

# **Electricity Distribution Price Control Review**

## **Initial consultation**

July 2003

## Summary

This document is the first consultation paper on the fourth distribution price control review, which is due to take effect from 1 April 2005. The paper sets out the objectives for the review, the issues that will need to be considered, the approach Ofgem proposes to take to resolve those issues, and the timetable and workplan for the review.

Work on the distribution price control review will build on the solid foundations established over the past 12 months from the review of the general framework for network monopoly price controls. In parallel with this wider project, early work has already begun on preparations for the distribution price control review in collaboration with the companies and other interested parties, including through a series of Working Groups.

This document and the underpinning work have benefited substantially from ideas and proposed approaches put forward in these discussions and consultations across a range of issues.

The underlying philosophy with which Ofgem approaches this review was explained in the Initial Conclusions paper to the Developing Network Monopoly Price Controls project published in June 2003. Ofgem's principal objective is to protect the interests of consumers (present and future). This will be achieved by giving distribution companies appropriate incentives both to invest and operate efficiently and to deliver the outputs and services required by network users.

Potentially the biggest challenge for this distribution price control review, and the biggest change to previous reviews, is to adapt the regulatory framework to provide appropriate incentives for distribution companies to connect and utilise distributed generation, in support of the government's energy policy. Ofgem recognises the importance of early progress on this issue. This paper sets out initial thoughts on how incentive arrangements could work. This would be a new mechanism which combines partial pass-through with an output based incentive rate. Together these will help protect DNOs against risk whilst giving them a positive incentive to invest efficiently in response to demand by offering the prospect of a premium return. Suggestions as to how this mechanism could be improved or alternative mechanisms would be welcomed.

The other main area that is substantially different from previous reviews is quality of supply where the work on the Information and Incentives Project over the last three

years has moved the regulatory regime forward very substantially. Consolidating and building on the lessons from experience over this period will be a key element of the review and this paper sets out how Ofgem proposes to address these areas.

Analysis of costs, financial issues and the structure and form of the price control (and incentive framework) are all critically important to the price control and Ofgem's thinking on these areas has benefited from the work on the general review of network monopoly price controls over the past 12 months. This paper does not attempt to summarise or replicate all of the previous work in these areas, but focuses on describing how Ofgem proposes to take the work forward over the coming months, in the context of the distribution price control review. This includes the use of a range of techniques to assess and benchmark costs, and enhanced transparency through publication of the financial model to be used in the review. In particular, Ofgem will seek to ensure that the best performers retain sufficient incentives to continue to improve.

In terms of timetable, three further consultation papers are proposed prior to Initial Proposals in June 2004 and Final Proposals in November 2004. The new price control will take effect from 1 April 2005.

This initial consultation paper covers a wide range of issues important to the distribution price control review, with the intention of giving all interested parties the opportunity to influence the process at a relatively early stage. Ofgem would welcome comments by 22 August 2003.

# Table of contents

<b>1. Introduction.....</b>	<b>1</b>
Objectives for the price control review .....	3
Key issues for the price control review.....	5
Purpose and structure of this document .....	6
Responding to this document .....	8
<b>2. Background.....</b>	<b>9</b>
Introduction .....	9
Context of the price control review.....	9
Industry structure.....	12
Distribution businesses.....	12
Technical description of distribution businesses.....	14
Setting price controls.....	18
DNOs' performance under the existing price controls.....	20
<b>3. Form, Structure and Scope of the price controls.....</b>	<b>23</b>
Introduction .....	23
Ofgem's statutory objectives and those of licence holders.....	23
Structure of the existing price controls .....	24
Distribution losses .....	25
Hydro Benefit.....	26
Revenue drivers.....	26
Scope of the price controls .....	27
Competition in connections.....	31
Duration of the price controls.....	31
Fixed retention period for efficiency savings .....	32
Improving the incentive and price control framework.....	33
Views invited .....	37
<b>4. Quality of service and other outputs.....</b>	<b>38</b>

Introduction .....	38
The existing arrangements .....	38
Key issues for reviewing the outputs framework.....	40
Main areas of work.....	43
Views invited .....	50
<b>5. Distributed generation.....</b>	<b>51</b>
Introduction .....	51
Recent developments .....	51
Summary of responses to January Open Letter .....	52
Implications of revised distribution charging structure.....	54
Further thoughts on incentives relating to DG.....	55
Additional mechanisms .....	61
Views invited .....	64
<b>6. Assessing costs.....</b>	<b>65</b>
Introduction .....	65
Description of DNOs' costs.....	66
Changes in costs.....	68
Assessing costs at the last price control review.....	69
Proposed approach to assessing costs .....	70
Review of actual costs .....	75
Information sources.....	78
Views invited .....	80
<b>7. Financial issues .....</b>	<b>82</b>
Introduction .....	82
Obligations with respect to the financing of companies .....	82
The cost of capital .....	83
Assessing the RAV and the approach to depreciation .....	85
Treatment of pension fund costs .....	87

Views invited .....	88
<b>8. Timetable and consultation process .....</b>	<b>89</b>
Introduction .....	89
<b>Appendix 1 Initial Regulatory Impact Assessment (RIA) for the price control review..</b>	<b>96</b>
Introduction .....	96
Objectives and key issues.....	96
Costs and benefits .....	97
Distributional effects .....	99
Risks and unintended consequences.....	99
Competition .....	99
Review and compliance .....	100

# 1. Introduction

- 1.1. Ofgem's principal objective as set out in the Utilities Act 2000 is to protect the interests of consumers (present and future), wherever appropriate by promoting effective competition. Ofgem also has other important duties, including those relating to the security and diversity of supply and for environmental issues. Ofgem also has a statutory duty to ensure that licence holders are able to finance their statutory and licensed obligations.
- 1.2. Many areas of the gas and electricity industry are subject to, or are in the process of being opened up to, competition – including electricity generation, supply and the provision of certain metering and connection services. Ofgem will continue to monitor these markets to ensure that they operate effectively and where necessary take appropriate steps to ensure consumers' interests are protected.
- 1.3. There are some areas of the gas and electricity industries where companies retain an effective monopoly in the core services that they provide to consumers because it is not possible or appropriate to introduce competition. This applies to the distribution of electricity to consumers over monopoly networks. Distribution Network Operators (DNOs) have a crucial role to play in delivering long-term security of supply and the quality of service that consumers receive. In these circumstances, Ofgem seeks to protect the interests of consumers through a variety of regulatory tools, such as price controls and standards of performance.
- 1.4. Price controls protect consumers in terms of the charges that they pay for electricity distribution services. These charges account for a significant proportion of the total electricity bill that consumers pay – approximately 25 per cent of a typical domestic consumer's electricity bill. The design of the regulatory framework can also have a significant impact on the incentives that network companies are provided with in relation to quality of service and social and environmental issues, such as the level of electrical losses on the networks.

## ***The next price control review of the electricity DNOs***

- 1.5. Final proposals for the existing price controls for the electricity DNOs were published in December 1999<sup>1</sup>. These price controls cover the period from 1 April 2000 to 31 March 2005. It is important that revised price controls are implemented from 1 April 2005. The work that will need to be undertaken to develop revised price controls is one of Ofgem's most important projects over the next two years - as set out in its Corporate Strategy 2003-6, which was published in March 2003.<sup>2</sup>
- 1.6. This document represents the first major consultation on the issues that will need to be considered in developing revised price controls. A significant amount of work has already been undertaken over the last 12 months, as part of Ofgem's project on developing network monopoly price controls. This project had two main objectives:
- ◆ improving the framework of price controls applying to all network monopoly companies and, where appropriate, increasing consistency in the approach that is taken to setting price controls; and
  - ◆ laying the foundations for the next price control review of the DNOs including identifying the objectives, process, key issues and principles that will be used in setting the price controls.
- 1.7. Ofgem published a document in June 2003 which set out its initial conclusions on the first of these objectives.<sup>3</sup> This includes changes to the incentives that network monopoly companies have to achieve efficiency savings and Ofgem's broad approach to financial issues including the cost of capital and pension costs. These principles have been reflected in this document although the detail of how they should be applied will need to be considered as part of this price control review.

---

<sup>1</sup> Distribution price control review: Final proposals – Ofgem, December 1999.

<sup>2</sup> Ofgem's Corporate Strategy 2003-06 – Ofgem, March 2003.

<sup>3</sup> Developing network monopoly price controls – Initial conclusions, Ofgem, June 2003. (Ref. 54/03)



## ***Objectives for the price control review***

1.8. Ofgem set out its initial views on the objectives and key issues for the DNO price control review in August 2002 and its further thoughts in February 2003.<sup>4</sup> These documents explained that the objectives for the price control review reflect:

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

1.9. The main objectives for the review are to:

- ◆ provide appropriate incentives to DNOs to develop 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 DNOs with appropriate incentives to connect and utilise distributed generation;
- ◆ provide appropriate incentives to help to ensure that longer term security of supply is maintained;
- ◆ reflect Ofgem's responsibilities with regard to environmental and social issues; and

---

<sup>4</sup> Developing network monopoly price controls – Initial consultation, Ofgem, August 2002 (Ref 51/02)  
Developing network monopoly price controls – Update document, Ofgem, February 2003 (Ref 05/03)

- ◆ ensure that competition is promoted in the provision of supply, connection and metering services and in generation.

1.10. The following process related objectives are also appropriate:

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

1.11. Respondents to the August 2002 and February 2003 documents broadly agreed with the objectives for the price control review.

1.12. This document sets out the issues that will need to be considered in meeting these objectives and outlines the work that Ofgem intends to undertake over the course of the price control review. A number of steps have already been taken to help ensure that these objectives are met. This has included the publication of the August 2002 and February 2003 documents and the creation of a number of working groups with the network monopoly companies looking at:

- ◆ the incentives created by the regulatory framework;
- ◆ dealing with uncertainty;
- ◆ assessing consumers' willingness to pay;
- ◆ comparing quality of supply;
- ◆ the structure of electricity distribution charges; and
- ◆ assessing costs and financial modelling.

- 1.13. Ofgem also held a public workshop in February 2003 to discuss price control issues.<sup>5</sup> This was attended by a range of interested parties including consumers, energywatch, academics, consultants, suppliers, generators and the network monopoly companies. Ofgem will continue to look for ways of improving the consultation process as part of this price control review. This will include making better use of its website to provide information to interested parties.
- 1.14. Ofgem published an open letter in March 2003, which included a detailed draft timetable for the DNO price control review<sup>6</sup>. A revised timetable is set out in Chapter 8. There have been only minor changes to the original timetable published in March.

### ***Key issues for the price control review***

- 1.15. There are a number of key issues that will need to be considered as part of the price control review. The February 2003 document identified these as:
- ◆ *developing the regulatory framework to deal with increased levels of distributed generation* – Ofgem and the Institution of Electrical Engineers (IEE) held a conference on 10 September 2002<sup>7</sup> on the challenges and opportunities raised by the government's energy and environmental objectives. This was followed by the publication of an open letter by Ofgem in January 2003 on developing network regulation for distributed generation.<sup>8</sup> Issues associated with distributed generation are discussed in detail in Chapter 5 of this document. Ofgem has also published an accompanying Discussion Paper to this document on innovation funding and Registered Power Zones;
  - ◆ *the design of an appropriate overall incentive framework for the DNOs* – it is important that the financial incentives provided to companies are

---

<sup>5</sup> Slides used at this workshop are available on Ofgem's website.

<sup>6</sup> Open letter on developing network monopoly price controls and the next price control review of the DNOs – Ofgem, March 2003.

<sup>7</sup> A copy of Ofgem's slides and a speech given by Callum McCarthy at the conference are available on Ofgem's website.

<sup>8</sup> Developing network regulation: Open letter to the Chief Executives of DNOs regarding distributed generation – Ofgem, January 2003.

aligned with the interests of consumers. The design of the incentive framework provided to companies is key to achieving this aim and is discussed in more detail in Chapter 3; and

- ◆ *dealing with uncertainty* – in setting a price control Ofgem must come to a view about the efficient level of costs that a company will incur over the period of the next price control period and in doing so it is necessary to consider a number of variables that impact on costs, including the level of demand and the number of consumers. There may also be other obligations which arise between price control reviews which impact on companies' costs. Ofgem has developed a framework with Frontier Economics<sup>9</sup> that will help identify the most appropriate regulatory response for dealing with uncertainty. A broad outline of this framework was set out in the February 2003 document. Ofgem intends to use this framework over the coming months in conjunction with the working group that is looking at uncertainty.

- 1.16. Ofgem recognises that another area of significant interest for the price control review will be the treatment of pension costs. Ofgem set out its initial thoughts in this area in the June 2003 document on developing network monopoly price controls. Ofgem will develop its approach to pension costs as part of this price control review.

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

- 1.17. The purpose of this document is to set out the objectives, key issues and relevant background for the DNO price control review and to outline the work that will need to be undertaken over the course of the project.

- 1.18. The structure of the document is as follows:

---

<sup>9</sup> Regulatory mechanisms for dealing with uncertainty – a final report for Ofgem by Frontier Economics, March 2003.

