the ageing workforce and growing capital expenditure. Our draft revenue allowances include £149m for workforce renewal across the DNOs over the five year period.

Initial revenue proposals and impact on customer prices

1.30. The numbers in this document would mean that on average electricity distribution charges would go up by 5.3 per cent per annum over the next five years. However, this figure assumes that the cost of capital remains at the current level of

[2] The Electricity, Supply, Quality and Continuity Amendment Regulations (2006) amended the Electricity, Supply, Quality and Continuity Regulations 2002.

5.55 per cent on a Vanilla WACC basis[3], and it is based on modelling assumptions on the cost of pensions over the period. Our final decision on these issues could have a significant impact on prices[4]. There is a wide difference in the increase in allowed revenues across the 14 DNOs, with increases in some areas as high as 8.6 per cent, and decreases in other areas. The Initial Proposals increase for each DNO is set out in Chapter 3. It's important to note that DNOs' performance against some of their incentive mechanisms, plus changes in some costs that are out of their control, could result in different annual allowed revenues from those set out here.

1.31. The DNOs will be introducing new charging methodologies on 1 April that will change the proportion of allowed revenues they recover from different categories of customers. We have asked DNOs to make sure they do all they can to provide suppliers and other interested parties with advance information on the effect on the use of system charges for different customer groups. When there is greater clarity on the combined impact, we will write to suppliers, customer groups and Consumer Focus to highlight the impact of the changes to the way companies charge and our price control proposals.

Consumer Challenge Panel

1.32. We have also benefitted greatly from discussions with the Consumer Challenge Group, a group of consumer experts Ofgem has formed specifically for this purpose. The Consumer Challenge Group has been extremely useful in ensuring that Ofgem remains focussed on the consumer perspective during DPCR5 and particularly in the development of Initial Proposals. The Group have provided valuable insight and challenge on our developing views in those areas that are particularly customer focussed, such as connections, the focus on outputs and quality of service measures. In addition to this, and as a result of their close work with the team throughout the DPCR5 period to date and their resulting understanding of the price control process, they have also discussed our approach to cost assessment, the range of options for handling uncertainty and options for pensions.

1.33. Going forward we will continue to meet with the Group and intend to focus on those issues where our views are still developing, such as the tradeoffs between RORE and WACC and how we can ensure that an appropriate balance is maintained. We anticipate that the Group's input will continue to shape and influence our decisions as we look to develop our Final Proposals.

[3] A Vanilla WACC is based on a post-tax cost of equity and pre-tax cost of debt and represents the cash return allowed in our modelling. This figure was presented in DPCR4 as 4.8 per cent fully post-tax.
[4] The effect of a 25 basis points (0.25 per cent) increase in cost of capital is 0.5 per cent. The effect of £100m pa change in allowance for pension deficit recovery is 0.2 per cent.

2. Behaviours, Incentives, Funds and Obligations

Chapter Summary

This chapter sets out the behaviours we would like from the DNOs over the 2010 to 2015 period and the incentives, funds and obligations we propose to use to encourage them.

Question 1: Have we introduced a set of measures that can be understood by customers and other stakeholders?
Question 2: Are we aiming to encourage the behaviour you consider appropriate for DNOs in the 2010 to 2015 period?
Question 3: Are the proposed mechanisms likely to be successful?

Introduction

2.1. The price control review provides us with an opportunity to review the entire regulatory framework to ensure that it encourages the type of behaviour 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 three themes, as follows:

- **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. Our Initial Proposals are informed

also by consumer research we have undertaken at various stages of the price control review[5] and feedback from our Consumer Challenge Panel.

2.3. In forming our Initial Proposals we have tried to make sure we do not make the regulatory framework overly complicated and that it is clear to customers and other stakeholders what DNOs will be required to deliver in return for their allowed revenues. An important element of our proposals is a commitment on Ofgem's part to produce an annual report on each DNO's performance against the key regulatory mechanisms and output measures. This should provide customers and others with the information they need to engage with the DNOs on how they run and plan their businesses. We will consult on a draft template of this new annual report around the time of our Final Proposals document.

2.4. Below we provide an overview of our proposals against each of the three objectives. More detail on each of our proposals is contained in the Incentives and Obligations Technical 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, most significantly, 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.
- **make it easier for 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.

[5] 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. Qualitative report

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 adjust in a timely manner to the profound changes to 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 local 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 fundamentally 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. A number of mechanisms in the current price control are aimed at encouraging some of these behaviours. There is a losses incentive, an incentive on DNOs to efficiently connect distributed generation (DG), and to use new network operating arrangements where necessary to accommodate DG. We propose to retain the undergrounding and DG incentive and to revise the losses incentive to make it more effective and proportionate. We also propose to introduce a new fund worth £500m to encourage DNOs to form partnerships in order to try out new technologies and new commercial arrangements needed to serve the low carbon economy.

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

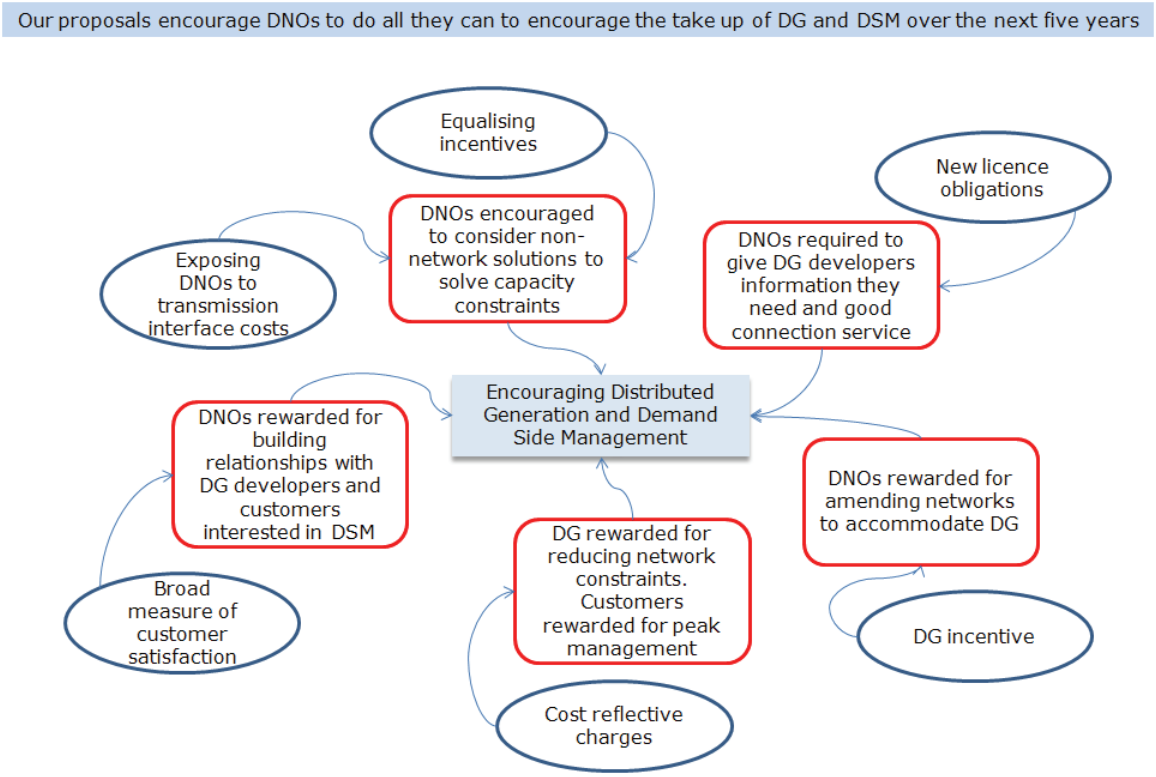
- report their carbon footprint on an annual basis,
- improve the information available to DG developers. We have worked closely with DG developers of different sizes to establish the information that is most useful to them,
- undertake a review of their existing contracts with distributed generators to ensure that users' rights are clear and non-discriminatory in nature. This is critical with the expected change in network use,
- 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. Our decision, set out later in this chapter, to equalise the incentive rate across network investment and operating costs, and the introduction of a broad measure of customer satisfaction (described below) which rewards companies according to how well they engage with the full range of stakeholders, work alongside these new requirements 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.

