

## **Developing network monopoly price controls**

### **Update document**

February 2003      05/03

## Summary

This document provides an update on Ofgem's work on developing network monopoly price controls and on the next price control review of the electricity Distribution Network Operators (DNOs).

Ofgem's principal objective is to protect the interests of consumers, wherever appropriate by promoting effective competition. Price controls and associated incentive schemes are an important part of the protection provided to consumers – both in terms of price and quality and security of service – for the services that they receive from network monopoly companies.

The objectives of this project are to:

- ◆ improve the framework of price controls applying to all network monopoly companies; and
- ◆ lay the foundations for the next DNO price control review (covering the period from 1 April 2005), including identifying the objectives, key issues and principles for setting the price controls.

### **Consistency of price controls**

In general, it is recognised that consistency across different network price controls is desirable, but not at the expense of solutions appropriate to specific sectors or situations. The expected increase in generation directly connected to distribution networks will make it increasingly important to consider the issue of consistency with the electricity transmission arrangements, including developments in System Operator incentives.

### **Assessing cost efficiency**

At previous price controls, Ofgem has used a range of methods to assess efficiency, including both analysis of company specific information and comparative analysis across companies. It is generally recognised that two of the difficulties with the approaches taken to date are:

- ◆ dealing with the accounting and operational trade-offs between capital and operating expenditure; and

- ◆ that having the lowest possible cost for a particular activity does not necessarily imply greatest efficiency, because of trade-offs with other elements of cost and with the outputs delivered.

In assessing efficiency at the next distribution price review and beyond, Ofgem will address both of these issues through explicit consideration of the trade-offs. To the extent practical, this will include analysis of total costs and value for money, but it is recognised that as these methods have yet to be developed or proven robust, it will be appropriate to use a range of techniques for the foreseeable future.

### **Incentives for cost efficiency**

There is now considerable experience of the basic incentive properties of the RPI-X mechanism, and in the light of this experience, there are a number of areas where issues arise and improvements to the detail of the arrangements can be sought:

- ◆ differing strength of incentives between capex and opex - this partly drives the problems in assessing efficiency identified above. This issue is the subject of ongoing work being undertaken for Ofgem by Frontier Economics, which will be published in March;
- ◆ periodicity - the basic RPI-X mechanism distorts incentives depending on the timing to the next review. Ofgem has already begun to address this issue for capital expenditure (capex) in the electricity distribution sector through a commitment to allow a fixed retention period for efficiency savings. This document proposes the use of fixed retention periods for both operating expenditure (opex) and capex for all the price controls covered by this project. In addition, because the periodicity problem is greatest as the next review approaches, it is proposed to initiate this mechanism for DNOs operating costs for the last two years of the current review period (i.e. from 1 April 2003). Further thoughts as to how the mechanism could work in practice are set out in this document;
- ◆ non-operational capex - in the electricity sector, non-operational capex has in the past been expensed for price control purposes. To the extent that spending on non-operational capex is intended to create future efficiencies in either capital or operating expenditure, it appears to be more appropriate to capitalise this expenditure in future, with an appropriate asset life.

## **Delivering outputs**

Over recent years, one of the most significant improvements to the system of price control regulation, both in the energy sector and in other regulated industries, has been brought about through more explicit focus on outputs.

A key area of focus for the next round of reviews will be to ensure that the overall package of incentives is appropriate and well-balanced, and that the trade-offs between quality outputs and prices reflect consumers' preferences. Ofgem's view is that, in general, the balance will best be struck by improving incentives on delivery of outputs rather than weakening incentives for cost efficiency.

The implications for the next distribution price review will include:

- ◆ work over the coming months to improve understanding of consumer preferences. This is likely to include a survey of willingness to pay for a range of potential improvements, particularly in terms of quality of service, as well as customer focus groups to explore views in more detail, and, dialogue with energywatch and other consumer organisations; and
- ◆ a review of the overall package of output delivery incentives and other measures, covering the Information and Incentives Project (IIP) incentives, Guaranteed and Overall Standards of Performance and the Asset Risk Management survey. An early focus for this review will be whether the present regimes for dealing with exceptional events (such as severe weather) are appropriate for the future.

## **Financial issues**

Ofgem and the regulated network companies each have important duties in respect of ensuring the companies can finance their activities. In undertaking price reviews, Ofgem considers carefully a range of financial issues and undertakes detailed financial modelling in order to ensure that an efficiently run company can finance its activities. Issues include:

- ◆ the cost of capital - this is the subject of study jointly commissioned by the UK sector regulators. Ofgem's view is that an efficient capital structure is one which ensures that a company can respond to changing business and financial circumstances – in current conditions this is likely

to be difficult with higher levels of gearing – this will inform its thinking on the cost of capital. Further consideration is being given to the appropriate treatment of tax liabilities;

- ◆ the regulatory asset value (RAV) - it is not Ofgem's intention to re-open or reconsider the method of calculation of historic RAVs. In rolling forward the RAV since the last price review, consideration will need to be given to:
  - adjusting future depreciation (particularly to mitigate the impact of the pre-Vesting assets "cliff edge" in electricity distribution);
  - capitalisation policies, capital expenditure and asset disposals in the current review period;
  - how rolling retention periods for capital expenditure feed into the RAV; and
- ◆ financial modelling and ratio analysis - this provides an important cross-check on the appropriateness of the price controls. Ofgem intends to develop test ratios consistent with a rating comfortably within the investment grade category, based on a capital structure consistent with that used to determine the cost of capital. When it has been developed, the financial model to be used for this assessment will be published.

### **The next DNO price control review**

The August consultation document<sup>1</sup> set out Ofgem's initial thinking on key aspects of the next DNO price review, including objectives and key issues. This document gives an overview of the responses received and explains how they have been taken into account, as well as outlining work undertaken on the key issues which has either been published elsewhere (such as the Open Letter on Distributed Generation) or will be published in the near future (work on uncertainty and incentives undertaken by Frontier Economics).

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<sup>1</sup> Developing network monopoly price controls – Initial consultation, Ofgem August 2002,.

## **Next steps**

Views are invited on the issues raised by this paper by 14 April

In March, Ofgem intends to publish:

- ◆ work undertaken by Frontier Economics on dealing with uncertainty and the incentive framework for price controls; and
- ◆ a detailed timetable and workplan for the next distribution price control review.

In May, this project will conclude with a Statement document on Developing Price Controls. This will then feed into the work on the next DNO price control review.

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# 1. Rationale

## *Issue*

- 1.1. Ofgem's principal statutory objective is to protect the interests of consumers (present and future), wherever appropriate by promoting effective competition. Many areas of the gas and electricity industries are subject to, or are in the process of being opened to, competition – including electricity generation, supply and the provision of metering and connection services. Ofgem will continue to monitor these markets to ensure that they operate effectively and where necessary take appropriate steps to ensure that consumers' interests are protected
- 1.2. There are some areas of the gas and electricity industries where companies retain an effective monopoly in the core services that they provide to consumers because it is not possible or appropriate to introduce competition. This applies to the bulk transportation and distribution of energy to consumers over monopoly networks. Network companies have a crucial role to play in delivering long-term security of supply and the quality of service that consumers receive from transmission and distribution networks. In these circumstances, Ofgem seeks to protect the interests of consumers through a variety of regulatory tools, such as price controls and standards of performance.
- 1.3. The regulatory framework, of which price controls are a significant component, is the primary mechanism through which incentives are provided to the companies to achieve these objectives. Price controls also protect consumers in terms of the charges that they pay for transmission and distribution services. These charges account for a significant proportion of the total energy bill that consumers pay-- approximately 40 per cent of a typical domestic consumer's gas bill and between 25 - 30 per cent of a typical domestic consumer's electricity bill. The design of the regulatory framework can also have a significant impact on the incentives that network companies are provided with in relation to social and environmental issues, such as the level of energy losses on the networks.
- 1.4. The August document explained that although price controls have worked well since privatisation a number of improvements have been made in recent years.

These include the introduction of the Information and Incentives Project (IIP) incentive scheme for the electricity Distribution Network Operators (DNOs), and for gas and electricity transmission, reforms to network access arrangements and to the way in which network capacity is allocated.

1.5. It should be possible to introduce further improvements to network monopoly price controls and this work forms a key part of Ofgem's proposed corporate strategy and plan (published in December 2002) over the next three years. The August document outlined that there are a number of developments behind this work, including:

- ◆ reports that have been produced by the National Audit Office (April 2002), the Performance and Innovation Unit (February 2002), and more recently the Organisation for Economic Co-operation and Development (OECD)<sup>2</sup>;
- ◆ Ofgem's increased social and environmental responsibilities under the Utilities Act 2000 and in this context the guidance that Ofgem has received from the Secretary of State on social and environmental issues; and
- ◆ the views that have been expressed by a number of interested parties on the regulation of monopoly companies, including the DNOs, National Grid Company (NGC), Transco, academics and other commentators.

1.6. It is important that the regulatory framework is reviewed in the light of these considerations and where appropriate improvements are introduced so that:

- ◆ the interests of consumers, both present and future, continue to be protected. This includes ensuring that they are protected from the abuse of monopoly power, receive an appropriate level of service and that a secure supply of gas and electricity is maintained;
- ◆ regulated companies have appropriate incentives to meet the demands of their consumers in an economic, efficient and co-ordinated manner and are able to finance their licensed activities and statutory obligations;

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<sup>2</sup> "OECD Reviews of Regulatory Reform – United Kingdom: Challenges at the Cutting Edge" OECD 2002.  
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- ◆ the regulatory framework can take account of the government's security of supply, social and environmental objectives; and
  - ◆ the level of transparency and understanding in the regulatory process is increased, including where appropriate, improving the level of consistency across different sectors of the industry.
- 1.7. The project should also reduce the burden of the next DNO price control review as work has begun early on defining key aspects of the review, including the timetable, objectives and key issues.
- 1.8. This project should benefit all those with an interest in the regulation of energy companies, including consumers, providers of finance, supply companies, generators and the network monopolies themselves.
- 1.9. The direct costs that Ofgem will incur from undertaking this project on developing network price controls are relatively small in relation to its importance and the charges that consumers pay for transmission and distribution services. Ofgem's budget for this project in this financial year is around £300,000, which includes an allowance for consultancy support. This does not include the costs of the next DNO price control review.

## ***Objectives***

- 1.10. Given these considerations the August document outlined the objectives of the project as follows:
- ◆ improving the framework of price controls applying to all network monopoly companies and, where appropriate, increase consistency in the approach that is taken in setting price controls; and
  - ◆ laying the foundations for the next distribution price control review in 2003/04 including identifying the objectives, process, key issues and principles that will be used in setting the price control which will be implemented from April 2005.

## 2. Introduction

### *Background and scope of the project*

- 2.1. The August document explained that the scope of the project covers:
- ◆ the electricity DNOs;
  - ◆ the transmission asset owner (TO) price control for Transco's Local Distribution Zones (LDZs) and National Transmission System (NTS);
  - ◆ the TO price control for the NGC; and
  - ◆ when implemented through BETTA, the TO price control for the Scottish Transmission companies.
- 2.2. The August explained that the focus of the project does not intend to review the System Operator (SO) incentive schemes which have been put in place for gas and electricity transmission. It is important to consider whether there are any aspects of the arrangements in transmission that need to be reflected in the regulatory framework for distribution – particularly in electricity distribution where these are likely to be changes in the way in which DNOs run and operate their networks as a result of increased amounts of generation connecting to their networks in the future. This is discussed in more detail in Chapter 3.
- 2.3. The present price control arrangements have worked well since privatisation and this project is seeking to improve existing arrangements rather than completely replace the existing RPI-X system of price control regulation. This was a view supported by respondents to the August document. Ofgem will not re-open any of the existing price controls in the light of the conclusions of this project but it will look at how they can be implemented at future price control reviews.
- 2.4. The project also has important links with a number of other areas, including the work that is being carried out by:
- ◆ the DTI, Ofgem and the industry on the arrangements for the connection of generation to distribution networks;

- ◆ Ofgem on reviewing the incentives on DNOs to reduce electrical losses;
- ◆ Ofgem on reviewing the structure of distribution charges and in particular the definition of the boundary between connection and ongoing use of system charges; and
- ◆ Ofgem and the industry on developing a survey that will focus on the asset risk management processes and policies of network companies.

### ***Purpose and structure of this document***

- 2.5. The purpose of this document is to outline Ofgem's further thoughts on a number of important areas in the light of respondents' views on the August document.
- 2.6. The structure of the document is as follows:
- ◆ consistency of the existing price controls (Chapter 3) – this Chapter sets out Ofgem's further thoughts on the consistency of the existing regulatory frameworks and identifies recent developments;
  - ◆ incentives for efficiency and assessing costs (Chapter 4) – this Chapter sets out Ofgem's further thoughts on how costs are assessed and incentives provided for cost efficiency in setting price controls generally and for the next DNO review;
  - ◆ developing the incentive and price control framework (Chapter 5) – this Chapter sets out Ofgem's thoughts on how cost assessments and efficiency incentives raised in Chapter 4 can be combined with incentives in other areas such as quality of service. The Chapter focuses on Ofgem's initial thoughts on the development of this framework for the DNOs;
  - ◆ financial issues (Chapter 6) – this Chapter sets out Ofgem's initial thoughts on financial issues including those issues relevant to all network monopoly companies and those that will need to be considered as part of the DNO price control review including on asset valuation, cost of capital and financial modelling and ratios; and

- ◆ the next DNO price control review (Chapter 7) – this Chapter sets out Ofgem’s further thoughts on the objectives and key issues for the price control review. It also sets out Ofgem’s thoughts on the information that will need to be collected as part of the review.
- 2.7. Appendix 1 sets out a revised version of the approach that Ofgem intends to use for undertaking price control reviews, which takes account of the five principles of good regulation identified by the government. Appendix 2 provides further details on the work that Frontier Economics is undertaking on this project. Appendix 3 sets out Ofgem’s initial thoughts on how a commitment to allow DNOs to retain efficiency savings for a fixed period of time could be implemented. Appendix 4 sets out how Ofgem’s thoughts on how it intends to assess consumers’ preferences part of the DNO price control review. Appendix 5 sets out Ofgem’s thoughts on developing quality of service incentives for the DNOs.

### ***Responding to this document***

- 2.8. The project scope and structure is wide ranging, and as such Ofgem would like to hear the views of all those with an interest in the development of network monopoly price controls, including consumers and their representatives, investors and City analysts and the companies themselves.
- 2.9. Any responses to this document should be received by 14 April. They should be sent to:

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- 2.10. Unless otherwise marked as confidential all responses will be published by placing them in Ofgem’s library or on our website. It would be helpful if responses could be submitted both electronically and in writing. Any questions on this document should, in the first instance, be directed to Adrienne Monroe.

## 3. Consistency of price controls

### *Introduction*

- 3.1. The August document set out a high level review of the existing regulatory frameworks that are in place for the network monopoly companies. One of the areas that the review focused on was the level of consistency across gas and electricity transmission and distribution. This Chapter sets out Ofgem's further thoughts in this area in the light of the views of respondents and recent developments in the regulation of network monopoly companies.

### *Consistency of price controls*

- 3.2. The August document explained that the main difference in the price control frameworks is the existence of SO incentive schemes for gas and electricity transmission and invited views on whether there were any areas where greater consistency would benefit consumers.

### *Respondents' views*

- 3.3. Respondents to the August document broadly welcomed the review of the existing price controls although it was pointed out that consistency should not be pursued at the expense of solutions that are necessary to meet the specific requirements or circumstances of a company or sector. It was also suggested that Ofgem should seek to identify best practice in regulation by looking at other regulators abroad and not to focus solely on experience in this country. Another respondent argued that in order to minimise regulatory risk it may be desirable to have a consistent philosophy of approach underpinning the different price controls. It also pointed out that there were no obvious reasons to justify some of the existing differences between price controls such as the mechanisms for capitalising expenditure into the regulatory asset value (RAV) or different retention periods for efficiency savings. This respondent also identified a specific area of inconsistency between the NGC TO price control in the area of DNO investment at Grid Supply Points (GSPs). It argued that it would be more efficient to replace those GSP assets, which are shared between NGC and DNOs, at the same time.