- ◆ **background (Chapter 2)** – this Chapter sets out the background to the price control review and reviews the performance of the DNOs under the existing price control;
- ◆ **scope, form and structure of the price control (Chapter 3)** – this Chapter sets out Ofgem’s initial thoughts on the scope, form and structure of the price control including the incentive framework;
- ◆ **quality of service and other outputs (Chapter 4)** – this Chapter sets out how Ofgem is proposing to address the regulation of outputs that companies may be required to deliver over the next price control period. It explains the work that is being undertaken to assess consumers’ willingness to pay, to compare companies’ quality of service performance and to revise the treatment of exceptional events such as severe weather;
- ◆ **distributed generation (Chapter 5)** – this Chapter sets out Ofgem’s further thinking on the incentives that DNOs may require in relation to distributed generation;
- ◆ **assessing costs (Chapter 6)** – this Chapter sets out Ofgem’s thoughts on the way in which it intends to assess companies’ efficiency and determine the future level of costs that an efficient company will require over the period of the price control;
- ◆ **financial issues (Chapter 7)** – this Chapter sets out Ofgem’s thoughts on financial issues, including on the cost of capital, asset valuation and depreciation and the approach to financial modelling;
- ◆ **timetable (Chapter 8)** – this Chapter provides an update on the timetable for the price control review; and
- ◆ **initial Regulatory Impact Assessment - RIA (Appendix 1)** – this Appendix sets out an initial RIA for the price control review which explains why Ofgem is undertaking the review and the expected costs and benefits that may arise.

1.19. Ofgem has also published alongside this document:

- ◆ a Discussion Paper on Registered Power Zones and “Innovation Funding Incentives”,<sup>10</sup> and
- ◆ a consultation document on metering price controls.<sup>11</sup>

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

1.20. Ofgem would like to hear the views of all those with an interest in the development of revised price controls for the DNOs, including consumers and their representatives, investors and city analysts, distributed generators, environmental groups, suppliers and the DNOs themselves.

1.21. Responses to this document should be received by 22 August. They should be sent to:

Cemil Altin  
Head of Price Control Review  
Ofgem  
9 Millbank  
SW1P 3GE

Email [cemil.altin@ofgem.gov.uk](mailto:cemil.altin@ofgem.gov.uk)

Fax 020 79017075  
Tel 020 79017401

1.22. Unless marked as confidential all responses will be published by placing them in Ofgem’s library or on the 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 Nienke Hendriks, who can be contacted on 020 79017329 or on email at [nienke.hendriks@ofgem.gov.uk](mailto:nienke.hendriks@ofgem.gov.uk).

---

<sup>10</sup> Innovation and Registered Power Zones: Discussion Paper, Ofgem, July 2003.

<sup>11</sup> Electricity Distribution Network Operators: Price Control review – Metering issues – Initial consultation, Ofgem, July 2003.

## 2. Background

### *Introduction*

- 2.1. Since the last price control review in 1999, there have been a number of developments in the legislative framework, the corporate environment, the government's energy policy and utility regulation. It is important to understand the context of the price control review within these developments and how they will need to be taken into account in developing revised price controls.

### *Context of the price control review*

- 2.2. The Utilities Act 2000, which modified the Gas Act 1986 and the Electricity Act 1989, sets out Ofgem's objectives and duties. Under the Utilities Act 2000 Ofgem has increased social and environmental responsibilities.<sup>12</sup> An important factor that needs to be taken into account in developing revised price controls is the guidance that Ofgem receives from the Secretary of State on social and environmental issues. This guidance took legal effect in November 2002 and consultation is underway on a version that has been updated in the light of the government's Energy White Paper.
- 2.3. The objectives for the price control review reflect Ofgem's statutory objectives and duties and also the statutory duties and licensed requirements of the DNOs. Ofgem has also taken account of the guidance it has received from the Secretary of State. As the price control review progresses and policy decisions are taken, it will be important to ensure that these are consistent with the objectives for the price control review. An important aspect of this will be the production of Regulatory Impact Assessments (RIAs) where there are new policies or significant changes to existing policies. An initial RIA for the price control review and an explanation of how Ofgem intends to use them during the review is set out in Appendix 1.

---

<sup>12</sup> 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 Annual Reviews, June 2002 (42/02) and June 2003 (36/03).

- 2.4. In its Energy White Paper the government reaffirmed specific targets for the amount of energy to be supplied from renewable generation and for the capacity of combined heat and power (CHP) by 2010. If these targets are to be achieved then it is likely that there will be a significant increase in the amount of generation connected directly to the distribution networks. This raises important questions about the way in which the regulatory framework may need to be developed – and this has been reflected in the objectives for the project and the work that has already been carried out. Distributed generation is discussed in detail in Chapter 5.
- 2.5. At privatisation, the Public Electricity Suppliers (PESs) were responsible for both the distribution and supply of electricity, taking the place of the former regional electricity boards. With the introduction of competition in supply it was considered appropriate to split distribution and supply activities and this was formalised by the Utilities Act 2000 which introduced separate licences for distribution and supply, and required that these be held by separate legal entities. At the last price control review, a significant amount of work was undertaken on splitting out supply activities and their associated costs from the distribution businesses. This will not be a concern for this price control review although the introduction of competition for the provision of certain metering services may raise similar issues. The objectives for the price control review recognise that it will be important to ensure that competition is promoted in the relevant parts of the industry, including for supply, connection and metering services and generation. Ofgem has published a document on metering price controls alongside this paper.
- 2.6. It is also important to understand how the price control review is related to some of the other projects and policy areas that are being taken forward by Ofgem. A number of areas are relevant in this respect:
- ◆ **distributed generation co-ordination group (DGCG)** – this group, created and jointly chaired by the Department of Trade and Industry (DTI) and Ofgem, is concerned with a wide range of issues related to the connection and operation of distributed generation in Great Britain and is advised on technical issues by the Technical Steering Group (TSG).



The work of the DGCG provides an important input into the price control review;

- ◆ **structure of electricity distribution charges** – Ofgem has been reviewing the structure of electricity distribution charges in order to ensure that they protect consumers, provide the right incentives to companies and reflect developments in the environment within which DNOs operate their networks, including the development of distributed generation. Ofgem published initial conclusions on the structure of electricity charges in June 2003.<sup>13</sup> This will be followed by an initial decision document in October 2003 and an implementation update document in July 2004. Any major changes to the structure of charges will be introduced alongside the new price controls in April 2005;
- ◆ **distribution losses** – Ofgem has been reviewing the incentives that DNOs have to reduce the incidence of electrical losses on their networks. Ofgem published initial proposals on possible changes to the incentive arrangement in June 2003<sup>14</sup> and final proposals will be published in October 2003, as part of the update document for the price control review. Any changes to the incentive arrangements will be introduced alongside the new price controls in April 2005; and
- ◆ **asset risk management survey** – Ofgem and the industry have worked together to introduce a survey which assesses the asset risk management policies and processes used by network monopoly companies. The first survey was undertaken in summer 2002 and the results published in January 2003.<sup>15</sup> Ofgem intends to undertake some form of asset risk management survey as part of the DNO price control review. One of the areas that this will focus on is looking at the models, processes and assumptions that companies have used to develop their cost projections. This should increase the level of understanding of how companies expect their costs to change over time.

---

<sup>13</sup> Structure of Electricity Distribution Charges: Initial Conclusions, Ofgem, June 2003 (Ref 43/03).

<sup>14</sup> Electricity Distribution Losses: Initial proposals, Ofgem, June 2003 (Ref 44/03).

<sup>15</sup> Asset Risk Management Survey – composite industry report – Ofgem, January 2003 (Ref 01/03).

## ***Industry structure***

- 2.7. The DNOs' primary function is the distribution of electricity that has been produced from various types of generating plant, across their networks from Grid Supply Points (GSPs) that connect to the higher voltage transmission networks, into consumers' homes and business premises.<sup>16</sup> Suppliers purchase electricity from generators, pay charges to transmission and distribution companies for transferring electricity across their networks, arrange for meter readings to be taken, and incorporate all of these costs into the bills they send consumers.

## ***Distribution businesses***

- 2.8. DNOs are responsible for maintaining and developing an economic, efficient and co-ordinated network. This includes responsibility for ensuring that consumers have a reliable electricity supply, restoring power promptly in the event of an interruption to supply and connecting consumers to their network. These and other responsibilities of the DNOs are set out in their licences and the Utilities Act 2000.
- 2.9. Electricity distribution costs account for around £3 billion annually and make up around 25 per cent of consumers' electricity bills. For a typical domestic electricity consumer, based on consumption of 3300 kWh of electricity a year, the distribution element of their bill would be approximately £60.
- 2.10. Each DNO holds a licence to distribute electricity on its distribution system within Great Britain, although the price control relates to the relevant services provided by the DNO within its authorised area. Following privatisation and a number of corporate mergers and acquisitions, the licences for the fourteen authorised areas within Great Britain (twelve in England and Wales and two in Scotland) are presently held by eight different companies. This may be reduced to seven if the announced purchase of Aquila's distribution business by Scottish and Southern Energy is completed. All of these companies are part of larger corporate groups although each DNO is a separate legal entity. These larger

---

<sup>16</sup> Some generation capacity may be connected directly to DNOs' networks. This is termed distributed

corporate groups have a wide range of different activities and businesses including owning other network monopoly businesses (including in other sectors e.g. water), generation businesses and supply businesses.

- 2.11. DNOs are owned by shareholders, both private and public, in a number of different types of ownership structure including publicly quoted shareholdings and privately owned companies. Table 2.1 sets out the DNOs' licensed names, their former names (as at the last distribution price control review) and their present ownership. Figure 2.1 shows the area that each DNO (using their trading names) is licensed to serve.

**Table 2.1: DNO names and ownership**

Present DNO name	Former name	Group owner
EdF Energy (SPN) plc	SEEBOARD	EdF*
EdF Energy (LPN) plc	London Electricity	EdF *
EdF Energy (EPN) plc	Eastern Electricity	EdF *
Western Power Distribution (South Wales) plc	SWALEC	PPL
Western Power Distribution (South West) plc	South Western Electricity	PPL
Northern Electric Distribution Ltd	Northern Electric	MidAmerican
Yorkshire Electricity Distribution Ltd	Yorkshire Electricity	MidAmerican
Southern Electric Power Distribution	Southern Electric	Scottish and Southern Energy
Scottish Hydro-Electric Power Distribution	Scottish Hydro-Electric	Scottish and Southern Energy
Aquila Networks	Midlands Electricity	Aquila/First Energy <sup>17</sup>
East Midlands Electricity Distribution plc	East Midlands Electricity	Eon (via Powergen)
United Utilities Electricity plc	Norweb	United Utilities
SP Manweb plc	Manweb	ScottishPower
SP Distribution Limited	ScottishPower	ScottishPower

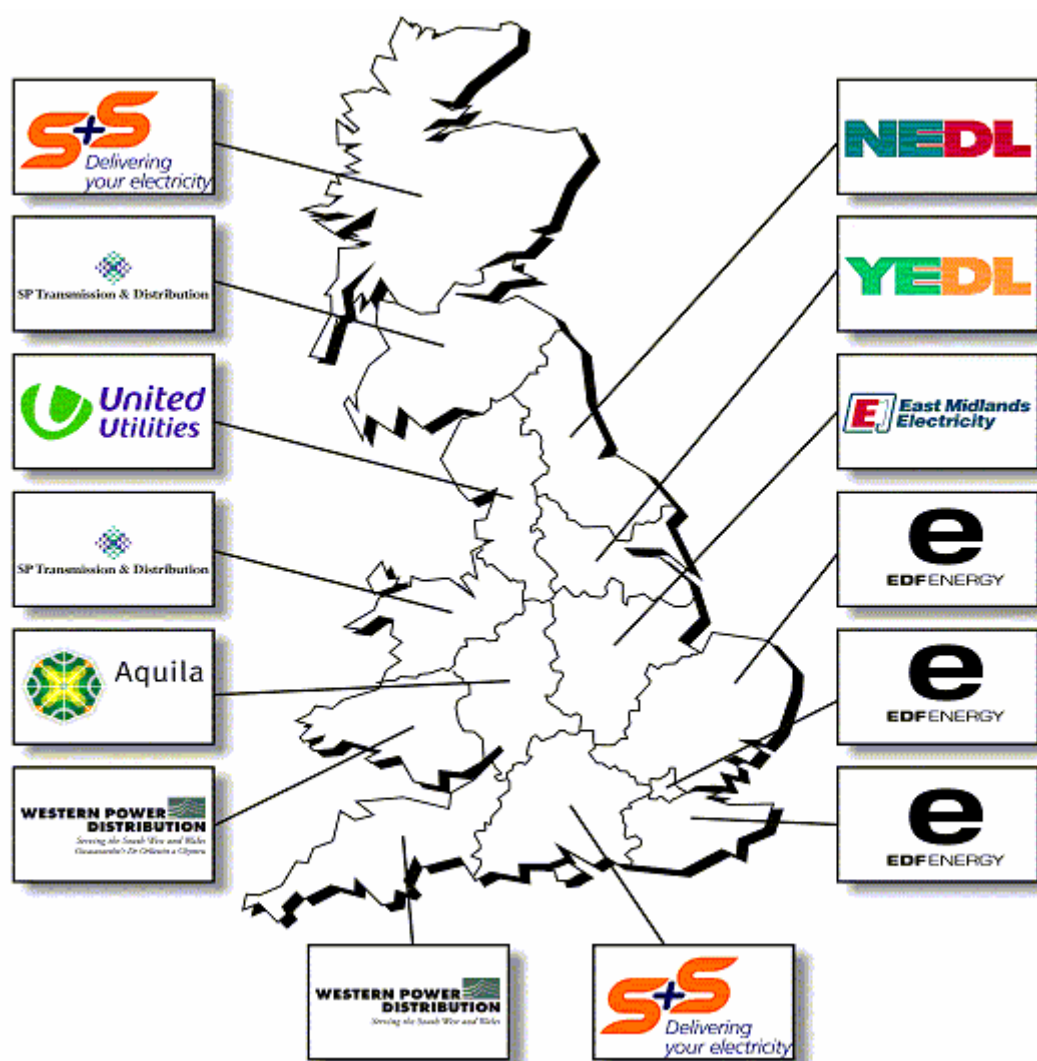
\* As of 30 June 2003, the UK holding company's name changed from LE Group to EdF Energy.

