

August 2002

**Developing network monopoly price
controls**

Initial consultation

Executive summary

This document sets out Ofgem's Initial Consultation on developing network monopoly price controls. Network companies have a crucial role to play in helping to ensure long term system security and the delivery of a good level of service to consumers and the aims of this project are to:

- ◆ improve 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
- ◆ lay the foundations for the next distribution price control review in 2003/04 including identifying the objectives, key issues and principles that will be used in setting the price control that will be implemented from April 2005.

The regulation of network monopoly companies covers a range of mechanisms including the RPI-X type price controls that are in place for the Distribution Network Operators (DNOs), Transco and NGC and the system operator (SO) incentive schemes that are in operation gas and electricity transmission. These work together in ensuring that consumers are protected and companies are provided with appropriate incentives for investment in and operation of the networks.

This consultation does not review the applicability or operation of either the SO incentive schemes or the regulation of Independent Gas Transporters (IGTs) and Independent Electricity Distributors (IEDs) as these are the subject of ongoing current work by Ofgem. The scope of this project therefore covers:

- ◆ the DNOs;
- ◆ the price control for Transco's Local Distribution Zones (LDZs) and the TO price control for Transco's National Transmission System (NTS);
- ◆ the TO price control for the National Grid Company (NGC); and
- ◆ the TO price control (when implemented under the BETTA arrangements) for the Scottish transmission companies

The project also has links with other important areas of work, including that being carried out by:

- ◆ the DTI, Ofgem and the industry on the arrangements for the connection of distributed generation to distribution networks;
- ◆ Ofgem on reviewing the structure of distribution charges;
- ◆ Ofgem on reviewing the incentives on DNOs to reduce electrical losses;
- ◆ Ofgem and the industry to develop a survey that will encourage the adoption of best practice in the asset risk management processes and policies of network companies; and
- ◆ Ofgem and the industry on developing competition in metering services.

Developing a generic approach for undertaking price control reviews will help to ensure that price control reviews are carried out in a consistent way for all network companies and increase the level of transparency in the regulatory process. The paper identifies the principal steps that Ofgem expects to follow in undertaking a price control review as including:

- ◆ developing the timetable and consultation process;
- ◆ identifying the objectives of the review;
- ◆ identifying the key issues for the review;
- ◆ specifying the principles to be used in setting the price control;
- ◆ identifying the outputs which regulated companies will be expected to deliver;
- ◆ identifying and specifying the appropriate incentive and price control framework to allow companies to deliver these outputs and meet the needs of their consumers;
- ◆ collecting and assessing the information to be used to set the price control;

- ◆ identifying the financial issues relevant to the price control;
- ◆ implementing the price control; and
- ◆ evaluating the review process.

and seeks views on the suggested approach to undertaking price controls and whether there are improvements that could be made to it.

The price control frameworks for the gas and electricity networks are substantially similar other than the existence of the SO incentive schemes for gas and electricity transmission systems, which have been implemented to meet issues relevant to transmission. There are also small differences between the frameworks in the way efficiency savings are treated, for example for what period companies are allowed to retain capital expenditure efficiencies.

These price control frameworks have worked well in providing companies with strong incentives to improve efficiency (and cut prices) while maintaining a good quality of service to consumers. For example:

- ◆ operating costs of the DNOs have fallen in real terms by around 30 per cent between privatisation and 2002, by around 35 per cent in respect of electricity transmission and 29 per cent in respect of gas transportation/distribution; and
- ◆ over £30 billion has been invested in the energy networks since privatisation and quality of supply has generally improved.

However, a number of interested parties, including the companies, NAO, academics and other commentators have suggested that there are a number of features of the existing arrangements that could be improved, in particular:

- ◆ the incentives provided to companies to operate efficiently;
- ◆ the incentives provided to companies to invest in the network; and
- ◆ balancing incentives for efficiency with improvements in quality of service.

It is important that where possible Ofgem should seek to introduce further improvements to network monopoly price controls. Ofgem presently plans to mainly focus on the above three areas as part of this project. Views are sought as to whether these should be the main areas of focus or whether other areas should be included.

The next distribution price control review is due to take effect in April 2005. Consistent with the approach Ofgem is taking to all price controls, this is now the stage to establish the objectives and key issues for the review and to identify the principles that will need to be considered in setting the price control. It is also the stage to set out a high level timetable identifying the major deliverables for the price control review – which will then be developed in more detail.

The objectives for the next price control will need to reflect Ofgem's statutory duties and the DNOs' statutory duties and licence requirements. The objectives will also need to take account of other influences such as the views of consumers, suppliers, generators and those of the DNOs, and the social and environmental guidance provided by the Secretary of State. An important factor here will be the forthcoming Energy White Paper.

Ofgem's initial thoughts on the high level objectives of the price control are 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 energy efficiency, the environment and social issues; and
- ◆ ensure that competition is promoted in the provision of supply connection and metering services.

All of these can be related directly to Ofgem's and the DNOs statutory duties (and licence requirements). In developing these objectives Ofgem will need to consider, in particular, the impact of other influences.

The key issues to be considered for the next price control will include those being considered as part of the general review of network price controls. In addition for the DNOs there will be issues specific to distribution networks, including:

- ◆ ***dealing with uncertainty*** - In setting price controls Ofgem must come to a view about the efficient level of costs that a company will need to incur over the period of the next price control. In doing so, it must make assumptions and forecasts about a number of variables including the level of demand, the number of consumers and the factors that may impact on the future costs of the company. One area of uncertainty, at least for the next price control, will be the level and nature of investment that will be required in relation to the connection of distributed generation. This reflects:
 - 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 could also have an impact on how the network is operated and thus on the operating costs of the company.

- ◆ ***developing the regulatory framework to deal with increased levels of distributed generation*** – Increases in the amount of distributed

generation raises important issues for the regulatory framework, including:

- ❑ putting in place interim measures for this price control period (up to April 2005) to allow generators to spread the costs of connection over a number of years;
- ❑ ensuring that DNOs receive appropriate incentives (and returns) for the connection of distributed generation in the next price control period and beyond (after April 2005);
- ❑ looking at whether specific arrangements need to be put in place to help facilitate DNOs to utilise distributed generation once it has been connected to the network;
- ❑ the impact of an increase in distribution generation could have on certain aspects of the regulatory framework; and
- ❑ looking at whether specific arrangements need to be put in place to encourage DNOs to develop their networks in a proactive, planned and efficient manner.

Ofgem is seeking views on these topics and whether there are other key issues specific to distribution networks that need to be considered and if so the arrangements to deal with them.

The timetable for this project, which will lead into the next DNO price control review in Spring 2003, is set out in the table below.

Date	Deliverable
2002	
September	Possible workshop
October	Second consultation paper
December	Update document
2003	
January	Possible workshop Bilateral meetings with interested parties
March	Principles document

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1. Introduction

Background

- 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. To help ensure that consumers' interests are protected Ofgem will continue to monitor these markets to ensure that they operate effectively.
- 1.2 There are some areas of the gas and electricity industries where companies retain an effective monopoly in the core services 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. In these circumstances, Ofgem seeks to protect the interests of consumers through the use of price controls and mechanisms such as standards of performance.
- 1.3 Price controls have worked well since privatisation in providing companies with strong incentives to improve efficiency (and cut prices) while maintaining a good quality of service to consumers. For example:
 - ◆ operating costs of the electricity distribution network operators (DNOs) have fallen in real terms by around 30 per cent between privatisation and 2002, by around 35 per cent in respect of electricity transmission and 29 per cent in respect of gas transportation/distribution; and
 - ◆ over £30 billion has been invested in the energy networks since privatisation and generally quality of service has improved.
- 1.4 Important steps have been taken in recent years, and further steps will be taken in the future, to improve the way in which price controls work. These steps have focused on providing companies with better incentives and consumers with additional protection. These have included:

- ◆ the introduction of an incentive scheme under the Information and Incentives Project (IIP) for the DNOs to strengthen the financial incentives to deliver the appropriate quality of service to consumers¹;
- ◆ the introduction of output measures for Transco under their price control;²
- ◆ reforms to network access arrangements and to the way in which network capacity is allocated. These reforms are designed to give transmission companies stronger signals to encourage them to invest in an efficient and timely way³; and
- ◆ the introduction of new incentive arrangements for the gas and electricity transmission companies to improve incentives for the efficient day-to-day operation of the networks.⁴

1.5 Ofgem has also introduced important changes at the time of price control reviews which have improved the way price controls work, including:

- ◆ an adjustment mechanism for expenditure as part of the Transco price control, which helps to deal with the uncertainty associated with the workload mix that needs to be undertaken and improves the financial stability of the company;
- ◆ the introduction of an adjustment factor in the price control for the National Grid Company (NGC), which is designed to deal with the uncertainty associated with the level of capital expenditure required to connect generation to the transmission network; and
- ◆ a commitment to allow DNOs to retain the benefits of capital expenditure efficiency gains for a longer period of time.

¹ Final proposals for the IIP incentive scheme for DNOs were published in December 2001. The scheme became operational on 1 April 2002 and will run until 31 March 2005.

² Ofgem expects to introduce a similar incentive scheme to the IIP for Transco from April 2004.

³ Ofgem published its views for the way forward in February 2002 (Transmission access and losses under NETA - revised proposals). These proposals have not yet been implemented but are under consideration by industry, which Ofgem expects will bring forward proposals for change.

⁴ Transco's National Transmission System: System Operator incentives 2002-7 Final Proposals, Ofgem, December 2001 and Transco price control and NTS SO incentives 2002-7: Explanatory notes to accompany the section 23 notice of proposed modifications to Transco's Gas Transporter Licence, Ofgem, April 2002.

Context of this review

- 1.6 It should be possible to introduce further improvements to network monopoly price controls. Ofgem's corporate strategy and plan, published in April 2002, identified five key objectives for the regulation of monopolies over the next three years:
- ◆ improving the signals and incentives for efficient investment in national transmission and local distribution networks;
 - ◆ improving the quality of service on networks, particularly local distribution networks;
 - ◆ encouraging best practice in asset risk management;
 - ◆ improving incentives with respect to distribution and transmission losses; and
 - ◆ ensuring that there are fair and transparent arrangements for distributed generation.
- 1.7 There are a number of other reasons that suggest it is timely to consider the way in which price controls are reviewed and implemented:
- ◆ Ofgem has recently undertaken price control reviews of all of the primary network monopoly companies⁵:
 - DNOs and Scottish Transmission in 1999;
 - electricity transmission in England and Wales in 2000; and
 - gas transportation and distribution in 2001.

NGC system operator incentive scheme from April 2002, Final proposals, Ofgem, February 2002.

⁵ There are no formal price control arrangements in place for Independent Gas Transporters (IGTs) or Independent Electricity Distributors (IEDs), although Ofgem has proposed interim measures to protect the consumers of these companies while it considers the nature of more permanent arrangements. These measures are set out in an open letter on Ofgem's website "Open letter on the regulation of new electricity distribution licence holders", 31 May 2002.

This provides an opportunity to learn lessons in the light of recent experience, for example to see if there are certain aspects of the present arrangements which could be improved or made more consistent;

- ◆ the Performance and Innovation Unit (PIU) published its report (The Energy Review) to government in February 2002 which raised a number of issues relevant to the regulation of network monopolies, including⁶:
 - the level of and incentives for investment in networks; and
 - the level of energy that should be supplied from renewable sources.

The Department of Trade and Industry (DTI) is consulting on the PIU's recommendations in advance of publishing a White Paper on energy policy around the end of this year⁷. The DTI's consultation document identifies a number of issues related to networks including:

- the security of supply;
 - energy efficiency and the role of combined heat and power (CHP) in contributing to reductions in carbon emissions; and
 - the contribution of electricity supplied from renewable sources.
- ◆ the National Audit Office (NAO) published a report on the regulation of the gas, electricity, telecommunications and water industries in April 2002.⁸ This generally supported the way in which price controls have been applied in these sectors, but also identified a number of issues on which regulators should focus, including:
 - that incentives to achieve efficiency savings are stronger towards the beginning of the price control period;

⁶ The Energy Review: A Performance and Innovation Unit Report, February 2002.