2.9. Our proposed arrangements have been designed so that there is nothing within the price control that prevents the DNOs transforming their networks and businesses in time to serve low carbon or energy saving initiatives. The DG incentive and the combined reopener for general reinforcement and high value one-off connections (described in Chapter 4), means that DNO allowed revenues will flex if, for example, a rapid take up of electric vehicles or heat pumps means the DNO has to carry out much more reinforcement than anticipated in their plans or if they have to install smart devices to accommodate more load with the same network capacity. At the extreme, if the pace of change dramatically exceeds that which DNOs have built into their plans and the price control does not provide DNOs with the revenues they need to adapt, then the DNOs will be able to approach Ofgem to reset the control.

Figure 2.1 - How our proposals encourage DG and DSM



2.10. The most significant developments are in the losses incentive and the new low carbon networks fund. Both are discussed below.

Losses incentive

2.11. The current losses incentive rewards or penalises DNOs by £48 per MWh[6] 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 low loss equipment, to introduce low loss operational techniques and to seek out theft, unregistered meters and other "non-technical" losses. Under DPCR4 some DNOs have received very high rewards under this incentive with one company earning £25m pa on average over the first four years of DPCR4 and one DNO has faced high penalties.

2.12. 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 reporting losses. Our approach is to address these problems so that customers only pay and DNOs are only rewarded for real improvements.

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

- Companies will be provided with **upfront funding for low loss investments** where they can make a business case using the electricity wholesale price including the 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. The DNOs have submitted business plans for £54m of low loss equipment of which £11m has been allowed in these Initial Proposals. Companies will then be set tougher targets to make sure the investments deliver the 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 £60/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 floors in the mechanism, in recognition that performance at the extremes could be driven by other factors rather than real changes on the network or in data quality.

2.14. 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 caps on rewards will be removed. 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 commercial arrangements to help tackle theft.

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

Low carbon networks fund

2.15. The purpose of the fund is to allow the DNOs to try out new technology and new commercial arrangements to see what arrangements will allow them to provide the best service that users will need in a low carbon economy. 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. We would expect DNOs to enter into partnerships for many of the 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 and other industry players such as suppliers.

2.16. Up to 90 per cent of project finance will be covered by the 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. Expenditure of this allocation would receive little oversight by Ofgem. The majority of the fund (tier 2 - around £320m), however, will go into a central fund with DNOs competing for an allocation. We would expect the central fund would finance a small number of flagship projects and that a panel chaired by Ofgem would award funding on an annual basis. Around £100m of the total fund amount would be held back and awarded to participating DNO consortia to recognise schemes which have brought particularly valuable learning to the industry.

2.17. A cross-industry group has been set up, jointly chaired by DECC and Ofgem and reporting to the ENSG (Electricity Networks Strategy Group[7]), to address key issues relating to smart grids. Its work will include scoping out the kind of trials that would be helpful over the coming years and that could be funded by the LCN fund. This group will set a useful framework for DNOs by mapping the issues that the future networks might face, the technologies and commercial arrangements that may address these issues and identifying knowledge gaps.

2.18. The following list illustrates the high level questions the projects receiving tier 2 funding might seek to answer:

- What technology combinations allow DNOs to accommodate more renewable distributed generation while minimising the need for network reinforcement? What are the cost implications and what are the regulatory and commercial barriers to the take-up of this technology?
- Where a DNO implements active network management, what commercial arrangements best enable it to capture the benefits of these arrangements?

[7] http://www.ensg.gov.uk/

- What changes to DNO systems and commercial relationships would allow the DNO to act as a funding intermediary for domestic installations such as micro-generation and insulation and are they a cost effective means of delivering or financing energy efficiency to households?

2.19. We are considering whether it is appropriate to introduce a new licence condition that would allow Ofgem to require DNOs to let other parties run trials on their networks. DNOs that do not use the learning 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.

Customers

Behaviours

2.20. 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, and
- Be proactive in engaging with all stakeholders to inform their plans and operational decisions.

2.21. In general, despite current incentives, there is a perception that DNOs do not pay enough attention to customer service beyond that related to security of supply. There are concerns that not all DNOs have adequate information about their customers or are equipped with the skills needed to communicate with end users 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 end users. We are looking closely at options for encouraging networks to engage with users and consumers in our RPI-X@20 review.

Mechanisms

2.22. We have a number of mechanisms in place to encourage the DNOs to consider the quality of service 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. As noted above, 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.

2.23. 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 per annum. 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 specific timeline 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,
- Allow DNOs to earn a 4 per cent 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.

2.24. We explain competition in connections and the new measure of customer satisfaction below.

Competition in connections

2.25. Our competition in connections proposals should not be viewed in isolation but rather as part of an integrated package together with the connections guaranteed standards and associated licence condition. We aim to stimulate more competition by allowing DNOs to earn reasonable margins on competitive connections activities and establish competition tests to determine the extent of competition in each DNOs' distribution service area. In return, DNOs will have to achieve the guaranteed standards and will risk losing their margins if they fail to meet new licence conditions.

2.26. Expenditure on sole use and shared use connections assets will receive different price control treatment. Sole use connections assets that are directly funded by the connecting customer will be an excluded service during DPCR5 and the contestable elements associated with direct costs will be subject to allowed margins. Conversely, net expenditure relating to shared asset connections will be recoverable through the price control and subject to a revenue driver for high volume low cost connections. There will be a reopener for large one-off connections combined with general reinforcement. We set this out in more detail in Chapter 4.

Broad measure of customer satisfaction

2.27. We are seeking to introduce a broad customer satisfaction measure to better capture the full range of interactions that customers have with DNOs, for example when seeking a connection or when making a complaint. 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.

2.28. 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 annually and Ofgem will include the results in its new annual report of DNO performance.

2.29. 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 2.1 - Proposed scope of the broader measure

Component	Focus	Target customers
Customer satisfaction survey	Interruptions, connections and general enquiries	Domestic, non-domestic, IDNOs, ICPs, DG customers, developers and customers dealt with by messaging.
Complaints metric	Unresolved and repeated complaints, complaints referred to Ofgem as determinations	All customer complaints (including domestic, non-domestic, DG, IDNOs, ICPs, developers)
Stakeholder engagement	Stakeholder views of the DNOs' approach to engagement	All relevant stakeholders including suppliers, IDNOs, ICPs, Local Authorities, developers, DG customers, environmental and planning organisations

Networks

Behaviours

2.30. 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 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 Initial 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.

2.31. Current regulatory arrangements provide DNOs with a skewed incentive to solve network performance or constraint problems through further investment in transformers and cables, rather than maintaining the asset 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 keep a much higher proportion of under spend 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 don't 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.

2.32. It is particularly important that we get the balance of incentive 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 defer greater volumes of work and doing more to actively manage and monitor levels of risk.

2.33. 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.

2.34. 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. As noted above, 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 leading to deteriorations in network health and increase volumes of faults and risks of major network outages.

Mechanisms

2.35. 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.

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

Equalisation of incentives

2.37. 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 the same sharing factor will apply between customers and the DNO for any over or under spend against allowances. This should remove the distortions discussed above and mean there are less cost boundaries for us to monitor over the DPCR5 period.

2.38. 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 over spend and will be able to keep the full benefit of any efficiencies they can make in the DPCR5 period.

2.39. Our initial proposal is that 85 per cent of all costs (other than business support costs) should be capitalised, and that customers will repay 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 RAV returns under the DPCR4 arrangements, and this new arrangement should not distort the rate of RAV growth or create difficulties for the DNOs in financing their businesses.

2.40. The proportion of any over spend or under spend 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

[8] The IFI is additional to the low carbon networks fund.

this through the Information Quality Incentive (IQI) which is set out in detail in the Cost Assessment document.

Network Output measures

2.41. 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 package of output measures, including:

- **A Load Index (LI)** relating to general reinforcement expenditure. DNOs will be required to use established criteria to rank each applicable site 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. DNOs will be required to use established criteria to assign 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. DNOs will continue to be required to report fault rates under the existing reporting requirements.

2.42. 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.[9] . Further details are provided in the Incentives and Obligations document.