## *Ofgem's further thoughts and recent developments*

### **Overview of current arrangements for NGC's transmission system**

3.4. NGC as the TO and SO in England and Wales has an internal and external cost incentive scheme and a TO price control as outlined below:

- ◆ internal SO incentive scheme – includes the costs of its control centre, systems and staff required for performing the SO function;
- ◆ external SO incentive scheme – covers the costs of balancing services contract costs, balancing mechanism costs and includes a component for losses. This is a sliding scale or profit sharing scheme that limits NGC's overall gain or losses by applying sharing factors, caps and floors; and
- ◆ TO price control – provides NGC with an allowed revenue based on an assessment of the efficient opex and capex necessary for NGC to fulfil its role as TO.

3.5. Since August, Ofgem has published its thoughts on how the SO incentives for NGC should be further developed.<sup>3</sup> The present arrangements have worked well in providing NGC with strong incentives to reduce significantly the overall costs of system operation. Ofgem considers that further benefits can be realised by providing NGC with appropriate incentives to respond to signals from market participants to release additional incremental transmission capacity. The main features of the refined framework in transmission (which is being aligned with arrangements for gas transportation) are as follows:

- ◆ the incentive scheme will cover entry and exit transmission capacity that is incremental to that assumed in setting the TO price control (the baseline capacity);
- ◆ users of the transmission system will be able to purchase financially firm transmission access rights covering several years ahead to meet their own requirements and hedge short-term capacity risks. Where NGC is unable to deliver access rights there will be 'buy-back' incentives to cover the

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<sup>3</sup> NGC SO incentive schemes from April 2003 - Initial proposals document, Ofgem December 2002.  
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costs of purchasing from market participants the access rights it had previously sold; and

- ◆ there will be improved market signals for transmission capacity release and investment – NGC will be better able to determine whether it would be economic and efficient to build more transmission capacity in particular locations or bring investment forward (or defer it). NGC will be allowed to keep the revenues from the sale of any incremental transmission capacity up to a cap calculated by reference to a maximum allowed rate of return, which will be significantly higher than the rate of return it is allowed under its price control (6.25 per cent).

### **Consistency between electricity transmission and distribution**

- 3.6. It is important to consider whether there are any aspects of the arrangements in electricity transmission that are outlined above that should be applied in electricity distribution to help ensure that companies have appropriate incentives to operate their networks in an economic, efficient and co-ordinated way.
- 3.7. The way in which electricity distribution networks are managed and operated is likely to change over time. A significant driver of this change will be the increased amounts of distributed generation that are likely to connect to the distribution networks in the future. A significant increase in the amount of distributed generation may mean that the DNOs' networks increasingly exhibit characteristics of the transmission system. Ofgem published an open letter to the Chief Executives of the DNOs in January 2003 on the issues that an increase in distributed generation may have for the regulatory framework.<sup>4</sup> This raised the issue of whether there are any features of the transmission regulatory framework that should be applied in electricity distribution – and the timing for when they should be applied. Ofgem's aim is to ensure that the framework for electricity distribution is sufficiently flexible to allow further evolution towards the transmission framework in the course of the next price control period (2005 to 2010) if this is in the interests of consumers.

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<sup>4</sup> Developing Network Regulation: Open letter to the Chief Executives of DNOs regarding distributed generation – Ofgem, December 2002.  
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## Developments in gas distribution

3.8. In April 2002 Transco reorganised its 12 LDZs into eight regional networks. In the light of this reorganisation Ofgem set out draft proposals in December 2002<sup>5</sup> which indicated that it intended to introduce a separate price control for each regional network. Ofgem considers that separate price controls will:

- ◆ protect consumers in the event that Transco decides to sell off one or more regional networks;
- ◆ provide opportunities to compare the performance of regional networks and so enable more effective regulation; and
- ◆ create greater management focus and promote savings which can be shared with consumers.

3.9. Ofgem intends to publish final proposals on the separation of the price controls in May 2003 following which the separate regional price controls would be implemented from 1 April 2004. Ofgem will consult on the development of a quality of service incentive scheme for Transco's regional distribution networks during 2004/05 with a view to implementing arrangements from 1 April 2005.

3.10. Ofgem has also recently published its draft proposals on the regulation of Independent Gas Transporter (IGT) charging.<sup>6</sup> This set out draft proposals for a system of relative price regulation, based on Transco's equivalent charges, for the future regulation of IGTs' gas transportation charges. The document also set out the remaining issues that need to be resolved before final proposals are published in the second quarter of 2003.

## Other issues

3.11. As explained above there are a number of smaller differences in the price control frameworks across network monopoly companies. These include the treatment of capital expenditure in the RAV and the retention period for efficiency savings. These issues are discussed in more detail in the rest of this document. As part of the distribution price control review, Ofgem will need to

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<sup>5</sup> Separation of Transco's distribution price control: Draft proposals – Ofgem, December 2002.

assess the future capital expenditure requirements of the DNOs including whether it would be more efficient to replace DNO-NGC shared GSP assets at the same time.

### ***Issues for consideration***

3.12. Ofgem would welcome views on any of the issues raised in this Chapter and in particular on:

- ◆ whether there are any aspects of the electricity transmission framework that should be applied in electricity distribution and the most appropriate timing for doing so, including the regulatory, technical and commercial issues that would arise.

## 4. Assessing costs and incentives for efficiency

### *Introduction*

- 4.1. Price controls protect consumers in terms of the charges that they pay for services provided by network monopoly companies. They also provide the companies with incentives to operate in an efficient, economic and co-ordinated manner, to deliver an appropriate level of quality and security of supply and to deliver other relevant outputs, such as those relating to the environment, including system losses.
- 4.2. The August document explained that in setting price controls it is necessary to:
- ◆ assess the efficiency of companies; and
  - ◆ make a projection of the future level of costs that an efficient company is expected to incur over the period of the next price control in the following areas:
    - **opex** – this covers the day to day costs of running the network such as staff costs and repairs and maintenance;
    - **capex** – includes spending on assets, such as overhead line, pipes and other plant, such as transformers;
    - **financing costs** – covers the costs an efficient company may be expected to incur in providing a reasonable return to investors who provide the capital and other financial facilities it requires; and
    - **taxation** – covers the expected tax liabilities that an efficient company may be expected to incur.<sup>7</sup>
- 4.3. These projections of costs are then used to set the allowed level of revenue that an efficient company will require over the period of the price control. In linking the future level of revenue to the assumed level of efficient costs, it is important

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<sup>7</sup> This section focuses on the issues associated with opex and capex. Financing costs and taxation are discussed in detail in Chapter 6.

to ensure that a balance is achieved between protecting consumers, in terms of quality and security of supply and value for money, and providing companies with appropriate incentives towards efficiency. The incentives companies are provided with to improve efficiency depend on:

- ◆ ***how quickly and to what extent cost reductions feed through into the allowed level of revenue*** - changing the amount of time that companies are allowed to retain efficiency savings and any 'glide-path' to the level of efficient costs will impact on the efficiency incentives provided to companies; and
- ◆ ***the way in which efficiency is assessed*** - if efficiency is assessed by comparing companies' costs (or benchmarking) then this can provide stronger efficiency incentives than if efficiency was assessed by looking at company information alone.

### ***Assessing efficiency and projecting costs***

4.4. Ofgem has used a number of different approaches and techniques for assessing efficiency and projecting the future level of costs that an efficient company would incur. These fall into three main areas:

- ◆ ***analysis of company specific information*** – as part of the price control review companies provide information on both their present and forecast level of costs.

In assessing efficiency it is appropriate to assess historical trends in companies' costs and the accounting policies that have been used to help ensure that they are not masking the underlying level of their costs. For example, at the last DNO price control review a significant amount of work was undertaken on standardising companies' costs for differences in accounting policies – such as their attribution, allocation and capitalisation policies.

In projecting the future level of costs that an efficient company would be expected to incur, it is necessary to consider the companies' own forecasts and, in particular, how they have been derived, including the assumptions that have been made.

At the last DNO price control review, it was clear that there were significant variations between companies in the levels of cost reduction already achieved, contrasting patterns of forecasts compared to historical trends and strong evidence to suggest that companies had not submitted accurate forecasts;

- ◆ ***comparative analysis of companies' costs*** – Ofgem has made significant use of comparative analysis in assessing companies efficiency and projecting the future level of efficient costs. Both inter-and intra-industry comparisons have been made, although due to issues of comparability, the scope of comparisons with other industries (and countries) has been limited. Comparative analysis has been used extensively in setting price controls for the DNOs and to a much lesser extent for NGC and Transco (although Ofgem has compared the performance of the LDZs). The comparative analysis that has been undertaken includes the use of econometric techniques, such as the regression analysis of frontier performance that was used for the DNOs at the last price control review, and comparisons of unit costs, such as engineering and metering costs and corporate overheads.

Comparative analysis has also been used in projecting the future level of efficient costs for companies. This has mainly taken the form of comparisons of cost trends and unit costs, such as repairs and maintenance costs and other cost functions; and

- ◆ ***analysis of market data*** – market data has been used most widely in assessing various components of the cost of capital but less so in assessing opex and capex efficiency and projecting the future level of costs. Areas where market data has been used include comparisons of companies' employment and procurement costs against those in other sectors and/or in the wider economy. In assessing the future level of costs, Ofgem has also looked at the level of efficiency (or productivity) that the general economy might be expected to deliver and compared this to the level forecast by monopoly companies.

4.5. It will be necessary to continue to use a range of methods for assessing efficiency and projecting the future level of costs that an efficient company should incur.

This was a view supported by respondents to the August document. It will be important to ensure that interested parties understand the way in which the analysis has been brought together in coming to decisions about the level of efficiency and the future level of costs. Ofgem will ensure that this process is as transparent as possible including making available relevant information. The relative weight that is attached to a particular approach will depend on a number of factors including:

- ◆ whether the price control review is of a single company or a group of companies; and
- ◆ the robustness of the analysis that has been undertaken which in some instances may be affected by the availability and quality of information.

### ***Issues for the DNO price control review***

4.6. There are a number of issues that will need to be considered as part of the DNO price control review in relation to assessing efficiency and projecting the future level of efficient costs. Some of these were identified in the August document:

- ◆ assessing efficiency
  - the adjustments that will need to be made to individual company's reported costs to restate them on a more consistent basis. Ofgem is presently reviewing the regulatory accounts of the companies to gain a better understanding of the work that will need to be done in this area. It is clear that the capitalisation, allocation and attribution policies being used by companies will need further investigation. A particular issue that needs to be considered is the impact of differing outsourcing arrangements on the treatment of costs;
  - the impact that mergers between DNOs has had on Ofgem's ability to undertake comparative analysis of companies' costs and in particular what form of comparisons can be made between companies that own more than one licence holder with those that are single entities. It will also be necessary to consider how to take account of the policies for treating merger savings in place at the time of each merger;

- whether it is possible to assess efficiency on the basis of some measure of total costs (and outputs) rather than considering opex and capex separately (as was done at the last DNO price control review);
  - whether the frontier performance approach that was used at the last price control review remains appropriate and the impact that any changes may have on the efficiency incentives provided to companies;
  - whether there will be a need to review companies' capex efficiency in more detail given Ofgem's commitment to strengthen the incentives for DNOs to achieve capex savings by allowing them to retain the savings for a fixed period of time. It will also be necessary to consider what role Ofgem's work on Asset Risk Management can play in this respect; and
- ◆ projecting future costs:
- whether it will be possible to place more weight during this price control review on the forecasts that companies submit. This will depend significantly on Ofgem's assessment of the reasonableness of the forecasts.

Most of the DNOs have made significant improvements in their understanding of their impact of capex on their networks, including the impact on quality and security of supply. It will be important to gain an understanding of the models and techniques that companies use for forecasting their future capex requirements. It is doubtful whether it would ever be appropriate to rely solely on individual company's forecasts and Ofgem will need to undertake its own analysis of the future capex requirements of the DNOs; and

- the role that Ofgem's work on Asset Risk Management should play in assessing companies' capex forecasts.

## ***Efficiency incentives***

- 4.7. In setting the allowed level of revenue for companies Ofgem needs to ensure that an appropriate balance is struck between protecting consumers and providing companies with incentives towards efficiency. A number of concerns have been raised about the way in which efficiency incentives have been provided to companies.

## ***Views of respondents***

### **The strength and periodicity of incentives**

- 4.8. The general view expressed by the network monopoly companies was that, although RPI-X has worked well, the incentives towards efficiency need to be strengthened. It was argued that the scope to achieve efficiency savings has diminished since privatisation and that, if companies were to continue to seek out efficiency savings, the incentives for doing so would need to be strengthened.
- 4.9. The network monopoly companies also argued, along with other respondents, that changes should be made to the incentive framework to overcome the problems caused by the periodicity of incentives. One company argued that under the present arrangements companies retain 27 per cent of the present value of a cost reduction made in the first year of a price control period but only 6 per cent of the present value of a cost saving made in the fifth (and final) year. It was suggested that this periodicity of incentives could distort companies' behaviour, for example by delaying efficiency programmes to the beginning of a new price control period.
- 4.10. Companies argued that extending the period of time for which they are allowed to retain efficiency savings would strengthen the incentives towards efficiency. It was suggested that this could be achieved either by extending the duration of the overall price control or by introducing some kind of rolling adjustment whereby companies retained the benefits of efficiency gains for a fixed period of time regardless of when the saving was made.

## **Distortion of incentives between opex and capex**

4.11. The majority of network monopoly companies argued that the present incentive arrangements give rise to distorted incentives and that this could lead to them adopting an inefficient mix of opex and capex. One company argued that the extent of any trade-off between opex and capex is minimal and that there only exists very limited opportunities to reduce opex by increasing capex. There were mixed views about how the distortion could be reduced. Some companies argued that the incentives for opex and capex efficiency should be equated so that companies would be neutral as to whether they achieved opex or capex savings. It was also suggested that efficiency could be assessed on the basis of some measure of total costs, although it was recognised that using total costs to assess efficiency may be difficult due to a number of factors including:

- ◆ identifying the appropriate definition of capex to include in a measure of total costs; and
- ◆ identifying the appropriate cost drivers for opex and capex which may not be the same.

4.12. Some companies argued that while the Regulatory Accounting Guidelines (RAGs) had improved the reporting of cost information there remained significant differences across companies in the allocation of costs between capex and opex. It was suggested that this was particularly the case when comparing companies that have outsourced activities with those that have not because of differences in the capitalisation of overhead costs.

## **The treatment of non-operational capex**

4.13. The network monopoly companies argued that the existing treatment of non-operational capex provides a disincentive to seek out efficiency savings driven by investment in IT. It was also pointed out there is an inconsistency in the treatment of non-operational capex across the different price controls. Companies argued that non-operational capex should be included in the RAV and allowed to earn an appropriate rate of return. One company suggested that non-operational capex should be depreciated over 5 years. Another suggested that the capitalisation of IT spend (where assets are depreciated over 7 years) under the SO price control for electricity transmission may provide a precedent.

It also argued that it should be possible to put in place an effective monitoring process to help prevent companies from inappropriately capitalising expenditure.

## ***Ofgem's further thoughts***

### **Periodicity of incentives**

4.14. Ofgem considers that the issues raised by the periodicity of incentives are best resolved by allowing companies to retain the benefits of an efficiency saving – both opex and capex - for a fixed period of time regardless of when the saving is made. It has already committed to this approach for the treatment of capex for the DNOs under their price controls and other regulators in this country and abroad have used similar approaches.<sup>8</sup> This change to the treatment of efficiency savings should benefit both companies and consumers by helping to ensure that the regulatory framework does not distort companies' decisions about when they make efficiency savings. This should help ensure that companies have better incentives to run and operate their networks on an economic, efficient and co-ordinated basis. It will be necessary to consider the details of how the arrangements will work. Ofgem's initial thoughts are that for:

- ◆ ***the DNOs*** – in setting revised price controls from 1 April 2005, the fixed retention period will apply to capex efficiency savings made during the whole of the existing price control period (2000/01-2004/05) as the commitment was made in 1999 in setting the price control. As the commitment to retain opex efficiency savings for a fixed period of time is being made now it will not have any impact on the incentives provided to DNOs to date. Putting in place the commitment now will only affect their future behaviour. This implies that there may be benefits in applying the fixed retention period to incremental opex efficiency savings achieved in 2003/04 and 2004/05 of this price control period – further details on how the commitment could work for the DNOs are set out in Appendix 3; and

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<sup>8</sup> Both Ofwat and Ofreg allow companies to retain efficiency savings for a fixed period of time. The state regulator in Victoria, Australia, also allows the retention of efficiency savings for a fixed period of time.  
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- ◆ **NGC and Transco** – revised price controls for NGC and Transco are due to be implemented from 1 April 2006 and 1 April 2007 respectively. Consistent with the DNOs it may be appropriate to apply new arrangements to efficiency savings made from 2003/04. Separate considerations might need to apply to Transco's replacement capex, which is subject to specific incentive arrangements.