⁷ Energy Policy: Key Issues for consultation, DTI, May 2002.

⁸ Pipes and Wires: A report by the Comptroller and Auditor General.

- ensuring that regulators have adequate information to assess investment requirements and that the incentives provided to companies to invest are appropriate;
- ensuring that price controls allow an appropriate return for investors;
- looking at ways of reducing the perception of regulatory uncertainty; and
- looking at ways of reducing risks associated with the price control process, including the burden placed on regulated companies in reviewing price controls.

Ofgem has already taken steps to mitigate many of these issues - for example the introduction of the IIP incentive scheme and improvements in the annual reporting arrangements for accounting and quality of supply information. Ofgem will continue to look at ways of mitigating the concerns identified by the NAO, both as part of this project, and its wider work on regulating companies;

- ◆ a report produced by the Better Regulation Taskforce (BRTF) on utility regulation which identified a number of principles of good regulation - including transparency, accountability and consistency – and a number of specific recommendations including that regulators’ annual plans should include a clear explanation of how objectives will be prioritised and how decisions that are taken relate to the regulators’ objectives;
- ◆ under amendments to the Electricity Act 1989 and the Gas Act 1986, introduced by the Utilities Act 2000,⁹ Ofgem has increased social and environmental responsibilities. It is important to consider how the price control framework should be developed in the light of these responsibilities. There are specific issues to consider in this context including:

⁹ Ofgem has a range of duties relating to the environment, energy efficiency, and the interests of certain groups of consumers. These duties are explored in more detail in Ofgem’s Environmental Action Plan (August 2001 50/01) and the Annual Review (April 2002 31/02).

- the guidance that Ofgem receives from the Secretary of State on social and environmental issues;
 - the targets that have been set by the government for the amount of electricity to be supplied from renewable sources and CHP, which will mean that DNOs may need to respond to a significant increase in the amount of generation capacity wishing to connect directly to their networks;
 - the incentives that are provided to companies to reduce losses in the transmission and distribution of energy; and
 - the issues raised by the PIU report and the DTI's consultation document;
- ◆ there has also been, and continues to be, ongoing structural change within the energy industry through corporate transactions and other developments such as the emergence of separated asset-owner operator models. Ofgem published a document in May 2002, which set out its policy in relation to the treatment of mergers between DNOs. While this policy is not for consideration as part of this project, corporate transactions and other developments are likely to continue and it is important to consider the impact that these have on the way in which price controls are reviewed and implemented; and
 - ◆ various other interested parties including the DNOs, NGC, Transco, academics and other commentators have identified concerns with the way in which price controls presently work, including the incentives for achieving cost efficiencies and for undertaking investment.

Rationale

- 1.8 Network companies have a crucial role to play in helping to ensure long-term security of supply and the quality of service that consumers receive from transmission and distribution networks. 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 39 per cent of a typical domestic consumer's gas bill and 27 per cent of a typical domestic consumer's electricity bill.

- 1.9 Undertaking this project should help ensure 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; and
 - ◆ regulated companies have appropriate incentives to meet the demands of their consumers in an efficient manner and are able to finance their licensed activities and statutory obligations.
- 1.10 It is important that price controls continue to allow companies to fulfil their statutory and licensed obligations. This project has an important role to play in achieving this aim for price controls generally. It will also ensure that there is consultation and clarification of the key issues and objectives for the next DNO review at an early stage of the process.
- 1.11 The direct costs that Ofgem will incur from undertaking this project 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.

Scope, objectives and structure of the project

Scope

- 1.12 The regulation of network monopoly companies covers a range of mechanisms including the RPI-X type price controls that are in place for the DNOs, Transco and NGC and the system operator (SO) incentive schemes that have been introduced in gas and electricity transmission. These work together in ensuring

that consumers are protected and companies are provided with appropriate incentives for investment in, and operation of, the networks.

1.13 While this consultation encompasses issues relating to investment in networks it is not appropriate for this project to review the applicability or operation of the SO incentive schemes. These have been introduced to deal with the specific circumstances that are relevant in transmission and the operation of the schemes is being monitored separately by Ofgem.¹⁰ As part of the British Electricity Trading and Transmission Arrangements (BETTA) it is proposed that SO arrangements will be introduced which will operate on a Great Britain wide basis alongside Transmission Operator (TO) arrangements for the transmission systems in England and Wales and in Scotland. This will mean that there will be a separate TO function within the Scottish Transmission companies to which an RPI-X type price control will continue to apply. This will make the arrangements for transmission in Scotland more consistent with those for England and Wales.¹¹

1.14 This means that the scope of this 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 National Grid Company (NGC); and
- ◆ when implemented through BETTA, the TO price control for the Scottish Transmission companies.

1.15 As outlined above, 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. 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.

¹⁰ Revised SO incentive arrangements for NGC are due to be implemented in 2003.

¹¹ The Development of British Electricity Trading and Transmission Arrangements (BETTA): Ofgem/DTI report on consultation and next steps, May 2002

1.16 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 to develop a survey that will focus on the asset risk management processes and policies of network companies.

1.17 It is important that the linkages between these various projects are understood. Further details on the areas that they cover and the timetables are in Appendix 1.

Objectives

1.18 Given the considerations outlined above, the proposed objectives of the project are to:

- ◆ improve 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
- ◆ lay 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.

Structure

- 1.19 Ofgem proposes putting in place two main workstreams:
- ◆ *workstream 1* - developing the price control framework for all monopoly network companies; and
 - ◆ *workstream 2* - identifying the objectives, process, key issues and principles ahead of the next price control review in 2003/04.
- 1.20 Ofgem is also undertaking an internal review of lessons from recent price control reviews. The focus for this work will be on planning for the next distribution price control review, for example by looking at the use of consultants and the process for data collection. This work should help to improve the way the price control review is undertaken.

Purpose and structure of this document

- 1.21 The purpose of this document is to identify the key issues and questions that will need to be considered this year under this project and as part of the next distribution price control review in 2003/04. The document also sets out the timetable and process for the project. The structure of this document is as follows:
- ◆ developing a framework for undertaking price control reviews (Chapter 2) – this Chapter sets out a generic approach that Ofgem intends to use for undertaking price control reviews of network monopoly companies;
 - ◆ review of existing network monopoly price controls (Chapter 3) – this Chapter sets out a high level review of the existing price controls and highlights some of the concerns that various parties have identified with the present arrangements;
 - ◆ the next distribution price control review (Chapter 4) – this Chapter sets out Ofgem's initial thinking on the next DNO price control review and in particular on the objectives, key issues and principles for the review; and

- ◆ timetable and consultation (Chapter 5) – this Chapter sets out the timetable and consultation process for Ofgem’s work on developing network monopoly price controls.
- 1.22 Appendix 1 sets out an outline timetable of the work relevant to DNOs that Ofgem is undertaking in the next year. Appendix 2 contains a summary of a workshop held in May 2002 with the industry to discuss this project.

Responding to this document

- 1.23 In producing this document Ofgem has already held discussions with the DNOs, NGC and Transco, both on a bilateral basis, and as part of an industry workshop. 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.
- 1.24 Any responses to this document should be received by 17 September. They should be sent to:

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- 1.25 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 who can be contacted on 020 79017414 or on email at adrienne.monroe@ofgem.gov.uk.

2. Ofgem's proposed approach to undertaking price control reviews

Introduction

2.1 There are a number of important steps that need to be undertaken in setting price controls. These include identifying the objectives, key issues and process for the review and deciding on the appropriate incentive framework that will both protect consumers' interests and allow companies to fulfil their statutory and licensed obligations in an efficient manner. Setting out the way in which these steps are to be developed should help to ensure that price control reviews are carried out in an appropriate and consistent way for all network companies, and should increase the level of transparency in the regulatory process. This Chapter sets out initial thinking on the development of a generic approach to undertaking price control reviews for network monopoly companies.¹²

Setting price controls

2.2 Before setting out in more detail the issues relating to the review and implementation of price controls it is helpful to outline in broad terms how price controls are set. This requires an estimate of the level of revenue that would be sufficient to finance an efficient business. Price control revenue can be thought of as being made up of allowances for:

- ◆ operating expenditure – this covers the day to day costs of running the network such as staff costs, repairs and maintenance, planning, control and overhead costs. In setting the price control an allowance is made to cover the level of operating expenditure which an efficient company would be expected to incur over the period of the price control;
- ◆ capital expenditure – including spending on assets, such as overhead line, pipes and other plant, such as transformers. In setting the price control a projection is made of the level of capital expenditure that an

¹² For a variety of reasons changes may need to be made to price controls between the planned reviews, either for an individual company (e.g. for a merger) or more generally (e.g. for the pass through of licence fees). This document is primarily addressing the planned reviews. However, many of the principles will

efficient company would incur over the period of the price control. The benefits of capital expenditure are expected to last over several years so companies recover these costs over the assumed life of the asset, through an allowance for depreciation;

- ◆ financing costs – covers the costs an efficient company may be expected to incur in providing a reasonable return to the investors who provide the capital and other financial facilities it requires. The price control makes allowance for these costs by estimating a return on the value of the capital employed in the business (the regulatory asset value – RAV) equal to the return required by providers of finance (the cost of capital; and
- ◆ taxation – the price control must provide sufficient cashflow to cover the tax liabilities that an efficient company may be expected to incur, taking into account the prevailing rate of corporation tax and the level of gearing used in estimating the cost of capital. Ofgem provides for the tax liabilities through an allowance in its estimate of the pre-tax cost of capital.

2.3 These various elements are brought together in the calculation of overall price control revenue. A financial model is also used to check on the financial viability of the licensee.

An approach for undertaking price control reviews

2.4 There are several important steps in undertaking a price control review, including:

- ◆ developing the timetable and consultation process;
- ◆ reviewing companies' performance under the last price control and identifying any developments that could have an impact on the next price control;
- ◆ identifying the objectives for the review;

also be applicable for interim reviews, although the process may need to be adapted to reflect the particular circumstances.

- ◆ identifying the key issues for the review;
- ◆ specifying the principles to be used in setting the price control;
- ◆ identifying the outputs which regulated companies will be expected to deliver;
- ◆ identifying and specifying the appropriate incentive and price control framework to allow companies to deliver these outputs and meet the demands of their consumers;
- ◆ collecting information from companies which will be used to set the price control;
- ◆ assessing the efficiency of companies and projecting the level of costs (operating, capital and financial) that the regulator expects an efficient company to incur over the period of the next price control;
- ◆ developing the financial model which will be used in setting the price control and assessing the financial impact on companies;
- ◆ implementing the price control;
- ◆ evaluating the review process; and
- ◆ once the price control has been set monitoring companies' performance against it.

Timetable and consultation process

2.5 Reviewing and setting price controls requires significant resources from the regulator and regulated companies. Price control reviews also impact on the work of other interested parties including consumer representatives, investors and City analysts. At the outset it will be important to set out a clear, logical and achievable timetable for the review, which identifies the key stages in the process, including when:

- ◆ key policy issues should be resolved;
- ◆ consultation papers should be published; and

- ◆ information should be collected from network companies.

2.6 The timetable should allow companies and other interested parties to contribute effectively to the review process. This includes allowing an appropriate amount of time to respond to consultation documents and to complete information requests. It is also important that where practicable the timetable takes account of any external factors that could have an impact on the development of the price control. This may include guidance Ofgem receives from the Secretary of State on social and environmental issues. If it is necessary to change the timetable during the review process Ofgem would make this clear as soon as practicable and would generally seek views on any steps it intends to take in relation to these matters.

2.7 It is also important that the consultation process is open and transparent. Ofgem has taken important steps in this regard in recent reviews by making greater use of workshops and by publishing more information relevant to the price control, including some of the reports of its consultants and on how it has calculated the level of allowed revenue. Further improvements could be made to the consultation process, including:

- ◆ improving the way in which Ofgem explains how key decisions have been taken including how those views raised during the consultation process have been taken into account;
- ◆ making better use of workshops and seminars where interested parties have an opportunity to discuss issues in an open environment – workshops have worked well on a number of projects that Ofgem has undertaken in recent years such as the IIP and Ofgem will look to see how they can be better incorporated into the price control process;
- ◆ making better use of the website – Ofgem plans to launch an improved website towards the end of the year and will look at how it could be better used during a price control review process, particularly in making information more easily accessible; and
- ◆ publishing additional information relevant to the review – in addition to the steps identified above, Ofgem will continue to look at ways to

improve transparency in the price control process. One step would be to publish more information on the financial model used during the price control review process.