2.43. We are publishing the DNOs' proposed outputs for DPCR5 together with our Initial Proposals, and those interested in this area can access this information on our website.[10] We have not yet reviewed these submissions from the DNOs, and they are published unedited. If any DNO has not come forward with an appropriate set of outputs in time for Final Proposals, we reserve the right to apply weaker incentive strengths to the IQI or give less additional income, as discussed in our May document. We will ensure that the volumes underpinning the DPCR5 allowance for network investment on general reinforcement and asset replacement fully reconcile with the agreed network output measures in time for Final Proposals.

[9] Ofgem will work with DNOs to develop outputs for the other areas of network investment during DPCR5.
[10] The outputs workbooks are located together with the Cost Assessment document.

2.44. The new output measures allow DNOs to report their delivery in a consistent format which can be tracked over time. We will monitor and report annually on each DNO's progress towards the agreed outputs. We will seek explanations from the company where there are significant deviations.

2.45. It is not our intention at DPCR5 to mechanistically tie a revenue adjustment to outturn output performance. The DNO's performance against the agreed DPCR5 outputs will inform a detailed discussion with Ofgem on the level of network investment undertaken over the period. There may be circumstances in which a DNO can demonstrate that it was in customers' interests to deliver a different network health or loading output than was agreed at the start of DPCR5. We also expect that during the DPCR5 period DNOs will further develop their asset management and network planning capabilities, such that it may be in customers' interests for investment schedules to change accordingly. However there will be financial consequences if, after taking into account all the relevant changes that have occurred over the DPCR5 period, Ofgem considers that a DNO's output performance is unsatisfactory. This is the key role of the network output measures – to ensure that customers receive value for the revenues they provide to the DNOs.

2.46. In addition to these potential financial consequences, a DNO whom Ofgem determines has under-performed against its agreed outputs will be the subject of much greater scrutiny over its forecast network investment at the DPCR6 review.

3. Proposed allowed revenues

Chapter summary

This chapter sets out our initial proposals for the allowed revenues of each DNO and explains how we have arrived at these proposals. We have used the current cost of capital under DPCR4 as a working assumption for the cost of capital. We set out our emerging thoughts on the cost DNOs may incur in financing their business over the next five years. We will set out our decision on the cost of capital for DPCR5 in our Final Proposals document in the winter.

Question 1: Have we taken an appropriate approach to setting allowed revenues?
Question 2: What assumptions do you think we should use for real price effects on DNOs over the 2010 to 2015 period?
Question 3: What are your views on PwC's range for WACC?
Question 4: Do you think we need a mechanism to address cost of debt uncertainty?
Question 5: What are your views on the debt trigger mechanism?

Revenue allowances

3.1. Our initial proposal is that DNOs collectively should be allowed revenues of £21.5bn over the DPCR5 period. This represents a 5.3 per cent annual increase over each of the next five years. A summary of the Initial 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 per category. DNO management must manage its costs in the way it considers appropriate to meet its obligations including relevant outputs.

3.3. We have arrived at our initial proposals after coming to a view on the efficient levels of network investment, network operating costs and indirect costs in the 2010 to 2015 period and the financial policies that should apply. At this stage we have made working assumptions only on the cost of capital and the treatment of defined benefit pension costs. So although we expect our assessment of operating and investment costs to remain relatively stable between now and final proposals, there could still be significant changes either up or down in allowed revenues.

3.4. The DNOs collectively forecast £15.4bn network expenditure during DPCR5. We have spent the last six months in discussions with each DNO on its business plans and carrying our cost assessment. We propose to cut these forecasts by 14 per cent. 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 proposal is that DNOs should be allowed a 13 per cent increase on expenditure in the current period. Our assessment of DNOs' expenditure for DPCR5 is largely complete and we

do not expect our view on DPCR5 expenditure, or the cost assessment methodologies we use to change significantly between now and Final Proposals. We will, however, accommodate some specific areas of work mentioned below and take on board any new evidence on macro-economic trends in real prices.

3.5. Our allowed revenue proposals make the working assumption that the efficient cost of financing the businesses remains at DPCR4 levels of 5.55 per cent real Vanilla weighted average cost of capital (WACC). Advice we have received suggests that the WACC could fall within the range of 3.5 per cent and 5.6 per cent. We set out below our thoughts on what might influence our final decision on the cost of capital in Final Proposals. This decision could have an important bearing on the allowed revenues for DPCR5, with a move of 25 basis points representing an increase/decrease in allowed revenues of £300m per annum.

3.6. Decisions on other financial matters also have an important bearing on revenue allowances. The treatment of corporation tax costs and our proposals for the proportion of DPCR5 expenditure that is recovered through "fast money" (revenues received from customers in the DPCR5 period) and that recovered through "slow money" (returns on the DNOs assets from future generations of customers) are set out below.

3.7. The DNOs collectively forecast that the cost of repairing their deficits associated with defined benefit pensions will reach £1.4bn in the DPCR5 period and our policy in this area could have a significant impact on allowed revenues in our Final Proposals. We are consulting separately on this matter and will set out our initial proposals for the treatment of this cost category and pensions costs generally[11] in the autumn.

3.8. Finally, customers are paying in this price control for higher investment carried out in the DPCR4 period, from which they are already benefitting. Even if we assumed that DNOs would only invest at the same levels as of 2009-10 throughout DPCR5 a significant increase in allowed revenue would be required. We estimate that this alone would require an annual increase of 2.5 per cent pa.

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

[11] All but one of the DNOs has closed their defined benefit pension schemes, but we need to consider the funding of defined benefit and defined contribution schemes going forward.

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

£m 07/08	DPCR4	DPCR5	Annual increase
CN West	1,423.12	1,658.83	4.8%
CN East	1,447.40	1,706.41	4.9%
ENW	1,317.82	1,633.64	7.2%
CE NEDL	922.19	1,156.34	7.0%
CE YEDL	1,204.63	1,443.92	5.6%
WPD-South Wales	863.48	1,013.44	5.0%
WPD-South West	1,058.25	1,286.16	6.3%
EDFE LPN	1,347.72	1,696.77	7.0%
EDFE SPN	1,007.56	1,348.01	8.6%
EDFE EPN	1,721.09	2,035.91	5.1%
SP Distribution	1,731.28	1,539.87	-4.3%
SP Manweb	1,031.45	1,336.29	8.6%
SSE Hydro	1,001.80	1,162.74	4.5%
SSE Southern	2,002.72	2,496.47	6.9%
Total	18,080.50	21,514.81	5.3%

Ofgem view of the DNO business plans

DPCR5 network expenditure and key drivers

3.10. We set out below our view of the efficient level of network expenditure[12] for each DNO over the DPCR5 period, and compare this with the forecast that each company made and their expenditure in the DPCR4 period. We have challenged robustly each DNO on its business plan and think we have taken a firm but

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

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 operational inefficiency.

3.11. Our initial proposals entail a cut in DPCR5 forecast expenditure of between 5 and 19 per cent across the DNOs.

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	494	715	585	-18%	519	617	516	-16%	1013	1332	1101	9%	-17%
CN East	483	724	592	-18%	485	560	532	-5%	968	1284	1124	16%	-12%
ENW	432	652	524	-20%	491	616	508	-17%	923	1268	1033	12%	-19%
CE NEDL	272	453	363	-20%	340	375	346	-8%	612	828	709	16%	-14%
CE YEDL	355	591	460	-22%	426	489	469	-4%	781	1080	928	19%	-14%
WPD S Wales	155	234	202	-14%	260	333	315	-5%	415	567	517	25%	-9%
WPD S West	249	360	307	-15%	380	484	426	-12%	629	845	733	17%	-13%
EDFE LPN	401	622	514	-17%	484	551	510	-8%	885	1173	1023	16%	-13%
EDFE SPN	424	650	518	-20%	503	564	509	-10%	927	1214	1027	11%	-15%
EDFE EPN	637	834	657	-21%	806	942	792	-16%	1444	1777	1449	0%	-18%
SPD	348	450	412	-8%	429	499	420	-16%	776	949	832	7%	-12%
SP Manweb	381	630	565	-10%	436	523	453	-13%	818	1153	1018	24%	-12%
SSE Hydro	174	229	210	-8%	286	338	313	-7%	460	567	523	14%	-8%
SSE Distribution	515	707	611	-14%	578	670	698	4%	1093	1377	1309	20%	-5%
Total	5320	7853	6520	-17%	6423	7562	6806	-10%	11743	15415	13326	13%	-14%

3.12. As noted in Chapter 1, further expenditure on the electricity distribution networks is unavoidable in the 2010 to 2015 period, largely but not exclusively, to service the replacement of ageing and unreliable assets which were installed in the 1950s and 1960s. Around 25 per cent of network expenditure in DPCR5 will be related to asset replacement, representing an increase of 14 per cent from 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).