4.15. It will also be important to consider whether any changes need to be made to the reporting and monitoring arrangements that are presently in place for network monopoly companies if they are allowed to retain efficiency savings for a fixed period of time. This is because there will need to be a greater degree of understanding and transparency of companies' performance on an ongoing basis. Ofgem will need to pay particular attention to any over-spend against the allowed level of operational capex. A number of issues will need to be considered in deciding on the criteria for whether an over-spend should be included in the RAV, including:

- ◆ the reason for the over-spend; and
- ◆ whether network performance has been improved; and
- ◆ whether it is consistent with consumers' willingness to pay such that they benefit overall.

#### **Retention period for efficiency savings**

4.16. It is necessary to consider the appropriate length of time for which network monopoly companies are allowed to retain the benefit of any efficiency savings that they make before these are passed back to consumers. If the period of time is lengthened then companies (and investors) will retain a greater proportion of the benefits in comparison to consumers (and vice versa). Relevant factors in deciding on the retention period include:

- ◆ ensuring that companies have appropriate incentives to continue to seek out efficiency savings;

which needs to be balanced against ensuring that:

- ◆ consumers are provided with an appropriate level of protection in terms of the prices that they pay and the quality service they receive; and
- ◆ the longer term performance and security of the network is maintained.

4.17. Frontier Economics is looking at these issues as part of its workstream on developing incentive frameworks. Ofgem intends to publish further details on this work in March.

### **Distortion of incentives between operating and capital expenditure**

4.18. Ofgem considers that the existing arrangements can provide companies with distorted incentives between opex and capex. This may mean that companies have incentives to misallocate costs (for example by capitalising revenue costs) and adopt an inefficient mix of capex and opex in running and operating their networks. The distorted incentives are driven by two main factors – these are that:

- ◆ *under the present arrangements the benefit that a company realises from an opex saving is greater than that for a capex saving of the same size* - Ofgem needs to consider whether it is appropriate to provide more balanced incentives for opex and capex. In the water industry, Ofwat has indicated that it intends to allow companies to retain efficiency savings – both opex and capex - for a fixed period of five years regardless of when the saving is made. Frontier Economics is looking at ways of achieving a better balance between opex and capex incentives in the energy sector; and
- ◆ *the efficiency of companies is primarily assessed on the basis of operating costs rather than on the basis of some measure of total costs* – the incentive that companies have for inefficient substitution of opex for capex would be reduced if efficiency were assessed on the basis of some measure of total costs. Ofgem considers that where practicable and appropriate companies' efficiency should be assessed on the basis of total costs. Ideally the assessment of efficiency should also take account of the outputs (including quality of service) that a company delivers to its consumers. Ofgem recognises that there a number of issues to be resolved in developing a model for assessing efficiency in this way,

particularly defining and measuring total costs and outputs on a robust basis.

Frontier Economics is looking at ways of overcoming these issues. Over time, Ofgem wants to move progressively towards a total value for money approach to both assessing efficiency and providing incentives for efficiency. This would bring the regulatory assessment of efficiency more into line with the way in which companies make decisions about how they run and operate their networks. It will take time to develop this approach on a robust basis and as such any model of total costs (and outputs) will be one of a number of methods that will be used for assessing companies' efficiency.

### **Treatment of non-operational capex**

4.19. To the extent that spending on non-operational capex is intended to create future efficiencies in either capex or opex, or improvements in future network performance, it would appear to be appropriate to allow companies to recover the projected efficient level of costs from consumers over the period in which benefits are expected to accrue. Ofgem therefore sees merit in including projected non-operational capex in the RAV and depreciating the capital cost over an appropriate period of time. A number of issues remain to be considered in developing this approach, including:

- ◆ the appropriate definition of non-operational capex – it may be appropriate to distinguish IT spend from other non-operational capex such as head office costs to avoid creating perverse trade-offs between such expenditure categories, although a simple accounting-based definition may be easier to monitor. Also, it may be that some recurrent expenditure could sensibly continue to be expensed;
- ◆ the appropriate asset life that should be assumed – one company has suggested 5 years and 7 years is used in the SO electricity transmission price controls;
- ◆ the appropriate rate of return that non-operational capex should earn in the RAV;

- ◆ the extent to (and duration over) which any benefits from under-spending against the projected level of costs should be retained by the company, in the context of the rolling retention periods proposed for opex and network capex efficiency savings; and
- ◆ the criteria for considering whether there are any circumstances in which over-spend against the projected level of costs should be incorporated into the RAV – for example where innovative solutions are developed and a clear link can be demonstrated to improved efficiency in another area of costs such that customers benefit overall.

### ***Issues for consideration***

4.20. Ofgem would welcome views on any of the issues raised in this Chapter and in particular on:

- ◆ the most appropriate balance between protecting consumers and providing companies with incentives towards efficiency and in particular the length of time that companies should be allowed to retain efficiency savings;
- ◆ Ofgem's intention to allow companies to retain efficiency savings for a fixed period of time including for the DNOs the detailed issues set out in Appendix 3;
- ◆ the most appropriate way of reducing the distorted incentives between opex and capex and in particular:
  - the form of a value for money model that could be used to assess efficiency and provide incentives to companies;
  - whether it would be appropriate to provide more balanced incentives between opex and capex and the impact that this could have on retention periods and the incentives that companies have to provide a good quality and security of supply; and
- ◆ the treatment of non-operational capex.

## 5. Developing the overall incentive and price control framework

### *Introduction*

- 5.1. The overall incentive and price control framework is the primary mechanism through which companies behaviour is incentivised. This includes providing incentives for the economic, efficient and co-ordinated operation of their network and for the delivery of relevant outputs or requirements. It is important to think about these incentives together to help ensure that the price control is consistent with Ofgem and companies meeting their statutory and licensed duties. It is also important to ensure that the overall incentive framework is consistent with the objectives for the price control and does not provide inconsistent or perverse incentives to companies.
- 5.2. This Chapter sets out Ofgem's thoughts on the issues that should be considered in developing the overall incentive framework generally and more specifically those that will need to be considered in setting revised DNO price controls. Frontier Economics is also undertaking work in this area and Ofgem intends to publish further details of their work in March.

### *Developing the overall incentive and price control framework*

- 5.3. Chapter 4 explained that it is important that an appropriate balance is achieved between incentives for efficiency and incentives to deliver relevant outputs. The August document explained that important steps have been taken in recent years to help ensure that this balance is appropriate. These developments have focused on strengthening the incentives that companies are provided with to deliver relevant outputs and/or placing increased focus on the monitoring of outputs.
- 5.4. It has been suggested that another way of achieving an appropriate balance between the incentives towards efficiency and delivery of outputs would be to weaken the efficiency incentives in some areas. It has been argued that this

may mean that companies would focus more on the delivery of outputs rather than seeking out efficiency savings.

- 5.5. Ofgem considers that companies should continue to be provided with appropriate incentives to operate their networks as efficiently as possible – although this does not necessarily mean at the lowest possible cost. RPI-X has worked well since privatisation in providing companies with these incentives although as Chapter 4 identified there are some areas where the efficiency incentive framework could be improved. Weakening the incentives towards efficiency would provide no guarantee that companies would focus on the delivery of outputs; could mean that companies would be less willing to innovate and seek out more efficient ways of running their networks; could mean that outputs are delivered for a higher cost than otherwise would have been the case; and that prices to consumers could be higher. Ofgem considers that a more appropriate approach is to retain strong incentives on companies to achieve efficiency savings and to balance these against appropriate incentives to deliver outputs.
- 5.6. Ofgem considers that there a number of steps in developing the overall incentive framework:

- ◆ **the first step is to identify the areas where incentives need to be provided to companies** - the RPI-X part of the price control formula (or the baseline price control) provides incentives on companies to operate an economic, efficient and co-ordinated network and to deliver the outputs that are required of them as efficiently as possible. This is because the costs underlying the price control are subject to the incentives outlined in Chapter 4.

In certain circumstances it may be necessary to consider alternative arrangements, particularly where there is significant uncertainty regarding the nature and level of future investment needs. The SO incentive schemes, which have been introduced in gas and electricity transmission, are designed to ensure that the transmission companies have appropriate incentives towards efficiency even though the investment requirements are uncertain. Where this is the case it is important to ensure that the boundary between the main RPI-X price

control and any other allowed costs and incentives is defined and monitored on a robust basis so as to reduce the possibility of gaming by companies and to ensure that the incentives are clear.

- ◆ **the second step is to identify the outputs that companies are required to deliver** - a key input into this should be an assessment of consumers' preferences and willingness to pay. It is also important to consider other influences and requirements including relevant statutory requirements, the views of government (for example in the social and environmental guidance that Ofgem receives from Ministers) and other interested parties including suppliers.

It may not always be possible or appropriate to identify the full range of outputs to cover all of a company's activities. This is because in some areas there will not be a specific output that can be defined or measured on a robust basis. This implies that output incentives cannot necessarily always be formal, objective and mechanistic.

- ◆ **the third step is to consider the form of any incentives that may be required to encourage companies to deliver particular outputs or to behave in a certain way** - incentives can be financial (i.e. they affect the amount of revenue that companies can collect) and/or can take other forms such as monitoring, and publishing comparative analyses of, companies' performance. The decision on whether to use a financial or other type of incentive will depend on a number of issues including the importance of the output to consumers; the ability to measure a specific output on a robust basis; and the extent to which an output is under companies' control.

Where financial incentives are provided to companies they can either form part of the price control or they can be introduced through other mechanisms such as guaranteed and overall standards of performance. Where incentives focus on the overall performance of a company (for example quality of supply under the IIP incentive scheme for the DNOs) it will usually be appropriate to incentivise delivery through the price control. Where the incentive focuses on the performance of a company in relation to an individual customer (or groups of customers) it will

usually be appropriate that the incentive is provided through a separate mechanism (for example the guaranteed standards of performance); and

- ◆ **the fourth step is to consider the detail of the incentives provided to companies to deliver an output or a particular objective** - the form of the incentive that is appropriate will depend on the objective. This could include achieving a fixed target (or output level) where it may be appropriate to use some form of penalty scheme. Alternatively, if companies are being incentivised to achieve at least a minimum (or baseline) level of performance, and where possible outperform, it may be appropriate to use some form of incentive scheme where companies are rewarded or penalised a specified amount for each 'unit' they deviate from the minimum level. This might be symmetrical or asymmetrical.

- 5.7. It is also important that companies are provided with incentives to seek out and meet the needs of their consumers including where the demand for gas and electricity changes. For this reason price controls can include mechanisms that adjust companies' revenue as demand (and other factors) change. The LDZ price and DNO price controls include a specific revenue driver that links revenue to changes in demand. The TO price control for NGC includes a revenue driver which allows the company to collect an additional £23 million for each additional GigaWatt (GW) of generating capacity connected to their network beyond the base level assumed in setting the price control.
- 5.8. It is also important to consider whether there are certain costs that are outside of a company's direct control and that need to be treated in a different way to those included in the RPI-X part of the price control (i.e. where a company can do nothing or very little to influence the level of costs that it incurs or where influencing those costs would require uneconomic or inefficient changes to the way the network is run or operated). Under these circumstances it may be appropriate (and more efficient) to pass these costs through to consumers so that they bear the risk of any changes. Examples of costs that have been treated in this way include licence fees for all network monopoly companies and NGC exit charges for the DNOs.

## ***Developing the overall incentive and price control framework for the DNOs***

- 5.9. Under the existing DNO price controls the costs that an efficient company should incur for running and operating their network on an ongoing basis and for the efficient delivery of the outputs that are required of them are included in the main (or 'baseline') RPI-X price control. Specific incentive mechanisms are in place to incentivise companies to deliver specific outputs that are required of them – the IIP quality of service incentive scheme and the losses incentive mechanism. The price control also allows the DNOs to pass through certain costs to consumers such as NGC exit charges and licence fees.
- 5.10. Ofgem considers that where possible and appropriate the costs associated with running and operating the network on an ongoing basis and the delivery of the required outputs should continue to be included in the 'main' (RPI-X) price control to help ensure that companies have appropriate incentives towards efficiency. As explained above there may be certain circumstances – particularly where there may be significant uncertainty regarding the future level of investment - where it is not appropriate to incentivise companies through the main price control.
- 5.11. It will be necessary to consider how to deal with the costs associated with distributed generation given the uncertainty associated with the likely penetration of generation on the distribution networks. It may be necessary to consider whether the costs should be incentivised on a different basis to the other costs that DNOs should incur to help ensure that companies have appropriate incentives towards operating an economic, efficient and co-ordinated network. If it is possible to predict with a reasonable degree of certainty a proportion of the costs that DNOs could incur in relation to distributed generation then it may be appropriate to include these within the baseline price control and incentivise deviations from the baseline in some other way. This may include developing additional arrangements for DNOs to provide them with incentives to meet the demands of their customers on an economic and efficient basis. Ofgem's initial thoughts on possible incentive arrangements for DNOs in relation to distributed generation were published in a letter to DNO CEOs in January 2003.

- 5.12. Appendix 4 sets out the approach that Ofgem intends to undertake to assessing consumers' preferences for the DNO price control review. Appendix 5 sets out the issues associated with developing appropriate incentives for the delivery of quality of service.
- 5.13. Ofgem has also recently published a consultation document on the losses incentive mechanism.<sup>9</sup> Once a decision has been made about the most appropriate form of incentive mechanism for losses Ofgem will need to consider how it fits into the overall incentive and price control framework for the DNOs. A further consultation paper on losses is planned for May 2003 and Ofgem intends to publish a decision document around August 2003.
- 5.14. Ofgem will also need to consider whether it is appropriate to provide DNOs with incentives in any other areas including on the environment. This will be informed by further consultation and the consumer research that Ofgem intends to undertake in the coming months. If it is appropriate to provide incentives to DNOs in other areas, Ofgem will need to consider the most appropriate form of the mechanism and the impact that it could have on the costs and risks that DNOs may incur.

### ***Issues for consideration***

- 5.15. Ofgem would welcome views on any of the issues raised in this Chapter and in particular on:
- ◆ the way in which the incentive and price control framework should be developed;
  - ◆ Ofgem's initial thoughts on the incentive framework that should be put in place for the DNOs;
  - ◆ the approach to assessing consumers' willingness to pay and in particular the areas that should be covered in any consumer research (Appendix 4);
  - ◆ quality and security of supply issues for the DNOs and in particular (Appendix 5):

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<sup>9</sup> Electricity distribution losses: A consultation document - Ofgem, January 2003.  
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- the treatment of the OSs and whether they should be included in the IIP incentive scheme;
- the scope and form of the exemptions under the GOSPs and the exceptional circumstances mechanism under the IIP; and
- the most appropriate way of setting targets for the number and duration of interruptions to supply including whether targets should be set for a period for longer than the price control period and if so how this could be introduced.

## 6. Financial issues

### *Introduction*

- 6.1. The August document explained that in setting a price control a number of financial issues need to be looked at including:
- ◆ assessing the cost of capital including providing companies with sufficient revenue to cover their expected tax liabilities;
  - ◆ the valuation of the regulatory asset value (RAV) and the approach to depreciation; and
  - ◆ the financial modelling that is undertaken by Ofgem to assess the financial impact of the price controls on companies.
- 6.2. This section sets out Ofgem's initial thoughts in these areas and also on the specific issues that will need to be considered as part of the DNO price control review.