Reviewing companies' performance and regulatory developments

- 2.8 In planning for a price control review it is important to review companies' performance against the existing price control. This should help to identify the areas for improvement in the price control arrangements which could then be taken into account in identifying the objectives and key issues for the review. It will also be important to assess whether there have been any developments which could have an impact on the regulatory framework, including changes in legislation and industry structure.

The regulator's objectives

- 2.9 The objectives for a price control review have a significant impact on the form of price control that is implemented, the outputs that companies are expected to deliver and the incentive framework that is put in place. They can also impact on the way a review is carried out. It is important therefore that the objectives for a price control review are identified at an early stage of the process.
- 2.10 Ofgem considers that the objectives of a price control review are driven by three main factors:
- ◆ **the statutory duties of the regulator** – the decisions taken by Ofgem are primarily driven by its statutory duties as set out in the Gas Act 1986 and the Electricity Act 1989 (as amended by the Utilities Act 2000). The principal objective of Ofgem is to protect the interests of consumers (present and future), wherever appropriate by promoting effective competition. It also has other important duties, including those relating to the security and diversity of supply and for environmental and social issues. Ofgem also has a statutory duty to ensure that licence holders are able to finance their statutory and licence obligations;
 - ◆ **the statutory duties and licence requirements of the regulated company** – in addition to the statutory duties on regulated companies set out in the Gas Act 1986 and the Electricity Act 1989 (as amended by the Utilities

Act 2000), they also operate under the conditions of their licences and other statutory regulations such as those relating to Guaranteed Standards of Performance; and

- ◆ **other influences** - including:
 - the views of consumers and their representatives;
 - guidance from the Secretary of State on social and environmental issues;
 - requirements of other government departments and agencies, such as the Health and Safety Executive or the Environment Agency;
 - the views of other interested parties, including suppliers and providers of finance;
 - EU and UK legal requirements; and
 - corporate transactions and business structures.

2.11 In identifying the objectives for a price control review Ofgem will consider all these factors. It is also important that interested parties have an opportunity to provide feedback on the objectives before they are finalised. Many 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.

Key issues for a price control review

2.12 It is important that all interested parties have a good understanding of the key issues for a price control review at an early stage of the process. This will help to focus subsequent work on the project and allow time to develop appropriate solutions that will help to ensure that the objectives for the price control review can be achieved. Ofgem will consult on the key issues for a price control at the same time as it seeks views on the objectives for a review.

Identifying price control principles

- 2.13 Price control principles specify the way in which key features of the control will be assessed, including:
- ◆ the efficiency of companies – for example whether the efficiency of capital and operating expenditure are to be assessed separately or together in some measure of total costs;
 - ◆ quality of supply targets – for example whether targets are set on the basis of comparative analysis of companies' performance or companies own performance over time; and
 - ◆ the approach to financial issues – for example the way in the cost of capital will be estimated and the approach to depreciation.
- 2.14 These principles can have a significant impact upon the incentives that are provided to companies. It is important that where practicable there is an early understanding of how these will be applied in setting the price control.

Identifying outputs

- 2.15 In assessing the level of expenditure (the inputs) that an efficient company may be expected to incur it is important that the regulator, consumers and the company itself, understand what outputs are required to be delivered in return. Outputs can cover a number of areas, including:
- ◆ the price that consumers pay; and
 - ◆ the quality of service that companies deliver.
- 2.16 Specifying the nature and level of outputs provides clarity to companies and helps enable them to plan and initiate investment projects effectively. It also provides the regulator with a tool for monitoring and incentivising the performance of companies on an ongoing basis to help meet its principal objective of protecting the interests of consumers.
- 2.17 The nature and level of the outputs will be influenced by a number of factors including the requirements of government, the preferences of consumers, the

views of the regulated company itself and the costs of actually achieving the outputs. It is also important to understand the relationship between output measures so that the regulator can help ensure that companies do not have conflicting or perverse incentives.

- 2.18 Careful consideration needs to be given to the way in which consumers' preferences are identified as this is not straightforward. A number of different techniques have been used previously including focused survey questionnaires and consultation with consumer representatives. As part of a price control review Ofgem will look at the best way in which consumers' preferences should be assessed.

Identifying the incentive and price control framework

- 2.19 The incentive and price control framework are the primary mechanisms through which companies' behaviour is incentivised. In order for Ofgem and companies to meet their statutory and licensed duties it must provide the incentives that a company needs to operate efficiently, provide an appropriate level of service to consumers and maintain asset integrity and system security.
- 2.20 At the highest level the framework must protect the interests of present and future consumers while allowing companies to finance their licensed activities. At a lower level this means incentivising companies across a number of areas so that specific objectives for the review (and related outputs) can be achieved:
- ◆ investment – companies need to be provided with appropriate incentives to invest in the network in a timely and efficient way so that:
 - long term system security and quality of service is maintained;
 - changes in the level or pattern of demand can be met;
 - demands from consumers for connection to the network can be met; and
 - changes in the use of the system can be facilitated.

- ◆ efficiency – companies need to be provided with appropriate incentives towards efficiency (in terms of their operating, capital and financing costs) in meeting their statutory duties and licensed requirements;
- ◆ demands of consumers – companies need to be provided with appropriate incentives to help ensure that they meet the demands of their consumers, including providing an appropriate quality of service; and
- ◆ other areas – there may also be other areas in which companies need to be incentivised, including on environmental and social concerns.

Collecting information from companies

2.21 In order to set price controls Ofgem needs to collect information from regulated companies. This information will include both historical and forecast costs (both operating and capital) and other data such as the amount of energy distributed or transmitted. The collation of this information for periodic reviews places a burden on regulated companies. This is one reason why Ofgem has increased the emphasis on collecting information on an annual basis. New annual reporting arrangements for quality of service have been put in place for electricity and gas distribution and significant improvements have been made to the regulatory accounts that network monopoly companies submit each year. This should help to reduce the amount of information that is requested at the time of a price control review – particularly as the improved reporting arrangements become more mature.

2.22 Identifying the objectives and the key issues for the price control review at an early stage will also help to focus subsequent requests for information. Ofgem will continue to look at ways in which information can be requested from companies more effectively. This could include collecting information at different stages of the review to spread the burden on the companies. It will also be important to allow an appropriate amount of time for companies to provide feedback on draft versions of the main information requests. Ofgem will also seek to explain to companies the reason why it is collecting information.

Assessing efficiency and projecting future costs

- 2.23 As identified above, it is appropriate to assess the efficiency of companies and to make a projection of the future level of costs (operating, capital and financial) that an efficient company is expected to incur over the period of the next price control. This area of work has been the most significant in terms of the amount of resources that it requires from both Ofgem and the companies.
- 2.24 In assessing efficiency and projecting the future level of costs Ofgem uses a number of techniques and looks at a number of different sources of information, including:
- ◆ analysis of company specific information – as part of the price control review companies provide information both on their present and forecast costs. These are analysed to test for reasonableness and in particular to understand in detail how they have been derived, including looking at any assumptions that have been made;
 - ◆ comparative analysis of companies' costs – this includes the use of benchmarking techniques such as regression analysis and comparison of key cost ratios and unit costs. Comparative analysis has been used extensively in setting price controls for the DNOs, particularly for assessing the level of operating expenditure. It has been used less extensively for NGC and Transco; and
 - ◆ analysis of market data – the regulator also has regard to market data particularly when estimating various components of the cost of capital, and also for analysing operating and capital expenditure - for example looking at the level of general procurement and employment costs.
- 2.25 In setting the price control Ofgem will have regard to the information and analysis described above and the need to ensure that the level of allowed costs is sufficient to allow the company to:
- ◆ provide an appropriate quality of service to its consumers;
 - ◆ maintain asset integrity and ensure system security;

- ◆ meet its statutory and licensed obligations; and
- ◆ provide a reasonable return to capital providers.

Developing financial modelling

2.26 In setting a price control Ofgem must have regard to its statutory duty to ensure that companies can finance their licensed activities. Ofgem uses a financial model to help assess the financial impact of the new price control on the company. This involves looking at the financial position and viability of the licence holder in the light of the proposed price control. This has focused on the ability of the licence holder to maintain a stable 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 efficient level of costs that a company should incur. Particular attention is paid to the levels of cover for interest and dividend payments, with a view to seeking to ensure that companies can maintain a stable credit rating comfortably within the investment grade category. In certain circumstances it may be necessary to make certain adjustments to the price control to help ensure that the financial ratios remain stable over time. For example, during the last DNO price control review an adjustment was made to the depreciation profile of the companies to help maintain the key financial ratios. An adjustment was made to the treatment of replacement capital expenditure under the Transco price control for the same reason. The intention is to use this approach at future price control reviews, although it will be necessary to review market conditions and the particular circumstances of companies.

2.27 To help ensure that financial models are robust they will continue to be subject to external audit. In order to improve transparency in future a version of each financial model will be published together with an explanatory guide.

Implementing the price control

2.28 Implementation of the price control requires changes to the existing licence conditions of the regulated company and/or the introduction of new licence conditions. The process that needs to be followed for making licence

modifications is set out in the Gas and Electricity Acts. This varies depending on the type of condition being introduced or the nature of the changes that are being proposed. The drafting of changes to the licence is usually an iterative process. It will be important to begin this process well in advance of the time when the changes will need to be subject to a statutory consultation process. Initial thinking on the nature of the changes that would need to be made to the licences should be published as early as practicable in the review process. The intention is that by the time final proposals are published Ofgem will be in a position to make available to companies a detailed draft of the changes to the licence that will be required to implement the new price control. Ofgem would then expect to produce, and publish for comment, a revised version of the licence modifications before it issued the statutory consultation on the licence amendments.

Assessing the review process

- 2.29 It is important that following the completion of the price control review the process is assessed, including where appropriate, against the objectives that were identified at the outset. Interested parties should be given an opportunity to contribute to the assessment and as such Ofgem will publish an initial review document soon after the price control has been implemented. Once Ofgem has considered responses to this document it will publish a final document which will identify any lessons that it intends to implement for the next price control review.

Monitoring price controls

- 2.30 Once a price control has been implemented there is a need for an ongoing process to review companies' performance – both in terms of the amount of revenue they collect from consumers and any outputs which they are required to deliver. It is important that the monitoring regime does not place an unnecessary burden on regulated companies and the regulator. It will be important to consider the ongoing costs of regulation as an input in making decisions on the price control.

Issues for consultation

2.31 Views are invited on any aspect of the issues raised in this Chapter and in particular on:

- ◆ whether the steps identified in paragraph 2.2 are appropriate;
- ◆ what information should be published as part of the review process;
- ◆ the approach to identifying the objectives, principles and key issues for the price control review;
- ◆ what considerations should be taken into account in specifying outputs;
- ◆ the approach to establishing the appropriate incentive framework; and
- ◆ the way in which the price control review process should be assessed.

3. Review of existing network monopoly price controls

Introduction

- 3.1 Chapter one explained that an important part of this project is a high level review of the existing RPI-X price controls for the network monopoly companies. The purpose of this review is to assess whether there are any features of the existing arrangements, common to all networks, that could be improved and if there is a need to increase the level of consistency between the various price controls.
- 3.2 This Chapter identifies a number of areas of the present price control arrangements that need to be looked at in greater detail to see if improvements could be made, including:
- ◆ the incentives provided to companies to operate efficiently;
 - ◆ the incentives provided to companies to invest in the network; and
 - ◆ balancing incentives for efficiency with improvements in quality of service.