3.13. 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 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 carry out the necessary investment over the DPCR5 period.

3.14. Other factors driving increased expenditure include the need to reinforce specific parts of the network either to meet new demand that has already materialised and which places the network at full capacity, or to meet new demand expected for specific areas of the DNOs' networks over the DPCR5 period. We consider that on average 14 per cent of network expenditure is required to provide this reinforcement, representing an increase of 17 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.

3.15. 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. This non core expenditure accounts for around 5 per cent of our view of the network expenditure required over the 2010 to 2015 period.

3.16. DNO forecasts have built an above inflation increase in the cost of network equipment. Our view is that there is scope for ongoing efficiency in the way the DNOs carry out investment and that this will offset any impact in real prices.

3.17. We think that efficient DNOs should be able to deliver this additional network investment with only a 4 per cent increases on current operational costs from DPCR4, accounting for 51 per cent of network expenditure over the DPCR5 period.

3.18. We think that increases in this area of costs can be contained through further efficiency improvements 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]

3.19. Similarly, we have based our view of network operating and indirect costs on the assumption that costs to the DNOs increase between 0.9 per cent and 1.4 per cent faster than the general rate of inflation from 2008-09 to 2014-15. We challenge the DNOs' view that their operating costs will increase significantly in real terms. We think that the economic downturn means that DNOs should be able to negotiate hard to limit real price effects on behalf of their customers. We are open to further

[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.

discussions on these assumptions and will look for evidence in the energy sector and elsewhere over the next few months to inform our final proposals. We think that the level of network investment that customers will have to fund in DPCR5 and the economic climate, with many families and businesses feeling the strain, make it appropriate for us to take a firm line.

3.20. At the beginning of the price control review process we made it clear that we expected DNOs to conduct stakeholder engagement before forming their DPCR5 business plans. All DNOs took us up on this challenge and an overview of the approach that each of them applied was provided in our Policy Paper (159/08). Overall this process has been successful in helping the DNOs to build relationships and to obtain stakeholder views on some of the peripheral areas of expenditure, such as on flooding and undergrounding activities. DNOs have found it harder to get meaningful feedback from stakeholders on the approach to managing network risk and on the outputs (in terms of network health and network loading) they should be trying to achieve. We will work with the DNOs over the DPCR5 period to explore how stakeholder engagement can be improved. Our proposals under the broad measure and our proposals for outputs should retain focus on this area as will our commitment to publish annual reports for each DNO that will be accessible to a wide range of stakeholders. This is also a theme in our RPI-X@20 Review.

Review of network investment

3.21. 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.

3.22. We think that many of the DNOs still have a conservative view of the unit costs they will face over the DPCR5 period. We have observed a very large range in the unit cost assumptions the DNOs make. Applying sensible benchmarking which allows each DNO a set of unit costs at the lower of the DNOs' forecast or the median level has allowed us to cut network investment expenditure by 11 per cent.

3.23. 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 4 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 and we consider that the companies should be able to achieve their planned network health and fault levels by 2015.

3.24. We see a range of attitudes towards risk in the volume of reinforcement investment forecast by the DNOs, with some DNOs looking to build in additional capacity early in response to forecast demand growth. However, as is explained in more detail in Chapter 4 there is some uncertainty around the rate of demand growth in each DNO area and we propose to have an integrated reopener for large one-off connections and general reinforcement making use of the new load index. This reopener will be dependent on the DNO being able to demonstrate through the load index that demand is significantly higher than originally forecast.

3.25. Our work has been through several iterations. We used our models to assess the forecasts we received from the DNOs in February and to highlight areas of concern. We held detailed discussions with each of the DNOs to explain our approach, discuss our concerns and give the opportunity for the DNOs to provide us further feedback. We spent much of May and June reviewing additional information, for example asset condition data, provided by the DNOs in response to our questions. We have since incorporated the DNOs' final DPCR5 forecasts into our models to inform our view of DPCR5 expenditure. Finally, the view of network investment expenditure for each DNO set out in this document has been influenced by a number of broader considerations including the company's track record in spending against its forecasts, the ability of the company to ramp up to new levels of expenditure and the quality of the business plan narrative submitted along with the expenditure forecasts.

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

Review of network operating and indirect costs

3.27. We have generally arrived at our view of the network operating and indirect costs by benchmarking historical cost data and then rolling forwards these benchmarks in line with our view on:

- the scope for further efficiency improvements,
- movements in the DNO's real prices, and
- the impact that the volume of activity will have on cost levels over the five years.

3.28. In most cases this approach means that the benchmark costs for less efficient companies will be brought in line with those that are more efficient and customers will not carry the cost of inefficient operations. Our benchmarking shows that there is still a considerable gap between the least and most efficient DNO with the highest cost DNOs 35 per cent above the average industry level for networking operating costs and 26 per cent above for indirects and non-operational capex and the most efficient DNOs 41 per cent below for network operating costs and 21 per cent for indirects. Overall we consider that the efficiency ranking generated by our work matches the impression that we and the companies have of relative efficiency in the

industry. We also note that the more efficient companies from our analysis were also forecasting lower network investment unit costs for the DPCR5 period.

3.29. We have conducted our benchmarking using DNO cost data for four years (2005-06 to 2008-09) which we collected through our annual regulatory reporting process (RRP) and the latest DNO business plans. The RRP has allowed us to collect data from each DNO on a largely consistent basis. The improved data set means we have been able to conduct more sophisticated and robust benchmarking than before. Our operating cost assessment team, like our network investment team contains a number of individuals who have, through the RRP process, built up a good understanding of each business and its cost structure. We have benefitted also from the support of an academic advisor, Melvyn Weeks, who specialises in benchmarking techniques

3.30. Benchmarking is a highly technical area and we explain in full the methodology we have used in the Cost Assessment document.

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

3.32. In the case of network operating costs (i.e. inspections and maintenance) benchmarking results are weaker than elsewhere perhaps because there is still not enough consistency in the reporting applied by DNOs to this cost category. In this case we propose to use a hybrid approach which brings DNOs with costs higher than the average down to the average level of efficiency and benchmarks those DNOs in the top 25 per cent at the upper quartile level of efficiency. Those companies between the upper quartile and average are given their own level of costs. We consider that this addresses the data issues for these activities. We recognise that there may be some trade off between network operating costs and network investment. We have taken a holistic approach to make sure that we do not unfairly penalise companies by setting a low operating cost benchmark without recognising the impact on the level of network investment.

3.33. We have had to consider whether, in advance of our benchmarking, we should adjust historical costs for specific factors that might mean the efficient level of costs is higher in some regions than in others. This has been a controversial area and we have decided to apply adjustments for both regional labour and contractor costs and a number of specific additional costs associated with particular networks. We have recognised in our benchmarking that it is more costly to work on sparsely populated

networks such as the Highlands and Islands and on densely populated networks in London, and that there are extra costs associated with running the interconnected network in SP Manweb's area.

3.34. We are satisfied that our benchmarking is robust and pragmatic and gives common sense results. However, we still have some concerns about the robustness of some of the underlying data submitted by the DNOs at the end of June. We are continuing to review this data which may lead to changes in the results in our autumn update and final proposals.

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 under- or over-spends 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 under-spends.

Cost assessment outstanding

3.36. The proposals for network expenditure set out in this document are firm and are based on lengthy and robust analysis. We do not expect to see significant movements in our assessment of network expenditure in the run up to Final Proposals. However, there are a few areas of costs that we are yet to analyse or where we will update our assessment based on additional information from the DNOs. We will carry out our assessment over the coming weeks.