---

generation and is discussed in Chapter 5.

<sup>17</sup> SSE announced its intention to purchase Aquila Networks on 22 May 2003. The purchase has not been completed at the time of writing.

Figure 2.1: DNOs' authorised areas



### ***Technical description of distribution businesses***

2.12. In England and Wales, the transmission network, operating at 400kV and 275kV, transports electricity from generating stations to the DNOs' distribution networks at Grid Supply Points (GSPs). The highest voltage level of the distribution network is generally at 132kV. Towards the centres of demand, transformers are used to reduce the voltage of the electricity to lower voltage levels. In Scotland the situation is slightly different. In Scotland, the transmission networks operate at 400kV, 275kV and 132kV, and the distribution networks at the lower voltages. Most consumers are supplied at the low voltage (LV) level, which is defined as a voltage less than 1kV, with most domestic consumers being

supplied at 230 Volts. There are some larger business consumers which are supplied at the higher voltage (HV) level, which is defined as a voltage greater than 1kV (up to and including 22kV). There are a very small number of industrial consumers that are connected at the extra high voltage (EHV) level, which is defined as a voltage level greater than 22 kV (up to 132 kV).

2.13. The distribution networks mainly consist of overhead lines, underground cable, switchgear, transformers, control systems and meters to enable the transfer of electricity from the transmission network to consumers' premises. There are many similarities between the different distribution networks but there are also some important differences, including:

- ◆ the number and density of consumers connected to the network;
- ◆ the voltage level at which consumers are connected; and
- ◆ the size of the network and the area that is served.

2.14. Table 2.2 shows the number of consumers connected to each network and the number of units distributed at different voltage levels. In Table 2.2 LV1 refers to units distributed (to domestic/small non-domestic premises) for which different rates apply in specified night-time periods compared to other periods, e.g. Economy 7; LV2 refers to units distributed (for similar premises and tariffs) during normal night-time periods or specified off-peak periods; and LV3 refers to all other LV units not captured by LV1 or LV2, e.g. a domestic unrestricted tariff.

**Table 2.2: Number of consumers connected to the network and units distributed**

<b>DNO</b>	<b>Numbers of consumers connected</b>	<b>Total Units Distributed (GWh)</b>	<b>EHV (GWh)</b>	<b>HV (GWh)</b>	<b>LV1 (GWh)</b>	<b>LV2 (GWh)</b>	<b>LV3 (GWh)</b>
<b>Aquila</b>	2,299,379	27,216	848	10,020	1,714	1,795	12,839
<b>EME</b>	2,421,506	28,187	735	10,569	5,326	2,702	8,855
<b>EPN</b>	3,381,566	34,217	681	8,107	6,791	3,884	14,754
<b>Hydro</b>	673,138	8,407	433	1,184	1,694	1,995	3,101
<b>LPN</b>	2,083,617	25,518	533	6,097	915	942	17,031
<b>NEDL</b>	1,510,799	16,687	2,537	3,629	644	648	9,229
<b>SP Distribution</b>	1,906,498	22,561	2,145	4,898	1,174	2,656	11,688
<b>SPN</b>	2,112,108	20,745	1,853	2,781	3,070	2,131	10,910
<b>Southern</b>	2,706,336	32,320	2,304	8,246	1,412	2,548	17,810
<b>SP Manweb</b>	1,433,917	16,941	2,434	4,398	732	753	8,624
<b>UU</b>	2,269,503	25,216	810	7,916	1,168	1,656	13,666
<b>WPD S. Wales</b>	1,041,325	12,518	2,952	2,695	440	464	5,967
<b>WPD S. West</b>	1,356,895	15,116	680	3,657	1,257	1,638	7,884
<b>YEDL</b>	2,142,733	24,074	1,388	8,131	1,114	1,121	12,320

2.15. Table 2.3 sets out details on certain technical characteristics of each of the distribution networks.

**Table 2.3: Key technical characteristics of DNOs' networks**

DNO	Total area in square km (000s)	Length of circuit (km)												Total Network Length
		132kV		66kV		33kV		HV		LV		Total		
		Over-head	Under-ground	Over-head	Under-ground	Over-head	Under-ground	Over-head	Under-ground	Over-head	Under-ground	Over-head	Under-ground	
Aquila	13,000	1,405	298	809	18	1,045	376	14,723	11,598	6,301	23,919	24,283	36,209	60,492
EME	16,000	2,158	193	10	10	2,864	1,429	12,906	12,205	5,325	30,902	23,263	44,739	68,002
EPN	20,300	2,356	231	0	0	3,875	2,534	19,297	17,223	9,474	36,302	35,002	56,290	91,292
Hydro	54,500	-	-	0	0	5,325	649	21,103	4,766	4,244	8,917	30,672	14,332	45,004
LPN	667	28	470	12	445	0	638	1	9,072	0	19,772	41	30,397	30,438
NEDL	14,400	604	73	1,023	437	355	417	10,085	7,427	2,956	16,233	15,023	24,587	39,610
SP	23,000	-	-	0	0	2,963	1,838	16,953	15,189	4,544	24,110	24,460	41,137	65,597
SPN	8,300	1,179	333	0	0	1,314	1,266	5,593	11,035	4,149	20,496	12,235	33,130	45,365
Southern	16,900	1,920	394	6	163	3,459	1,795	13,398	14,333	8,929	29,407	27,712	46,092	73,804
SP Manweb	12,200	1,299	213	0	0	2,006	1,528	13,053	6,398	5,310	16,065	21,668	24,204	45,872
UU	12,500	1,332	249	0	0	1,389	1,785	7,994	11,266	3,032	30,984	13,747	44,284	58,031
WPD S. Wales	11,800	1,165	71	355	15	1,465	380	12,315	4,970	3,165	9,120	18,465	14,556	33,021
WPD S. West	14,400	1,372	58	0	0	2,842	1,030	17,430	6,444	7,793	11,826	29,437	19,358	48,795
YEDL	10,700	1,222	196	941	58	1,294	1,366	9,797	10,805	2,523	27,983	15,777	40,408	56,185

Note: The 132kV network in Scotland forms part of the transmission network. Source: Companies' completed returns for 2001/02 for Information and Incentive Programme templates.

## ***Setting price controls***

2.16. It is helpful to outline in broad terms how price controls are set. Price controls provide a company with a level of revenue that would be sufficient to finance an efficient business. This is based on an estimate of the various allowances which make up companies' costs and comprises of:

- ◆ **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, underground cables and other plant, such as transformers. In setting the price control a projection is made of the level of capital expenditure that an 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 regulatory 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 has historically provided for the tax liabilities through an allowance in its estimate of the pre-tax cost of capital.

2.17. The proportion of price control revenue that is covered by each of the cost areas above is shown in table 2.4.



**Table 2.4: Breakdown of price control revenue 2001/02<sup>1</sup>**

	<b>Costs in £billion 2001/02 actual (2001/02 prices)</b>	<b>Percent of price control revenue accounted for by cost category 2001/02 actual %<sup>5</sup></b>
Operating expenditure <sup>2</sup>	1.185	40
Depreciation <sup>3</sup>	0.99	33
Financing and tax costs <sup>4</sup>	0.79	26

Notes: 1 Source: Regulatory accounts 2001/02

2 Excludes depreciation and transmission exit charges

3 Regulatory depreciation has been used as a proxy for annualised capital expenditure

4 A figure of 6.5% has been used for the cost of capital consistent with the existing price control

5 Does not add up to 100 per cent because excluded service revenue is not included in price control revenue

- 2.18. The importance of cost efficiency in the areas of capital expenditure (depreciation), operating expenditure and financial management (return) should not be understated and each has a significant impact on the level of prices and companies' profitability.
- 2.19. Price controls and related arrangements are included in licence conditions in each distribution licence. These licence conditions specify how the price control will work and provide a mechanism to monitor companies' performance and for Ofgem to take appropriate action if it becomes clear that a company is not meeting its licence conditions. As part of the price control review, Ofgem will publish draft licence conditions for consultation. These are subject to a final consultation, under Section 7 of the Utilities Act 2000, before licence holders have to decide whether they are willing to accept the licence modifications. If they do not accept the modifications, Ofgem would expect to refer the matter to the Competition Commission for a decision.

## ***DNOs' performance under the existing price controls***

2.20. This section sets out how DNOs have performed so far under the existing price control both in terms of costs and the quality of service delivered to consumers.

2.21. Tables 2.5 to 2.7 set out how DNOs have performed overall against the operating and capital expenditure assumptions underlying the existing price control. It is difficult to make adjustments to the companies' numbers to make them directly consistent with the assumptions underlying the existing price control and for this reason only aggregate figures have been published at this stage. An important aspect of the price control review will be to refine these adjustments to make companies' costs more consistent with the existing price control assumptions.

**Table 2.5 –2.7: Cost and return performance under the existing price controls**

<b>Table 2.5</b>	<b>Standard controllable operating costs 2001/02</b>		
	<b>Assumed (£m)</b>	<b>Actual (£m)</b>	<b>Difference (%)</b>
<b>Average</b>	<b>72</b>	<b>56</b>	<b>22</b>
<b>Highest out-performance</b>	<b>-</b>	<b>-</b>	<b>47</b>
<b>Lowest out-performance</b>	<b>-</b>	<b>-</b>	<b>8</b>

<b>Table 2.6</b>	<b>Capital expenditure 2001/02</b>		
	<b>Assumed (£m)</b>	<b>Actual (£m)</b>	<b>Difference (%)</b>
<b>Average</b>	<b>77</b>	<b>68</b>	<b>12</b>
<b>Highest out-performance</b>	<b>-</b>	<b>-</b>	<b>41</b>
<b>Lowest out-performance</b>	<b>-</b>	<b>-</b>	<b>-2</b>

<b>Table 2.7</b>	<b>Return 2001/02</b>		
	<b>Assumed (%)</b>	<b>Actual (%)</b>	<b>Difference (%)</b>
<b>Average</b>	<b>6.5</b>	<b>9</b>	<b>2.5</b>
<b>Highest out-performance</b>	<b>6.5</b>	<b>13</b>	<b>6.5</b>
<b>Lowest out-performance</b>	<b>6.5</b>	<b>7</b>	<b>0.5</b>

2.22. The tables shows that on average, in 2001/02, DNOs were outperforming the operating expenditure assumptions underlying the price control by around 22 per cent and the capital expenditure assumptions by around 12 per cent – although there is significant variation across companies. Overall, DNOs are earning a return

of around 9 per cent, which is 2.5 per cent greater than the allowed cost of capital of 6.5 per cent – although again there is variation across companies. In setting revised price controls, the benefits of achieved efficiency savings will be passed back to consumers, in accordance with the treatment of efficiency savings set out in this document and the June 2003 document on developing network monopoly price controls.

- 2.23. Table 2.8 shows how companies are performing in 2001/02 in relation to the 2004/05 targets that have been set for the number (or customer interruptions – CI) and duration (or customer minutes lost – CML) of interruptions to supply. Although performance can vary from year to year depending on a number of factors, including the weather, it can be seen that most companies are making good progress to meeting or outperforming their targets.
- 2.24. In Table 2.8, both actual CIs and CMLs have been adjusted for exceptional events and to reflect audits carried out by Ofgem to assess the DNOs' reporting accuracy. The targets have also been adjusted from those originally set in 1999, in order to make them consistent with the definitions and guidance set out in the Regulatory Instructions and Guidance (RIGS).<sup>18</sup> Further details are set out in Ofgem's 2001/02 Electricity Distribution Quality of Supply report published in June 2003.<sup>19</sup>

---

<sup>18</sup> Information and Incentives Project – Regulatory Instructions and Guidance version 2, Ofgem, March 2002.

<sup>19</sup> 2001/02 Electricity distribution quality of supply report – Ofgem, June 2003 (Ref 51/03).

**Table 2.8: Quality of service performance<sup>1</sup>**

	<b>2004/05 CI Target</b>	<b>2001/02 Actual performance CIs</b>	<b>2001/02 Actual performance as % of 2004/05 Target</b>	<b>2004/05 CML Target</b>	<b>2001/02 Actual performance CML</b>	<b>2001/02 Actual performance as % of 2004/05 Target</b>
<b>DNO</b>						
<b>Aquila</b>	131	124	94%	117	126	108%
<b>EME</b>	81	79	97%	71	93	131%
<b>EPN</b>	92	102	111%	82	80	97%
<b>Hydro</b>	135	120	89%	196	142	73%
<b>LPN</b>	32	39	121%	45	42	94%
<b>NEDL</b>	90	84	93%	97	88	91%
<b>SP Distribution</b>	66	60	90%	88	64	73%
<b>SPN</b>	97	93	96%	85	97	113%
<b>Southern</b>	94	100	107%	101	90	89%
<b>SP Manweb</b>	47	47	100%	66	53	80%
<b>UU</b>	55	56	103%	68	64	94%
<b>WPD S. Wales</b>	153	121	79%	129	92	71%
<b>WPD S. West</b>	81	104	129%	63	85	135%
<b>YEDL</b>	85	78	92%	67	55	82%

Notes: 1 A percentage figure below 100 indicates that a DNO is outperforming its 2004/05 target.

Figures rounded to nearest whole number

## 3. Form, Structure and Scope of the price controls

### *Introduction*

- 3.1. This Chapter discusses the RPI-X price control framework which has been applied to the DNOs. RPI-X price controls and related regulatory arrangements, such as quality of service incentive schemes, have been used by the regulator to meet its statutory objectives and duties. The price control and incentive framework is also designed in a way that seeks to ensure that licence holders can meet their statutory duties and licensed obligations.
- 3.2. The Chapter outlines Ofgem's main statutory objectives and describes various measures undertaken by Ofgem over the last year to strengthen the RPI-X framework. It also considers issues relating to the duration, structure and scope of the new distribution price controls that will take effect from 1 April 2005.