Consistency of price controls¹³

- 3.3 The table below sets out a high level summary of the price controls that are presently in place for gas and electricity distribution and transmission. It shows that the main difference in the price control frameworks is the existence of SO incentive schemes for gas and electricity transmission – which as explained earlier have been implemented to meet particular issues relevant to transmission. There are also a number of smaller differences in the way in

¹³ Further details on the nature of the various businesses and the price control and incentive frameworks that are presently in place can be found in the following documents:

- Transco SO incentives: 'Transco's National Transmission System: System Operator incentives 2002-7 Final Proposals', Ofgem, December 2001 and Transco price control and NTS SO incentives 2002-7: Explanatory notes to accompany the section 23 notice of proposed modifications to Transco's Gas Transporter Licence April 2002.
- Review of Transco's price control from 2002 – final proposals', Ofgem, September 2001.
- The transmission price control review of the National Grid Company from 2001: Transmission asset owner Final proposals, September 2000, and NGC system operator incentive scheme from April 2002, Final proposals, Ofgem, February 2002.
- Review of Public Electricity Suppliers 1998 to 2000 Distribution Price Control Review Final Proposals, December 1999.

which efficiency savings are treated, for example on how long companies are allowed to retain capital expenditure efficiencies, but in general there appears to be a reasonably high degree of consistency in the present arrangements.

- 3.4 A number of interested parties including the companies, the NAO, academics, and other commentators have suggested that there are a number of features of the existing arrangements that could be improved. The rest of this Chapter identifies some of these concerns and identifies the issues that will need to be considered in assessing whether any changes should be made.

Table 1: Key features of the price controls in electricity and gas transmission and distribution¹⁴

	Distribution	National Grid Company	Transco
Duration	<p>Main price control</p> <p>5 years (new price control to be implemented from April 2005)</p>	<p>Main price control</p> <p>5 years (new price control to be implemented from April 2006)</p>	<p>Main price control</p> <p>5 years (new price control to be implemented from April 2007)</p>
Price control framework	<p>Main price control</p> <p>The price control covers the main regulated functions of DNOs and provides revenue for day-to-operation of and investment in the network – including the provision of certain metering services.</p> <p><i>Dealing with uncertainty</i></p> <p>Incentives to meet changes in baseline assumptions of units distributed provided by a revenue driver, which is 50:50 weight of actual units distributed and forecast customer numbers (an average revenue price control).</p> <p>Change of law/public inquiry re-opener included in licence which allows for the company to apply for a disapplication of the price control.</p> <p>Additional incentive mechanisms</p> <p>IIP incentive scheme exposes up to 2 % of regulated revenue depending on quality of service delivered to consumers, including on the number and duration of interruptions to supply.</p> <p>Losses incentive mechanism provides incentive to DNOs to reduce amount of electrical losses.</p>	<p>Main price control</p> <p>The main price control covers the TO function of the transmission business.</p> <p><i>Note:</i></p> <p>Separate incentive scheme for the SO function of the transmission business which are due to be reset in 2003.</p> <p><i>Dealing with uncertainty</i></p> <p>Incentives to meet changes in the baseline assumptions of the amount of new generation connected to the transmission network under the main price control provided by an annual correction factor which allows the company to collect £23 million for each additional Gigawatt (GW) of generating capacity connected. A relevant 'output' measure is monitored.</p> <p>Change of law/public inquiry re-opener included in licence, which allows for the company to apply for a disapplication of the price control.</p> <p>SO incentive scheme</p> <p>A single incentive scheme to provide incentives to the SO to minimise all SO costs incurred in operating the transmission system on a day-to-day basis, ensuring that generation and demand are matched and maintaining the quality and security of supplies (system balancing).</p>	<p>Main price control</p> <p>The main price control covers the LDZs and the National Transmission System (NTS) in its role as transmission asset owner.</p> <p><i>Note:</i></p> <p>Separate incentive scheme for the SO function of the transmission business.</p> <p>Separate tariff cap on certain metering services provided by the LDZs.</p> <p><i>Dealing with uncertainty</i></p> <p>No revenue driver in NTS TO price control (a total revenue cap).</p> <p>Revenue driver included in LDZ price control to meet changes in baseline assumptions in the amount of gas transported.</p> <p>A 'comfort letter' provided to Lattice by Ofgem sets out the categories of cost changes that would be considered for a re-opening of the price control and the process and mechanics for doing so.</p> <p>Change of law/public inquiry re-opener included in licence, which allows for the company to apply for a disapplication of the price control.</p> <p>SO incentive scheme</p>

¹⁴ This table does not include Scottish Transmission price control.

			<p>Separate incentive scheme for the SO function of the transmission business provides incentives to meet changes in baseline assumptions of linepack and entry/exit capacity through short/long term auction framework.</p> <p><u>Additional incentive mechanisms</u></p> <p>IIP style incentive scheme proposed to be introduced from April 2004 under the main LDZ price control.</p>
Costs and incentives	<p><u>Operating expenditure (Opex)</u></p> <p><i>Assessing efficiency</i></p> <p>Operating cost efficiency of the DNOs assessed using a combination of regression analysis and comparative assessment of key business functions and activities.</p> <p><i>Incentives</i></p> <p>Provided by the 5 year price control period and the benchmarking of costs.</p> <p><u>Capital expenditure (Capex)</u></p> <p>Commitment given at the last price control review to allow DNOs to retain the benefits of any Capex efficiency savings for a fixed period of 5 years regardless of when the saving is made during the price control period (this does not apply to metering assets). This is subject to DNOs meeting their obligations on the quality and security of supply.</p> <p>Non-operational Capex (e.g. on IT) is treated as an expensed item and is not included in the Regulatory Asset Value (RAV) of the DNO.</p>	<p><u>Operating expenditure (Opex)</u></p> <p><i>Assessing efficiency</i></p> <p>Operating cost efficiency of NGC mainly assessed using a detailed analysis of key business functions and activities.</p> <p><i>Incentives</i></p> <p>Provided by the 5 year price control period.</p> <p><u>Capital expenditure (Capex)</u></p> <p>The costs of a system protection project proposed by the company were excluded from the Capex allowance. However Ofgem indicated that if the company incurred the expenditure and it was assessed as efficient there is a commitment to include it in the RAV at the time of the next price control review.</p> <p>Non-operational Capex (e.g. on IT) is treated as an expensed item and is not included in the Regulatory Asset Value (RAV) of the TO business.</p> <p><u>Note:</u></p> <p>IT capex related to the costs of introducing and operating the SO incentive scheme are included in the SO RAV on the basis of an assumed 7 year asset life.</p>	<p><u>Operating expenditure (Opex)</u></p> <p><i>Assessing efficiency</i></p> <p>Operating cost efficiency of the LDZs assessed using a combination of comparative analysis and detailed analysis of key business functions and activities.</p> <p><i>Incentives</i></p> <p>Provided by the 5 year price control period.</p> <p><u>Capital expenditure (Capex)</u></p> <p>50% of replacement expenditure is expensed and 50% is included in the RAV.</p> <p>Annual adjustment mechanism in place for deviations from the allowed level of replacement expenditure: 33% of any underspend is passed back to consumers and 50% of any overspend is funded by the price control. Also the 5 year total spend must not be more than the 5 year total allowance. Also no adjustment will be made to the RAV for any differences (under-or-over spend) between actual and allowed expenditure.</p> <p>There is no separate category for non-operational capital expenditure.</p>
Cost of capital	6.5 % pre-tax real	6.25 % pre-tax real	6.25 % pre-tax real 7% pre-tax real for metering price control

Incentives towards efficiency

3.5 RPI-X has worked well since privatisation in providing the network monopoly companies with strong incentives to reduce their operating costs. However, concerns have been raised over the incentives the present framework will provide for achieving efficiency savings in the future. These concerns can be broadly broken down into two main areas:

- ◆ the strength and periodicity of incentives; and
- ◆ the distortion of incentives between opex and capex.

The strength and periodicity of incentives

3.6 Concerns have been raised that price controls need to provide companies with stronger ongoing incentives to achieve efficiency savings. This is because the scope to achieve efficiency savings has been diminished since privatisation. It is argued that this is compounded by the issue that under the existing arrangements the benefit that a company realises from achieving cost efficiencies (both capital and operating) may be influenced by the timing of when the saving is made. This is because the company retains the benefit of the cost saving only up until it is passed back to consumers in setting the new price control, i.e. it receives greater benefits from cost reductions that are made towards the beginning of the price control period. It has been argued that this periodicity:

- ◆ means that the timing of when a company achieves efficiency savings is, at least in part, driven by the price control framework rather than commercial or economic considerations; and
- ◆ increases the possibility that the regulated company will try to game the regulatory process by delaying efficiency savings.

3.7 A number of different approaches have been put forward with the aim of providing companies with stronger incentives to achieve efficiency savings. These have included increasing the duration of the price control period beyond the present level of 5 years and introducing a rolling adjustment mechanism so that companies retain the benefits of cost efficiencies for a fixed period of time regardless of when the saving is achieved. The latter approach was taken by

Ofwat in 1999 for both operating and capital expenditure efficiencies and Ofreg has recently proposed adopting similar arrangements for Northern Ireland Electricity (NIE).¹⁵ Allowing companies to retain efficiency savings for a fixed period of time is also one way of resolving the issues raised by the periodicity of incentives.

3.8 It is important that companies have appropriate incentives to achieve efficiency savings. If there is evidence that these incentives are not sufficiently strong then Ofgem will need to look at ways of strengthening them. Ofgem also recognises that the present arrangements may introduce an element of periodicity to the incentive framework and that this may distort the timing of when companies make efficiency savings. This is not a desirable feature of the present arrangements and Ofgem intends to look at ways in which this could be improved. In looking at whether any changes should be made Ofgem will also need to ensure that:

- ◆ consumers are provided with the appropriate level of protection, i.e. Ofgem needs to ensure that there is an appropriate sharing mechanism for efficiency savings between companies and consumers;
- ◆ there is an appropriate balance between the incentives to:
 - achieve efficiency savings;
 - provide a good quality of service to consumers; and
 - ensure that the longer term performance and security of the network is maintained.

The distortion of incentives between capital and operating expenditure

3.9 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:

¹⁵ Final Determinations: Future Water and sewerage charges 2000-05, Ofwat, November 1999 and Transmission and Distribution Price Control Review: Final Proposals for Northern Ireland Electricity plc, Ofreg, June 2002.

- ◆ 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.

3.10 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. Various approaches have been proposed to reduce this perceived distortion. These include 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 option would be to provide more balanced efficiency incentives between capital and operating expenditure.

3.11 If any further changes need to be made in this area Ofgem will need to consider:

- ◆ whether there is a significant trade-off (or substitution effect) between operating and capital expenditure – there are two principle sources to the trade-off between operating and capital expenditure:
 - the accounting trade-off – In reporting costs companies must allocate them between operating and capital expenditure. The boundary between operating and capital expenditure for network companies has not been well defined in the past and this has led to inconsistent reporting. To help ensure that companies' report costs as consistently as possible Ofgem has set out detailed regulatory accounting guidelines (RAGs).¹⁶

¹⁶ 'Final proposals on regulatory accounts', Ofgem, November 2001 sets out principles. 'Electricity Distribution Businesses Regulatory Accounting Guidelines: Working Paper', Ofgem, July 2001 sets out RAGs for DNOs. RAGs for NGC, Scottish Transmission and Transco will also be published.

Companies are due to submit information based on the RAGs this summer for the first time. Ofgem will review the information and consider whether any changes need to be made to the RAGs. This should help reduce the level of uncertainty regarding the allocation of costs; and

- the operational trade-off – It has been argued that companies have some flexibility in deciding on whether to invest in the network (e.g. replace an asset) or continue to incur operating expenditure (e.g. through repairs and maintenance). If companies' expenditure plans are substitutable between capital and operating expenditure then it may be appropriate to reflect this in the way efficiency is assessed; and
- ◆ the need to ensure that if incentives to achieve efficiencies are strengthened that companies also have appropriate incentives to ensure that consumers receive a good quality of supply and that the longer term performance and security of the network is maintained.