3.37. The areas we intend to update include:

- Demand connections (both the ex ante allowance and the baseline and unit costs for those connections subject to a volume driver), and
- General reinforcement and asset replacement in order to take account of the detailed reconciliation of the DNOs' proposed outputs and their forecast

expenditure we are currently undertaking. This may result in changes to either the baseline expenditure, the level of outputs the DNO commits to or both.

3.38. The areas where there is insufficient clarity to make firm baseline proposals at this stage include:

- Major system risks expenditure (HILP only),
- BT 21st century expenditure,
- Expenditure on rising mains and laterals, and
- Expenditure on Critical National Infrastructure Costs (e.g. preparation for black start), and
- Costs associated with the Traffic Management Act.

3.39. We will issue proposed baselines for these areas of expenditure in the autumn once there is more clarity around the requirements.

3.40. The June FBPQ submissions included an additional disaggregation of data between those indirect costs that supported activities within the price control and those outside the price control, such as sole use connections costs. We have run a version of our analysis using only the cost data identified as funded through the price control but have not had the opportunity to undertake our usual quality assurance work on those numbers. The results of this analysis identified inconsistencies, anomalies and differences in cost allocation across the companies. We have therefore not used this disaggregated data in our benchmarking. We will undertake further quality assurance work on the disaggregated numbers and, if we are satisfied they are suitable we may use them in the autumn update and final proposals. This work may amend the results presented in these proposals.

Defined Benefit Pension costs

3.41. A significant element of the DNOs' cost base is the cost of servicing defined benefit pension schemes. DNOs have requested £2bn over DPCR5 to fund their contributions to these schemes including deficit recovery, compared to £1.2bn in DPCR4. Although most of the DNOs have closed their schemes to new entrants, many of the schemes are in deficit and so there are and are likely to continue to be substantial costs to maintaining these schemes for many years to come. The nature of a defined benefit scheme means that until the scheme is finally wound up, the funds needed to ensure all liabilities are covered are not certain, so any assessment of how well funded these schemes are is only an estimate.

3.42. Our approach to pension costs at DPCR4 involved providing each DNO with an upfront allowance at the time of the price control based on the company's recovery plan, itself driven by the most recent triennial valuation of the deficit. If during DPCR4 the DNOs are required to pay more or less than we have assumed following future triennial valuations, we have agreed that we will make an appropriate adjustment to their revenues in the subsequent price control, providing the costs are deemed to have been efficiently incurred. Customers will pay £27m in DPCR5 to allow DNOs to recover these costs, which they have already incurred.

3.43. We have had concerns over whether our pension principles have resulted in adequate incentives for all price-controlled energy network companies to do what they can to keep their pension costs down. We recognise that the deficit recovery plan is a matter for the Trustees of each DNO, that the pension has to be managed to the satisfaction of The Pension Regulator (TPR) and that in some cases the DNO is part of a much larger pension scheme where the main funders of the scheme face competitive pressure to control their pension costs. However, the scale of pension costs and the speed with which they are increasing means we think it remains appropriate for us to consider whether we could do more to replicate the competitive pressure that the management of other companies face when they discuss the recovery plan with their Trustees.

3.44. On 31 July 2009 we published a consultation document[14] outlining some options for how we could regulate this element of costs in future. Some of the options may be applied to DNOs in DPCR5 and we will set out our minded to position in the autumn. In the meantime we have made assumptions in line with our current application of the principles for the purposes of determining draft revenue allowances.

Corporate tax liabilities

3.45. The DNOs are subject to UK corporation tax. We need to make allowance for their expected tax payments during DPCR5. We have calculated the corporation tax that a DNO would expect to pay if they earned the allowed revenues set out above and spent money on the categories of costs assumed in determining these revenue allowances.

3.46. HMRC have a detailed set of rules based on legislation and practice that they apply to determine whether expenditure qualifies for tax relief, and if so, at what rate it attracts relief. To avoid an overly complex calculation we have made some standard assumptions about the percentage of each category of expenditure that we have assessed that qualifies for each type of tax relief. These assumptions are based on what DNOs have told us about their tax submissions to HMRC and our own understanding of the tax rules. Although the DNOs' tax returns are reviewed by the same tax office there are some differences between them in the categorisation of costs for tax relief, and in a few instances, we have made adjustments to our standard methodology.

Cost of capital and financeability

3.47. As set out in Chapter 2 we propose that 85 per cent of the DNOs' network costs will be recovered through a return on their RAV, which means that they recover the

[14] Price control pensions principles. Second consultation document (96/09)

costs over time. Since these costs are not fully covered by current revenues, the DNOs need to obtain finance for these costs and the providers of this finance require a return.

3.48. Broadly speaking there are two types of finance that the DNOs can obtain, debt finance and equity finance. Debt finance, such as bank loans or corporate bonds is better protected and has first call on the cashflows of the company and thus requires a lower return. However, a company cannot rely entirely on debt finance because its cashflows are not sufficiently certain, so it will also require some equity finance - that is, investment in the shares of the company. Equity finance is riskier and thus requires a higher return on average. The precise mix of debt and equity (and the exact form each takes), known as the gearing level, are a matter for each DNO to determine, and so we simply take a notional gearing assumption that is appropriate for this type of business and calculate the return accordingly. The return is expressed as a WACC with the cost of debt capital and the cost of equity capital weighted according to the gearing level.

3.49. The WACC for an electricity network cannot be directly observed, although there is evidence, especially from debt markets, that can help to estimate it. Capital markets have been particularly volatile in recent months due to the effects of the credit crunch and the subsequent recession. Our approach for calculating the cost of capital is weighted towards long-term indicators, but involves us considering and taking into account the impact of more recent evidence.

3.50. We have commissioned a report from the consultants PriceWaterhouseCoopers (PwC) to assist us in estimating the cost of capital. The estimate that the Vanilla WACC could fall within the range of 3.5 per cent to 5.6 per cent. However, the WACC, and in particular the return to equity component is affected by the precise balance of risks and rewards a price control package offers the DNOs, and so we will not determine the WACC until our Final Proposals in the winter.

Cost of debt uncertainty

3.51. The volatility of economic data has prompted concerns that our ex ante cost of debt in particular may turn out to be inadequate if there are future severe disruptions to the efficient working of capital markets. This risk is limited by the typical structure of debt finance of network businesses, which is generally long-term (so refinancing needs are usually small in any given price control period and mostly at fixed rate), but still applies to the incremental borrowing needed to finance the substantial investment plans for DPCR5. It would be poor value for consumers to mitigate this risk by setting a very high ex ante cost of debt that covers all possible outcomes.

3.52. While we would prefer to continue with our current approach, our consultants have identified a number of alternative approaches we could use to address uncertainty around the cost of debt. These include introducing:

1. a more explicit price control disapplication clause making it clearer that DNOs can approach Ofgem for a new settlement if circumstances changed significantly within the price control period,

2. a mechanistic adjustment (or trigger mechanism) that gave the DNOs extra revenue when a suitable indicator of market interest rates rose above a certain level for a sustained period (and symmetrically reduced revenues if it fell below a certain level).

3. a substantial effects clause, which would specifically state the circumstances in which Ofgem would consider a reopener of DPCR5,

4. a time based reopener which would require Ofgem to review allowed revenues if interest rates hit a trigger point.

3.53. We are not persuaded at this stage that we need to introduce any of these alternative mechanisms but we would welcome views on this matter. This is because we consider that long-term debt is available at rates that, if inflation returns to the levels typically seen over the last ten years, are consistent with recent price control decisions. We may also revisit this position if market conditions deteriorate rather than continue to improve further. We are particularly concerned about the practicality of designing, consulting on and implementing Option 2 as part of the current review. This would require extensive further work to develop a suitable mechanism as a suitable index to base the trigger on does not, in our view, currently exist. Our current view is that this issue may be better considered and consulted upon as part of the RPI-X@20 project.

3.54. In the meantime, we have modelled revenues for Initial Proposals using the DPCR4 WACC. This comprises a 7.5 per cent post-tax cost of equity, a 4.1 per cent pre-tax cost of debt and a gearing assumption of 57.5 per cent debt, resulting in a 5.55 per cent cash or Vanilla return (6.8 per cent pre-tax, 4.9 per cent fully post-tax[15]). All these figures are expressed in real terms. The RPI element of these costs is recovered through indexation of allowed revenues to RPI.