### *Ofgem's statutory objectives and those of licence holders*

- 3.3. The decisions taken by Ofgem are primarily driven by its statutory objectives 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 – and must have regard to guidance issued by the Secretary of State on social and environmental issues. Ofgem also has a statutory duty to ensure that licence holders are able to finance their statutory and licence obligations.
- 3.4. 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.

- 3.5. The June 2003 document indicated that, in the absence of effective competition, the use of incentive regulation, including RPI-X price controls, is the best way of ensuring that both the regulator and the companies can meet their relevant objectives and duties.
- 3.6. In general the RPI-X framework has worked well since privatisation, this is illustrated by the performance of the DNOs: operating costs have fallen by 30 per cent in real terms since privatisation and quality of service has generally been improved.
- 3.7. The National Audit Office (NAO) investigated the performance of the RPI-X price control framework as applied by Ofwat, Oftel and Ofgem. Their findings were published in April 2002<sup>20</sup>. The NAO concluded that RPI-X regulation had been successful in delivering investment while also driving improvements in efficiency which had been passed onto consumers.

### ***Structure of the existing price controls***

- 3.8. The main features of the existing price control include:
- ◆ the RPI-X form of price control that provides incentives to companies to operate and invest in the network on an efficient basis;
  - ◆ a revenue driver linking revenue to the number of units distributed and a predetermined projection of the number of consumers. The revenue driver is weighted equally between the two;
  - ◆ an incentive mechanism to encourage distribution businesses to reduce the level of electrical losses on their distribution networks and become more energy efficient;

---

<sup>20</sup> Pipes and Wires – National Audit Office, 10 April 2002.

- ◆ an incentive mechanism to encourage companies to improve the quality of service delivered to consumers in three main areas – the number and duration of interruptions to supply and the quality of telephone response provided to consumers. This was introduced as part of the Information and Incentives Project (IIP);
- ◆ a pass through for the costs of prescribed business rates on network assets, licence fees and NGC exit charges; and
- ◆ a correction mechanism that adjusts the price control for any previous over or under recovery of revenue.

3.9. The price control can be represented generically as follows:

$$BR * (V) * (1 + \%RPI - X + L + Q + Z + CPT - K)$$

where

%RPI	% increase retail price index (RPI)
BR	Base revenue
V	Volume driver
X	X factor
L	Network losses incentive
Q	IIP penalty term
Z	IIP reward term
CPT	Cost pass through for prescribed business rates on network assets, licence fees, NGC exit charges
K	Correction factor for over/under recovery in the previous year

3.10. Ofgem considers that the broad structure of the price control remains appropriate although it will be necessary to consider the detail of each of these areas.

### ***Distribution losses***

3.11. At present around 20 TWh per year is lost as electricity is transported across the distribution networks in Great Britain, which is significant both financially and environmentally. In light of these considerations Ofgem has undertaken a review of

the existing arrangements that provide incentives on DNOs to reduce losses. Initial proposals were published in June 2003.

- 3.12. Following responses to the June document Ofgem will set out final proposals regarding the incentive framework for distribution losses in the DNO price control review update document scheduled for October 2003. Initial proposals on the valuation of the incentive will be set out in the DNO price control review initial proposals document in June 2004. This will allow up to date information to be taken into account. Final proposals on the losses incentive will be part of the DNO price control review final proposals in November 2004. The new losses incentive will take effect from 1 April 2005 together with the revised price controls.

### ***Hydro Benefit***

- 3.13. Hydro Electric's (HE) price control presently includes a transfer of Hydro Benefit which has the effect of reducing distribution charges for HE's consumers in the North of Scotland. The transfer reflects the low cost of HE's hydro power stations within its generation business due in part to the written down asset values at privatisation. In 2001/02 the value of Hydro Benefit was £38.7 million.
- 3.14. As part of the final proposals for the last price control review a revised formula for calculating Hydro Benefit was included in HE's price control. Ofgem indicated that by including the formula in the licence modification both Ofgem and HE intended that the formula would survive subsequent price control reviews. Consideration will need to be given to whether there is a compelling reason to change this approach.

### ***Revenue drivers***

- 3.15. Price controls can be designed so that the permitted level of total revenue that a company is allowed to recover varies with changes in volume as well as being indexed to RPI. This provides financial incentives to companies to respond to the demands of their consumers. Under the existing price controls the revenue driver is 50 per cent weighted to the number of units distributed. The remaining 50 per cent is fixed as it is related to a predetermined projection of the number of consumers.



This helps to avoid incentives to unnecessarily increase the amount of units distributed over the network.

- 3.16. Ofgem will need to consider whether the present arrangements remain appropriate and provide the right incentives to companies in dealing with uncertainty over demand growth.

### ***Scope of the price controls***

- 3.17. The existing distribution price control covers all charges made by DNOs except for those deemed to be excluded services. There are eight categories of excluded services which are set out below:

- ◆ **extra high voltage (EHV) charges** – relate to charges made to those consumers that are connected to DNOs' distribution systems at a voltage level above 22kV, or directly to a sub-station with a primary voltage of 66kV or above. The charges that DNOs have recovered from these consumers have been excluded from the existing price controls on the basis that they are connected at different voltage levels, often with individual supply requirements, which means that they have generally been charged on a site specific basis. The forecasts provided by DNOs at the last price control review generally indicated that they expected real reductions in the level of revenue recovered from EHV consumers. Ofgem also strengthened the licence condition relating to the treatment of EHV excluded revenue to give the Authority the power to cap EHV charges if DNOs acted in a way that was inconsistent with the assumptions made in setting the price control.

It is important that the regulatory framework provides EHV consumers with an appropriate level of protection from the possible abuse of monopoly power. As part of the price control review, Ofgem will need to consider what form this protection should take. It will be important to understand how and why EHV charges have changed over the period of this price control and to ensure that they are consistent with the assumptions underlying the price control – including on the cost of capital and asset valuation;

- ◆ **top-up and standby charges** – relate to charges made to those consumers who do not use the DNOs' distribution systems for the bulk of their electricity needs. Ofgem's initial view is that these charges should continue to be excluded from the main price control;
- ◆ **non trading rechargeables** – these charges relate to specific requests made by third parties for DNOs to carry out work on their distribution systems. This includes requests to move overhead lines and underground cables to accommodate the needs of public authorities or developers. The nature and level of this work tends to vary from year to year and on this basis, Ofgem's initial view is that they should continue to be excluded from the price control;
- ◆ **pre-payment meter distribution business surcharges** – these charges relate to the extra costs incurred by DNOs in providing prepayment meters. Under the existing price control, the maximum additional amount (relative to their charge for a standard domestic meter) that DNOs can charge for the provision of a prepayment meter is capped at £15 for each meter. Competition is being introduced in the provision of certain metering services and this will have an impact on the treatment of metering related charges. Ofgem considers that effective competition provides consumers with the best protection in terms of the level of charges that they pay and the quality of service that they receive. The treatment of prepayment meter charges is discussed in more detail in the Ofgem July 2003 document on metering price controls;
- ◆ **special metering charges** – these charges relate to the provision of metering services to larger consumers, who can require more sophisticated and specific metering solutions than smaller consumers. This is discussed in more detail in the July 2003 document on metering price controls;
- ◆ **other minor activities and charges** – there are number of other minor activities where charges that DNOs recover are excluded from the price control including those relating to wheeling where units of electricity are transferred from one distribution system to another; and

- ◆ **connection charges** – the charges that DNOs recover from consumers from providing connections to the distribution systems are also excluded from the price control. The treatment of connection charges is discussed in more detail below.
- 3.18. In addition NGC connection charges associated with EHV units are also treated as excluded services.
- 3.19. Table 3.1 shows a breakdown of excluded service revenue across DNOs.

**Table 3.1: Excluded service revenue by category 2002/03**

DNOs	EHV	Top and standby	Non trading rechargeables	Pre-payment meter distribution business surcharges	Special metering charges	Other minor activities and charges	NGC/ transmission exit charges re EHV units	<b>Total excluded services revenue</b>
	£m	£m	£m	£m	£m	£m	£m	<b>£m</b>
Aquila	2.9	2.7	12.2	5.4	0.2	0.3	0.4	<b>24.1</b>
EME	3.2	2.2	6.3	4.1	0.4	0.9	0.0	<b>17.1</b>
EPN	4.9	1.7	0.1	2.9	2.6	0.6	0.7	<b>13.5</b>
Scottish Hydro	1.8	0.4	2.2	0.0	2.4	0.8	0.0	<b>7.6</b>
LPN	3.4	1.4	9.0	5.9	0.0	2.1	1.5	<b>23.3</b>
NEDL	7.4	0.9	8.8	2.6	0.0	1.1	1.8	<b>22.6</b>
SP Distribution	0.9	0.0	5.5	0.0	6.7	1.5	0.0	<b>14.6</b>
SPN	9.2	1.4	6.6	3.0	0.0	4.3	3.8	<b>28.3</b>
Southern	6.4	1.6	6.9	4.4	0.6	4.7	1.2	<b>25.8</b>
SP Manweb	6.9	1.2	3.7	4.3	0.0	0.7	1.1	<b>17.9</b>
UU	4.1	3.8	24.3	4.1	0.5	7.8	0.8	<b>45.4</b>
WPD S. Wales	8.4	0.4	3.4	2.5	1.7	1.0	2.1	<b>19.5</b>
WPD S. West	2.0	2.9	4.5	3.3	0.0	4.2	0.3	<b>17.2</b>
YEDL	3.6	2.8	2.7	3.9	0.0	1.2	1.9	<b>16.1</b>
<b>TOTAL</b>	<b>65.1</b>	<b>23.4</b>	<b>96.2</b>	<b>46.4</b>	<b>15.1</b>	<b>31.2</b>	<b>15.6</b>	<b>293.0</b>

Source – Regulatory accounts 2001/02

## ***Competition in connections***

3.20. The August final proposals on distribution connections<sup>21</sup> indicated that Ofgem was considering the classification of connection services between contestable and non-contestable services. Where the provision of services can be delivered through a competitive market this is preferable to introducing other forms of protection such as price controls. Ofgem will continue to monitor the development of the competitive connections market and if it is apparent that the market is not working effectively it will consider whether it is appropriate to take any steps to improve the functioning of the market. Where services are non-contestable they will continue to be provided by a monopoly supplier. In these circumstances Ofgem will need to consider whether consumers need to be provided with some form of protection in terms of the charges that they pay and the quality of service that they receive. There are a number of options that could be considered including:

- ◆ including non-contestable connection charges within the price control; and
- ◆ introducing standards of performance in certain areas such as the timeliness and quality of information provision.

## ***Duration of the price controls***

3.21. Regulators in the UK have tended to set price controls for between four and five years. The existing distribution price control is set to run for five years from 1 April 2000 to 31 March 2005. Increasing the period of the price control can strengthen the incentives that companies have to deliver efficiency savings. It also raises the possibility that there will be greater deviation from the assumptions underlying the price control. The June 2003 document on developing monopoly price controls explained that the existing incentives to achieve efficiency savings appear to be of sufficient strength. Ofgem has developed a framework for dealing with uncertainty this will be used over the course of the coming months to identify the most

---

<sup>21</sup> Competition in connections to electricity distribution systems: Final Proposals - Ofgem, August 2002 (Ref 54/02).

appropriate regulatory response for dealing with different types of uncertainty. However, there remains significant uncertainty regarding the development of distributed generation and the impact that this will have on companies' costs. On this basis it would seem appropriate to retain a five year price control period.

### ***Fixed retention period for efficiency savings***

3.22. The June 2003 document explained that DNOs would be allowed to retain the benefits of:

- ◆ capex savings for a fixed period of 5 years regardless of when the saving is made. This applies to capex savings (other than in respect of meters) made during this price control period, i.e. from 1 April 2000 to 31 March 2005; and
- ◆ incremental opex savings beyond the levels assumed in setting the existing price controls for a fixed period of 5 years regardless of when the saving is made. This will apply to all incremental opex savings made during this price control period after April 1 2003 and until March 31 2005.

3.23. The capex retention commitment was conditional on companies meeting their security and quality of supply obligations. The February 2003 document indicated one possible way of interpreting this commitment would be to link it to the 2004/05 targets that have been set for the number and duration of interruptions to supply. Several respondents disagreed with this approach or expressed concern about increased risk in relation to the 2004/05 targets. There are also the practical issues that the 2004/05 targets are now recognised not to be equally challenging across all DNOs and that 2004/05 performance will not be known until after the new price control is implemented. Ofgem is therefore minded to take a more general view of companies' compliance with security and quality of supply obligations in determining whether to allow the retention of capex efficiencies, and not to put in place a mechanistic link to performance against 2004/05 targets, although they will be an input into such an assessment.

3.24. Ofgem has recently met with a group of DNOs to discuss the practical implication of the rolling retention of capex efficiencies and how it should be reflected in the RAV. Ofgem is in the process of reviewing the method put forward by the companies for adjusting the RAV but its initial view is that this seems appropriate. Ofgem's proposed approach will be described in the October 2003 update document.

### ***Improving the incentive and price control framework***

3.25. The work that Ofgem has been undertaking on developing monopoly price controls has focused on improving certain aspects of RPI-X regulation to help ensure that the interests of consumers are protected and that it delivers effective and consistent incentives to DNOs. Ofgem published its initial consultation on this work in August 2002. This was followed by an update document in February 2003, the publication of two reports by Frontier Economics<sup>22</sup> in March 2003 and initial conclusions in June 2003.