### *Obligations and duties with respect to the financing of companies*

- 6.3. Ofgem has a principal objective to protect the interests of consumers, wherever appropriate by promoting effective competition. In carrying out its functions to further this principal objective, Ofgem must have regard to the need to secure that licence holders are able to finance their licensed activities. Companies also have obligations under their licence with regards to the availability of resources and credit rating. For example, for the DNOs:
- ◆ **Condition 44: Availability of Resources** – states that the licensee should act in a manner calculated to secure that it has available to it all such resources including management and financial resources, personnel, fixed and moveable assets, rights, consents and facilities, as shall ensure that it is at all times able:
    - a) to properly and efficiently carry on the distribution business; and

b) comply in all respects with its obligations under its licence and the Act, including without limitation, its duty to develop and maintain an efficient, co-ordinated, and economical system of electricity distribution;

◆ **Condition 46: Credit Rating of Licensee** – states that the licensee shall use all reasonable endeavours to ensure that the licensee maintains at all times an investment grade credit rating; and

◆ **Condition 47: Indebtedness** – states that the licensee shall not without the prior written consent of the Authority:

a) create or continue or permit to remain in effect any mortgage, charge, pledge, lien or other form of security or encumbrance whatsoever, undertake any indebtedness to any other person or enter into any guarantee or any obligation otherwise than:

i. on an arm's length basis;

ii. on normal commercial terms;

iii. for a permitted purpose; and

iv. (if the transaction is within the ambit of standard condition 29 (Disposal of Relevant Assets)) in accordance with that condition.

Condition 47 also sets out conditions relating to various transactions between the licence holder and other affiliates and (subject to certain limited exceptions) prohibits cross-default obligations.

6.4. In the light of these obligations, Ofgem considers that in setting price controls it must ensure that:

◆ an efficient company should be able to earn a return on its RAV that is at least equal to the allowed cost of capital. Companies that outperform the efficiency assumptions underlying the price controls and deliver the outputs that are required would be expected to earn a return in excess of

the allowed cost of capital. Those companies that underperform will earn a return lower than the allowed cost of capital; and

- ◆ companies must be able to raise finance from the capital markets on reasonable terms. The cost and other conditions of borrowing are directly related to the financial position and prospects of a company. This is the reason why Ofgem uses a financial model to assess the financial impact of the price controls on the companies, paying particular attention to key financial ratios.

- 6.5. Both of these considerations will depend in part on the level of gearing that Ofgem assumes for the purpose of estimating the allowed cost of capital and for assessing the financial impact of the price control on licence holders.

### ***Cost of capital***

- 6.6. In running its business a company will incur financing costs in the same way as it incurs operating and capital costs. These financing costs are incurred because the company must provide a reasonable return to the investors who provide the capital and other financing facilities that it requires. Regulators have tended to make an allowance for the efficient financing costs that a company will incur by estimating a return on the value of the capital employed in the business (the RAV) equal to the return required by providers of finance (the cost of capital).
- 6.7. The cost of capital is a significant component of the overall costs of network monopoly companies costs (for example, for the DNOs it accounts for, on average, around 25 per cent of total costs). The level at which the allowed cost of capital is set also has an important impact on the incentives that companies have to invest in the network. If the allowed cost of capital is lower than the financing costs that an efficient company would incur then this could provide a disincentive to continue investing in the network. It could also raise problems for companies in continuing to finance their existing capital base. Conversely if the allowed cost of capital is set at a level higher than their financing costs companies may have an incentive to over invest and/or shareholders may earn windfall gains.

6.8. The cost of capital is usually calculated as a weighted average of the cost of debt and equity finance. The balance between the level of debt and equity financing is referred to as the level of gearing (or the capital structure of the company). Ofgem considers that the broad approach that has been used to estimate the cost of capital in recent price control reviews remains appropriate, although there are certain aspects of the approach which need to be looked at in more detail. Some of these are being considered by Smithers & Co (a firm of financial consultants) who have been appointed jointly by the UK regulators to produce a study on certain aspects of the cost of capital. This report is due to be published in the near future. Ofgem will need to consider this study in developing its thoughts on the cost of capital. There are also some specific issues that need to be considered, including the approaches to gearing, taxation and the incurred fixed costs of debt

### ***The level of gearing***

- 6.9. Ofgem has previously estimated the cost of capital on the basis of an assumed level of efficient gearing consistent with companies maintaining a rating on its debt that is at least of an grade category. This approach was used so as to encourage financial efficiency (consistent with incentives for cost efficiency) and to protect the interests of consumers.
- 6.10. Since the last DNO price control review there has been a general increase in the average level of gearing across the electricity industry from around 35 per cent to 60 per cent. This increase in gearing levels has also been a feature (albeit to a greater extent) of the water industry and Ofwat commissioned a study by Oxera to assess what would be a sustainable capital structure in the water industry. This report suggested that, although higher levels of gearing can reduce the overall cost of capital, it could (in cases where gearing is very high) reduce the financial flexibility of a company – a systemic risk that would be increased if a number of highly geared companies simultaneously encountered financial difficulties. The report recommended that, although higher levels of gearing can provide benefits in the form of a lower cost of capital, the financial risks of these capital structures mean that it is appropriate for Ofwat to assume a level of gearing close to those used at the last water review in 1999 (50 per cent).

- 6.11. Ofgem has also expressed its concerns about companies moving to a highly geared capital structure in its response to Ofwat's consultation paper on acquisition of Dwr Cymru by Glas Cymru.<sup>10</sup> It was also explained that where there is uncertainty regarding the level of costs (particularly investment) that companies may incur in the future it may be appropriate for companies to retain a greater degree of flexibility in their financial position so that they can respond to the demands required of them.
- 6.12. This issue may be of particular relevance to the DNOs given the uncertainty regarding the likely pattern of development of distributed generation on DNOs' networks. This may mean that DNOs will need a greater degree of financial flexibility if they are to respond effectively and efficiently to the demands of their customers for connection to and reinforcement and utilisation of the network.
- 6.13. Given these considerations, Ofgem's initial view is that in estimating the allowed cost of capital it intends to use a level of gearing that is consistent with companies maintaining a credit rating that is comfortably within the investment grade category. This should provide companies with sufficient flexibility to respond to unexpected events and to meet the requirements placed on them.
- 6.14. In setting the last DNO price control review Ofgem assumed level of gearing of 50 per cent. Ofgem will need to consider whether this continues to represent an appropriate level of gearing for the purpose of setting the new price controls.

### ***Taxation***

- 6.15. The August document explained that, in setting price controls, Ofgem must make an allowance for the tax liabilities that it expects an efficient company to incur over the period of the price control. This can be done in two main ways:
- ◆ ***estimating the specific tax liabilities of each company*** – Ofwat has estimated the cost of capital on a tax exclusive (or post-tax) basis by calculating the expected tax liabilities of each company on an individual basis and treating these as a cost of the licensed business; and

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<sup>10</sup> Proposed acquisition of Dwr Cymru Cyfyngedig by Glas Cymru Cyfyngedig: a consultation paper by Ofwat, October 2000.  
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- ◆ *using a pre-tax cost of capital* - Ofgem has tended to estimate the cost of capital on a tax inclusive (or pre-tax) basis. Using this approach the pre-tax cost of capital includes a general allowance for the tax liabilities that a company may incur. This allowance has been based on a stylised adjustment to the cost of equity (often called the 'tax wedge' approach). Ofgem has also undertaken checks to ensure that the allowance provided companies with sufficient cash flow to cover their expected tax liabilities.
- 6.16. Ofgem considers that the pre-tax approach is appropriate where companies are likely to have similar tax liabilities. It also provides companies with an incentive to manage their tax liabilities efficiently as they retain the benefit of outperforming the allowance that has been made.
- 6.17. Ofwat has indicated that it intends to estimate the cost of capital on a post-tax basis, although it will also publish the cost of capital on a pre-tax basis to aid comparisons with other regulators.
- 6.18. Ofgem needs to consider whether it remains appropriate to estimate the cost of capital on a pre-tax basis. A number of issues need to be considered including:
- ◆ the impact that a company specific approach may have on the incentives provided to companies to manage their tax liabilities efficiently;
  - ◆ whether changes to the tax treatment of infrastructure renewals expenditure will have a company specific impact which could mean that it is not appropriate to use a generic allowance;
  - ◆ whether the tax liabilities of companies have been and are expected to be close to the level of tax implied by the tax wedge. If the expected tax liabilities exceed or are lower than the tax allowance implied by the tax wedge it may not be appropriate to estimate the cost of capital on a pre-tax basis unless the difference has previously been allowed for;
  - ◆ whether it is appropriate to allow companies to retain all of the benefits associated with high levels of gearing in the view of the concerns that have been raised about such financing structures; and

- ◆ whether moving to a post-tax approach would improve the level of consistency across different regulators and to the benefit of consumers.

### ***Incurred fixed costs of debt***

- 6.19. At the last DNO price control review, Ofgem made a generic adjustment to the estimated cost of capital to take account of the fixed rate long term debt which an efficiently managed company would have incurred since privatisation. This adjustment was made because of the greater weight placed on contemporary market evidence which meant that the estimate of the cost of debt did not adequately reflect the cost of the long term fixed rate debt that companies had taken on.
- 6.20. Ofgem needs to consider whether it remains appropriate to adopt an adjustment for fixed rate long term debt in estimating the cost of capital. Its initial view is that an efficiently managed company will retain an appropriate amount of flexibility to respond to changing circumstances – including changes in financing costs. Ofgem would expect an efficiently managed company to have a balanced debt portfolio and that therefore it is not appropriate for consumers to have to pay for inefficient financing decisions which companies have taken. However, Ofgem will consider any evidence that it is presented to it by companies that shows that long term fixed rate debt is part of an efficient financing portfolio and that options had been explored to refinance any high cost debt that remains in their portfolio.

### ***The Regulatory Asset Value (RAV) and the approach to depreciation***

- 6.21. In order to secure continuing access to investment funds on acceptable terms, network monopoly companies need to provide a return on the capital invested in their business. In general, the capital invested in a company is considered in two parts - the initial capital at a point in time (e.g. at flotation for the DNOs) and investments made since then.
- 6.22. Ofgem recognises that changes to the method of calculating (and the value of) the initial RAV that has already been agreed can have a negative impact on the perception of regulatory risk. On this basis, it does not intend to revisit the

method of calculating the initial RAV for any of the network monopoly companies. This includes maintaining the approach that was used for valuing the flotation assets of the DNOs and the historic value of the RAV calculated in setting the last price control in 1999.<sup>11</sup>

6.23. There are a number of issues that do need to be considered in relation to investments going forward. Some of these are relevant to all network monopoly companies whilst others are specific to the DNOs:

- ◆ Chapter 4 explained that Ofgem intends to allow all network monopoly companies to retain the benefit of any efficiency savings (both opex and capex) for a fixed period of time regardless of when the saving is made. Ofgem will need to consider the detail of how this commitment will be applied and in particular the most appropriate way of updating companies' RAVs for capex efficiencies;
- ◆ in assessing the size of the RAV it is important to consider the most appropriate way of treating those assets which have been disposed. Ofreg has indicated that it will allow Northern Ireland Electricity (NIE) to retain the benefit of any asset disposal for five years before an appropriate adjustment is made to the RAV to pass the saving back to consumers. Ofgem will need to consider the most appropriate way of treating asset disposals to help ensure that companies have appropriate incentives to manage their assets efficiently;
- ◆ all of the network monopoly companies have a condition in their licence relating to asset disposal. Ofgem needs to consider whether:
  - the definition of relevant assets is appropriate as it generally only relates to operational assets such as lines and wires and not other assets of the licence holder such as the head office; and
  - the definition of operational control (and disposal) needs to be clarified in the light of changes in the regulatory framework and/or corporate structures and financing arrangements;

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<sup>11</sup> It will be necessary to update the 2000/01 opening value of the RAV for actual capex and depreciation as the value of the RAV in 2000/01 was set on the basis of forecast capex and depreciation.

- ◆ Chapter 4 explained that Ofgem considers that there may be benefits in changing the treatment of non-operational capex so that it is included in the RAV and depreciated over an appropriate period of time. Ofgem would need to consider the most appropriate asset life that should be assumed for the depreciation of non-operational capex;
- ◆ for the DNOs Ofgem needs to consider whether the adjustment that was made to the depreciation profile of some companies at the last price control review should be extended to other DNOs – in 1999 Ofgem explained, that if the existing assumptions with respect to depreciation were used in setting the price control, there would be a sharp fall in the allowed level of depreciation (and therefore allowed revenue) once flotation assets had been fully depreciated. This would then be followed by increasing allowances in the future. It was pointed out that this could impact adversely on the financial position of companies in the short term and put upwards pressure on prices in the long term. The adjustment that was made to the depreciation profile was a way of mitigating these issues. Ofgem's initial view is that similar considerations are relevant to the other DNOs whose flotation assets will be fully depreciated during the next price control period. In deciding on the adjustment that should be made it will be important to:
  - consider whether any adjustment should be applied to the Scottish DNOs given that the valuation of their flotation assets has been calculated in a different way and as such the fall in the depreciation allowance as the flotation assets are fully depreciated may not be as significant as for the other DNOs;
  - consider the longer term consequences of any adjustments that are made; and
  - ensure that the approach used maintains the net present value (NPV) of the RAV.
- ◆ if DNOs are required to finance a significant increase in investment over the next price control period, Ofgem will need to consider the impact this will have on the financial position of the companies. If it is clear

that the financial position of the companies is not consistent with the obligations outlined above, Ofgem will need to consider whether it is necessary to adopt an alternative approach to the treatment of depreciation of network renewal expenditure (or replacement capex). This could include allowing a proportion of investment to be expensed through the profit and loss account rather than being included in the RAV. This approach was used at the last price control review for Transco and by Ofwat in the water industry. It will only be possible to come to a decision about the treatment of forward investment when more is known about the likely level of expenditure that DNOs may incur.

### ***Financial modelling and ratios***

- 6.24. Paragraph 6.3 explained the duty and obligations that Ofgem and DNOs must meet in respect of the financeability of the licence holder. Ofgem uses a financial model to help assess the financial impact of the new price control on companies. This has primarily involved assessing the financial position and viability of the licence holder in the light of the proposed price control. This assessment has focused on the ability of the licence holder to maintain a satisfactory level and trend of key financial ratios consistent with an investment grade credit rating and the need to ensure continued access to financial resources. This analysis is based on Ofgem's projections of allowed revenue and the level of costs that an efficient company would incur.
- 6.25. Ofgem's initial view is that it is appropriate to focus the modelling of the impact of the price control on the financial position of the licence holder – particularly in the light of the financial ring fencing provisions which are set out in companies' licenses.
- 6.26. Credit rating agencies use a variety of methods and techniques to assess credit ratings. In particular, they assess the business profile of the issuer and carry out financial analyses of historical and forward looking data, examining the issuer's earnings, cashflow and capital structure in relation to its debt service requirements, working capital needs and capital expenditure requirements. In the past, credit rating agencies have placed particular emphasis on parameters such as the coverage of fixed financial charges by cash flow and the ratio of free cashflow to total debt. In the water industry, the credit rating agencies have

developed new financial ratios and methods to rate companies that have a very high level of gearing.

- 6.27. It is important that appropriately financed companies can continue to access funds at a reasonable cost to meet their investment requirements. To help ensure that this is the case, Ofgem intends to target credit ratings which lie comfortably within the investment grade category – based on the level of gearing used in estimating the cost of capital and tested against a number of scenarios.
- 6.28. Ofgem will continue to develop its thinking on the most appropriate financial indicators (and the level of these indicators) that should be used for assessing the financial impact of the price control and their respective levels in the coming months. This will be done in consultation with the credit rating agencies and financial market participants and Ofgem will continue to monitor market developments.

### ***Issues for consideration***

- 6.29. Ofgem would welcome views on any of the issues raised in this Chapter and in particular on:
- ◆ the implications of the financing obligations and duties on Ofgem and licence holders;
  - ◆ the approach to estimating the cost of capital and in particular issues associated with:
    - the approach to gearing; and
    - taxation;
    - fixed costs of debt; and
  - ◆ the RAV and the approach to depreciation and in particular on:
    - the way in which the RAV should be updated for capex efficiencies;
    - the approach to asset disposals;

- the treatment of non-operational capex in the RAV; and
- the most appropriate way of dealing with the sharp fall in Vesting asset depreciation for the DNOs.

## 7. The next DNO price control review

### *Introduction*

- 7.1. The August document set out Ofgem's thinking on key aspects of the next DNO price control review including the timetable, objectives and key issues. This Chapter sets out Ofgem's further thinking in these areas.