Financeability tests

3.55. In principle, an adequate cost of capital should be enough to ensure that the DNOs are able to raise the finance they need. However, in the light of our duty to secure that these businesses are able to finance themselves and due to the difficulties in ensuring that an estimated cost of capital is adequate in practice, we also carry out some financeability tests. These tests are deigned to be equivalent to those used by the financial markets, and especially the credit rating agencies, whose

[15] These figures are marginally different from those quoted at DPCR4 due to a change in the corporate tax rate.

assessment of the creditworthiness of businesses has a large impact on their ability to raise debt finance and the cost of doing so.

3.56. The tests are explained further in the Financial Issues document, but are primarily a check that the gearing level throughout the period, and the ability of companies to pay their interest obligations from their cashflows, are consistent with a comfortable investment grade credit rating. Our assessment of the cashflows implied by the initial proposals is that all the companies should be able to access the capital markets when they need to.

3.57. We note that in recent months (although the situation has clearly improved) there were periods when the withdrawal of liquidity from capital markets made it extremely difficult even for the best-rated companies to raise new capital. We would note that if such a scenario were to be repeated during the DPCR5 period that higher revenue allowances would be unlikely to improve the situation, but we would take any such systemic problems into account when assessing the DNOs' performance over the price control period.

Mergers and Acquisitions

3.58. There is a reasonable possibility of further merger and acquisition activity within the electricity distribution sector given recent press reports that some companies may be considering selling their DNO businesses. Ofgem has a mergers and acquisitions policy which we published in 2002[16]. Amongst other things, this sets out that we will apply a merger tax of £32m (in 2001-02 prices) where current players buy out a DNO group. Should a DNO group go up for sale we may find it necessary to amend our policy in order to address the specific issues that arise from that sale process. We would consult before making any changes to our merger policy.

16 http://www.ofgem.gov.uk/About%20us/enforcement/mergers/oft/Documents1/mergersandacquisitions%2048.pdf

4. Risks and Rewards

Chapter summary

This chapter sets out our initial views on the opportunity the price control should give to DNO shareholders to earn additional returns, and the risk they should face of earning less than expected within the price control period.

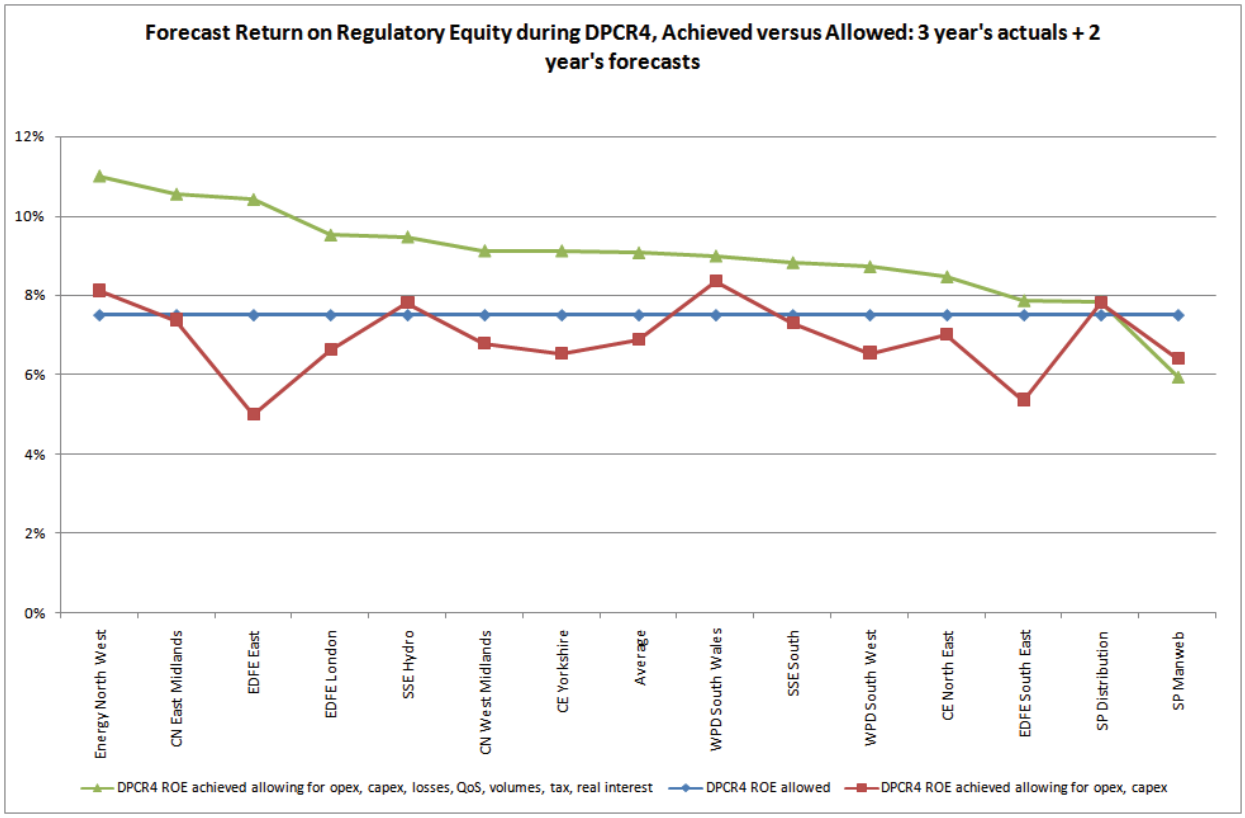
Question 1: Do you agree with our approach to calibrating the price control settlement?
Question 2: Do you think DNOs should be awarded a low baseline WACC and be given opportunities to earn more through outperformance, or a higher WACC with more limited opportunities to earn through outperformance?
Question 3: What comments do you have on our early views on how different incentives should be calibrated and the impact on customers' bills?
Question 4: Do you agree with our proposed mechanisms for handling uncertainty?

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 (IIS), the volume driver, changes in corporate tax rate and deviations in real interest rates from those assumed when we set the price control.

Figure 4.1 – Forecast return on regulatory equity for each DNO in DPCR4



4.3. The scope for outperformance and underperformance of the regulatory rate of return is often overlooked by companies and commentators at the time of price control reviews, with debate focusing mainly upon the WACC Ofgem applies 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.

4.4. In this review we want to take a more holistic view of all elements of the price control settlement and make sure that together they provide a fair balance of risk and reward for customers and DNO shareholders. We have begun to use the RORE measure as we form our proposals. Our approach is set out below. We would expect much of the debate between now and Final Proposals to focus on the proposals in this chapter and we anticipate our views may change over that period.

4.5. Our basic unit for assessing variability in RORE is the basis point. One hundred basis points equals one per cent. So, if the baseline return on equity included in the WACC is 7.5 per cent, (as in DPCR4), and incentive outperformance allows a

company to earn 8 per cent then they have gained 50 basis points in additional RORE.

Approach to calibrating the settlement

4.6. We have a number of specific objectives in calibrating the settlement as follows. We would like to:

- make sure that the settlement is formulated so that those DNOs that perform the best earn the highest returns. A high performing DNO will be achieving the set of behaviours we set out in Chapter 2, will be exceeding the settlement outputs and meeting statutory and licence conditions while meeting (or beating) costs within the limits set by the price control allowed revenue. Our assessment is that those companies that are making the highest RORE in DPCR4 are not necessarily those that have delivered most in terms of customer service, efficiency improvements and network performance over the period,

- set incentives so that DNOs have to deliver significant improvements to earn in excess of the baseline rate of return. While some of the DPCR4 outperformance was due to unexpected falls in the cost of debt and changes to the corporate tax rate, some of it has been driven by earnings under the losses incentive. There is evidence to suggest that in general it may have been too easy for DNOs to make gains under this incentive and, because it impacts overall performance, under the settlement as a whole,

- ensure there is an appropriate balance between the chance of under and outperforming the assumed rate of return. Performance in DPCR4 suggests that in general the opportunities to outperform may have exceeded the risk of earning below the assumed rate of return, and

- ensure that there is an appropriate allocation of total RORE basis points available for performance across the different incentives. Our assessment is that the losses incentive mechanism has dominated RORE in DPCR4, dwarfing DNO performance in network investment and operating efficiency.