3.26. The June 2003 initial conclusions document set out ways that the existing price control framework could be improved, including:

- ◆ confirmation of the merits of incentive regulation under the RPI-X model, recognising the benefits of a transparent process and the challenges that the regulator and the industry face in developing price controls that deal appropriately with uncertainty and align financial incentives that companies face with consumers' interests;
- ◆ recognition that while Ofgem has a common set of objectives for the companies it regulates, in some circumstances the best way to achieve these may vary across sectors, but that it is important that the regulatory framework does not present a barrier to convergence of approach or provide perverse incentives;

---

<sup>22</sup> Balancing Incentives – a final report prepared for Ofgem by Frontier Economics, and Regulatory Mechanisms for Dealing with Uncertainty – a final report prepared for Ofgem by Frontier Economics, March 2003.

- ◆ a move to rolling retention periods for efficiency savings to provide a consistent strength of incentives through time. The strength of incentives will depend on the extent of and approach to benchmarking and the length of the retention period – there does not appear to be a strong reason at present to move away from a five year retention period provided this is balanced with strong output delivery incentives;
- ◆ a decision-making framework for dealing with uncertainty that will be used to aid decisions both at reviews and, where necessary, in considering how to address substantial new costs arising between reviews; and
- ◆ a review of general financial issues that affect all the monopoly price controls within the scope of this project and, where possible, explanation of the approach Ofgem propose to take with the intention of reducing regulatory uncertainty. In particular, the paper set out for consultation Ofgem's initial thoughts on a framework for reflecting pension costs in price controls.

3.27. In addition, Ofgem recognises the value of benchmarking in those sectors where this is practicable (including the DNOs) and the consequent desirability of ensuring that best performers have sufficient incentives to continue to improve. Best performer in this context does not necessarily mean the company with the lowest cost. Ofgem indicated in the June 2003 document on developing network monopoly price controls that the general incentives provided to companies to achieve efficiency savings appear to be of sufficient strength. In looking at the methods that are used to assess efficiency (including benchmarking) and to project costs forwards it will be important that those companies that are the best performers continue to be provided with incentives to be the best in comparison to those that are less efficient.

3.28. Table 3.2 summarises the current range of incentives and areas that are under review or where possible improvements could be made.



**Table 3.2: The incentive framework for DNOs**

	<b>Current approach</b>	<b>Potential improvement identified</b>
RPI-X price control formula	Revenue drivers: Under the existing price controls the revenue driver is 50 per cent weighted to the number of units distributed. The remaining 50 per cent is fixed as it is related to a predetermined projection of the number of consumers.	Under review.
OPEX	Companies keep OPEX efficiency savings for the duration of price control period.	Allow companies to retain benefits of OPEX efficiency savings for a fixed period of time (5 years).
CAPEX	<p>DNOs are allowed the projected capex, a return on RAV and regulatory depreciation based on the RAV and the depreciation assumptions.</p> <p>At the next review, RAV and depreciation are re-calculated using actual investments over previous control period and the benefit of any CAPEX savings are passed onto consumers.</p>	<p>Allow companies to retain benefits of CAPEX efficiency savings on non-operational CAPEX for a fixed period of time (5 years).</p> <p>Based on assessment on a case by case basis, in which it can be demonstrated that consumers have benefited, companies will be remunerated for efficient non-operational CAPEX overspend through the RAV.</p> <p>For asset disposal, deduct proceeds of sale of assets (or where these have been transferred out of the licensee) from the RAV five years after the year in which the disposal was made.</p>

Distribution losses	Marginal incentive scheme which rewards DNOs by 2.9p per kWh for reductions in the level of distribution losses below the average rate for the past ten years.	Under review – see June 2003 44/03 Electricity distribution losses: Initial proposals.
Quality	<p>IIP incentive scheme: Quality incentive scheme rewarding/penalising DNOs for performance on number and duration of interruptions to supply against individual targets and the quality of telephone response performance-incentive.</p> <p>Guaranteed and Overall Standards of Performance – under GSs compensation payments to affected consumers if DNOs fail to meet required level of service subject to certain exemptions. OSs specify an average minimum level of service that companies are expected to achieve but where it is not appropriate to provide compensation to consumers.</p>	<p>Under review.</p> <p>Under review.</p>
Distributed Generation	Deep connection charges	Under review – see Chapter 5 for possible hybrid mechanism of cost pass through with a return lower than WACC combined with supplementary revenue driver to deliver premium return to the WACC.
RPZ and Innovation funding	n/a	Under review – see accompanying Discussion Paper.

## ***Views invited***

3.29. Views are invited on any of the issues raised in this Chapter and particularly on:

- ◆ the structure of the price controls;
- ◆ the treatment of the revenue driver;
- ◆ the scope of the price controls and the treatment of the various categories of excluded service revenue;
- ◆ the duration of the price control; and
- ◆ the incentive framework applying to DNOs and improvements that could be made to the framework including ensuring that the best performers are provided with appropriate incentives to continue to improve.

## 4. Quality of service and other outputs

### ***Introduction***

- 4.1. This Chapter sets out an overview of the existing framework of output measures and incentives that are in place for DNOs, the key issues that need to be considered in reviewing this framework and the key areas of work Ofgem will be undertaking to achieve this. It also sets out Ofgem's further thoughts on revising the exemptions regime.

### ***The existing arrangements***

- 4.2. The existing framework of output measures and incentives that is in place for the DNOs has four main elements:
- ◆ output measures that are subject to direct financial incentives under the price control;
  - ◆ output measures to monitor performance between reviews;
  - ◆ Guaranteed and Overall Standards of Performance (GOSPs); and
  - ◆ asset risk management and medium-term performance information.

### ***Outputs that are subject to financial incentives under the price control***

- 4.3. Following the last distribution price control review, Ofgem undertook a review of the regulatory arrangements for quality of service under the Information and Incentives Project (IIP). This included the introduction of common definitions and accuracy requirements for the reporting of quality of service performance and, from April 2002, financial incentives in relation to the number and duration of interruptions to supply and the quality of telephone response.

- 4.4. DNOs may be penalised by up to 1.75% of their annual revenue if they do not meet their individual targets for the number and duration of interruptions. There is also a mechanism for rewarding companies who beat their 2004/05 targets based on their rate of improvement in performance up to that date.
- 4.5. DNOs are rewarded or penalised by up to 0.125 per cent of revenue, on an annual basis, depending on their relative quality of telephone response. This is assessed through a monthly consumer survey that is undertaken by Ofgem.

### ***Output measures to monitor performance between reviews***

- 4.6. Ofgem collects information on a number of other outputs that are not financially incentivised in order to monitor performance between reviews, carry out comparative analysis and ensure that there are no perverse effects arising from the incentive scheme. This includes information on:
- ◆ the number of short interruptions, i.e. those lasting less than three minutes;
  - ◆ the breakdown of the number and duration of interruptions by voltage level and by circuit; and
  - ◆ the speed of telephone response.
- 4.7. Ofgem originally intended to introduce incentives on the speed of telephone response as part of the IIP incentive scheme in April 2002. Given concerns about the consistency in reporting across DNOs, Ofgem has instead focused on gaining a better understanding of differences in the companies' telephony systems and improving the robustness of the data. Incentives on the speed of telephone response will not be introduced before April 2005 and initial thoughts are discussed below.

### ***Guaranteed and Overall Standards of Performance***

- 4.8. The Guaranteed and Overall Standards of Performance (GOSPs) cover a range of service areas including restoration of supply following unplanned faults, making and keeping appointments and the provision of new connections. The Guaranteed

Standards provide protection to individual consumers. If the DNOs fail to meet the required level of service they must pay compensation to the consumers affected, subject to certain exemptions. Overall standards require DNOs' average level of performance for particular services to be above a minimum level.

### ***Asset risk management***

- 4.9. In Autumn 2002, Ofgem undertook its first survey of the policies and procedures used by the DNOs for asset risk management. Ofgem intends to carry out these surveys on a regular basis to encourage sharing of best practice between DNOs and to provide assurance that consumers' interests in future security and quality of supply are not being compromised.

### ***Key issues for reviewing the outputs framework***

- 4.10. There are a number of key issues that need to be considered in developing the outputs framework as part of the price control review.

### ***Scope of the output measures***

- 4.11. It is important to determine the appropriate scope of the outputs against which the DNOs will be required at least to report performance. This should be based on measures needed to protect consumers' interests, which will be informed by research into consumers' priorities.
- 4.12. Consumers may be concerned with the social and environmental performance of companies and it may be appropriate to extend the existing output measures to include such areas. This could include monitoring emissions of sulphur hexafluoride (SF<sub>6</sub>) which is a greenhouse gas which is used by DNOs as an insulant in some distribution equipment. The majority of SF<sub>6</sub> is used in higher voltage equipment on the transmission network. Ofgem is committed, as part of its Environmental Action Plan, to taking work forward on SF<sub>6</sub> emissions. Other environmental issues may include amenity issues and water pollution from leakage from oil filled cables.

- 4.13. In the light of the October 2002 storms, Ofgem is also considering whether there should be additional outputs and incentives regarding the resilience of companies' networks and their effectiveness in restoring consumers' supplies following exceptional events.

### ***Balance between financial and other forms of incentives***

- 4.14. Incentives can be financial (i.e. affecting price control revenue) or can take other forms such as public recognition and peer pressure from monitoring companies' performance and publishing league tables. The decision on which type of incentives to use will depend on issues such as the importance of the output to consumers, the ability to measure the output on a robust basis and the degree to which it is under companies' control.

### ***Form of the incentive scheme, targets and incentive rates***

- 4.15. For those outputs that are financially incentivised it will be necessary to determine the appropriate form of the incentive scheme, target levels of performance and incentive rates.
- 4.16. The appropriate targets and incentive rates should be based on a realistic assessment of the scope for improvement in performance, information on the efficient costs of achieving various levels of performance and consumers' willingness to pay.
- 4.17. Under the IIP incentive scheme, further consideration may need to be given to the treatment of planned interruptions, to avoid perverse incentives to accelerate or delay network investment depending on quality of supply performance to date in a given year.

### ***Development of the GOSPs***

- 4.18. As part of the price control review Ofgem is considering the appropriate scope and level of the GOSPs and associated levels of compensation. In taking this forward it will be important to understand consumers' views on improvements or extensions

to the GOSPs, their main priorities and their willingness to pay for such changes relative to the impact on DNOs' costs. Some guaranteed standards trigger relatively low compensation payments and it is for consideration whether these still provide a valuable contribution to the regulatory framework.

- 4.19. It will be important to review the role of Overall Standards of Performance (OSs) within the outputs framework, including whether it is appropriate to include some of the OSs in the IIP incentive scheme.
- 4.20. Ofgem is also giving further consideration to the introduction of automatic payments under GS 2 (the 18 hour restoration period standard). In undertaking the IIP, Ofgem found that the costs of introducing new measurement systems capable of allowing accurate automatic payments were prohibitively high in terms of the likely cost per consumer. Ofgem will be reviewing this assessment based on any new evidence regarding the likely costs and benefits.

### ***The treatment of exceptional events***

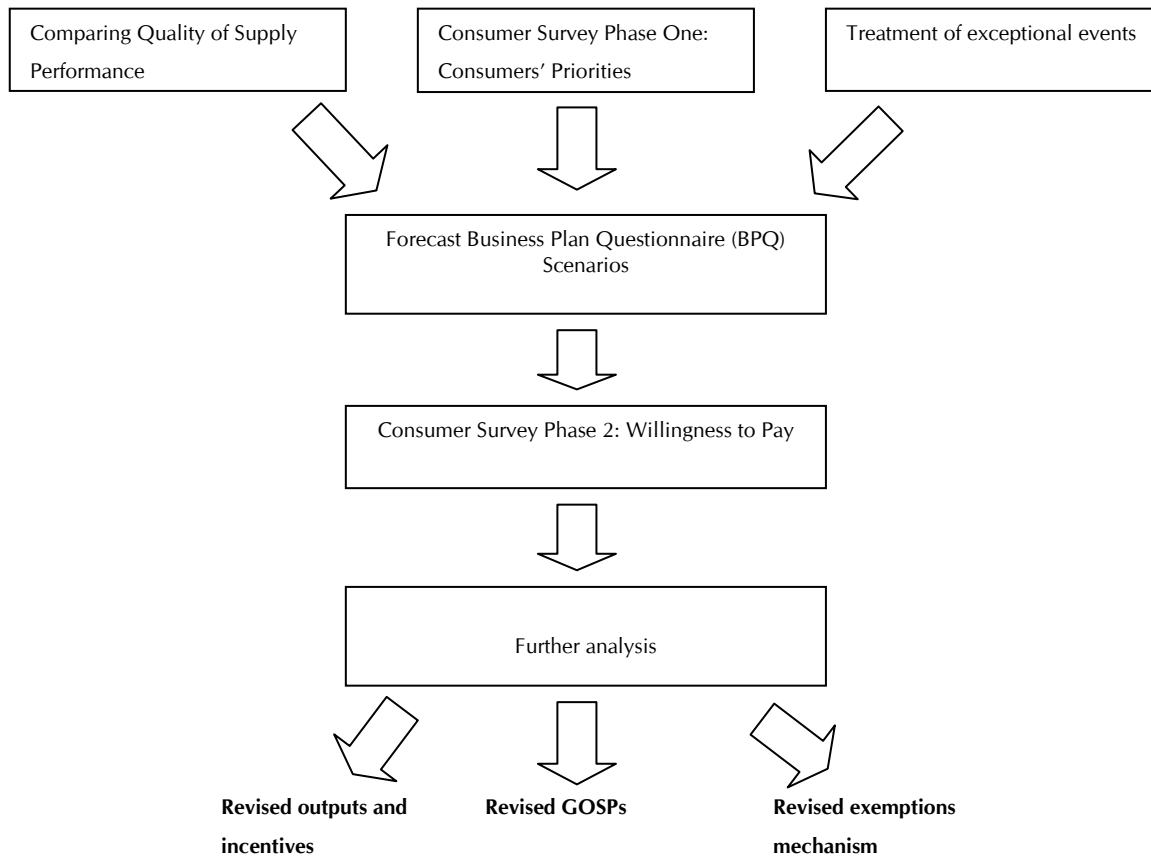
- 4.21. It is important to review the treatment of exceptional events under the Guaranteed Standards of Performance and the IIP incentive scheme. The current exemption regime has a number of significant weaknesses:
- ◆ there is a lack of clarity of incentives on DNOs as Ofgem is required to make backward-looking assessments of the events and companies' performance;
  - ◆ there are separate exemption mechanisms for both the IIP and the GSs which may lead to additional uncertainty and duplication of effort;
  - ◆ there may be delays and confusion for consumers as DNOs interpret the exemption regime differently; and
  - ◆ the process can be resource intensive for both Ofgem and energywatch.
- 4.22. Ofgem intends to put in place improved arrangements that strengthen incentives, provide greater clarity to DNOs and consumers and are more cost effective.