### *Objectives for the price control review*

- 7.2. The August document explained that the regulator's objectives for a price control review should be driven by three main factors:

- ◆ Ofgem's statutory objectives and duties;
- ◆ the DNOs statutory duties and licensed requirements; and
- ◆ other influences – including the views of consumers, DNOs and other interested parties and guidance that Ofgem receives from the Secretary of State on social and environmental issues.

- 7.3. Ofgem's initial view of the objectives for the price control were that it should:

- ◆ provide appropriate incentives to DNOs to manage and operate their networks in an economic, efficient and co-ordinated manner;
- ◆ provide clear and consistent incentives to DNOs to help ensure they provide an appropriate quality of service to consumers – including incentives for timely and efficient investment in the network;
- ◆ seek to ensure that the DNOs can finance their licensed activities commensurate with an efficient level of expenditure;
- ◆ provide fair and transparent arrangements for distributed generation;
- ◆ provide appropriate incentives to help to ensure that longer term security of supply is maintained;

- ◆ reflect Ofgem's responsibilities in regard to the environment and social issues; and
- ◆ ensure that competition is promoted in the provision of supply, connection and metering services and in generation.

7.4. The August document also indicated that the following process related objectives were appropriate:

- ◆ where possible Ofgem should try to resolve key policy issues at an early stage so that regulated companies have more certainty about the price control; and
- ◆ Ofgem should ensure that the consultation process is open and transparent and that all interested parties have an opportunity to contribute to the review process.

### ***Views of respondents***

7.5. Most of the respondents to the August document agreed with the objectives that Ofgem had set out for the review, although a number of additional objectives were identified including that:

- ◆ the cost and burden of the price control review should be minimised;
- ◆ DNOs are financed to take account of network stewardship to balance short, medium and long term performance;
- ◆ Ofgem undertakes appropriate cost benefit analysis of any new initiatives including for competition in metering and connection services; and
- ◆ companies are provided with flexible incentives to facilitate the technological development of distribution networks that may result from an increase in the level of distributed generation connected to the networks.

7.6. One company also argued that previous investment levels have not been sufficient to maintain the average age of network assets which has led to an increased risk of network failure. It suggested that there is a need to begin a long

term prioritised programme of investment now before assets begin to fail to help ensure long term safety and integrity of the network.

- 7.7. One respondent highlighted that Ofgem has statutory duties under section 62 of the Environment Act (1995) in relation to National Parks and that these should be taken into account in developing the objectives and key issues for the price control review.

### ***Ofgem's further thoughts***

- 7.8. Ofgem does not consider that seeking to minimise the burden and cost of the price control review should be an overriding objective for the price control review. Price controls are complex projects that require significant resources. Where possible Ofgem will seek to reduce the burden and cost of the review but this should not be at the expense of the quality of work that is undertaken as this could have a negative impact on both consumers and companies. Ofgem has already taken steps to reduce the burden of the review by beginning the process early and by trying to identify the objectives, key issues and principles as soon as possible.
- 7.9. Ofgem intends to produce impact assessments for significant new policies initiated by Ofgem, which will identify the impact on consumers and the industry. The assessments will also cover the effects of any significant initiatives on the environment and security of supply.
- 7.10. One of the key issues for the price control review is the development of the regulatory framework to deal with increased levels of distributed generation. Ofgem's initial thoughts in this area were set out in an open letter to the Chief Executive Officers (CEOs) of the DNOs which was published in December. Ofgem considers that the price control should seek to develop the regulatory framework to accommodate the increased level of distributed generation, including providing DNOs with appropriate incentives for the connection and utilisation of distributed generation.
- 7.11. Ofgem's principal objective is to protect the interests of consumers (present and future), wherever appropriate by promoting effective competition. In setting price controls Ofgem will need to consider the impact of its proposals on the

short, medium and longer term performance of the network and ensure that an appropriate level of quality, security and safety of supply is maintained.

- 7.12. Since the August document was published, Ofgem has received guidance from the Secretary of State on social and environmental issues. Ofgem has reviewed the guidance and considers that the objectives for the review take into account the contents of the guidance. If Ofgem receives revised guidance from the Secretary of State on social and environmental issues following publication of the Energy White Paper, Ofgem will need to consider how this should be taken into account in setting the price controls. In meeting its principal objective Ofgem will also have regard to its duties in other relevant statutes such as the Environment Act (1995).
- 7.13. One respondent argued that Ofgem should indicate how it would resolve any conflicts between the various objectives for the review. It is important that the review process is as transparent as possible so that interested parties can understand how and why Ofgem has arrived at its decisions. As part of this process, Ofgem would expect to explain how these decisions relate to the objectives for the review. Most of the objectives for the review will be complementary but, where this is not the case, Ofgem will make decisions about the price control after carefully assessing the impact of different options, within the context of the hierarchy of objectives and duties set out in the legislation. It is not possible at this stage to be more precise about how these assessments will be carried out but it will be important to understand the impact on all relevant parties, including identifying the expected costs and benefits.

### ***Key issues for the review***

- 7.14. The August document identified two key issues for the review as:
- ◆ dealing with uncertainty; and
  - ◆ developing the regulatory framework to deal with increased levels of distributed generation.
- 7.15. Ofgem also considers that it is appropriate to include the design of an appropriate overall incentive framework for the DNOs as a key issue for the review as discussed in detail in Chapter 5.

7.16. This section sets out Ofgem's further thoughts in these areas in the light of the views of respondents.

### ***Dealing with uncertainty***

7.17. The August document explained that in setting a price control Ofgem must come to a view about the efficient level of costs that a company will incur over the period of the next price control and that in doing so it must consider a number of variables, including the level of demand, the number of consumers and other factors that may impact on the future costs of the company. The next price control period is likely to be characterised by greater a level of uncertainty than has been experienced before, mainly due to the increased amount of distributed generation that is likely to connect to DNOs networks in the future. The document indicated that there are a number of possible options for dealing with uncertainty and that any arrangements must:

- ◆ be appropriate to the nature and level of uncertainty that is expected;
- ◆ achieve an appropriate balance between the risk that companies are exposed to and the protection that is provided to consumers; and
- ◆ provide appropriate incentives towards efficiency.

### ***Views of respondents***

7.18. Respondents to the August document generally welcomed the focus on uncertainty as a key issue for the price control review. Network monopoly companies argued that there are many different sources of uncertainty in addition to distributed generation that needs to be considered in setting the price control, including those driven by changes in legislation. It was recognised that one of the key issues that needs to be considered in dealing with uncertainty is the appropriate balance of risk and protection between companies and consumers. It was argued that the degree to which a company can manage the impact of the uncertainty would be a significant factor in deciding on the appropriate allocation of risk. It was suggested that where companies can manage the impact then they should be provided with incentives for doing so but where they cannot the risks may be better borne by consumers. One network monopoly suggested that where the impact of the uncertainty is not

material (or the risks are low) then companies should be able to deal with this within the basic price control allowance. Another suggested that some DNOs may be more willing than others to take on risk and that it may be possible to develop a number of mechanisms for dealing with uncertainty, each with a different level of implied risk, from which DNOs could then choose. It was also argued that it would be important that the final proposals for the price control clearly set out the requirements on the DNOs and in particular any changes that would be required during the price control period.

### ***Ofgem's further thoughts***

- 7.19. This section sets out Ofgem's further thoughts on uncertainty in the light of responses, discussions with the network monopoly companies in the joint working group and work that has been undertaken by Frontier Economics.
- 7.20. Uncertainty is essentially driven by an absence of information – either about what may happen in the future and/or the impact that uncertainty will have on companies and consumers. Uncertainty can arise for a number of reasons including:
- ◆ **external influences and change** – like all businesses, DNOs are subject to external influences and change. These can impact either positively or negatively on companies' costs (and/or revenue). Factors that could have an impact in this area include:
    - *changes in the taxation system* – DNOs, like all companies, are liable for tax. Changes in the tax system can have an impact on the tax liabilities that DNOs face. For example, there has recently been a change in the way that network renewal expenditure will be treated for tax purposes. It is likely that this will have an impact on the amount of tax that a DNO has to pay;
    - *changes in legislation and other relevant requirements* – DNOs operate under a legislative framework which sets out their duties, responsibilities and licensed requirements. Changes in these areas can have an impact on the costs of companies and could include:
      - modifications to the distribution licence;

- changes in Health and Safety Legislation;
- changes in the Electricity Supply Regulation; and
- *other external influences and change* – there are a number of other external factors not directly related to the legislative or tax system that can create uncertainty for DNOs. This can include the impact of the government's environmental policies or other initiatives. The August document explained that one of the key areas of uncertainty for the next DNO price control will be the pattern of development of distributed generation and the impact that this will have on the costs that DNOs incur;
- ◆ **the regulatory regime** – it is not possible to provide companies with absolute certainty about every aspect of the regulatory regime, although Ofgem recognises that where possible and practicable regulatory uncertainty should be minimised. This includes trying to provide companies with more clarity about how costs will be treated in setting price controls and how they will be rewarded (or penalised) for good (or bad) performance;
- ◆ **firm specific factors** – there are also a number of factors which could be firm specific which could create uncertainty, including:
  - the level and location of demand on the network; and
  - the requirements of a DNO's customers, for example for connection to or reinforcement of the network.

7.21. Uncertainty can impact on companies in a number of ways including that:

- ◆ it can have a negative impact on the ability of a company to operate efficiently – where there is uncertainty companies may be less focused on operating their business efficiently. For example, companies may choose a higher cost option (or take contingency steps) or defer investment to mitigate against the risk of increased uncertainty. This may increase costs above the efficient level. Uncertainty can also lead to inappropriate short term decision making which may be a particular problem in a business that has long term assets; and

- ◆ it could increase the cost of capital, but only where the uncertainty leads to an increased level of risk that is not diversifiable by investors.

7.22. It is important to consider how the regulatory framework should deal with the different uncertainties that companies face. This does not mean that companies should not be exposed to any form of uncertainty as this is unlikely to be the most appropriate response except in certain circumstances. Ofgem is developing a decision making process that will allow it to consider the appropriate regulatory response to uncertainty. It is Ofgem's intention that the same decision making process will be used for looking at different types of uncertainty, across all companies, and for all price control reviews. This should help to ensure that the consistent decisions are taken about how to deal with uncertainty. It should also increase credibility and consistency in the regulatory decision making process.

7.23. There are a number of factors (or drivers) that need to be considered when looking at how to deal with the impact of uncertainty including its:

- ◆ **materiality** – it is important to consider whether the uncertainty that a company faces will have a material impact on their level of income and/or costs, their ability to meet specific outputs, their decision making process and their financial position. If it is considered that the impact of the uncertainty is not material in these respects then it may not be appropriate to put in place a regulatory mechanisms to deal with it, although it may be necessary to implement some form of monitoring between price reviews;
- ◆ **separability** – it is important to consider whether the impact of the uncertainty on the company can be separately identified. This includes being able to identify the impact on costs and/or the ability of a company to deliver certain outputs. Where the impact of the uncertainty can be separated the most appropriate approach would be to put in place specific arrangements (including incentives where appropriate) to deal with the uncertainty. A separate mechanism is likely to lead better-targeted incentives and a reduced level of overall risk.

It is also necessary to consider the potential costs of introducing a separate mechanism including those associated with implementing and monitoring any mechanism and any gaming opportunities that are provided to companies. For example, companies may have an incentive to reclassify costs where these are treated differently under different regulatory mechanisms;

- ◆ ***controllability*** – it is important to consider the extent to which a company has control over the impact of the uncertainty. This does not mean looking at whether it can control the uncertainty itself but rather its subsequent impact – for example on the costs that it incurs or the outputs that it is expected to deliver. If a company is able to exert some control over the impact of the uncertainty then it may be appropriate to incentivise the company for managing this risk. This could lead to a more efficient outcome than if the risk were passed through to consumers. If a company can exert little (or no) control over the impact of the uncertainty then it may be appropriate to consider passing these risks through to consumers as otherwise companies' efficiency may be reduced. It also important to consider the potential impact of any solution on the level and path of distribution charges (and ultimately prices) to consumers. For example, passing costs through to consumers may increase the volatility of distribution charges which may not be desirable for suppliers or consumers; and
  
- ◆ ***predictability*** – if the full impact of the uncertainty is predictable by all parties then there is no need to take any specific steps to mitigate its impact. However it is more likely that companies and Ofgem will differ in the degree to which they can predict the impact of the uncertainty. If companies have better information than the regulator then it may appropriate to consider whether arrangements should be put in place to incentivise companies to make this information available as part of any steps to deal with the uncertainty. For example, where the regulator does not have full knowledge about the cost impact of uncertainty it may be possible to put in place some form of benchmarking, which would reveal information over time and could be designed to reward those companies that had dealt with the uncertainty efficiently.

- 7.24. Ofgem will continue to develop its thoughts on how to deal with uncertainty over the coming months including refining the decision making process which is being developed with Frontier Economics. This will include identifying the best way of dealing with the different uncertainties that will be faced by DNOs during the next price control period – including the uncertainty raised by distributed generation.

### ***Developing the regulatory framework for distributed generation***

- 7.25. The August document explained that the government has put in place specific targets for the amount of energy to be supplied by renewable generation and combined heat and power (CHP) by 2010. If the government's targets are to be achieved then it is likely that there will be a significant increase in the amount of generation connected directly to the distribution networks. This raises important questions about the way in which the regulatory framework may need to be developed to:

- ◆ ensure that the DNOs have appropriate incentives to operate their networks on an economic, efficient and co-ordinated basis;
- ◆ ensure that the DNOs facilitate competition in generation and supply;  
and
- ◆ take account of the government's security of supply, social and environmental objectives.

### ***Views of respondents***

- 7.26. Respondents to the August document welcomed the recognition of distributed generation as a key issue for the DNO price control review. It was argued that distributed generation provides a significant challenge and opportunity to the DNOs in accommodating generation on their networks. A number of respondents suggested that it would be important to ensure that DNOs are provided with appropriate incentives to facilitate the connection of distributed generation to their networks and to utilise the generation to help them run their networks as efficiently as possible. It was argued that any incentive framework

for the DNOs in relation to distributed generation would need to be flexible and forward-looking. It was also suggested that it may be necessary to recognise that some DNOs may be better able to accommodate distributed generation on their networks – either because of the nature of the area that they serve or the characteristics of their network. It was also pointed out that it would be necessary to consider the impact of distributed generation on quality of supply – both in terms of the information that DNOs should provide to suppliers and in relation to the DNOs quality of supply commitments. One respondent also argued that it is important to consider the linkages between the work on distributed generation and other projects including the structure of electricity distribution charges and losses.

### ***Ofgem's further thoughts***

7.27. Ofgem outlined its further thoughts in these areas in an open letter to the Chief Executives of the DNOs that was published in January 2003. This included identifying some possible mechanisms that could be used to provide incentives to DNOs to:

- ◆ provide access to and reinforcement of their networks in response to requests for the connection of distributed generation – possible incentive mechanisms that were identified included:
  - a MW (or capacity) revenue driver; and
  - including a proportion of reinforcement costs in the RAV to allow it to earn a guaranteed rate of return.
- ◆ use distributed generation to help them run their networks as economically and efficiently as possible – possible incentive mechanisms that were identified included:
  - using distributed generation as an alternative to network investment;
  - minimising system constraints through the use of some form of MWh revenue driver; and
  - using distributed generation to reduce system losses.

7.28. The letter also indicated that any arrangements needed to be consistent with (though not necessarily the same as) the evolving regulatory framework for electricity transmission so that they are no perverse incentives operating at either the transmission or distribution level – see Chapter 3.