Assessing efficiency

3.12 Chapter 2 explained the broad approach that Ofgem has taken in assessing the efficiency of network monopoly companies. A number of concerns have been raised about this, including that:

- ◆ the benchmarking techniques that have been used are not sufficiently robust methods on which to assess efficiency – Chapter 2 explained that in assessing efficiency Ofgem looks at a range of information and uses a number of different techniques. All of these are considered in coming to a view about the efficiency of a company. Ofgem will continue to look at ways in which its approach to assessing efficiency can be improved including the benchmarking techniques that are employed and gaining a better understanding of the cost drivers of companies;
- ◆ it is not appropriate to assess the efficiency of operating and capital expenditure separately as there is a trade-off between the two – as

explained above Ofgem is looking at whether it is appropriate to use a total cost approach in assessing companies' efficiency; and

- ◆ in assessing efficiency appropriate account should be taken of the outputs that a company delivers – this would provide a balanced assessment of companies' overall performance and would help to overcome some of the problems identified in paragraph 3.16. To date, only limited progress has been made with respect to these matters. One of the reasons for this has been the quality of information that has been available on costs and outputs. Ofgem has taken important steps in this area in the last two years by putting in place standard definitions and guidance for the reporting of costs and quality of service.¹⁷ These measures should facilitate the analysis of cost and quality levels and trade-offs in the future. Ofgem will be looking at different ways of achieving this objective as part of this project.

The impact of corporate transactions and changes in industry structure

- 3.13 In setting price controls, particularly for the DNOs, Ofgem has made significant use of comparative analysis both for assessing the efficiency of the companies and increasingly for setting quality of supply targets.¹⁸ Mergers between DNOs have reduced the number of independent groups operating or owning distribution companies which has led to a detrimental impact on the role which comparisons can play at or between price controls.¹⁹ Ofgem set out its policy with respect the treatment of mergers between DNOs in its May 2002 document.²⁰ Mergers raise two important issues for price controls which will need to be considered:

¹⁷ RAGs and Regulatory Instructions and Guidance (RIGs). For DNOs: Information and Incentives Project Regulatory Instructions and Guidance version 2, Ofgem, March 2002. For Transco: Review of Transco's Price Control from 2002 - Regulatory Instructions and Guidance for Reporting Outputs, Ofgem, February 2002.

¹⁸ At present all of the LDZs are owned and operated by Transco and are subject to a single price control, although has begun work to put in place separate price control arrangements for each of 8 network management units, which are in turn each made up of either 1 or 2 LDZs. An initial consultation document on the issues that this raises was published in July 2002 Separation of Transco's distribution price control: Initial consultation document, Ofgem, July 2002.

¹⁹ Mergers can also provide benefits to consumers if they generate efficiency savings which are greater than those of the single entities.

²⁰ Mergers in the electricity distribution sector: Policy Statement, Ofgem, May 2002.

- ◆ the impact on the nature of the comparative analysis that can be undertaken. For example, it may be necessary to consider what adjustments need to be made to companies' allocation and attribution of costs to ensure that companies can continue to be compared; and
- ◆ the way in which efficiency savings will be treated in setting the price control. Ofgem's May 2002 policy statement set out its broad proposals for the treatment of efficiency savings. Consideration will also need to be given to the approach taken at the last DNO price control review in 1999 and the consultation documents that were published by Ofgem for each relevant merger.

Incentives to invest and quality and security of supply

- 3.14 It is important that companies have appropriate incentives to invest in the network to help ensure that consumers receive a good quality of supply and to maintain system security and the integrity of network assets. Some concerns have been raised that the present arrangements provide some disincentive to companies in this area. These concerns mainly relate to the uncertainty that companies face regarding how capital expenditure will be treated in setting price controls and the length of time for which capital allowances are set.
- 3.15 In looking at capital expenditure the regulator faces two main issues:
- ◆ setting an allowance that is sufficient to allow a company to meet its quality of supply commitments and maintain system security and asset integrity taking account of likely future demands on the system; and
 - ◆ providing incentives to companies to achieve these 'outputs' as efficiently as possible.
- 3.16 Striking a balance between these two issues is not straightforward. This is because it can be difficult to establish a robust relationship between output measures and the expenditure that companies incur in running and operating the network. For example, efficiency savings may be made by deferring investment in a way that does not have a detrimental impact on quality of supply in the short term but could reduce the future security and integrity of the network. It is

recognised that efficiency savings can be achieved through changes to the design of the network or the way it is operated, which could also improve the future security and integrity of the network.

3.17 One way of trying to mitigate this problem is to strengthen the incentives that companies are provided with to deliver relevant output measures and/or place increased focus on the monitoring of outputs . A number of developments have been made in this area, including:

- ◆ introducing a quality of service incentive scheme for DNOs under the IIP;
- ◆ developing an asset risk management survey for all network monopoly companies;
- ◆ extending the existing requirement on NGC to produce a long term development statement to the DNOs; and
- ◆ introducing the SO incentive schemes for NGC and Transco.

3.18 By strengthening incentives on the delivery of output measures, Ofgem and consumers can gain more comfort that efficiency savings (particularly on capital expenditure) should not lead to a significant and detrimental impact on quality of supply, system security and asset integrity.

3.19 It is also important that where possible Ofgem provides companies with clarity about how their expenditure will be treated in setting price controls. Ofgem has provided a commitment to DNOs that they can retain the benefits of capital expenditure efficiencies for a fixed period of five years as long as they meet their quality of supply commitments. Ofgem needs to consider the way in which this commitment will be implemented. In particular, it will need to consider how to treat those companies that fail to meet their obligations with respect to the security and quality of supply. This will be taken forward as part of this year's work on the distribution price control (Chapter 4).

3.20 It has also been suggested that the periodic nature of price controls creates an incentive on companies to base their cost forecasts on what they will be required to deliver in the forthcoming price control period, i.e. it leads to

companies focusing their horizon on the price control period, rather than the longer term. Ofgem and the industry have been developing the asset risk management survey as one way of mitigating the impact of the periodicity of price controls. Other steps could include setting longer term targets for quality of supply. At present the targets that have been set for the quality of supply coincide with the duration of the price control. One way of focusing companies' attention on the longer term performance of their network would be to set longer term targets for quality of supply. This would require a better understanding of the relationship between expenditure and quality of service than has been apparent in previous price controls. Given the problems associated with projecting costs, it may also be necessary to build in some flexibility (both in terms of the targets and the allowed level of expenditure). In such circumstances it would be necessary to put in place clear and transparent rules for making adjustments otherwise companies could be exposed to additional uncertainty.

- 3.21 Ofgem will continue to look at ways in which it can improve the incentives that companies have to invest in the network in an efficient and timely manner. In particular, it will look at whether it is possible to set quality of supply targets for a longer period of time and ways in which companies can be provided with additional clarity about how expenditure will be treated in setting price controls.

Other issues associated with capital expenditure

- 3.22 Under the present arrangements the treatment of non-operational capital expenditure (e.g. IT) differs across the network companies:
- ◆ under the DNO and TO price control for NGC non-operational capital expenditure is not capitalised and is not added to the RAV;
 - ◆ under the Transco TO price control no distinction is made between operational and non-operational capital expenditure, i.e. it is all added to the RAV;
 - ◆ under the SO incentive scheme for NGC, IT expenditure is included in the RAV and depreciated over seven years; and

- ◆ under the SO incentive scheme for Transco, some IT expenditure is included in the RAV and depreciated over five years.

3.23 It has been argued that the regulatory treatment of non-operational capital expenditure could represent a barrier for firms to seek out further efficiencies. This is because some efficiency savings could be realised from increased (or better) use of non-operational capital expenditure (e.g. better use of IT). These companies have argued that non-operational capital expenditure should be capitalised and allowed to earn an appropriate rate of return for the duration of its assumed life.

3.24 Ofgem intends to consider whether it would be appropriate to take a different approach to the treatment of non-operational capital expenditure. In doing so a number of important questions will need to be looked at, including:

- ◆ whether the present arrangements do act as a significant barrier to companies – if the efficiency savings or improved working practices that this type of investment could deliver are significant enough they may outweigh any risk to the company that the investment is not included in the RAV;
- ◆ consistency with the arrangements in place under the various price controls and SO incentive schemes;
- ◆ over what period of time the expenditure should be depreciated if it is included in the RAV – it is unlikely that the types of assets that could be classified as falling into this category will last as long as other network assets such as transformers or pipes and cables. This would mean assessing the most appropriate life which could add more complexity to the way in which the price controls work; and
- ◆ the different treatment of non-operational capital expenditure could raise issues of monitoring – it would be necessary to define on a robust basis what expenditure would be classified as non-operational. This could introduce a significant burden on both the regulated companies and Ofgem.

3.25 Ofreg has recently indicated that it intends to treat certain categories of investment expenditure on a differential basis by allowing it to earn an additional rate of return of 1% over and above the 'standard' allowed level. Ofreg has indicated that these assets would be depreciated over ten years once they have entered the RAV. This approach is being applied to expenditure which they consider avoids network expenditure, i.e. that related to:

- ◆ demand side management; and
- ◆ distributed (or embedded) generation.

3.26 Ofreg has argued that these, and other changes to the price control arrangements, will help to incentivise the management of the regulated company to meet the demands of consumers whilst maintaining (or improving) returns to shareholders. It is not clear at this stage how these arrangements will work in detail.

3.27 Ofgem will need to look at whether there are any lessons to be learnt from the approach taken by Ofreg in this area. A number of issues will need to be considered, including:

- ◆ the definitional issues identified above for non-operational capital expenditure;
- ◆ whether any additional return is commensurate with additional risks that a company may incur from undertaking the investment; and
- ◆ whether there is any distortion of investment decisions if certain categories of expenditure are allowed to earn a higher rate of return.

Cost of capital

3.28 The allowed cost of capital that is estimated in setting a price control 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 invest. Conversely if the allowed cost of capital is greater than the financing costs companies could have an incentive to over invest. It is important therefore that

the allowed cost of capital is calculated on a robust basis. A number of concerns have been raised about the way in which the different regulators have calculated the cost of capital for regulated utilities. These concerns have focused on three main areas:

- ◆ the degree of consistency in the approach taken across regulators;
- ◆ whether the approach is able to estimate on a robust basis the return that investors require for providing finance to utility companies; and
- ◆ whether the approach is appropriate given the possible scope and nature of future investment requirements.

3.29 The UK's utility regulators are in the process of commissioning a joint study on certain aspects of the cost of capital for regulated utilities. This objectives of this study focus on:

- ◆ providing an independent view of the extent to which a reasonable degree of consistency in the approach to the cost of capital has been achieved by regulators, including identifying reasons why there may differences in approach; and
- ◆ identifying the best current approach to estimating the cost of capital for regulated utilities.

3.30 As part of this project Ofgem will need to look at whether any lessons from the cost of capital study should be taken into account in the way in which it regulates network monopoly companies.

Key issues and questions

3.31 Views are invited on any aspect of the issues raised in the Chapter and in particular on:

- ◆ whether there are any areas of inconsistency in the present price controls where greater consistency would benefit consumers;
- ◆ the most appropriate approach to dealing with concerns regarding the periodicity and strength of incentives provided to companies to achieve

efficiency savings, including whether companies should be allowed to retain efficiencies for a fixed period of time regardless of when the saving is made;

- ◆ the most appropriate way of assessing companies' efficiency including:
 - whether a total cost model could be used to mitigate concerns regarding the distortion of incentives between operating and capital expenditure;
 - whether quality should be included when assessing efficiency and if so, how;
 - the impact of corporate transactions and changes in industry structure on the way price controls are reviewed and implemented, and in particular on the type of benchmarking (of both costs and quality of service) that can be carried out and the issues that need to be considered in making these comparisons; and

- ◆ the best way of ensuring that companies continue to have the right incentives to invest in a timely and efficient manner to provide a good quality of service to consumers and maintain system security and in particular looking at the relationship between capex and the RAV, including:
 - the way in which capex efficiencies are reflected in the RAV and how the regulator should monitor companies' performance on an ongoing basis to ensure that quality of service, asset integrity and system security are maintained;
 - whether non-operational capital expenditure should continue to be excluded from the RAV;
 - whether the process of setting capex allowances every 5 years creates distortions to companies' incentives to invest in the network and if so how these should be overcome. For example, should capex allowances be set for a longer period of time and what role does output monitoring and quality regulation play in this regard;

- whether there is a case for differential treatment of 'different categories' of capex. For example, are there differences in the risks that companies incur in undertaking different projects that mean the related expenditure should be treated differently in the RAV; and

- ◆ whether the approach taken to ensuring companies can finance their activities and estimating the cost of capital is appropriate given the possible scale and nature of future investment requirements in gas and electricity transmission and distribution that may be necessary to facilitate the growth of renewable energy.