## ***Main areas of work***

4.23. There are a number of key areas of work that Ofgem is currently undertaking or will be undertaking over the next 12 months to develop the outputs framework. The relationship between these is illustrated in Figure 4.1.

**Figure 4.1: Key areas of work in developing the outputs framework**



### ***Phase one of consumer research***

- 4.24. Ofgem has appointed Accent Marketing and Research (Accent) to carry out consumer research for the distribution price control review. The work will be carried out in two phases as at present there is only limited information on the potential costs of service improvements. The first stage will focus on identifying the areas that consumers are most concerned with and their expectations and priorities for improvement. This will be used to determine the key areas where more detailed cost information will be requested from the DNOs as part of the Forecast Business Plan Questionnaire (BPQ).
- 4.25. Accent carried out the initial focus groups with domestic consumers and in-depth interviews with disabled and business consumers in June 2003. It is now carrying out the field work for the quantitative questionnaire for Phase 1. The results of this work will be published in September 2003.

### ***Phase 2 of the consumer research***

- 4.26. The second stage of the research will take place early next year when detailed information on the cost of service improvements has been returned by the DNOs and initial analysis has taken place of this data. This stage will focus on determining consumers' willingness to pay for improvements in the key outputs identified in the first stage of the consumer research in the light of cost information provided by the DNOs. This work will be based on stated preference techniques.

### ***Comparing quality of supply performance***

- 4.27. As discussed in the February 2003 document on developing monopoly price controls, Ofgem and the industry have been working together to develop a framework to enable better comparisons of quality of supply performance. This section outlines Ofgem's thoughts on this work.
- 4.28. In order to make more effective comparisons of performance between companies it is necessary to take account of factors which are outside DNOs' control or over which they have limited scope to change during a price control period. This is best

achieved by disaggregating performance by groups of circuits which have similar ranges of values for these factors, e.g. the percentage of overhead line, circuit length and the number of consumers connected per circuit.

- 4.29. It is then possible to carry out comparisons of fault rates, average customer interruptions and the duration of interruptions against the industry average in each group. More detailed variance analysis can also be undertaken to get a better understanding of the factors driving differences in performance. For example, differences may relate to fundamental characteristics such as circuit length which would be very costly to change and could only be achieved in the longer-term or differences may relate to factors such as the average duration of an interruption over which management would have more influence. This can be used to identify the realistic scope for improvement or gap closure in each group and, by aggregating across the groups, for each DNO as a whole. The analysis may also be used to adjust companies' overall performance so that they are more comparable and to identify the best performers.
- 4.30. Ofgem has now received 2002/3 performance data from all of the DNOs and it is carrying out the disaggregation work. Once this is completed it will carry out the performance comparisons and variance analysis. The initial results of this work will be published in October 2003 following discussions with each of the companies concerned. These results will be used to help identify the improvement scenarios to be included in the forecast BPQ. Ofgem would expect this work to be the main input into the determination of relative targets across companies.

### ***Rewarding frontier performance***

- 4.31. In the December 2001 final proposals for the IIP,<sup>23</sup> it was explained that companies should be provided with ongoing incentives to a frontier performing company (or the best) in terms of the quality of service delivered to consumers. Ofgem is committed to this objective and is developing its thoughts on the most appropriate way of rewarding frontier performance. Wherever possible, Ofgem would intend to

define frontier performance based on comparison of actual performance across companies, rather than in relation to existing IIP targets. Options for rewarding best performers could include:

- ◆ access to the IIP out-performance regime irrespective of performance relative to 2004/05 targets as long as a company was a frontier performer – this would mean that companies failing to meet their 2004/05 targets, but which were still frontier performers, would be allowed to earn a reward for outperformance depending on their rate of improvement in performance up to 2004/05; and/or
- ◆ companies that are frontier performers could be set lower rates of improvement in performance from 2005 onwards than would otherwise be the case.

4.32. Ofgem intends setting out initial proposals for rewarding frontier performance on quality of supply in the October 2003 document.

### ***Treatment of Exceptional Events***

4.33. Work is now underway on developing an improved framework for dealing with exceptional events under both guaranteed standards and the quality of service incentive scheme for the next price control period. In taking this work forward it will be important to gain a detailed understanding of:

- ◆ the frequency with which exceptional events occur and the scale of such events;
- ◆ the ability of DNOs to insure against the impact of such events and the cost of doing so;
- ◆ the relationship between weather conditions and the number of faults that occur on DNOs' networks;

---

<sup>23</sup> Information and incentives project, incentive scheme: final proposals – Ofgem, December 2001.

- ◆ whether there are “efficient” or benchmark timescales for restoring consumers for events of different magnitudes and type;
  - ◆ the extent to which DNOs can control the impact of such events; and
  - ◆ the effects on compensation costs of altering various aspects of the exemptions regime for GOSPs.
- 4.34. It has been suggested that all exemptions for exceptional events should be removed as this could provide clearer incentives to companies and would be easier for consumers to understand. This could expose DNOs to significant additional risk which may lead to an increase in the charges that consumers pay. Ofgem is exploring other options but it considers that the existing arrangements are not tenable.
- 4.35. Ofgem intends to introduce improved arrangements as part of the next price control and has retained Mott-MacDonald BPI to provide analysis and advice in this area. It is also necessary to consider whether it is necessary to put in place any interim measures to improve the existing arrangements. This is discussed below.

### ***Forecast Business Plan Questionnaire (BPQ)***

- 4.36. Ofgem will be asking each of the DNOs to provide detailed costs estimates for a base case and the additional costs relating to a small number of quality of service improvements. These will be based on the work discussed above.
- 4.37. The forecast BPQ is also likely to include an alternative scenario relating to improvements in the number and duration of interruptions during the next price control period, and a scenario, or sensitivities, relating to improved resilience in relation to exceptional events. In line with the recommendations of the DTI’s report into the October storms<sup>24</sup>, Ofgem will be requesting and reviewing information on

---

<sup>24</sup> Power System Emergency Post Event Investigation – A report for DTI by British Power International (BPI), October 2002.

the costs and benefits of accelerated upgrade of overhead lines to the latest design standard, EATS 43-40, and selective undergrounding based on risk assessment.

- 4.38. It will also be important to collect information on the estimated costs of improvements in standards of performance and other areas identified as being important to consumers.

### ***Further analysis***

- 4.39. The final stage of work in developing the revised outputs framework will consist of further analysis to determine the final targets and incentives rates for financially incentivised outputs, and the appropriate revisions to the standards of performance and exemption regimes. This will involve reviewing the information on the costs of delivering service improvements, consumers' willingness to pay and the views of other parties such as energywatch, suppliers and the government. It will also be important to review the effectiveness of the existing IIP incentive scheme to determine how incentives can be improved.

### ***Incentives for the speed and quality of telephone response***

- 4.40. As discussed above, Ofgem has been carrying out work to improve the consistency of information reported by DNOs on the speed of telephone response. Ofgem will be publishing a consultation paper in July 2003 proposing amendments to the Regulatory Instructions and Guidance (RIGs) that should make a clearer distinction between calls that are answered by an agent and calls that are answered by automated messaging. The changes should also improve the comparability of information across companies with different telephony systems. In the light of these changes, Ofgem will give further consideration to whether it is appropriate to introduce financial incentives on the speed of telephone response as part of the price control review.
- 4.41. Ofgem is also giving further thought to incentives for the quality of telephone response. Given the increasing use of automated messaging, it may be appropriate to reconsider the composition of the survey sample and/or to extend the monthly

survey to cover consumers' views on the effectiveness of such messages. It may also be appropriate to widen the scope of the questions in the survey to cover the speed with which the consumer's call was answered and other areas identified as being important to consumers.

### ***Interim measures for this price control period for exemptions for exceptional events***

- 4.42. As discussed above, the existing exemption regime for exceptional events has a number of significant weaknesses. As part of the price control review Ofgem intends to introduce improved arrangements that will provide more clarity, better consistency and improved incentives. Ofgem would expect to implement these across both the standards of performance and the IIP quality of service incentive scheme. Ofgem considers that it is important to put interim arrangements in place, before the next price control period, to avoid some of the problems that have recently been encountered.
- 4.43. A simple solution would be to put arrangements in place with the DNOs whereby they would not claim exemptions on an ex-ante basis and would instead pay out all valid claims for interruptions exceeding a given duration. The DNOs would then seek recovery of the costs through the price control which would be spread across all consumers. Ofgem would need to review whether it was appropriate for a company to recover all (or some of) the costs associated with meeting the compensation claims. This assessment would be based on the same criteria as those being used for the current determinations:
- ◆ whether the event prevented the company from restoring supplies in the relevant timescales;
  - ◆ whether the company took appropriate steps to design and maintain the network to withstand severe weather (e.g. tree-cutting); and
  - ◆ whether the company took appropriate steps to restore consumers' supplies once they had been interrupted.

- 4.44. The company would be allowed to recover, through the next price control, the compensation costs associated with claims for which exemptions would have applied.
- 4.45. Ofgem intends to consult separately on the details of these arrangements shortly but would welcome views on the principles outlined above.

### ***Views invited***

- 4.46. Views are invited on any of the issues raised in this Chapter and in particular on:
- ◆ the scope of output measures;
  - ◆ how frontier performance could be rewarded;
  - ◆ the treatment of GOSPs including their scope;
  - ◆ the treatment of exceptional events, including possible interim steps that could be introduced; and
  - ◆ incentives for the speed and quality of telephone response.



## 5. Distributed generation

### *Introduction*

5.1. The government has put in place specific targets for the amount of energy to be supplied by renewable generation and the capacity of combined heat and power (CHP) to be installed by 2010. Progress towards the government's targets is likely to involve a significant increase in the amount of generation connected directly to the distribution networks. This raises important questions about the way in which the regulatory framework may need to be developed to:

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

5.2. Ofgem consulted on issues associated with the development of the regulatory framework for distributed generation in the January 2003 open letter. This Chapter sets out Ofgem's further thoughts on how the regulatory framework could be developed.

### *Recent developments*

5.3. Ofgem published its initial conclusions on the structure of electricity distribution charges in June 2003. The document indicated that there are benefits from moving to a shallower connection charge boundary for generators connecting to the distribution networks. Without prejudicing the outcome of that consultation, this Chapter assumes that, in the future, connection charges for generators will be shallower than the present arrangements.

- 5.4. Ofgem also published initial proposals on DNOs' incentives relating to distribution losses in June 2003. This paper proposed strengthening the existing losses incentives for the DNOs.
- 5.5. In March 2003, Ofgem began work on developing a Business Plan Questionnaire for distributed generation (DG-BPQ) which will collect the information from the DNOs that will be required to develop appropriate incentive arrangements. A final version of the DG-BPQ has been sent to companies for completion and returns are due by 10 September 2003.

### ***Summary of responses to January Open Letter***

- 5.6. The January Open Letter outlined Ofgem's initial thinking on the appropriate incentives that could be provided in the following areas:
- ◆ **the connection of DG to the network** – under a shallower generation connection charging regime and a connection market being opened to competition, incentives in this area should be provided by ensuring the development of effective competition;
  - ◆ **access to the network including reinforcement** – two broad possible incentive mechanisms were outlined: including the DG-related reinforcement costs in the RAV with an appropriate rate of return; and using some form of revenue driver linked to the capacity of distributed generation connected to the network revenue (i.e. a £/MW revenue driver); and
  - ◆ **operating the network** – it was indicated that incentives could be provided in this area by incentivising the use of DG as an alternative to network investment and using a revenue driver linked to the amount of energy output to the distribution network from distributed generation sources (i.e. a £/MWh revenue driver). The incentives in relation to distribution losses were also considered relevant to this area.
- 5.7. In addition, the Open Letter also consulted on the use of Registered Power Zones (RPZs) as a possible way of facilitating the development of the distribution networks

to accommodate distributed generation, including moving towards active management.