### ***Other issues***

7.29. This section sets out some of the other issues that will need to be considered as part of the price control review:

- ◆ ***the treatment of correction factors*** – Ofgem intends to publish final proposals on the price control review before the end of the 2004/05 financial year. In doing so it will need to make a forecast of the amount of revenue that companies will collect from consumers in 2004/05. In the event that the actual amount of revenue that is collected from consumers is different from the forecast level Ofgem considers that it would be appropriate to carry forward any under-or-over recovery for 2004/05 to the first year of the new price control period (2005/06);
- ◆ ***metering*** – the provision of certain metering services are being progressively opened to competition. Ofgem will need to consider the most appropriate form of protection for consumers that will be required until effective competition has developed. Any arrangements that are put in place should not prevent the development of competition. Depending on the arrangements that are put in place it may be necessary to consider the treatment of metering assets and costs which are presently part of the distribution business (and price control);
- ◆ ***rebates for distribution use of system charges*** – there are a number of reasons why the distribution use of system (DuoS) charges that DNOs set suppliers can lead to a DNO recovering more (or less) revenue than is allowed under the price control. This can include differences between the actual level of units distributed and the level that was forecast in setting charges. Ofgem is particularly concerned that in circumstances where a DNO over-recovers against the price control that consumers benefit from any subsequent reduction in charges. Ofgem will be

reviewing arrangements for under-and over-recoveries and for changes in tariffs;

- ◆ ***new obligations*** – in setting the price control Ofgem will need to consider how to treat the costs associated with any new obligations that DNOs have been required to implement or deliver during this price control period. This includes costs that may have been incurred in relation to the lane rental trials that have been introduced in Camden and Middlesborough. Ofgem's initial view is that where costs are significant and/or have an asymmetric impact on companies, and where they are efficiently incurred, then they should be taken into account in setting the price control. Ofgem will need to undertake further work as part of the price control review on assessing whether the costs that companies have incurred in relation to new obligations are efficient;
  
- ◆ ***pensions*** – in setting price controls Ofgem makes allowance for the efficient level of costs it expects companies to incur over the period of the price control, including the costs that companies incur to fund their pension schemes. In looking at pension costs a number of issues will need to be considered:
  - how pension benefits provided regulated companies compare with practice in a competitive environment; and
  - the appropriate allowance to include in the price control to cover the DNOs' efficiently incurred pension costs over the price control period.

If a company has, or is forecasting, a deficit or surplus in its pension scheme in the price control period, Ofgem will also need to consider:

- how the deficit or surplus in the pension scheme arose or is expected to arise;
- how the pension scheme is valued;
- the nature of the deficit or surplus, i.e. whether it is permanent or expected to be short lived;

- the impact that funding a pension scheme deficit may have on the financial position of the company.

In looking at these issues Ofgem will compare the pension arrangements across DNOs and with those in competitive markets.

A final issue that needs to be considered is that pensions' accounting is changing in the UK as a result of Financial Reporting Standard 17.

Ofgem will need to consider how these accounting changes could impact on the DNO price controls;

- ◆ ***Hydro Benefit*** – under the existing price control Hydro Benefit is transferred to the distribution business of Scottish Hydro-Electric (SHE). The sums transferred arise from the relatively low cost of SHE's hydro power stations, partly reflecting the written down asset values at the time of privatisation. As part of the DNO price control review it will be necessary to consider whether, as a result of the introduction of the British Electricity Transmission and Trading Arrangements (BETTA), there is a need to change the existing arrangements; and
- ◆ ***the Scottish Transmission Price Control review*** – new price controls for the transmission businesses of the two Scottish DNOs are due to be implemented from 1 April 2005. Ofgem is developing an appropriate process and timetable for this price control in the light of the work that is being carried out by the DTI, Ofgem and the industry on introducing BETTA. Ofgem intends to make further details available on the process and timetable for the Scottish Transmission price control review in May 2003.

### ***Information for the price control review***

- 7.30. In order to set price controls Ofgem needs to collect information from companies. This information includes both historical and forecast costs (both operating and capital) and other data such as the amount of energy distributed. The approach that Ofgem intends to use for collecting information from companies seeks to build on that used during the last review in 1999 by meeting concerns that have been expressed by the DNOs. These concerns included:

- ◆ ensuring that companies have an appropriate amount of time to comment on draft versions of information requests;
- ◆ the burden that the collation of information placed on the companies' staff and resources;
- ◆ having a better understanding of how information will be used in the price control review process; and
- ◆ making sure that companies have clarity about the assumptions that should be used in putting together their forecast information.

7.31. In order to meet these concerns Ofgem intends to:

- ◆ allow an appropriate amount of time for companies to respond to draft versions of the main information requests – the timetable that is being developed for the review allows at least one major iteration on the form and content of each of the main information requests. Ofgem will also hold workshops with the DNOs in order to provide companies with the opportunity to comment at a formative stage of the process. Ofgem also intends to meet each company on a bilateral basis at an early stage of the process to allow the DNOs to provide direct feedback on the information gathering process. Ofgem will also use these meetings to update its understanding of their business, including how they are structured, how costs are allocated and the way in which information is collated internally;
- ◆ split the information request into separate parts which will be collected at different stages of the review process which should spread the burden more evenly over the price control review. Further details are set out below;
- ◆ provide DNOs with more guidance as to how information that is requested will be used in the review. This will be particularly useful in gaining a better understanding of whether the information request is broadly consistent with the way in which companies collate information internally, and if not, identifying the best way of adjusting data so that it can still be used effectively;

- ◆ providing companies with guidance about the assumptions that should be used in completing the information requests particularly for forecasts. This could include guidance on high level assumptions including:
  - the cost of capital;
  - forecasts of economic indices, including the RPI; and
  - quality of service targets.

7.32. These steps should help ensure that the process for collecting information for review is as open and as transparent as possible and that companies have a good understanding of the basis on which they are required to collate information.

### **Changes since the last price control review**

7.33. Since the last price control review, both Ofgem and the industry, have undertaken a significant amount of work on putting in place detailed reporting arrangements for both costs and quality of service. These should have increased the level of consistency in the way that companies report both costs and quality and therefore should reduce the burden of collecting this information for the price control review. In addition, one of the key issues for the last price control review was the treatment of costs in the light of the separation of supply and distribution activities. This will not be an issue for this price control review and as such this will reduce the amount of information that needs to be collected.

7.34. There have been a number of developments since the last review which will need to be looked at in detail. These include:

- ◆ corporate restructuring that has led to increased levels of outsourcing of business activities (including the day to day operation and maintenance of the network). This raises issues associated with how costs have been allocated between different business units and the ability to make comparisons across DNOs; and
- ◆ the increased amounts of generation which is likely to connect to the distribution network over the next price control period and beyond.

### ***Historical information***

7.35. In order to set price controls, Ofgem needs to collect historical information from companies, particularly on their operating and capital costs. This is needed to assess the efficiency of each company in particular years. The DNOs have recently submitted information on their costs in their regulatory accounts using guidance set out by Ofgem. This information is presently being reviewed by Ofgem to assess how companies' are performing against the existing price control and to identify any areas where the quality of information could be improved. It is clear that there will be a need to look at some issues in greater detail including the capitalisation, allocation and attribution policies used by companies. This will form part of the initial information request for the price control review. It will be important to ensure that there is no unnecessary duplication of the information request for the review with the information submitted by companies on an annual basis. In addition, work is already underway to collect detailed information on quality of service (see Appendix 5).

### ***Information on distributed generation***

7.36. It was explained above that there is likely to be a significant amount of generation that will seek connection to and use of DNOs' networks over the period of the next price control period and beyond. It will be important to gain a better understanding of the likely pattern of development of distributed generation and its impact on the costs incurred by DNOs. This will be necessary so that steps can be taken to deal with the uncertainty raised by distributed generation for the costs DNOs may incur and to help ensure that they have appropriate incentives for operating their networks in an economic, efficient and co-ordinated manner. Ofgem expects that this will require collecting information on:

- ◆ the amount of distributed generation connected during the present price control period and the resulting costs incurred by DNOs. It would be necessary to collect this information at a reasonable level of detail, for example in relation to the capacity and type of generation connected and the breakdown between opex and capex; of DNOs and others of the likely development of distributed generation;

- ◆ the expectations of DNOs and others of the likely development of distributed generation; and
- ◆ the impact on costs (both opex and capex) of increased amounts of generation connecting to the DNOs' networks – it will be necessary to have an understanding of the impact on costs of different types of generation, of whether this differs depending on where it connects to the network and on how the impact changes over time as the amount of generation connected increases.

7.37. It is important that work on developing the information request for historical and distributed generation related information begins at an early stage of the review process. This will then allow the work to be taken forward on assessing companies efficiency and developing appropriate incentives for DNOs in relation to distributed generation. Ofgem intends to develop these information requests in the coming months. Further details on the timetable will be made available in March.

### ***Forecast information***

7.38. In order to set a price control Ofgem also needs to collect information from DNOs on the efficient level of costs that they are likely to incur over the period of the price control. It is also necessary to collect other information such as the future amount of energy that DNOs expect to distribute and the amount of customers connected to the network. Ofgem needs to consider the basis on which DNOs should forecast their future costs. For example, it may be appropriate for DNOs to submit a number of different forecasts based on different assumptions (or scenarios) of the amount of generation connected to the network and/or the quality of service delivered to consumers. If scenarios are used it will be necessary to define them on a robust basis so that companies can forecast their cost levels with more certainty. It would also be necessary to consider who should define the scenario – Ofgem or the DNOs. Any scenario would also need to reflect consumers' preferences and willingness to pay.

## *Issues for consideration*

7.39. In addition to the issues identified above it is also necessary to consider:

- ◆ how far beyond the end of the next price control which ends in 2010 should DNOs be required to forecast their costs – although the price control allows companies to recover sufficient revenue to meet their statutory and licensed requirements it is important to have an understanding of the impact of the price control beyond 2010 on both the financial position of the companies and the likely path of prices to consumers;
- ◆ the best of way of ensuring that there is an appropriate level of transparency and openness in the information that companies submit to Ofgem - one approach would be to require DNOs to publish their business plans. Ofgem recognises that some of the information that companies submit may be need to be treated in confidence but the burden of proof in such matters should rest with the company. It will also be important to ensure that any information that is published is done so in a consistent and logical way so that interested parties can more readily make comparisons across DNOs; and
- ◆ whether it is appropriate to require that the Board of the licence holder and its parent company Board endorse the strategy and information set out in a company's submission. It is also necessary to consider whether any aspects of a company's submission should be subject to some form of audit, and if so, what form this should take.

## *Timetable*

7.40. Ofgem is in the process of finalising the detailed timetable for the price control review which will include when Ofgem intends to:

- ◆ publish consultation documents;
- ◆ request information from DNOs;
- ◆ hold major workshops and meetings; and

- ◆ make decisions on key policy issues such as the incentives provided to DNOs in relation to distributed generation and assessing companies' costs.

7.41. There have been no significant changes to the timetable that was published in the August document although further details have now been added. Ofgem intends to make the price control review timetable available to interested parties in March.

7.42. Ofgem also intends to publish further details on the work that Frontier Economics is undertaking in March. This will be accompanied by an Ofgem letter which will set out the key issues that will need to be considered in the light of the work that Frontier Economics has undertaken. This letter will replace the document that Ofgem originally planned to publish in March. Ofgem will then set out its further thoughts on developing price controls and the next DNO review in May.

# Appendix 1 Ofgem's proposed approach to undertaking price control reviews

## *Introduction*

1.1 The August 2002 document set out Ofgem's initial thoughts on a possible approach for undertaking all price control reviews of network monopoly companies. This Appendix identifies the changes that Ofgem intends to make to its approach to undertaking price controls in the light of the views expressed by respondents and the five principles of good regulation identified by the Better Regulation Taskforce (BRTF):

- ◆ transparency;
- ◆ accountability;
- ◆ proportionality;
- ◆ consistency; and
- ◆ targeting.

## *Summary of respondents' views*

1.2 Respondents generally expressed support for developing a general approach to undertaking price control reviews. Many respondents welcomed the openness and transparency of the process and the early engagement of network operators in discussions concerning the objectives, principals and key issues underpinning a price control review.

1.3 On **the appropriateness of the steps identified in undertaking price control reviews**, respondents generally agreed that these were appropriate although a number raised points on some of the individual steps. One respondent argued that the steps did not go into enough detail.

- ◆ On **developing the timetable and consultation process** – some respondents suggested that informal correspondence, bilateral meetings, workshops, and working-level groups all be used to supplement (but not

replace) the formal consultation process. One saw the need to resolve key policy issues, particularly quality targets, before companies completed the Business Plan Questionnaire (BPO);

- ◆ On **collecting information from companies which will be used to set the price control** - a number of the companies identified a need to reduce the amount of unnecessary information collected by Ofgem as well providing a better explanation of how information will be used. Some suggested that more of the data should be collected on an annual basis rather than at the time of the price control review. One respondent suggested companies need more time to comment on information requests to make sure that they were more focused. One respondent suggested information could be collected at different stages of the review.
- ◆ On **developing the financial model** - respondents welcomed Ofgem's intention to publish its financial models with an associated explanatory guide. A number argued that it is important that interested parties have an opportunity to comment on the model as it is developed. The use of a working group to develop the approach to financial modelling was strongly supported;
- ◆ On **implementing the price control** - respondents welcomed the move to publish draft licence modifications as early as practicable in the review process; and
- ◆ On **monitoring companies' performance against the price control** – respondents suggested that monitoring performance should not become overly burdensome for the regulator or companies.

1.4 On the **information should be published as part of the review process**, a number of companies argued that more detailed information should be made available on the way in which the price control has been set including consultants' reports and the way in which costs have been assessed. One respondent listed a number of items that Ofgem should publish, including guidance received by Ofgem from the Secretary of State, summaries of responses

to consultation documents responses and key issues discussed in working groups.

- 1.5 **On the approach to identifying the objectives, principles and key issues for the price control review**, one respondent commented that the objectives needed to include process related objectives that were in line with the government's principles of good regulation. Another argued that the objectives and key issues should be prioritised.
- 1.6 **On what considerations should be taken into account in specifying outputs**, respondents suggested that the value of outputs to consumers and other stakeholders should be given sufficient consideration early in the review process and that the level of outputs specified should reflect consumers' willingness to pay. One respondent considered it necessary for the price control to set out clearly the requirements on companies included in the agreed price control.
- 1.7 A number of respondents expressed support for Ofgem's intention **to review the way in which the price control review process should be assessed**. One suggested that Ofgem should publish a document on the review and hold a workshop. Others argue that the review process should be reviewed against the government's principles of good regulation.

### ***Ofgem's further thoughts***

- 1.8 Ofgem believes the broad approach set out in the August document remains appropriate. For the most part respondents supported the approach and most of the issues raised were on points of detail.
- 1.9 The steps that Ofgem has identified for undertaking price controls reviews are necessarily at a high level. As part of its own internal planning Ofgem will develop more detailed work programmes for the price control review. Where appropriate these will be shared with interested parties.
- 1.10 Ofgem will put in place appropriate steps that will allow companies to contribute to the development of the BPO and sufficient time to complete information requests. Where possible Ofgem will also seek to reduce the amount of information requested at a review including ensuring that there is no unnecessary duplication with other information that companies submit. It is not

possible to resolve all of the key policy issues before companies complete information requests although it will be important for Ofgem and the companies to identify the relevant assumptions that should be used in completing and analysing information requests.

- 1.11 In identifying the outputs that should be included in the price control, Ofgem will seek the views of interested parties including, where appropriate, using market research to gain a better understanding of consumers' views.
- 1.12 Ofgem considers the approach set out in August and in this document is consistent with the five principles of good regulation set out by the BRTF.
- 1.13 Ofgem is increasing **transparency** by publishing its financial model with an explanatory guide and by setting out its approach to price control reviews including identifying at an early stage the key issues and objectives for a review. Ofgem will also explain how its decisions on the price control review relate to the initial objectives and will publish appropriate information so that interested parties can understand how decisions have been made including the way costs have been assessed.
- 1.14 Ofgem is **accountable** to Parliament and to its committees, including the Trade and Industry Select Committee, the Public Accounts Committee, and the Environmental Audit Committee, and is subject to parliamentary scrutiny. Ofgem expects that the relevant bodies will review Ofgem's approach to price control reviews. Ofgem will also undertake its own review of the price control process which will be assessed against the recommendations of the BRTF and the approach outlined in August and in this document. In the event that companies reject the licence modifications required to implement a price control Ofgem would need to consider whether to refer the matter to the Competition Commission for a decision.
- 1.15 Given Ofgem's principal objective and other duties the burden of the price control will be set **proportional** in terms of the burden placed on companies and other interested parties. Where possible Ofgem will seek to reduce the burden of the price control review subject to it continuing to meet its principal objective and other duties.