4. The next distribution price control review

Introduction

- 4.1 This Chapter takes the approach that was set out in Chapter 2 for undertaking price controls and applies it to the next price control review for the DNOs which is due to be implemented from 1 April 2005. In particular it sets out initial thinking on the objectives, key issues and timetable for the review.
- 4.2 Chapter 3 identified a number of key issues that will be considered this year in relation to all network monopoly companies, particularly:
- ◆ the incentives provided to companies to operate efficiently;
 - ◆ the incentives provided to companies to invest in the network; and
 - ◆ balancing incentives for efficiency with improvements in quality of service.
- 4.3 As well as these there are also DNO specific issues, in particular relating to increases in the amount of generation connected to the distribution network, which will need to be considered this year.
- 4.4 This year provides an important opportunity to consider key aspects of the price control review before the full review process gets underway. There have already been initial discussions with the DNOs on these issues and this is an opportunity to seek a more detailed response from the DNOs and the views of other interested parties. A significant amount of further work will need to be carried out, by both Ofgem and the DNOs, before the price control is implemented in April 2005. Beginning the work now should help to even out the workload and allow all parties to contribute effectively to the review.

The next distribution price control review

Background

- 4.5 In addition to issues common to setting all network price controls, during the last distribution price control review in 1999, Ofgem had to consider a number of important issues, in particular:
- ◆ the impact, particularly on operating costs, of the requirement on the DNOs to separate their supply and distribution activities as this raised important issues regarding the attribution and allocation of costs between different businesses. A significant amount of work was also undertaken on adjusting companies' data for differences in capitalisation policies. Since 1999 Ofgem has introduced new RAGs that should help to ensure that companies' costs are reported on a more consistent basis; and
 - ◆ ensuring that companies have balanced incentives both for improving efficiency and providing a good quality of service to consumers – Ofgem was concerned that as cost savings became harder to achieve it would be important to ensure that companies had clear and balanced incentives to provide a good quality of service to consumers. Since 1999 Ofgem has developed the IIP incentive scheme which will provide companies with direct financial incentives to provide an appropriate quality of service to their consumers. The IIP incentive scheme was introduced in April 2002 and will operate until March 2005. It will be reviewed as part of the work on the price control. Ofgem also introduced new Overall and Guaranteed Standards of Performance on the maximum number of interruptions that consumers should experience. As part of the price control review it will also be necessary to consider the role of the Overall and Guaranteed Standards of Performance.
- 4.6 There have been a number of significant developments since 1999 which have had an impact on the regulatory environment. These potentially raise important issues for the way in which the next price control will be reviewed and implemented. These include:

- ◆ *the implementation of the Utilities Act 2000* - Ofgem has increased social and environmental responsibilities as a result of the Utilities Act 2000. It is important to consider how the price control and incentive framework should be developed to allow Ofgem to fulfil these responsibilities;
- ◆ *the Government's environmental commitments* – as part of its commitments under the Kyoto Protocol the government has introduced its Climate Change Programme, one of the objectives of which, is to ensure that 10 per cent of the UK's generation needs are met from renewable sources by 2010. The government has also set a target of 10 GW for the amount of Combined Heat and Power (CHP) plant to be operational from 2010. If these targets are to be met it is likely that there will need to be a significant increase in the amount of generation that is connected directly to the distribution networks. The PIU report has also recommended that this target should be increased to 20 per cent by 2020.

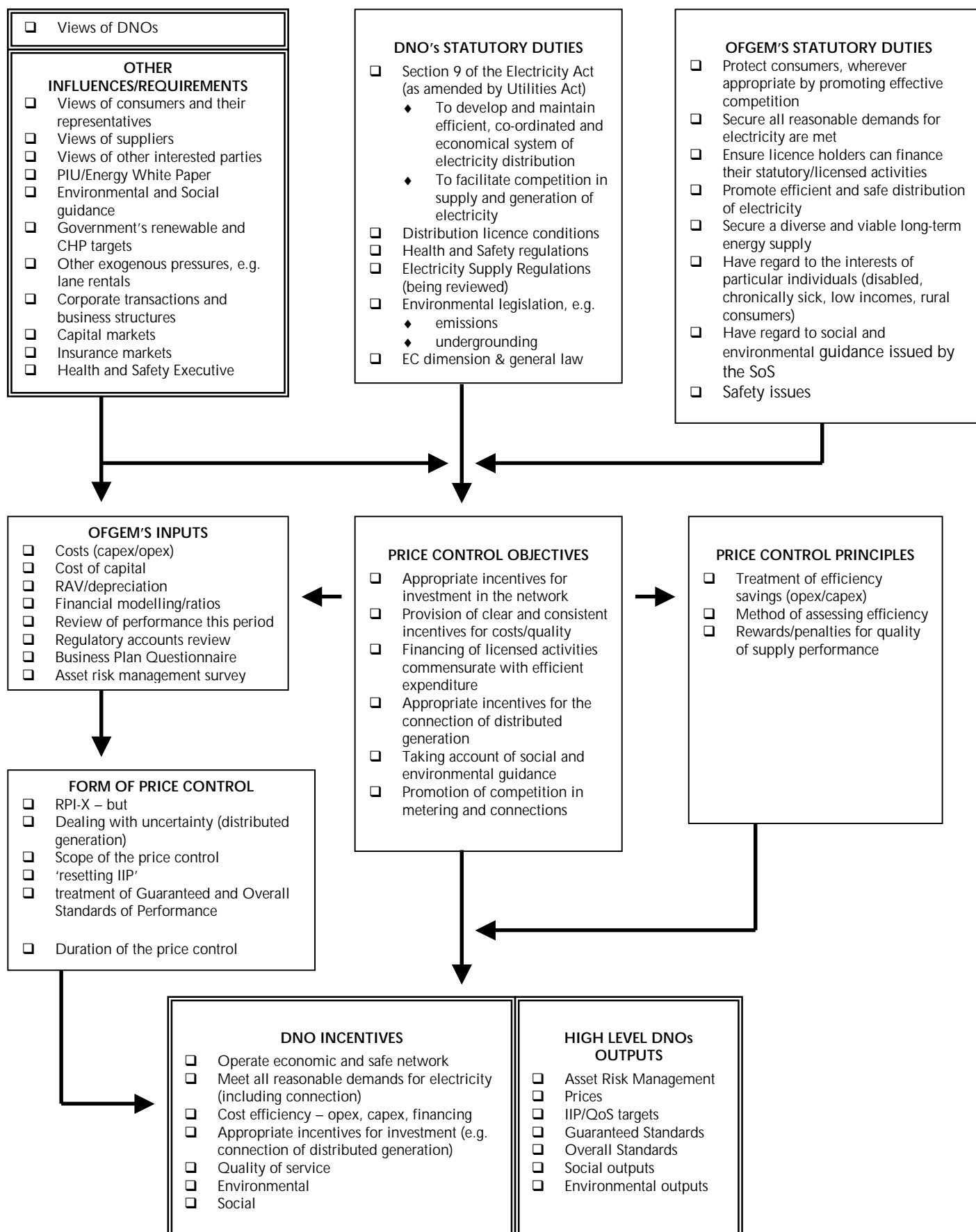
The DTI is in the process of consulting on the issues raised by the PIU report. It is anticipated that this consultation will result in the publication of an Energy White Paper around the end of the year. This may raise issues that have an important bearing on key aspects of the price control review, including the objectives, price control and incentive framework and what DNOs will be expected to deliver; and

- ◆ *further corporate activity* – there has been ongoing structural change within the energy industry primarily through corporate transactions. Corporate transactions are likely to continue and it is important to consider the impact that these have on the way in which price controls are reviewed and implemented.

The price control review process

- 4.7 Figure 1 sets out a schematic diagram of the price control review process as discussed in Chapter 2. The diagram identifies the key steps and components of the review process and how they are related. The rest of this Chapter discusses the objectives, key issues, DNO outputs and the review timetable in more detail.

Figure 1: The price control review process



Objectives for the price control review

4.8 Chapter 2 explained that Ofgem's objectives for the price control review are primarily driven by three factors:

- ◆ *Ofgem's statutory duties* - The Electricity Act 1989 (as amended by the Utilities Act 2000) identifies Ofgem's principal objective as protecting consumers (both present and future) wherever appropriate by promoting effective competition. In carrying out its functions to meet this objective Ofgem must also have regard for the need to secure that all reasonable demands for electricity are met and that licence holders can finance their obligations under these Acts. Ofgem also has other important duties with respect to the environment, social issues, particular consumer groups, securing a diverse and viable long term energy supply and safety issues.

It is important that the objectives for the price control review are consistent with Ofgem's principal objective and other duties. As explained in Chapter 2 this may require reaching an appropriate balance between the various duties;

- ◆ *the DNOs' statutory duties and licensed requirements* – the statutory duties of the DNOs are set out in various statutes and subordinate legislation. Section 9 of the Electricity Act 1989 (as amended by the Utilities Act) imposes a duty to develop and maintain an efficient, co-ordinated and economical system of electricity distribution and to facilitate competition in the supply and generation of electricity. Each DNO operates under a distribution licence which sets out specific obligations and requirements, such as non-discrimination conditions, quality of service requirements, and the price control condition. Each DNO is also subject to Guaranteed and Overall Standards of Performance. Each DNO is also required to design its network to certain minimum technical standards – as specified by the distribution licence. These arrangements are complemented by the Electricity Supply Regulations (ESRs), which place a duty on DNOs to ensure a continuous supply of electricity is maintained except in exceptional circumstances.

The ESRs also define limits for allowed variations in voltage levels and requirements on the safety and adequacy of the network.²¹ It is also important to consider other statutory duties which fall on the DNOs, including those relating to the environment and general EC law. It is important that the objectives of the price control reflect these various regulations as they can influence DNOs' costs and the quality of service delivered to consumers; and

- ◆ *other influences* – a number of other influences will also need to be considered in identifying the objectives for the price control review. These include the views of various interested parties such as the DNOs, suppliers, consumers and their representatives. It is also important to consider the requirements of government and the social and environmental guidance provided by the Secretary of State. The government's forthcoming Energy White Paper will also need to be considered.

4.9 In the light of these factors Ofgem's initial thoughts on the high level objectives for the price control are 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;

²¹ The ESRs are in the process of being replaced by the Electricity Safety, Quality and Continuity Regulations (ESQCR) which the DTI have been consulting on.

- ◆ reflect Ofgem's responsibilities in regard to energy efficiency, the environment and social issues; and
 - ◆ ensure that competition is promoted in the provision of supply connection and metering services²².
- 4.10 All of these can be related directly to Ofgem's and the DNOs' statutory duties (and licence requirements). In developing these objectives further Ofgem will need to consider in particular the impact of the other influences.
- 4.11 Ofgem also considers that the following process related objectives are appropriate:
- ◆ where possible trying to resolve key policy issues at an early stage so that regulated companies have more certainty about the price control; and
 - ◆ ensuring that the consultation process is open and transparent and that all interested parties have an opportunity to contribute to the review process.

Key issues for the price control review

- 4.12 It was explained above that there have been a number of developments since 1999 which have had an impact on the regulatory environment. It is clear that these raise important issues for the price control review.

Dealing with uncertainty

- 4.13 Chapter 2 explained that 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.

²² Ofgem's Strategy for Metering: Report on progress and next steps, May 2002, outlines a number of issues relevant to DNOs which will need to be considered as part of the next price control review, including the separation of metering assets and associated costs from main price control and the nature of any arrangements that may be required to protect the interests of consumers before competition is fully effective.