- 5.8. The responses to the Open Letter were generally supportive of the objectives for this work and the principles identified for assessing the potential incentive mechanisms.
- 5.9. Many respondents agreed that the level of uncertainty over the development of DG meant that it would be difficult to predict in advance the total level of costs that companies would incur in connecting and providing access to the network for generators.
- 5.10. Some respondents supported the use of a pass-through mechanism to avoid undue risk on the DNOs, whereas others saw merit in adopting a simple £/MW revenue driver which could provide incentives to companies to connect generators on an efficient basis.
- 5.11. A number of DNOs pointed out that in some cases it could be efficient to carry out forward investment ahead of realised demand (for example, if a solution to provide more capacity than directly needed in the short term led to much lower costs in the medium term than an incremental approach of repeated reinforcement in response to individual connection requests). It was argued that companies would need clarity about the regulatory treatment of such expenditure to address the level of risks that they faced.
- 5.12. On incentives for network operation, the respondents supported the principle of the DNOs being encouraged to make use of DG in avoiding network investment and to minimise constraints on generators accessing the network. Some DNOs suggested that a simple MWh driver would need to be adopted to focus on factors that were within companies' control.
- 5.13. The respondents who commented on the interaction between the distribution losses incentives and the DG incentives agreed that an appropriate balance between the two sets of incentives needed to be achieved in the price control arrangements.

5.14. On the use of Registered Power Zones, most respondents indicated that it was a useful concept but indicated that careful consideration needed to be given to specific issues, including quality of supply and distribution charges, and how they would relate to the main price control. A number of companies have come forward to discuss possible RPZ applications on an exploratory basis.

### ***Implications of revised distribution charging structure***

5.15. Ofgem has recently published initial conclusions on its review of the structure of electricity distribution charges. This paper proposed, subject to consultation, the adoption of:

- ◆ common charging principles applied consistently across all DNOs;
- ◆ a common connection boundary for demand and generation, which leads to most reinforcement costs being recovered through use of system charges rather than connection charges;
- ◆ use of system charges for all users of the system (demand and generation);  
and
- ◆ flexibility for generators or demand connectees to establish non-standard arrangements with DNOs.

5.16. The proposed changes to the charging regime will result in some of the costs of reinforcement being recovered from generator use of system charges instead of through the deep connection charges presently paid by generators. This change is not intended to alter the balance of charges between consumers and generators.

5.17. Under the existing price control arrangements, a reduction in the amount of capital expenditure covered by the initial connection charge could give DNOs an incentive to find ways of reducing or avoiding those costs which would now be recovered through an ongoing use of system charge. This could give DNOs an incentive to take action to delay or discourage distributed generation, albeit offset by legal obligations to connect and to facilitate competition.

- 5.18. This would not be appropriate and would not support the government's energy policy. A different mechanism is therefore required which provides incentives to DNOs to respond to the demands of their consumers on an efficient basis.
- 5.19. Whatever incentive arrangements are introduced, and despite the intention not to rebalance charges between demand and generation, it may be possible that there are some circumstances where costs cannot be recovered from generators. This raises the possibility that consumers in a particular DNO area may be required to fund some of the general reinforcement costs particularly where additional capacity is not utilised.
- 5.20. Some DNOs in their responses to the January 2003 Open Letter and in other discussions with Ofgem have put forward proposals for a form of levy on all consumers across the country which could then be redirected to those areas where DG connection and/or costs are highest. This would provide an additional subsidy for distributed generation over and above that provided (for renewable generation) by the Renewable Obligation Certificates.
- 5.21. The social and environmental guidance received by Ofgem from the Secretary of State makes it clear that new environmental (or social) measures having a significant financial impact are a matter for Ministers, not Ofgem. Some of the levy arrangements that have been proposed would appear to fall into this category.

### ***Further thoughts on incentives relating to DG***

- 5.22. Whilst the financial risks to the DNOs need to be taken into consideration in the development of the regulatory arrangements, these must be balanced against the need to protect consumers' interests in terms of the costs they will bear. Nonetheless, where the financial risks for a particular category of expenditure are higher than for most expenditure or where network consumers require additional investment in certain areas, it may be appropriate for the return on that expenditure to be higher than the company wide allowed cost of capital. The remainder of this Chapter uses the term "premium return" to refer to a return higher than the company wide (rather than project specific) allowed cost of capital.

- 5.23. The areas for incentives that are outlined in this document should not be seen as the only possible options that are available and Ofgem would consider other ideas that are brought forward by interested parties.

### ***Incentives for network access and investment***

- 5.24. DNOs do not control changes in users' requirements (including the location and volume of DG) that give rise to need for investment in the network. They can have some influence over how the demands of their consumers are responded to and hence the resulting costs that are incurred.
- 5.25. Pass-through of network reinforcement costs would virtually eliminate the financial risks to the DNOs and significantly reduce the incentive to respond efficiently. Guaranteed pass-through, particularly if at a premium rate of return, would give DNOs a strong incentive to provide network access to DG but not on an efficient basis. This could lead to charges being higher than they otherwise would and could create barriers of entry to the generation market.
- 5.26. This concern could be partly addressed by adopting a cap on the maximum level of costs that could be passed through in any given year with the rest logged up for remuneration at the next price control review. The logging-up could also be subject to some form of efficiency test. Unless the rules for the efficiency test could be made clear at the beginning of the price control, this could introduce more uncertainty for the DNOs and could discourage them from providing network access.
- 5.27. Another issue associated with pass-through, particularly if at a premium rate of return, is the separability of DG-related costs. If costs cannot be readily identified and monitored companies could gain from misallocating costs as being related to distributed generation.
- 5.28. A DG capacity based £/MW revenue driver, when given an appropriate incentive rate reflecting the efficient costs of providing network access would provide incentives for the DNOs to invest efficiently in the network. The difficulty with this mechanism is that the efficient costs of providing network access varies depending

on a number of factors, including the location and technology type of the DG, existing network conditions, and the local demand pattern. Some of these factors may be built into the incentive formula, for example by using multiple £/MW incentive rates for different categories of DG and/or different voltage levels of connection. It is not realistic to reflect all possible variations in an incentive framework that would be practicable and transparent. Using the £/MW revenue driver on its own could place additional financial risks on the DNOs and/or disincentivise them from connecting DG that has higher reinforcement costs than the incentive rate.

- 5.29. An additional issue associated with the use of a £/MW revenue driver on its own, in conjunction with shallower connection charges, is the possibility that DNOs could be left with stranded assets in the event that a distributed generator ceased operations. While there may be some merit in DNOs having an incentive to find other uses for the available capacity, the risks with a pure £/MW driver may be disproportionate. This could be addressed through some form of logging-up for the stranded assets into the RAV, although consideration would be required as to what, if any, efficiency test would be needed to ensure that consumers did not pay for costs that were not efficiently incurred.
- 5.30. Having considered the advantages and disadvantages of the two broad incentive mechanisms, Ofgem's initial view is that arrangements combining aspects of both pass-through and an incentive rate would be likely to achieve a better balance between the interests of the DNOs and those of consumers. For DNOs, such an arrangement could encourage them to respond to DG through a premium return on cost effective investment and limiting their downside risk. Consumers and connectees would be protected by incentivising DNOs to minimise costs through giving a higher return to less costly reinforcement.
- 5.31. Ofgem's initial outline of a possible hybrid incentive mechanism is as follows:
- ◆ the costs incurred by the DNOs to provide network access to DG are given pass-through treatment with a rate of return lower than the WACC (or

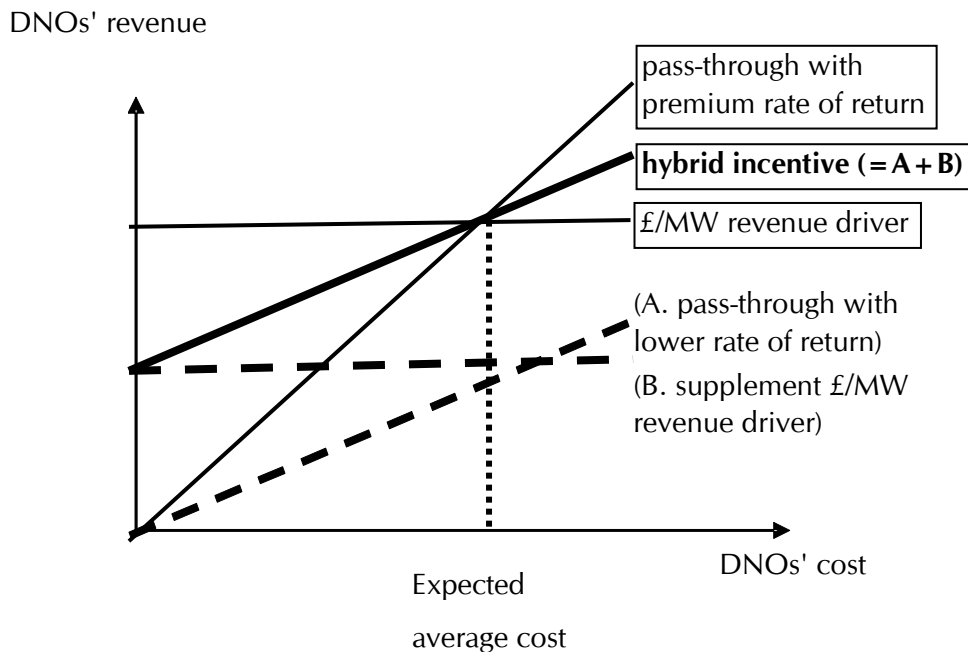
equivalently, a proportion of the costs are passed through with a rate of return equal to the WACC); and

- ◆ then the DNOs are given a further supplementary £/MW revenue driver based on the amount of distributed generation capacity that is provided with access to the network.

5.32. The potential hybrid mechanism is shown schematically in Figure 5.1, which also shows the two broad mechanisms of pass-through with a premium rate of return and the £/MW revenue driver on its own. The £/MW driver would, for any given level of MW capacity connected, give a fixed amount of revenue to the DNO, set to reflect the expected costs ex ante, but not related to the actual cost incurred. A full pass-through of the costs would link revenue directly to the actual costs incurred. The hybrid mechanism combines aspects of the two 'pure' options, shown as A and B in the diagram. Element A provides protection for DNOs against downside risk, while the revenue driver (element B) gives the incentive for efficiency. At the predicted average level of costs, all three mechanisms (pass-through, a pure revenue driver and the hybrid) could be set to give the same level of (premium) return. The level of the premium return available to DNOs will need careful consideration as it would not be appropriate to incentivise inefficient investment in the network – although it is important that DNOs are provided with incentives of sufficient strength to respond to their users' requirements.



**Figure 5.1: Comparison of possible incentive arrangements for DNOs for DG (relationship between revenue and cost for a given MW connection)**



- 5.33. The balance between the two elements (A and B) of the hybrid mechanism will require careful consideration in the light of the best available information (including from the DG-BPQ) on the potential uncertainty around reinforcement costs. Respondents' views on this balance will be welcome - nothing should be read into the relative heights of the lines on the above diagram.
- 5.34. Variations could be built into the hybrid mechanism. For example, the pass-through element in each year could be capped. The £/MW revenue driver could be converted into a £/MWh revenue driver (discussed below).
- 5.35. Ofgem recognises that in some circumstances advance investment in the network may be more efficient and effective for facilitating DG development. There would potentially be a higher degree of risk associated with such investment in that the anticipated DG development may not materialise. Provided that the DG incentives are sufficiently strong, together with the downside protection provided by partial pass-through, this hybrid mechanism may provide incentives for advanced

investment if DNOs expect to be adequately rewarded once the anticipated DG development materialises.

### ***Incentives for network operation***

- 5.36. In principle, where decisions made by DNOs have a significant impact on the costs borne by network users and such impact can be measured, it would be appropriate to incentivise DNOs to minimise costs related to the operation of the network. Such arrangements have been introduced under the system operator incentive mechanisms in gas and electricity transmission. The June 2003 document on developing network monopoly price controls indicated that, given the differences between the transmission and distribution networks, it would not be appropriate to introduce similar arrangements for the DNOs at present. It is important to retain sufficient flexibility in the regulatory arrangements for DNOs so that there is no undue barrier for the convergence of the transmission and distribution arrangements if and when the circumstances are appropriate. To the extent that active management is expected to be adopted, consideration may need to be given as to whether any particular concerns are raised by common ownership of distribution network operators and generation connected to the same network.
- 5.37. For the next price control period, it would seem important that DNOs are provided with incentives where they can actively utilise DG services (e.g. capacity, voltage control) and to minimise network constraints on DG output to the network. In the specific area of DNOs making use of DG to avoid network investment, the scope of such activities will depend on the outcome of the current review of the planning standard P2/5 being carried out under the auspices of the joint DTI-Ofgem Distributed Generation Coordinating Group<sup>25</sup>. Subject to compliance with the licence security standards and any revisions resulting from the review, DNOs already benefit from the deferral of non-DG related investment through the capex efficiency incentives under the price control, as they are able to retain the benefits

---

<sup>25</sup> Further details are on the DGCG website at [www.distributed-generation.gov.uk](http://www.distributed-generation.gov.uk).

of any efficiency savings for a fixed period of five years. It may be appropriate to introduce similar incentive arrangements for DG related capex.

- 5.38. On incentives for providing ongoing network access to DG, Ofgem agrees with the principle that these incentives should focus on areas that are within DNOs' influence. The amount of power that a generator could output to the network will be determined by both the DNO's effort in ensuring access to the network and the DG's own economic consideration of the electricity generation market and other factors, including weather (particularly for wind and tidal power generators).
- 5.39. One option would be to use a £/MWh revenue driver, calculated as the sum of DG capacity multiplied by the amount of time that network access available. Whilst this option would appear to provide incentives to provide ongoing network access, a number of practical issues would need to be considered, including how network access was measured as well as how the £/MWh incentive rate would be set. If network access can be measured effectively, the incentives to the DNO for providing access would need to be considered in the light of the potential cost to the generator, which may be several times higher than a simple £/MWh incentive rate.
- 5.40. Improved incentives for the DNOs to manage distribution losses should give the DNOs stronger incentives to make use of DG to reduce losses. Further consideration may need to be given to the risks DNOs would bear under such an arrangement if DG actually increased losses.