- 1.16 Ofgem is increasing **consistency** by seeking to develop a consistent approach to undertaking price controls for network monopoly businesses. It is also seeking to improve the way in which it makes comparisons of performance across companies. Decisions that are taken about the price control will also need to take account of guidance Ofgem receives from the Secretary of State on social and environmental issues and be consistent with allowing efficient companies to meet their statutory duties and licensed activities.
- 1.17 On **targeting**, Ofgem will not seek to specify the way in which companies should meet specific outputs or run their business. Ofgem's intention is to put in place an incentive and price control framework that allows companies to respond to the needs consumers and to operate an economic, efficient and co-ordinated network.

# Appendix 2 Consultant's workstreams

## *Introduction*

- 2.1 This Appendix provides further details on the work that Frontier Economics is undertaking on dealing with uncertainty and incentives in the regulatory framework.

## *Regulatory mechanisms for dealing with uncertainty - workstream A*

Set out below is a workplan for providing advice on the most appropriate regulatory mechanism for dealing with uncertainty under price controls. The workplan details the high level requirements for the workstream and a specification of what the consultant will be expected to cover.

In setting price controls Ofgem must come to a view about the efficient level of costs that a company will incur over the period of the next price control. In doing so, it must consider a number of variables including the level of demand, the number of consumers, and other factors that may impact on the future costs of the company.

Over at least the next 5 years, the level and nature of investment that will be required, to facilitate the connection of distributed generation to the distribution network is uncertain. This is because:

- ◆ different types and sizes of distributed generation are likely to have to different implications for the networks – this impact may also vary depending on the existing type and strength of the network; and
- ◆ it is not possible to predict with accuracy the amount of distributed generation that will require connection to the network and when, where and at what voltage level, it will need to be connected.

An increase in the level of distributed generation on the network may also have an impact on how the network is operated and so in turn on the operating costs of a company.

These matters raise significant questions about how the price control arrangements should deal with this uncertainty. Where appropriate and practicable Ofgem prefers to put in place mechanisms that allow companies (and consequently the price control) to respond to changing circumstances.

There are a number of possible options for dealing with uncertainty and the consultant will be expected to consider ways in which more flexibility can be incorporated into the price control framework to deal with uncertainty that is likely to impact on a companies' costs. In particular, the consultant will need to:

- ◆ review existing mechanisms (including those within the energy sector, other UK utility sectors and in other countries) for dealing with uncertainty, outlining the advantages and disadvantages of different approaches.

The consultant will also be expected to consider for each different approach:

- ◆ the implied balance of risk between companies and consumers and in particular the potential impact on the cost of capital and the level/volatility of prices that consumers pay. It is also necessary to consider whether any approach has particular implications for different categories of consumers (e.g. the fuel poor/industrial consumers);
- ◆ the incentives that companies are provided with to manage the uncertainty efficiently;
- ◆ the circumstances—especially in terms of nature and level of uncertainty—for which different approaches (or combination of approaches) might be applicable; and
- ◆ the approach that would be most appropriate for dealing with uncertainty associated with distributed generation and the potential impact that it may have on the incentives on DNOs to connect distributed generation to their networks and the implied balance of risk between DNOs/distributed generators/consumers.

### ***Developing incentive frameworks - workstream B***

Set out below is a workplan for providing advice on improvements that can be made to the existing system of incentives applying to network operators. The workplan details the high level requirements for the workstream and a detailed specification of what the consultants will be expected to cover.

'RPI – X' has provided strong incentives to drive down costs in the UK since privatisation. More recently, concerns have emerged that companies may not have strong enough incentives to provide a good quality of service, which the IIP sought to address, or to invest in the network. In considering how to change the design of the incentive framework, Ofgem will need to ensure that there is an appropriate mechanism for sharing efficiency savings between companies and customers, as well as striking the right balance between companies' incentives in three areas: to achieve efficiency savings; to provide a good quality of service to consumers; and to maintain the longer term performance and security of the network.

In setting a price control it is necessary to make an assessment of the efficiency of a company – in terms of both its operating and capital expenditure (opex and capex). In previous price control reviews opex and capex efficiency have been assessed separately, although some adjustments were made to take account of the trade-off between opex and capex – mainly focusing on the accountancy relationship. Ofgem wants to consider the most appropriate approach to assessing costs, including whether opex and capex (and some measure of financing costs) should be considered together in a total cost model. In addition,

Ofgem wants to consider whether a measure of quality can be incorporated within the assessment of efficiency.

Some companies and other interested parties have argued that the present arrangements give rise to a distortion of incentives between capital and operating expenditure which is driven by a number of factors, including:

- ◆ that because capex is capitalised and enters the RAV it earns a return equal to the allowed cost of capital for the duration of the assumed life of the asset. This means that companies can increase their level of allowed revenue by incurring additional capex. As a consequence it has been argued that the incentives to achieve capital efficiencies are weaker than for operating costs; and
- ◆ that if efficiency is primarily assessed on the basis of operating costs then companies may have an incentive to substitute capital expenditure for operating expenditure both in terms of their future expenditure plans and in how costs are treated in their accounts.

It has been suggested that this distortion of incentives between capital and operating expenditure could mean that companies do not adopt the most efficient mix of capital and labour within their business. One approach that has been proposed to reduce this perceived distortion is assessing efficiency on the basis of some measure of total (operating, capital and financing) costs so that any incentive to substitute capital and operating expenditure is reduced. Another approach may be to better balance incentives for both opex and capex.

It has also been suggested that an overall assessment of efficiency would include a measure of the quality of service delivered to consumers. This could include incorporating a measure of quality directly into a total cost function or weighting the cost efficiency of a company with a measure of quality.

The consultant will be required to provide advice on the design of a well-balanced incentive framework, including advice on the guiding principles, the issues to consider and the necessary inputs to the process, and also on how to assess efficiency in a manner consistent with such a framework.

This will include advice on what the appropriate sharing mechanism for efficiency savings between companies and customers, as well as advice on the impact of any changes to the sharing mechanism to incentives to deliver various outputs, and on the dynamic incentives to achieve efficiency savings.

As part of this, the consultant will be required to provide advice on how to address the conflict between incentives to achieve efficiency savings with those to provide a good quality of service to consumers and to maintain the longer term performance and security of the network, including how best to trade off between high-powered incentives on costs and high-powered incentives to deliver outputs/outcomes. In addition, the consultants will need to provide advice on how changes in the sharing mechanism will affect the strength of companies' incentives in these other areas.

The consultant will also be required to provide advice on what improvements to the existing framework can be made to the present package of incentives, to begin the transition to a well-balanced incentive framework.

As part of its advice, the consultant will be expected to consider four broad areas: the balance of incentives between capex and opex; the periodicity of incentives to achieve efficiency savings; the strength of incentives to achieve efficiency savings; and the interaction of these incentives with the incentives to deliver appropriate quality of service to customers and maintain security of supply. In doing so, the consultant will be expected to answer the following questions.

*1. The distortion of incentives between capex and opex*

- ◆ What gives rise to the distortion of incentives between opex and capex and is it the same for all network companies? If there is a distortion of incentives, does it matter?
- ◆ If so, what is the most appropriate way of overcoming the issues these distortions raise: Is it appropriate to provide equally balanced incentives on capex and opex? What implication, if any, is there for the delivery of quality of service and security of supply of providing balanced incentives?
- ◆ How can more balanced incentives be provided if this is appropriate? Should a total cost model for assessing efficiency be used? If so what should be its functional form, and what measurement issues using total costs raises?

In answering this question, the consultant will be expected to specify the functional form of any total cost model, covering operating expenditure, capital expenditure and financing costs, which also incorporates an element of quality, and the consultant is not required at this stage to construct such a model.

- ◆ If quality is incorporated into the assessment of total cost efficiency, to what extent if any would this resolve some of the issues associated with the balance of incentives between efficiency and quality of service and security of supply? If the measurement of quality is restricted to readily available measures such as CMLs and CIs, how will this influence the answer to this question?
- ◆ How applicable is any approach for all network companies?

*2. Periodicity of incentives to achieve efficiency savings*

- ◆ What aspects of the regulatory framework give rise to the periodicity of incentives on opex and capex – are these aspects the same for both inputs?
- ◆ What issues does this raise?
- ◆ What is the most appropriate way of resolving issues of periodicity?

- ◆ What implication could there be of any changes to incentives to achieve efficiency savings on incentives to deliver an appropriate quality of service to customers and security of supply?

3. *The strength of incentives to achieve efficiency savings*

- ◆ What is the most appropriate share of the benefits of efficiency savings for companies to be allowed to retain?
- ◆ Should the retained share of benefits be equal for opex and capex particularly given the relative importance of capex for quality of supply and system security?
- ◆ What implications are there for delivery of quality of service and system security of strengthening incentives towards efficiency?
- ◆ Should the balance of incentives reflect the relative 'management effort' that is required to seek out efficiency savings in opex and capex?

4. *The balance of incentives to achieve efficiency savings and deliver appropriate quality of service to customers and maintain security of supply*

- ◆ How can a more balanced set of incentives be provided between outputs and efficiency, for example: Should there be a 'high powered' efficiency and output delivery framework? What implications could this have on the risk profile of companies?
- ◆ Could the IIP (or a 'stronger/expanded' version) provide sufficient comfort/incentives on output delivery to allow a strengthening of incentives on efficiency? If yes, would this remain sufficient if the assessment of efficiency using a total cost model does not include an element of quality?
- ◆ What role can Ofgem's asset risk management survey play in this respect?
- ◆ Would a move to a 10 year period for setting targets help overcome problems associated with periodicity of output delivery and the absence, at this stage, of good measures of future network health?
- ◆ How can more clarity/certainty be provided to companies regarding the treatment of expenditure (particularly capex) to help provide better investment incentives?

# Appendix 3 Introducing a fixed retention period for efficiency savings – issues for the DNO price control review

## *Introduction*

- 3.1 In setting the last DNO price control in 1999, Ofgem committed to allowing companies to retain the benefits of any capex efficiencies for a fixed period of time, regardless of when the saving was actually made. This commitment was conditional on the DNOs meeting their quality and security of supply obligations. In setting the next price control, which is due to be implemented from 1 April 2005, Ofgem also intends to allow DNOs to retain the benefits of any opex efficiencies for a fixed period of time. A number of issues need to be considered in developing how the detail of these arrangements will work for the DNOs and this Appendix sets out Ofgem's initial thoughts in these areas.

## *Calculating the incentive payment for capex efficiencies*

- 3.2 It is necessary to consider the detail of how the incentive payment for capex efficiencies is calculated. One way of calculating the benefit that a DNO gains from capex efficiencies is by multiplying the size of the saving (relative to the allowed level of capex) by the allowed cost of capital. This is the broad approach used by Ofwat. An alternative would be to allow DNOs to also retain the depreciation charge that otherwise would have been allowed if the investment had been undertaken. The size of the 'depreciation' benefit would depend on the approach to depreciation used in setting the price control.

## *The definition of capex efficiency*

- 3.3 In calculating the incentive payment for capex efficiencies it is also necessary to consider the way in which the size of the saving is calculated. There are a number of reasons why the actual level of capex incurred by a company in a particular year could be different to that assumed in setting the price control. It could be due to:

- ◆ outperformance of the cost assumption – it may be the case that a company delivers an investment project for a lower cost than that it forecasts and/or that is assumed by the regulator;
- ◆ differences in the timing of the investment –it is difficult to predict exactly when investment will be undertaken and as such differences between actual and allowed expenditure could arise because of the timing of when a company actually undertakes a project; and
- ◆ permanent deferral of a project – differences between actual and allowed capex could also arise because a company decides not to undertake a particular project because it is not necessary or required.

3.4 The objective of the commitment was to provide companies with improved incentives to achieve capex savings. It is also important to avoid providing companies with distorted incentives. Ofgem considers that there two main ways in which distorted incentives could be provided to companies:

- ◆ ***the quality of service to consumers*** - to help ensure that the stronger incentives for capex efficiency do not have a detrimental impact on the quality of supply delivered to consumers, Ofgem indicated that the commitment was conditional on DNOs meeting their quality and security of supply obligations (this is discussed below); and
- ◆ ***the deferral of investment*** - it is also important to avoid providing DNOs with an incentive to inefficiently defer investment in one price control period which would lead to them forecasting an increase in the subsequent period to 'catch-up' on their investment programme, i.e. they request the capex twice. In setting the price control it will be important to gain an understanding of the main reasons for any differences between actual and allowed capex. Where it appears that the differences are significant and driven primarily by deferred investment Ofgem intends to take this into account in setting the allowed level of capital expenditure in the next price control period.

### ***Meeting quality and security of supply commitments***

- 3.5 The commitment to introduce a fixed five year retention period for capex efficiencies is conditional on the companies meeting their obligations with respect to the security and quality of supply.
- 3.6 Ofgem considers that the relevant security and quality of supply obligations are the targets that have been set for the DNOs for the:
- ◆ the number of interruptions to supply; and
  - ◆ duration of interruptions to supply.
- 3.7 Consumers are concerned about both the number of times their supply is interrupted and the length of time that they are off supply. Ofgem considers that in order for DNOs to benefit from the fixed retention period for capex efficiencies they must meet their target for *both* the number of interruptions and the duration of interruptions.
- 3.8 When introducing the IIP incentive scheme Ofgem made adjustments to these targets make them consistent with new definitions and measurement systems being used by companies. The targets were finalised for seven of the DNOs. For the remaining seven DNOs, there remained considerable uncertainty about the impact of the changes in measurement systems and definitions on the targets. These companies accepted the IIP incentive scheme on the basis that they could request a further review of targets during 2002/03. Where companies have submitted additional information this is presently being reviewed by Ofgem and its consultants and any changes to the targets will be finalised by the end of March this year. Ofgem considers that the rebased targets are the relevant obligations that companies must meet in order for them to retain capex efficiency savings for a fixed period of time.
- 3.9 Ofgem considers that the relevant obligations should relate to the targets for the 2004/05 financial year. This means that the obligation would not include the interim targets that have been set for companies as part of the IIP. The DNOs already face adjustments to their price control revenue if they fail to meet their interim targets.

- 3.10 Under the IIP Ofgem can make adjustments to companies' quality of supply performance for accuracy of reporting or exceptional events (for example the occurrence of severe weather). The way in which these processes work are set out in paragraph 8 and 10 of Special Condition G (J in Scotland) of the DNO licence. If any adjustments are made to the 2004/05 performance figures for accuracy or exceptional events then the adjusted figure should be the relevant one used for assessing whether a company has met its obligations.
- 3.11 Ofgem needs to consider how to treat those companies that fail to meet their obligations with respect to the quality and security of supply. Under the IIP, companies that fail to meet their targets will face adjustments to their price control revenue. The greater the failure the more significant the adjustment. Where failure against the 2004/05 target is not significant it may be appropriate to allow companies to retain at least a proportion of the benefit associated with retaining capex savings for a fixed period of time. This could be achieved by putting in place some form of sliding scale arrangement so that the more significant the failure against a target, the less benefit is retained from any capex efficiency.

### ***Applying the commitment to opex***

- 3.12 Chapter 4 indicated that Ofgem's initial thoughts are that the commitment to retain opex efficiency savings for a fixed period of time will only apply to those savings made in 2003/04 and 2004/05 during this price control period – although it would be applied to efficiency savings made in each year of future price control periods. Ofgem also needs to consider whether DNOs should be allowed to retain all of the benefits associated with opex efficiency savings for a fixed period of time or whether there should be some alternative sharing arrangements between companies and consumers.

### ***Monitoring performance***

- 3.13 Introducing a fixed retention period for efficiency savings will also require an improved level of transparency and ongoing monitoring of companies' performance. Ofgem will need to consider the most appropriate way of publishing information on companies' performance against the price control on an annual basis.

### ***Applying the adjustment in the final year of the price control***

3.14 It is also necessary to consider the details of how the adjustment will work given that Ofgem will not have companies' final performance figures for 2004/05 before the price control has to be implemented. It may be possible to use an estimate of companies' performance using either 2003/04 performance or data collected during 2004/05 and to make any adjustments during the first year of the new price control period once companies' final performance figures are known.