- 4.14 The level and nature of investment that will be required, over at least the next 5 years, 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.
- 4.15 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.
- 4.16 These matters raise significant questions about how the price control arrangements should deal with this uncertainty. Where appropriate and practicable Ofgem will seek to put in place mechanisms that allow companies (and consequently the price control) to respond to changing circumstances.
- 4.17 Under the DNO price control there is a revenue driver related to the number of units of electricity that companies distribute and the number of consumers. Under the TO price control for NGC there are incentives for its transmission business to meet changes from the baseline assumptions of the amount of new generation connected to the network. Where it is more difficult to place an explicit value on the impact of uncertainty on the costs of companies, other arrangements may be appropriate. For example, the SO incentive schemes in place for NGC and Transco are designed to help ensure that the companies have appropriate incentives for timely investment in the network – even though the investment requirements and their value are uncertain.
- 4.18 In deciding on how to deal with uncertainty it is important to consider the most appropriate allocation of risk between companies and consumers. Where a company is best placed to manage a particular risk it should be provided with the mechanism and incentives to do so. In other circumstances it may be appropriate for the company to ‘pass through’ costs associated with the

uncertainty: in effect this requires consumers to bear some (or all) of the risk in the form of higher costs. Consumers can benefit in these circumstances as it may enable the regulated business to finance itself at a lower cost of capital. While this could lead to a lower required rate of return it could also reduce the incentives on a company to respond efficiently.

4.19 There are a number of possible options for dealing with uncertainty, which include re-opening the price control in the event that investment and operating requirements differ materially from the assumptions underlying the price control; the use of revenue drivers which would allow the price control to be adjusted automatically; and mechanisms to allow the controlled pass-through of a proportion of the unforeseen costs to consumers.

4.20 In the coming months it will be important to develop arrangements that:

- ◆ are appropriate to the nature and level of investment 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.

Developing the regulatory framework to deal with increased levels of distributed generation

4.21 Chapter 1 explained that the government has put in place specific targets for the amount of energy to be supplied by renewable generation and CHP by 2010. To help encourage the development of alternative sources of generation, particularly from renewable sources, it has put in place specific incentives under the Renewable Obligation and the Energy Efficiency Commitment.²³ If the government's targets are to be achieved it is likely that there will need to be a

²³ Ofgem has taken on specific responsibilities to assist the government in implementing its climate change programme for the energy sector. Further details are set out in Ofgem's Environmental Action Plan Annual review which was published in June 2002.

significant increase in the amount of generation connected to the distribution networks.²⁴

4.22 Considerable work has been, and continues to be undertaken, on addressing the challenges and opportunities that distributed generation raises:

◆ **at a technical level:**

- the need to review Engineering Recommendation P2/5 –to ensure that this network planning standard addresses the issues raised by new forms of distributed generation; and
- the impact that increased levels of distributed generation will have on the performance and operation of the distribution networks. This would be expected to result in a progressive development over time in the way in which the network is operated – from the present mainly passive basis, towards increasing active operation (i.e. where power flows must be secured for the behaviour of both generation as well as demand). This could mean that in time the distribution networks develop features more in common with the electricity transmission networks.

These technical issues are being looked at under the work programme of the joint DTI/Ofgem Distributed Generation Co-ordinating Group (DGCG) and its Technical Steering Group (TSG); and

◆ **for the regulatory framework:**

- putting in place interim measures for the present price control period (up to April 2005) in relation to the connection of distributed generation - this includes allowing distributed generators to spread the costs of their connection charge over a number of years (annualised charging);

²⁴ It may also be necessary to consider the obligations under the EU Renewables Directive that are relevant to DNOs. Directive 2001/77/EC of the European Parliament and of the Council on the promotion of electricity produced from renewable energy sources in the internal electricity market - OJ L 283 27 September 2001.

- ensuring that DNOs have appropriate incentives (and returns) for the connection of distributed generation in the next price control period and beyond (after April 2005) – Ofgem has already indicated that it sees advantages in moving to towards a shallow charging policy for the connection of distributed generation. Defining the boundary between connection charges and ongoing use of system charges is being taken forward as part of Ofgem’s work on the structure of distribution charges.²⁵
- in deciding on the appropriate returns and incentives for DNOs it will be important to look at any additional costs and risks that they may incur;
- looking at whether specific arrangements need to be put in place to help facilitate DNOs to utilise distributed generation once it has been connected to their networks;
- looking at the impact that an increase in distributed generation could have on other aspects of the regulatory framework, such as the IIP incentive scheme and the multiple interruptions Guaranteed and Overall Standards of Performance; and
- looking at whether specific arrangements and mechanisms need to be put in place to encourage the DNOs to develop their networks in a proactive, planned and efficient manner. Any arrangements should retain flexibility for different regulatory and commercial frameworks that may develop over time and not introduce an undue level of uncertainty.

4.23 In considering these issues Ofgem must have regard to the need to ensure that DNOs can continue to fulfil their licence obligations to operate an economic, efficient and co-ordinated network. It will also be important to bear in mind DNOs’ statutory obligations to facilitate competition in generation and to meet all reasonable demands for electricity.

²⁵ Ofgem intends to publish an update document on the structure of distribution charges in August 2002.

The incentive and price control framework

4.24 Figure 1 shows that the incentive and price control framework looks to provide incentives to companies in a number of areas, including:

- ◆ operating an economic and safe network;
- ◆ cost (operating, capital and financing) efficiency;
- ◆ investment and security of supply;
- ◆ providing a good quality of service to consumers;
- ◆ environmental issues such as distributed generation, electrical losses, energy efficiency and demand side management; and
- ◆ social issues, such as fuel poverty.

4.25 The traditional RPI-X price control arrangements have been generally successful in providing companies with appropriate incentives in these areas, although a number of improvements have been introduced to provide additional incentives or to achieve particular objectives. These improvements include:

- ◆ strengthening the losses incentive mechanism; and
- ◆ the introduction of an incentive scheme (under the IIP) which provides for financial rewards and penalties depending on the quality of service companies deliver to their consumers.

4.26 It is possible to think of these changes as additional incentive mechanisms to the original RPI-X formula (i.e. the original RPI-X formula has been expanded to include additional terms for losses and quality).

4.27 Chapter 3 identified a number of concerns that have been raised with the present arrangements particularly on the incentives provided to companies to invest in the network and to operate efficiently. Some of these concerns could be addressed within the existing RPI-X + Q (for quality) + L (for losses) framework – although there would be a number of issues to consider including defining the ‘boundary’ between RPI-X and Q and the relevant output measures that would

be monitored and/or incentivised. Under these arrangements it would be possible to think of RPI-X covering what companies are expected to deliver under base-line assumptions, whilst Q would provide the incentives on companies to provide a particular level of service.

- 4.28 It was explained above that the present arrangements may not be suitable for dealing with circumstances where there is significant uncertainty regarding the nature and level of future investment needs, i.e. where there is the possibility of significant deviation from the base-line assumptions. A number of options are available for dealing with this issue and these could provide a better way than the present arrangements for financing the required investment and protecting consumers.

DNO outputs

- 4.29 At this stage it is not possible to identify in detail the nature and level of outputs that DNOs will be expected to deliver as part of the next price control. This is because they will be influenced by a number of factors including the objectives of the review, the views of consumers and other interested parties, and the form of the incentive and price control framework. It is possible to identify the broad areas where outputs are relevant and some of the issues that will need to be considered, including:

- ◆ asset risk management – Ofgem and the industry have been working on developing an asset risk management survey which is designed to assess the policies and practices that companies have in place for managing asset risk.²⁶ Ofgem will need to consider how this information can be used most effectively in the price control review and in particular in helping to assess companies' future investment requirements;
- ◆ quality of supply – as explained above quality of supply will be an important aspect of the price control review. Issues that will need to be considered include:

²⁶ "Asset Risk Management in electricity and gas networks – Conclusions on framework and proposals for the survey" April 2002 ref 30/02

- identifying the most appropriate way of setting targets for the quality of supply, including whether targets should be set over a longer time period than the price control;
 - the balance between overall quality of supply performance and the quality of supply received by particular customer groups (e.g. worst served consumers); and
 - whether the scope of output measures adequately covers the requirements of all customer groups, particularly those who may have special requirements such as larger business consumers;

- ◆ price – price, in terms of the level of charges paid for use of the distribution system, is an output which is important to consumers. It will be important to consider the most appropriate balance between the level of prices and the quality of service delivered to consumers. This will require work to be undertaken on assessing consumers' willingness to pay for quality of service;

- ◆ guaranteed and overall standards of performance – Ofgem will need to consider the applicability of the existing standards of performance and in particular whether overall standards should be included within the scope of the IIP incentive scheme; and

- ◆ social and environmental outputs – at present there is an explicit incentive mechanism for electrical losses. These arrangements are being reviewed by Ofgem as part of an ongoing piece of work and it intends to publish a consultation paper on losses in September. Chapter 1 explained that Ofgem has increased social and environmental objectives and that it is due to receive guidance from the Secretary of State on these issues. In considering whether there is a need for explicit social and environmental output measures Ofgem will have regard to this guidance.

Initial timetable for the price control review

4.30 The new distribution price control is due to be implemented on 1 April 2005. This section sets out initial thinking on the timetable leading up to this date. This will need to be refined and set out in more detail in the coming months.

Table 2: Outline timetable for the price control review

Date	Deliverable
2003	
May	Initial consultation on the price control review
2004	
March	Policy document on price control review
June	Initial proposals on DPCR (including revenue allowances – P0/Xs)
August	Update document on DPCR (P0/Xs/review of IIP/draft licence modification)
October	Final proposals (P0/Xs/review of IIP) and licence modification
February	Final consultation on price control licence modifications
2005	
1 April	Price control implemented
Summer	Review of price control process

4.31 The May 2003 document is intended to follow on from the March 2003 document on developing price controls (as outlined in Chapter 5) and will set out in more detail the background and key issues for the price control review. The March 2004 document would set out initial thinking on some of the key inputs and principles that will be used in setting the price control, including the approach to financial issues. The June 2004 initial proposals document will include the level of revenue that companies will be allowed to recover in the next price control period. This document would also include an outline of the licence modifications that will be required to implement the price control. The August 2004 update document would include revised estimates of the level of allowed revenue in the light of responses to the initial proposals document. This document would also include an initial draft of the necessary licence modifications. The final proposals document will set out Ofgem’s final

proposals on the level of allowed of revenue that companies will be allowed to recover in the next price control period. This document would also include, for consultation, a more detailed draft of the necessary licence modifications.

Ofgem would then expect to issue a final consultation on the licence modifications in February 2005 in time for the price control to be implemented on 1 April.

4.32 Ofgem would also expect to carry out customer research relating to standards of performance and other related areas of quality of supply during the first half of 2003 with a view to setting out its initial thoughts on possible changes to the standards later in the year. Ofgem will consult on its proposals to revise the standards and draft changes to secondary legislation needed to implement them during 2004 with a view to implementing them in line with new price control.

4.33 One of the key aspects of the price control process that has yet to be decided is the timing and nature of any information requests (including the main business plan questionnaire - BPO) that the DNOs will be required to submit. It may be appropriate to separate the information request into two main parts – one for historical information and one for forecast information.

Key issues and questions

4.34 The priority for this year's work will be on clarifying the objectives, key issues and timetable and some of the principles for the price control review. It will also be important to set out, as far as possible, the nature and form of the price control and incentive framework that will need to be put in place for the DNOs. To this end Ofgem would like to hear the views of interested parties on any of the issues raised by this Chapter and in particular on:

- ◆ the initial objectives that Ofgem has identified for the price control review and in particular how outside influences should be reflected in these in a way which is consistent with the statutory duties and obligations of Ofgem and the DNOs;
- ◆ Ofgem's initial thoughts on the key issues for the price control review;

- ◆ the most appropriate form of the incentive and price control framework;
and
- ◆ the initial high level timetable for the price control review and in particular the possible impact that external events may have on the timing of the major deliverables and when decisions can be taken about key aspects of the price control.

5. Timetable and consultation for this year's work

Introduction

- 5.1 This Chapter sets out the timetable for the project in more detail and explains the way in which Ofgem intends to consult interested parties. Appendix 1 sets out a more detailed timetable of the work being undertaken by Ofgem that is relevant to DNOs.