4.7. As we look to decide how many basis points should be available to earn or lose around the baseline return on equity, we aim to make a decision that is informed by and compatible with:

- Our view on DNO expenditure. We propose to make significant cuts to the forecasts of many DNOs. These DNOs will not be able to earn the assumed rate of return within DPCR5 unless they are able to cut back on forecast costs, earn additional revenues through other incentives or achieve a cost of debt significantly below that which we use in setting WACC. Our approach to cost assessment already means that the "baseline" rate of return for most companies will be below the assumed rate of return in WACC, and they will need to make real improvements if they are to deliver assumed returns for their shareholders. Should we be put under pressure to increase our view of baseline expenditure in the run up to Final Proposals, we may have to reconsider the calibration of

incentives and other mechanisms to ensure that we had not made it too easy for DNOs to earn in excess of the baseline rate of return.

- Our decision on WACC. We do not consider it is appropriate to deliver a price control settlement that both allows the DNOs a relatively generous cost of capital and where the control is calibrated to provide the DNOs with more upsides than downsides. To get a fair balance of risk and reward between customers and DNOs, the WACC and the calibration of the settlement must be seen as part of an overall package.

- The level of price increases customers can be expected to bear. We have taken a tough line on DPCR5 expenditure. However, these initial proposals, which do not take into account the increase in baseline allowed revenues that might arise if it we decide to set WACC above DPCR4 levels, already represent a significant increase in the prices customers will have to pay for electricity distribution services - up to 8.6 per cent pa in some areas. We have to consider the extent to which it is appropriate to introduce other mechanisms which could drive up the price customers pay within the price control period. For this reason alone, there has to be a trade off between where we land on allowed revenues and the opportunity to outperform the settlement.

- DNO financeability. We will use our dynamic modelling of potential returns on regulatory equity to assist with our assessment of financeability. Whilst our primary financeability tests are focussed on satisfying ourselves that the baseline settlement is compatible with a comfortable investment grade credit rating, it is valuable to understand the range of financial ratios that could arise from the package. We would expect most plausible outcomes to be compatible with at least a basic investment grade credit rating, but we do not seek to guarantee that all outcomes meet this criterion. In the event that a DNO was outspending its allowances and yet underperforming on discretionary incentives, we would see this as a sign that it was not being run efficiently.

4.8. We would like to hear the views of DNOs and other parties as to whether we should: a) award the DNOs a cost of capital at the lower end of our range, but provide them with significant opportunities to outperform and more protection against underperformance; or b) award the DNOs cost of capital at the higher end of the range but where there are less opportunities to outperform and less protection against underperformance. At this stage we have not ruled out making final proposals that strike a different balance of these two factors across different DNO groups although we would have a strong preference for an outcome where all DNOs accept the same baseline WACC and a similar balance of risks and opportunities for shareholders within the price control period.

4.9. These considerations have a bearing on our decisions about the strength and structure of incentive schemes in DPCR5 and on our proposals for handling uncertainty. Our initial thoughts on each of these areas are set out below. We do not expect our views on the range and structure of incentives and uncertainty mechanisms to change significantly. But our view on the calibration of incentives and on the trigger points for uncertainty mechanisms could change as we firm up our proposed allowed revenue. We have arrived at these proposals after conducting high

level scenario modelling to assess the range of RORE basis points that a company could reasonably expect to earn above and below its baseline return on equity. We will continue with this modelling in the run-up to final proposals.

Incentive calibration

4.10. Incentives in the price control can alter the revenues DNOs are allowed to earn from customers (in most cases, allowing DNOs to lose as well as gain additional revenue). To the extent that these changes in allowed revenue are not perfectly offset by changes in costs the company bears, they present an opportunity for DNOs to make, or represent a threat that DNOs will lose, basis points around their baseline rate of return. Ideally, all incentive mechanisms should pay out or penalise the DNOs in response to the behaviour of the DNO and so the returns they make should be within the DNOs' control. However, in some cases, such as the losses incentive, other factors can play a role in how the DNO fares under the mechanism and where this is the case we think it is important to put in place caps and collars to limit the risk and reward under the scheme. We do not consider it is appropriate to place a cap or a collar on the overall returns a DNO can make.

4.11. We set out our initial thoughts on the calibration of the key DPCR5 incentives in the table below. At this stage, the work we have done in calibrating the incentives would mean that DNOs have an opportunity to earn a likely maximum of 57 basis points and face the risk of losing a maximum of 58 basis points from the incentive mechanisms alone[17]. This could mean that customers served by high performing DNOs find that they pay up to 3.9 per cent on top of the allowed revenues set out elsewhere in this document. Similarly, customers of poorly performing DNOs could face reductions in their use of system charges of up to 4.0 per cent. These are based on our modelling at a 95 per cent confidence interval. There will be no impact on customer prices in the DPCR5 period where the DNO under or outperforms our expenditure allowance, as the sharing mechanism will only hit customers' bills in the next regulatory period.

4.12. Our proposals would mean that the opportunity to earn/lose RORE basis points is currently split between performance as follows:

[17] In practice outturn RORE will be impacted by external factors which might offset or exacerbate the impact of price control incentives.

Table 4.1 - Ofgem analysis of scope to earn/lose RORE basis points under Initial Proposals

	Range of bps (95th confidence interval)	Impact on DPCR5 prices (% change on baseline revenues)
Environment - Losses	-51 to 50 bps	-3.4% to 3.4%
Customers - Interruptions, Minutes, Telephony, Connection margin, Guaranteed Standards	-25 to 27 bps	-1.7% to 1.9%
Networks - Cost over/underspend	-32 to 31 bps	None
Total expected impact from Environment, Customers and Networks	-58 to 57 bps	-4.0% to 3.9%

Handling uncertainty

4.13. As noted in Chapter 1, when we set allowed revenues for the five year period there is always a degree of uncertainty about the costs the DNOs will face over the period ahead. The unprecedented economic conditions means there is more uncertainty in DPCR5 than in previous reviews; particularly around future trends in the cost of issuing bonds and around the impact the recession will have on demand on the networks and the need for reinforcement.

4.14. The mechanisms we put in place to account for uncertainty 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), or to protect only one of the two parties. DPCR4 contains the following mechanisms:

- The rolling incentive within the IQI shares DNO under performance 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

- DNOs can apply for a reopener to allow them to recover the cost of meeting new legislation (the Traffic Management Act (TMA) and the Electricity Safety Quality and Continuity Regulations (2002) (ESQCR).

4.15. In DPCR5 we propose to retain the TMA reopener but otherwise we are considering a number of changes. In Chapter 2 we have already discussed our proposal to extend the category of costs subject to the rolling incentive and in Chapter 3 the range of different ways in which we could address uncertainty around the cost of debt and around tax liabilities. We are currently consulting on the treatment of pension costs for DPCR5.

4.16. It is worth emphasising that aside from any specific mechanisms included in the DPCR5 package, we have a general duty to secure that licensees are able to finance their activities. Therefore, if any event not covered by a specific mechanism threatened a DNO's ability to finance its activities, we would have to give serious consideration to reopening the price control.

4.17. We are removing the DPCR4 drivers for units distributed and customer numbers. Instead, we propose 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, and

- A combined reopener for general reinforcement expenditure and high-cost connections capex involving shared assets.

4.18. We propose to retain the reopener for TMA costs as there still remains significant uncertainty over the level and timing of these costs.

4.19. Further details of our proposals to managing cost and volume uncertainty can be found in the Cost Assessment document. We will develop our dynamic modelling to incorporate the impact of handling uncertainty on RORE.

Appendices

Index

Appendix 1 - Consultation Response and Questions

1.1. Ofgem would like to hear the views of interested parties in relation to any of the issues set out in this document.

1.2. We would especially welcome responses to the specific questions which we have set out at the beginning of each chapter heading and which are replicated below.

1.3. Responses should be received by 14 September 2009 and should be sent to:

DPCR5 Response
Electricity Distribution

Ofgem
2nd floor
9 Millbank
London
SW1P 3GE

020 7901 7026
DPCR5.reply@ofgem.gov.uk

1.4. Unless marked confidential, all responses will be published by placing them in Ofgem's library and on its website www.ofgem.gov.uk. Respondents may request that their response is kept confidential. Ofgem shall respect this request, subject to any obligations to disclose information, for example, under the Freedom of Information Act 2000 or the Environmental Information Regulations 2004.