### ***Adjusting prices***

3.15 It is necessary to consider the most appropriate way of adjusting prices to consumers for companies' performance against the cost assumptions underlying the price control. This can be done on:

- ◆ an annual basis - the Ofwat approach adjusts prices to consumers on an *annual* basis as the rolling adjustment (or incentive payment) drops out of the calculation of allowed revenue after five years; or
- ◆ in setting the next price control – an alternative approach would be to smooth the incentive payment so that the adjustment to allowed revenue (and prices to consumers) was taken into account in setting the next price control. Under this approach, prices to consumers would be more stable over the price control period (all other things equal).

3.16 The incentives provided to DNOs should not be affected as long as the net present value (NPV) of the adjustments to revenue are the same although Ofgem would also need to look at the cashflow effects of the different approaches.

3.17 Ofgem intends to develop its further thinking on how the rolling adjustments will work for DNOs in the coming months and further details will be published in May 2003.

## Appendix 4 Assessing consumers' preferences in the DNO price control review

4.1 Chapter 5 explained that an important aspect in developing the incentive and price control framework is an understanding of consumers' preferences – both in terms of the outputs which they value and what they are willing to pay for. As part of the DNO price control review, Ofgem intends to undertake work to gain a better understanding of these factors. There are several ways of obtaining information on consumers' preferences including:

- ◆ obtaining the views of energywatch and other consumer representatives;
- ◆ obtaining the views of suppliers who have more day to contact with consumers than DNOs;
- ◆ through the normal consultation process for the price control review; and
- ◆ through consumer research including the use of surveys and focus groups.

4.2 Ofgem considers that all of these will have a role to play in gaining a better understanding of consumers' preferences.

4.3 This section sets out Ofgem's initial thoughts on the issues associated with assessing consumers' preferences through research and in particular on:

- ◆ the scope of the research; and
- ◆ the most appropriate method that should be used for assessing preferences.

4.4 Ofgem intends to carry out its consumer research during the initial stages of the price control review to help inform the development of the information request for the review and the overall incentive and price control framework.

## The scope of the research

- 4.5 The primary area that the consumer research should focus on is the quality and security of supply that consumers value and are willing to pay for. There are a number of areas where it will be important to gain consumers' views including:
- ◆ the areas of quality of service that are of particular concern to consumers and whether these vary across different consumer groups, such as domestic and business consumers. This will include identifying whether there are any aspects of quality of service that consumers consider to be important and that are not covered by the existing arrangements;
  - ◆ consumers' willingness to pay for improvements in quality of supply and whether this varies across different consumer groups or geographical area. This could include assessing consumers' valuation of reductions in the number and duration of interruptions to supply;
  - ◆ appropriate levels for the Guaranteed and Overall Standards of Performance (GOSPs) and the associated levels of compensation that should be paid to consumers in the event of a DNO failing to meet its obligations;
  - ◆ appropriate levels of performance that DNOs should be providing under the IIP; and
  - ◆ whether the exemptions mechanisms (see Appendix 5) that are presently in place under the GOSPs and the IIP are appropriate and if not whether they should be replaced by some alternative arrangements;
- 4.6 It will also be necessary to consider what other areas the consumer research should cover particularly on environmental and social issues. For example, it may be appropriate to seek consumers' views on the impact of overhead lines on visual amenity and their willingness to pay for undergrounding some of the network.

## The method for assessing consumers' preferences

4.7 It is not straightforward to assess consumers' preferences where their service is provided by a network monopoly company as they cannot reveal their preferences through their choices in the market (without moving home or business premises to another DNO's area).<sup>12</sup> In these circumstances it is likely that the best way of assessing consumers' preferences is through some form of market research.

4.8 Ofgem considers that there are four main stages to undertaking effective consumer research for the DNO price control review:

- ◆ **Stage 1** – consideration of the most appropriate technique that should be used to survey consumers' preferences. There are many different survey techniques including benefits transfer and stated and revealed preference surveys. All of these have advantages and disadvantages and differing levels of complexity. Ofgem will need to consider the most appropriate technique (or combination of techniques) that should be used for the DNO price control review.

As part of the last price control review of the LDZs, Ofgem made use of small consumer focus groups to help develop the detail of the survey questionnaire. This was a useful step in developing a more robust survey and one that Ofgem could use in preparing its consumer research for the DNO price control review.

This stage of the process should also consider the way in which the results from the survey could be used in setting the price control as this will have an impact on the design of the research;

- ◆ **Stage 2** - The second stage will need to include developing the detail of the survey questionnaire that will be used to assess consumers' preferences;

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<sup>12</sup> Some industrial and other commercial consumers' preferences may be indicated through the choice of contract or services they purchase from a DNO.  
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- ◆ **Stage 3** – The third stage would involve undertaking the field research and actually surveying consumers; and
- ◆ **Stage 4** – The final stage of the work would involve interpreting the results from the survey and considering in detail the way in which the results should be used in setting the price control.

# Appendix 5 Developing incentives for quality of service for the DNO price controls

## *Introduction*

- 5.1 It is important that consumers are afforded protection not only in terms of the prices that they pay but also in the quality of service that they receive from DNOs. Quality of service is important for industrial, commercial and domestic consumers alike. Although quality of service to consumers has generally improved since privatisation, it is important that DNOs continue to be provided with appropriate incentives to deliver a good quality of service to consumers.

## *The existing arrangements*

- 5.2 The existing regulatory framework provides protection to consumers in relation to the quality of service they receive through two main mechanisms:
- ◆ **GOSPs** – the GOSPs cover a range of service areas including restoration of supply and making and keeping appointments. The Guaranteed Standards set service levels that must be met in each individual case. If the DNOs fail to meet these service levels they may be liable to pay compensation to the consumers affected. Overall Standards cover areas where it is considered inappropriate to have individual guarantees but where consumers in general have a right to expect predetermined minimum levels of service; and
  - ◆ **a quality of service incentive scheme under the IIP** – the IIP incentive scheme which was introduced in April 2002<sup>13</sup> provides financial incentives to DNOs with respect to the overall quality of service they deliver to consumers in three main areas:
    - the number of interruptions to supply;
    - the duration of interruptions to supply; and

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<sup>13</sup> IIP incentive schemes: Final proposals, Ofgem December 2001  
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- the quality of telephone service.

5.3 In addition, Ofgem's Asset Risk Management work is intended to provide reassurance that consumers' interests in future quality and security of supply are not being compromised.

5.4 There are a number of issues that will need to be considered during the price control review in deciding on the appropriate incentives that need to be provided to DNOs in relation to the quality of service they deliver to consumers. Ofgem's initial thoughts in this area are set out below.

### ***Ongoing work and recent events***

5.5 The first year of the IIP focused on putting in place consistent definitions and guidance for measuring quality of service. These are set out in the Regulatory Instructions and Guidance (RIGs) document.<sup>14</sup> The RIGs also introduced minimum levels of accuracy for the reporting of quality of service information. Many of the DNOs have introduced changes to their measurement systems in order to comply with the new definitions and accuracy requirements.

5.6 These developments will make it easier to make more effective comparisons of performance across companies. However, it is also necessary to take account of other factors, such as inherited network design and consumer density, which impact on DNOs' performance and currently limit the ability to make robust performance comparisons. Ofgem considers that it is appropriate to make adjustments for those factors that are outside the direct control of a DNO's management. Ofgem set out its thoughts in September 2002 on one way in which these factors could be taken into account in making more effective comparisons of performance.<sup>15</sup> Since then the industry and Ofgem have been working together to develop a framework which should enable better comparisons of quality of performance to be made. Ofgem intends to request further information from the DNOs later this month to help develop the framework further. As part of the price control review it will be necessary to

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<sup>14</sup> Regulatory Instructions and Guidance: Version 2 – Ofgem, March 2002.

<sup>15</sup> Information and incentives programme: Comparing quality of supply performance – Ofgem, September 2002.

consider how this should be used to set more consistent targets across companies including looking at using:

- ◆ a 'top-down' approach comparing companies' aggregate performance adjusted for certain factors outside of their direct control; and
- ◆ a 'bottom-up' approach comparing performance across companies in disaggregated voltage and circuit categories to help identify the possible scope for performance improvements.

5.7 In October 2002 the UK experienced severe storms which led to around 2 million consumers having their supply interrupted. Most of these had their supply restored within 18 hours although large numbers of consumers only had their supply restored a number of days after the initial storm. The Department of Trade and Industry (DTI) launched an investigation of companies' performance under the storm in November 2002. The investigation was carried out by British Power International (BPI) who produced a report in December 2002 outlining their findings. In taking forward its work on quality of service, Ofgem will pay particular attention to the recommendations of the report.

### ***GOSPs for the DNOs***

5.8 At present the GOSPs applicable to DNOs cover a range of service areas as outlined in table 1.

**Table 1: Range of service areas covered by the GOSPs**

<b>Guaranteed Standards</b>	<b>Overall Standards</b>
Responding to failure of mains fuse	Restoration of supply within 18 hours
Restoration of supply following a fault	Voltage faults corrected within 6 months
Multiple interruptions	Connect new domestic customers within 30 days
Estimating charges for connection	Connect new non-domestic customers within 40 days
Notice of planned interruption to supply	Respond to customer letters within 10 working days
Investigation of voltage complaints	Multiple interruptions
Making and keeping appointments	
Notifying customers of payments owed under the standards	

- 5.9 During the price control review, Ofgem will need to consider the appropriate scope and levels of the GOSPs and the associated levels of compensation. In taking this work forward it will be important to gain an understanding of the areas of quality of service that consumers value and their willingness to pay for any improvements. It will also be necessary to consider the impact on DNOs' costs, either from the introduction of new standards or where the level of an existing standard is changed.
- 5.10 It will be important to review the way the Overall Standards (OSs) are treated within the overall incentive and price control framework. This is for a number of reasons:
- ◆ at present, performance under the OSs is not subject to a direct financial incentive, although failure to meet the specified level of performance could result in a financial penalty under the Electricity Act 1989 (as amended). This means it is difficult to provide clarity to companies about the financial consequences of their performance;
  - ◆ that the OSs may only provide weak incentives to the DNOs in the service areas that are covered; and
  - ◆ that there may be some unnecessary overlap between some of the OSs and the output measures included in the IIP incentive scheme.
- 5.11 One option would be to include the standards within the IIP incentive scheme. This would provide more clarity to companies about the financial consequences of their performance and would provide an opportunity to remove any unnecessary duplication between the IIP and the standards. It could also strengthen the incentives on the DNOs to deliver a good level of service to consumers. Inclusion of OSs in the IIP could affect the amount of revenue exposed to the scheme.
- 5.12 Another issue that needs to be considered is the scope and form of exemptions to the GOSPs. For example, DNOs are currently entitled to claim an exemption from paying compensation under GS 2 (the 18 hour restoration period standard) if severe weather prevented them from restoring supplies in the specified timescales and they took reasonable steps both to design and maintain their network to take account of severe weather and to restore consumers. Ofgem

considers that there are a number of problems with the way in which the present exemption mechanism works:

- ◆ that the incentives that DNOs have to restore consumers once there has been an interruption to their supply are weakened if the exemption applies. If DNOs have at least some control over the impact of severe weather on their performance, then they should be provided with appropriate incentives for managing this risk. If incentives are provided to companies it will allow them to seek out more efficient ways of managing the impact of severe weather;
- ◆ that the mechanism is not well defined and that as a consequence DNOs interpret the mechanism differently which can cause confusion to consumers and lead to uncertainty for companies;
- ◆ that it can lead to Ofgem receiving a significant number of determinations in circumstances where consumers are not satisfied with the decision of a company to invoke the exemption. Following the storms which occurred in October 2002 Ofgem is expecting to receive over 2,500 requests for determination. Resolving these determinations takes time and imposes a significant resource burden on both Ofgem and the DNOs and delays the resolution of the issue for consumers.

5.13 If the scope of the severe weather exemption is reduced or removed, Ofgem will need to consider the impact that this may have on the costs and risks that a DNO will incur from managing the impact of severe weather on their performance. Frontier Economics is looking at the most appropriate regulatory approach for dealing with severe weather under the GOSPs as part of their work on dealing with uncertainty.

5.14 During the last price control review Ofgem indicated that it intended to introduce automatic payments under GS 2. In undertaking the IIP, it became clear that DNOs did not have sufficiently accurate measurement systems to introduce automatic payments under this standard. Ofgem also considered that at that time the costs of introducing measurement systems capable of allowing accurate automatic payments was prohibitively high in terms of the likely cost per consumer. Ofgem indicated that as part of the next DNO price control

review it would review this assessment in the light of any new evidence. Any decision on whether to introduce automatic payments will need to be based on an assessment of the likely costs and benefits.

### ***The IIP incentive scheme***

5.15 As explained above the IIP incentive scheme was introduced from 1 April 2002 and Ofgem will need to review its overall operation and effectiveness as part of the DNO price control review. Some of the specific issues that will need to be considered are outlined below and some of these are common to those that will be looked at under the GOSPs. This includes assessing the aspects of quality of service that are of particular concern to consumers. This may show that the output measures that are subject to financial incentives need to be changed or the number increased. In any event, it will be necessary to consider the amount of revenue that should be exposed to the incentive scheme, including whether there should be an explicit cap. This will depend on a number of factors including:

- ◆ the impact that the existing scheme has had on the incentives towards DNOs to provide a good quality of service to consumers;
- ◆ the value that consumers place on changes in the level of service that they receive from DNOs; and
- ◆ any impact that an increased level of revenue exposure may have on the level of risk incurred by a DNO.

5.16 Another aspect of the IIP that needs to be reviewed is the operation of the mechanism that allows Ofgem to make adjustments to companies' performance in the light of exceptional events. This mechanism and the way in which it should be applied are set out in Standard Licence Condition G (J in Scotland). Ofgem will need to consider whether the scope of the present mechanism should be changed and, if it is retained, whether there should be a supplementary incentive provided to companies to improve the resilience of their networks and respond effectively and efficiently in the event of exceptional events. It will be important to understand the impact of any changes on the level of costs and risk incurred by the DNOs.

5.17 If the number and duration of interruptions to supply remain within the scope of the incentive scheme, Ofgem will need to consider the most appropriate way of setting targets for the DNOs that:

- ◆ **provide an appropriate level of protection to consumers and are consistent with a level of service that they are willing to pay for** – it would not be appropriate to set targets for the DNOs that consumers were not willing to pay for. The work that Ofgem will be undertaking on assessing consumers' views about quality of service will be a key input here;
- ◆ **reward those companies that are the best performers during this price control period** – in a competitive market, higher quality products do not necessarily generate higher returns (because they are usually higher cost) but they do generally command higher prices than low quality products to an extent determined by consumers' willingness to pay for quality. Effective regulation for network monopoly companies should provide similar outcomes;
- ◆ **are consistent across companies** – the comparisons of companies' performance used to set the targets at the last price control review were not sufficiently robust because of differences in definitions and the accuracy of reporting and because other factors (outside of the direct control of companies) such as inherited network design and consumer density were not adequately taken into account. Ofgem will need to ensure that the way in which targets are set improves on the approach used at the last review; and
- ◆ **realistic and achievable and consistent with the cost assumptions underlying the price controls** - the work on comparing quality of supply performance that is being undertaken by the industry and Ofgem should help in setting more robust targets.

5.18 Ofgem also needs to consider the appropriate period of time for which targets should be set. The August document explained that one way of improving the incentives on DNOs to focus their attention on the longer term performance of the network may be to set targets for quality of supply beyond the price control

period. For example, it may be possible to set targets that companies need to achieve in ten years time. A number of issues will need to be considered when deciding on the most appropriate length of time that targets should be set for:

- ◆ **the relationship between expenditure and performance will need to be better understood** - Ofgem does not want to set targets for companies that are inconsistent with the cost assumptions underlying the price control as this could expose both DNOs and consumers to an unnecessary level of risk;
- ◆ **whether it would be appropriate to set targets for outputs beyond the period for which detailed assessments of costs are made and the incentives that this would provide to companies;**
- ◆ **whether it was possible to build an appropriate level of flexibility to the arrangements** – both in terms of the targets and the allowed level of expenditure – so that both consumers and DNOs were provide with an appropriate level of protection from changing circumstances – for example changes in the regulatory, commercial or technical environment within which DNOs operate. Any arrangements for making adjustments would need to be clear and predictable.