Timetable and consultation for this year's work

- 5.2 The Introduction explained that Ofgem has already met with the DNOs, Transco and NGC as part of the process of producing this document. It will be important to continue to meet with these companies on a bilateral basis as the project progresses. Ofgem would also like to meet with other interested parties including customer representatives, academics and providers of finance around this time.
- 5.3 Ofgem intends setting up a series of small working groups with the DNOs to take forward key aspects of the project that are particularly relevant to these companies, including looking at the best of way of dealing with uncertainty. The purpose of the working groups will be to act as a sounding board for Ofgem in developing its ideas. The working groups will not be a decision making body and will not preclude a full consultation on the issues at an appropriate stage. Ideally the expertise of the groups will collectively cover technical and regulatory areas.
- 5.4 Ofgem also intends to hold further workshops as the project progresses. These will provide interested parties with an opportunity to discuss the project in an open forum. The timing and nature of these workshops may vary depending on the level of interest and the issues that will be covered.
- 5.5 Ofgem and the Institute of Electrical Engineers (IEE) are holding a conference on 10 September 2002, which is related to DNOs – "Renewables , CHP and electricity distribution networks – a strategic review". This conference will

cover a number of areas, including the debate which will inform the next DNO price control review.²⁷

5.6 An outline of the key dates is set out in the table below.

Table 3: Outline timetable for developing price controls project

Date	Deliverable
2002	
September	Possible workshop
October	Second consultation paper
December	Update document
2003	
January	Possible workshop Bilateral meetings with interested parties
March	Principles document

5.7 Ofgem intends that the October 2002 second consultation paper will focus on setting out its further thoughts on the development of network monopoly price controls in the light of responses that it receives to this document. It will also contain its further thoughts on the next distribution price control review, including a more detailed timetable for the review, and an update on the work that Ofgem's consultants are undertaking on this project.

5.8 The December 2002 update document will set out Ofgem's initial proposals on some of the key areas of the project and will include an outline of the initial findings of its consultants. Following publication of this document Ofgem intends to meet with interested parties to provide them with an opportunity to provide their feedback ahead of it finalising its views.

5.9 Once Ofgem has had an opportunity to consider the views raised at these meetings and in responses to the update document it expects to publish a principles document in March 2003. This will set out its proposals for the way in which it intends to develop the framework of price controls. It will also set out the key objectives, issues and principles for the next distribution price

²⁷ Further details are available from the IEE website, www.iee.org/Events/e10sep02.cfm or directly from the IEE - contact by telephone on 020 73445743

control review. At the same time Ofgem intends to publish its proposals on the structure of distribution charges, as outlined in Appendix 1.

Appendix 1 Detailed timetable of work relating to DNOs

Introduction

- 1.1 This Appendix sets out a detailed timetable over the next year for the main projects and areas of work relating to the DNOs. Given the important interaction between the work on developing price controls and that on the structure of distribution charges the timetable for both projects has been brought together.

Key areas of work for 2002/03

Distribution Losses (Colin Green)

- 1.2 Key issues being considered include:
- ◆ identifying the drivers of electrical losses on distribution networks;
 - ◆ establishing whether it is appropriate to strengthen the incentives to reduce losses, and if so, how this should be achieved; and
 - ◆ considering the role of distributed generation and its impact on losses.

Developing price controls (Cemil Altin)

- 1.3 Key issues being considered include:
- ◆ reviewing how companies' efficiency is assessed;
 - ◆ reviewing the incentive framework on companies to achieve efficiency savings;
 - ◆ looking at how to deal with investment uncertainty and ensuring the provision of incentives to meet consumers' demands; and
 - ◆ identifying key issues, objectives, timetable and process for the next distribution price control review.

Distributed Generation (various Ofgem directorates. Co-ordinator: Arthur Cooke)

1.4 Key issues being considered include:

- ◆ the work programme of the joint DTI/Ofgem Distributed Generation Co-ordinating Group (DGCG) and its Technical Steering Group (TSG);
- ◆ consultation on Engineering Recommendation P2/5 (as part of Ofgem's wider consultation on the governance of industry standards);
- ◆ addressing the uncertainties associated with the benefits of distributed generation;
- ◆ standardisation and simplification of connection agreements for domestic combined heat and power (DCHP) units;
- ◆ looking at the feasibility of signalling to prospective generators that connection to certain parts of DNOs' networks could be beneficial to all parties (premium power zones) including; and
- ◆ relating arrangements for distributed generation to principles underlying transmission access and the provision of ancillary services.

Structure of charges (Colin Green)

1.5 Key issues being considered include:

- ◆ establishing an appropriate long-term charging framework for distributed generation, including:
 - the boundary between connection and use of system charges; and
 - the structure of ongoing generation charges;
- ◆ assessing whether the present arrangements of volume related charges is likely to remain appropriate as network conditions change; and

- ◆ rationalising the boundary between connection charges and use of system charges for domestic consumers.

Table A1: Timetable of work

Date	Workstrand			
	Distributed generation	Structure of charges	Developing price controls	Other (including losses)
2002				
AUGUST	Initial guidance on 'banding' of distributed generation	Update document	Initial consultation document	IIP audit visits to DNOs completed Decision document on Competition in Connections Regulatory accounts submitted to Ofgem Initial consultation on comparing quality of supply performance (normalisation) Final proposals on governance of electrical standards
SEPTEMBER	Summary of responses to March document	Possible industry workshop on structure of charges	Possible Industry workshop on developing price controls IEE/Ofgem conference on Renewables and Networks	Ofgem Quality of Supply report on DNOs (IIP) Asset Risk Management Survey (visits) Initial consultation on losses Possible workshop on comparing quality of supply performance Ofgem review of regulatory account submissions and review meeting with companies
OCTOBER		Initial proposals	Second consultation paper	Possible workshop on losses Consultation document to be published on meter assets. Ofgem's Strategy for Metering: Report on progress and next steps, May 2002, provides further details.
NOVEMBER	Summary of responses to consultation on Electricity			Report on Asset Risk Management Survey results

	(Connection Charge) Regulations 2002			
DECEMBER		Possible update document	Update document	Meeting with companies on RAGs for 2003/04 Participants seminar for Asset Risk Management
2003				
JANUARY	Possible implementation of Electricity (Connection Charge) Regulations Review of 'banding' of distributed generation Guidance on best practice for basic active network management Connection process guidance	Possible industry workshop	Possible industry workshop	Second consultation comparing quality of supply performance
FEBRUARY				
MARCH		Final proposals on structure of charges¹	Statement document on developing price controls	Statement document on losses

1 There will be an implementation phase for changes to the structure of charges following final proposals

Appendix 2 Summary of 28 May 2002 industry workshop on developing price controls

- 2.1 This Appendix sets out a summary of the issues discussed at a workshop held on 28 May 2002 with the industry to discuss issues associated with the development of network monopoly price controls.
- 2.2 The workshop consisted of a series of presentations from Ofgem and various companies on key aspects of the work that is being undertaken to develop the framework of network monopoly price controls. The slides that were used at the workshop are available on Ofgem's website with this document.

Summary of key issues raised

Dealing with uncertainty

- 2.3 It was recognised that regulated companies will always face some uncertainty regardless of how predictable or stable the regulatory framework is. Companies argued that there are a number of factors that need to be looked at when considering uncertainty, including:
- ◆ the most appropriate allocation of risk between companies and consumers. It was suggested that it was also important, in this context, to consider the interpretation of the regulators duty to ensure that companies can finance their licensed activities (as set out in the Electricity Act 1989 as amended by the Utilities Act 2000). It was argued that if there were differences in interpretation across the utility sectors this could impact on the perception of risk and influence the flow of capital across sectors; and
 - ◆ whether the allocation of risk can be defined precisely enough so as not to expose consumers or companies to a level of risk that was unintended.
- 2.4 A number of parties highlighted the importance of identifying agreed principles in advance for dealing with uncertainty. It was argued that, regardless of the approach taken to mitigate uncertainty, the principles would be more robust and

provide a more stable framework if they were included in the licences of companies. It was also argued that differences in approach across utility sectors could influence the flow of capital.

Incentives and assessing efficiency

2.5 A number of issues were raised about the incentives that companies have to achieve efficiency savings and how the regulator assesses efficiency, including:

- ◆ the trade-off between high powered incentives to reduce costs and longer term system security and quality of supply. It was argued that it is important to ensure that an appropriate balance is reached between these factors. A number of individuals highlighted the increased use of output based monitoring/incentivisation, such as the IIP incentive scheme and the asset risk management survey, as mechanisms for providing an appropriate balance against cost efficiency incentives;
- ◆ that there are issues of periodicity of incentives to achieve efficiency savings and problems for the regulator in forecasting future costs, particularly in the absence of effective benchmarking. Concerns were also raised over the technical robustness of existing modelling techniques (especially for companies where there are no close comparators, such as electricity transmission) and whether benchmarking should be used in more than an informative role in setting price controls, i.e. not being used to determine the future level of efficient costs. Some alternative approaches for dealing with issues of periodicity and forecasting costs were identified including allowing companies to retain efficiency savings for a fixed period of time and using rolling average mechanisms to determine future costs;
- ◆ that it may be appropriate to use a measure of total costs in assessing efficiency to help mitigate any distortion of incentives between operating and capital expenditure, although concerns were raised about whether it was practicable to use a total cost approach and how it would be applied;

- ◆ that companies have an incentive to focus their forecasts of future investment to meet requirements in the next price control period rather than longer term issues;
- ◆ there are issues associated with the capitalisation of expenditure into the RAV, including:
 - that companies require more certainty about how investment expenditure will be treated and whether it will be included in the RAV;
 - that non-operational capex (particularly IT spend) not being included in the RAV compounds the periodicity of incentives and distorts incentives towards investment and efficiency, although it was recognised that there would be issues associated with monitoring defining non-operational capex; and
 - that there is uncertainty about how 'quality of supply' related capex will be treated even if companies meet their regulatory targets.

Supplier and consumer issues

- 2.6 It was argued that there are a number of different 'types' of consumers – suppliers, distributed generators, industrial consumers, and end-consumers and that it was important to recognise this as they will all have different requirements and expectations. This raised the question of whether network companies could deliver a differentiated service to different consumers so that their preferences could be revealed. It was recognised that whilst this may be possible for larger consumers, technical issues meant that it would be difficult for smaller consumers. It was suggested that in the future it might be possible to offer a base line service and a menu of other (enhanced) services.
- 2.7 It was agreed that assessing the willingness of consumers to pay for improvements in quality of service or other forms of investment is important and that in doing so intergenerational issues need to be considered. It was also argued that consumers' expectations change over time and that the gap between

these expectations and what is capable of being delivered by companies (at reasonable cost) could increase over time.

2.8 In summary, a supplier suggested that consumers require:

- ◆ dependable supplies - and as a result the consequence of over-investment was less than for under-investment;
- ◆ acceptable and affordable core services – a questions was raised about whether these should these be licence and/or statutory obligations that network companies must deliver;
- ◆ differentiated service offerings – it was suggested that this could stimulate network innovation, but it was recognised that there were issues of free riders and technical feasibility; and
- ◆ convenience – it was suggested that consumers may prefer one contact point for all issues (the supplier) rather than the present model where they contact the network company in the event of an interruption in supply.

And suppliers want:

- ◆ better and more accurate information from network companies;
- ◆ to be recognised as consumers of the network companies in their own right;
- ◆ to be provided with the option of differentiated services; and
- ◆ a focus on quality of service as a key deliverable for price controls.

List of attendees

Name	
Brian Tilley	Aquila Networks
Iain Taylor	British Gas
Pauline Green Stephen Waller	East Midlands Electricity
Chris Bolt Paul Whittaker	Lattice
Tom Weyman-Jones	Loughborough University (Department of Economics)
Tahir Majid	LPN
Tim Tutton Lewis Dale	National Grid
John France	Northern Electric
Richard Ramsay Cemil Altin Chris Watts Adrienne Monroe Arthur Cooke Colin Green Richard Clay	Ofgem
Paul Bircham	EPN
Paul Hemsley	Scottish and Southern Energy
Garth Blundell Hazel Simpson	Scottish Power plc
Jim Tame Colin Nicholl	Seeboard Power
Mike Boxall	United Utilities
Bob Westlake Bob Parker	Western Power Distribution
Andrew Spencer	Yorkshire Electricity Distribution Ltd