1.5. Respondents who wish to have their responses remain confidential should clearly mark the document/s to that effect and include the reasons for confidentiality. It would be helpful if responses could be submitted both electronically and in writing. Respondents are asked to put any confidential material in the appendices to their responses.

1.6. Any questions on this document should, in the first instance, be directed to:

Nicola Cocks
Programme Management, Electricity Distribution

9 Millbank, Ofgem, London, SW1P 3GE
020 7901 7036

nicola.cocks@ofgem.gov.uk

CHAPTER: One

There are no questions in this chapter

CHAPTER: Two

Question 1: Have we introduced a set of measures that can be understood by customers and other stakeholders?
Question 2: Are we aiming to encourage the behaviour you consider appropriate for DNOs in the 2010 to 2015 period?
Question 3: Are the proposed mechanisms likely to be successful?

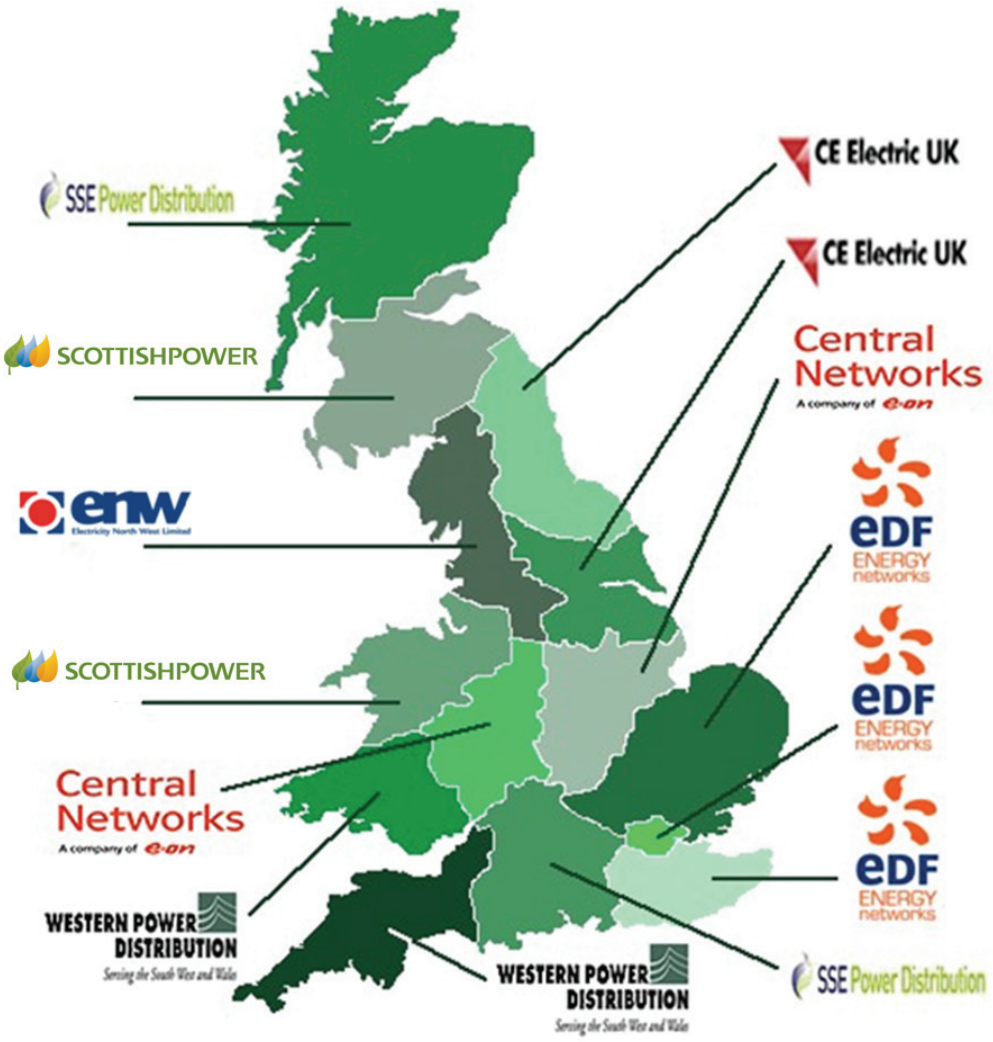
CHAPTER: Three

Question 1: Have we taken an appropriate approach to setting allowed revenues?
Question 2: What assumptions do you think we should use for real price effects on DNOs over the 2010 to 2015 period?
Question 3: What are your views on PwC's range for WACC?
Question 4: Do you think we need a mechanism to address cost of debt uncertainty?
Question 5: What are your views on the debt trigger mechanism?

CHAPTER: Four

Question 1: Do you agree with our approach to calibrating the price control settlement?
Question 2: Do you think DNOs should be awarded a low baseline WACC and be given opportunities to earn more through outperformance, or a higher WACC with more limited opportunities to earn through outperformance?
Question 3: What comments do you have on our early views on how different incentives should be calibrated and the impact on customers' bills?
Question 4: Do you agree with our proposed mechanisms for handling uncertainty?

Appendix 2 - Map of GB electricity distribution licence areas



Appendix 3 – 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.[18]

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[19].

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[20];
- 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.[21]

[18] Entitled "Gas Supply" and "Electricity Supply" respectively.
[19] 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.
[20] 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.

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:

- promote efficiency and economy on the part of those licensed[22] 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[23] 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.

[21] The Authority may have regard to other descriptions of consumers.
[22] or persons authorised by exemptions to carry on any activity.
[23] Council Regulation (EC) 1/2003

Appendix 4 - Glossary

123

132 kV

Only covers assets at the 132 kV voltage level.

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

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.

BT 21st century networks (BT21CN)

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

C

Capital Expenditure (Capex)

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

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:

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

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.

Distributed Generation Incentive (DGI)

The DG incentive is a 'hybrid' incentive scheme that provides for partial pass-through treatment of reinforcement costs incurred in providing network access to DG and a £/kW revenue driver to incentivise connection of DG. The 'hybrid' incentive sought to combine incentives for efficiency (via the incentive rate) with protection against cost uncertainty (via the cost pass through). An additional element to the incentive was created to provide ongoing network access (availability). The allowances were set based on the DNOs' expectations of likely DG connections and the costs associated with those connections.

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.

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

Extra High Voltage (EHV)

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

Electricity Networks Strategy Group (ENSG)

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.

Forecast business plan questionnaire (FBPQ)

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

G

General reinforcement expenditure

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

Gigawatt (GW)

A measure of energy equal to one thousand megawatts.

H

Health Index (HI)

High impact low probability (HILP)

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

Her Majesty's Revenue and Customs (HMRC)

High Voltage (HV)

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

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.

Low Voltage (LV)

All voltage levels up to and including 1kV.

M

Megawatt (MW)

A measure of energy equal to one thousand Kilowatts.

N

Network Operating Costs (NOCs)

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

Non-operational IT

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

O

Ongoing efficiency improvements

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

Operational IT and telecoms (excluding BT 21st century networks)

Investment in Operational IT and telecoms, such as, substation RTUs, marshalling kiosks, communications for switching & monitoring, and control centre hardware & software.

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.

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.

RPI-X

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

Regulatory reporting process (RRP)

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

S

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)

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."[24]

The Pension Regulator (TPR)

This regulator was established under the Pensions Act 2004.

U

Use of System charges (UoS)

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

Use of system network reinforcement cost

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

W

Weighted Average Cost of Capital (WACC)

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

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.

Appendix 5 - 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:

1. Do you have any comments about the overall process, which was adopted for this consultation?
2. Do you have any comments about the overall tone and content of the report?
3. Was the report easy to read and understand, could it have been better written?
4. To what extent did the report's conclusions provide a balanced view?
5. To what extent did the report make reasoned recommendations for improvement?
6. Please add any further comments?

1.2. Please send your comments to:

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Ofgem
9 Millbank
London
SW1P 3GE
andrew.macfaul@ofgem.gov.uk