### ***Additional mechanisms***

- 5.41. As discussed above, the current arrangements for distributed generation, with deep connection charges, do not provide appropriate incentives on DNOs (and in particular, do not encourage DNOs to pursue innovative solutions). This has led to discussion of various additional mechanisms, including Registered Power Zones (RPZs) and incentives to encourage effective innovation.
- 5.42. With the changes proposed above to the regulatory arrangements, DNOs will have incentives to address distributed generation in an efficient way. They will be able to benefit from successful adoption of innovative solutions, to the extent that these

provide lower cost connections or more valuable services to generators. The question is whether there are gaps in these incentive arrangements which should be filled by additional mechanisms.

5.43. In respect of designating particular projects for DG connection as RPZs, these could have a number of possible features, which can be characterised as falling in the following groups:

- ◆ a means of signalling to potential generators and/or other interested parties (e.g. planning authorities) regarding DNOs' intentions or network capabilities to attract connections to a particular location;
- ◆ possible provision for defined regulatory treatment in certain areas including, quality of supply incentives, or connection quotation timescale requirements; or
- ◆ possible provision of enhanced returns relative to the general DG incentive arrangements, through higher charges to connectees across a DNO's network (for example, through generator use of system charges).

5.44. The first of these is not primarily a matter for Ofgem. On the second, Ofgem's initial view is that blanket exemptions are not generally appropriate, but that DNOs and prospective connectees may agree variations affecting a particular connection on a bilateral basis. The rationale for enhanced returns in the third point would arise in response to increased risks associated with innovation or wider benefits (to other DNOs and connectees from a demonstration effect), although enhanced returns are already available through the main incentive mechanism discussed above. One difficulty might be in defining the boundary between qualification for RPZ status and the general arrangements.

5.45. Innovation by DNOs will also depend on new technical solutions being brought forward through the research and development process, prior to their demonstration through RPZs or other applications. These prior stages may be sponsored or funded by DNOs but often carried out by third parties. To the extent that all of the benefits of such development work accrue to the particular innovation that funds the

research and development (R&D), that DNO should fund all the costs. Where the benefits are shared more widely (e.g. with the general body of future connectees), there may be a gap in the incentive framework. This would not be solved by providing additional cost allowances in the price controls, as DNOs would still have an incentive not to spend the money. Some form of “use it or lose it” arrangement may be required. Additional funding provided through the price control (under a mechanism provisionally termed “Innovation Funding Incentive”) would need to be justified by (the present value of) the share of efficiency benefits that are expected to flow to consumers in the longer term.

5.46. For both RPZs and the Innovation Funding Incentive, further consideration is needed as to:

- ◆ the likely benefits for both distributed generators and demand consumers and how these compare with any related additional costs;
- ◆ whether prospective distributed generators, as a whole, are willing to fund innovation by DNOs which could reduce future charges to distributed generators; and
- ◆ how the detail of the mechanisms might work and whether the practical implementation issues can be overcome.

5.47. On the second point, the views of representatives of the renewable and distributed generation community will be particularly welcome. As these views may depend on the detail of the arrangements, further thoughts as to how these mechanisms could work are set out in a Discussion Paper published alongside this consultation document. Should responses to these documents indicate support for development of these ideas, Ofgem intends to set out provisional estimates of impacts of the mechanisms (including potential costs and benefits) in October for consultation before reaching a conclusion by December 2003.

## ***Views invited***

5.48. Views are invited on any aspects of the issues raised in this chapter and in particular on:

- ◆ whether there are other incentive mechanisms or arrangements not discussed in this chapter that would provide better protection for consumers and more appropriate incentives to DNOs;
- ◆ whether the hybrid mechanism provides an appropriate balance of incentives and if so, how the mix between pass-through and an incentive rate might be established;
- ◆ whether a “network availability” measure can be established and utilised in practice;
- ◆ whether the additional arrangements for Registered Power Zones and funding of innovation provide significant improvements and how the costs could be separately identified in practice; and
- ◆ whether a separate mechanism is needed to deal with potential risks of stranded costs falling on demand consumers, for example to transfer costs between the consumers of different DNOs.

## 6. Assessing costs

### *Introduction*

- 6.1. This Chapter considers how Ofgem intends to assess costs as part of this price control review. It covers the following:
- ◆ a description of DNO costs;
  - ◆ the approach to cost assessment at the last price control review;
  - ◆ a proposed approach to assessing costs for this price control review; and
  - ◆ information sources.
- 6.2. As a first step, it is useful to consider the two main general objectives of price controls which are:
- ◆ to protect consumers from the abuse of monopoly power, of which an important aspect is allowing them to share in the benefits that companies realise from efficiency savings; and
  - ◆ to provide companies with a future level of revenue and incentive arrangements to allow them to meet their statutory duties and licence obligations including operating an economic, efficient and co-ordinated network.
- 6.3. To meet these objectives, the level of allowed revenue depends on the projected costs expected to be incurred within the price control period and on funding costs incurred previously but not fully funded as they were incurred (capital expenditure), as well as various adjustments for incentive mechanisms.

## ***Description of DNOs' costs***

- 6.4. It is conventional when looking at the costs of an organisation to break them down into operating costs and capital expenditure. It is also important to look in more detail at the most important elements of operating costs, which for the DNOs are those associated with the operation and maintenance of the network.

### ***Operating costs***

- 6.5. As a first step in analysing operating costs it is important to separate those controlled directly by a DNO (e.g. salaries and repairs and maintenance) from those that are less controllable (e.g. network rates and the Ofgem licence fee). The less controllable costs tend to be treated in price controls in one of two ways. The DNO is either given a direct allowance for the cost based on a notification of the appropriate amount from the relevant organisation or the cost is treated as a pass through item and the actual costs to be recovered each year are added to allowed revenue for that year by a yearly adjustment to the price control formula.
- 6.6. Operating costs will normally include the following types of cost:
- ◆ salaries;
  - ◆ contractors;
  - ◆ materials;
  - ◆ consumables;
  - ◆ premises;
  - ◆ information technology (IT);
  - ◆ insurance;
  - ◆ network rates; and
  - ◆ depreciation.



6.7. It is also important to consider the factors that affect the level of operating costs.

DNOs' operating costs are mainly driven by the following factors:

- ◆ the amount of electricity distributed (demand or generation), load growth and movements in load (or churn) within a DNO's authorised area;
- ◆ the length and type of circuits;
- ◆ the number, nature and density of consumers;
- ◆ the geography and topography of the authorised area;
- ◆ the number and type of generators directly connected to its network;
- ◆ the weather;
- ◆ quality and planning standards e.g. P2/5; and
- ◆ operating and management practices.

6.8. Ofgem will be looking at cost drivers in order to understand (as far as possible) the key factors that impact upon a DNO and how they affect operating costs.

### ***Capital expenditure***

6.9. When considering capital expenditure Ofgem needs to consider the reason why expenditure is necessary and what assets the expenditure will create, replace or enhance. A typical analysis of capital expenditure would separately identify the following reasons for incurring capital expenditure:

- ◆ **load related operational capital expenditure** - this will be incurred either due to new demand connecting to the network (e.g. a new housing estate) or new generation connecting to the network (e.g. the connection of a new power station);
- ◆ **non load related operational capital expenditure** - typically this will be incurred to replace assets due to their condition or age; and

- ◆ **non-operational capital expenditure** - this is capital expenditure not directly related to the operation and control of the network and could include vehicles and IT equipment.
- 6.10. The Regulatory Accounting Guidelines (RAGs) and the Historical Business Plan Questionnaire (BPQ)<sup>26</sup> contain more detailed definitions of these different types of capital expenditure.

### ***Changes in costs***

- 6.11. Following privatisation and the incentives provided by the RPI-X price control framework the DNOs have made significant improvements in their efficiency by:
- ◆ reducing the number of management and supervisory levels in their organisational structures;
  - ◆ outsourcing activities where appropriate;
  - ◆ reorganising and restructuring activities;
  - ◆ introducing more technology based solutions to asset management, asset information, network maintenance and the location of faults;
  - ◆ using more flexible employee terms and conditions more closely linked to improvements in productivity;
  - ◆ having a better understanding of the condition of the network;
  - ◆ improving their understanding and management of asset risks; and
  - ◆ having a better understanding of the network cost drivers.

---

<sup>26</sup> Distribution Price Control Review 4 Historical Business Plan Questionnaire, Ofgem, June 2003.

- 6.12. These efficiency improvements have benefited consumers and the shareholders of the DNOs. It is likely that there are further efficiency improvements that can be made by the DNOs.

### ***Assessing costs at the last price control review***

- 6.13. At the last distribution price control review, costs were assessed by dividing them into two elements - operating costs and capital expenditure - which were independently reviewed. It was recognised that there were links between these two types of expenditure and this was built into the final proposals. Pannell Kerr Foster (PKF) looked at operating costs and PB Power looked mainly at capital expenditure.
- 6.14. The analysis of operating costs included adjustments to 1997/98 costs in respect of capitalisation policy, allocations and recharges and then assessment of the level of operating costs potentially achievable by each company by the application of efficient operating practices.
- 6.15. In considering efficiency in the base year, PKF developed a number of benchmarks to assess efficiency, both in terms of operating practices and costs. Key factors influencing distribution business efficiency included organisational structures, the approach to outsourcing and procurement, human resource policy, engineering policy, IT strategy and the level of corporate costs.
- 6.16. PKF also considered the extent to which companies had developed strategies for the outsourcing, procurement and market testing of services and activities and the effectiveness of IT systems and strategies.
- 6.17. In addition, Ofgem analysed the normalised operating cost figures using adjusted ordinary least squares regression analysis on the aggregate operating costs of each DNO with a composite explanatory variable. The explanatory variable included customer numbers, line length and units distributed.
- 6.18. The two approaches (PKF's work and the regression analysis) produced similar results. Projections of operating costs assumed that the level of efficient costs (the

“frontier”) remained constant in real terms, but those companies not on the frontier were placed on a glide path to reduce costs.

- 6.19. Capital expenditure was determined by modelling load related operational replacement capital expenditure and non load related operational capital expenditure. The non load related operational capital expenditure model was based on an age based analysis of the network.

### ***Proposed approach to assessing costs***

- 6.20. It is possible to consider the assessment of costs for the period 2005-2010 as comprising three components:
- ◆ assessment of an efficient level of costs for each company in a base year for which actual data is available;
  - ◆ changes in the efficient level of costs over time; and
  - ◆ for those companies not already at the estimated efficient level in 2002/03, a roll forward of actual costs to “catch up” to the efficient level (this will only affect projected costs for the price control period to the extent that costs are assumed not to have reached efficient levels by April 2005).
- 6.21. In order to ensure that this assessment is as robust as possible, Ofgem will continue to use a range of techniques for assessing efficiency and projecting future costs and in bringing these together will have regard to the objectives of the price control. A degree of pragmatism will need to be applied in the final assessment of projected costs. However, it is important for Ofgem to explain in a transparent way how efficiency and future costs have been assessed and how they have been used to derive the allowed level of revenue.
- 6.22. Changes to costs over time could arise from new obligations impacting on some or all DNOs (such as congestion charging or lane rentals). Changes will also arise from ongoing efficiency measures.

- 6.23. Ofgem also needs to consider how to include certain costs, such as those relating to pensions, into the analysis. Pension costs would have an effect on both the review of operating costs and capital expenditure as employee costs can be a major component of both.
- 6.24. There are four main ways of assessing the costs of a company namely:
- ◆ A review of actual costs to assess trends, anomalies, differences in categorisation or input mixes;
  - ◆ an analysis of the inputs or work required and the unit costs of the inputs (e.g. number of transformers multiplied by the cost per transformer) often called “bottom up modelling”;
  - ◆ benchmarking or comparison of overall costs in particular categories (e.g. total operating costs) across companies on the basis of regression analysis or other comparative modelling techniques, often called “top down modelling”; and
  - ◆ a review of companies’ own forecasts of costs and the methods, processes and data used to derive them.
- 6.25. Ofgem will perform a top down analysis of controllable operating costs and separately of total costs (potentially with adjustments for quality and other outputs). In addition, it will carry out bottom up modelling of repairs and maintenance costs which are the main element of DNOs’ controllable costs. As mentioned above, the two main elements of capital expenditure are load and non-load related. Ofgem will also undertake bottom up analysis of these costs and where possible will benchmark non-load related expenditure across DNOs.
- 6.26. It is important to realise that these are not independent techniques and that in many ways they are directly linked - for example, regression analysis may be used to determine unit costs for bottom up modelling. Using a variety of techniques to assess costs should ensure that as far as possible the overall price control settlement is robust.

- 6.27. In addition, Ofgem intends to consider total factor productivity analysis of DNOs and comparable companies, to provide an alternative assessment of the scope for future efficiencies, including efficiencies which cannot be explicitly identified at present.
- 6.28. Ofgem recognises that bottom up modelling of repairs and maintenance expenditure may not eventually provide the primary method of evaluating repairs and maintenance expenditure but considers that as a minimum it would provide valuable information for the efficiency analysis.
- 6.29. Ofgem also recognises the difficult issues involved in performing a robust benchmarking of non load related capital expenditure but considers that this analysis will provide a valuable cross-check against Ofgem's own bottom-up modelling and DNOs' own forecasts. In particular this analysis will help identify how different DNOs determine their replacement capital expenditure programs.
- 6.30. The review of total cost modelling included in the report on Balancing Incentives produced by Frontier Economics in March 2003 provides a basis for taking the total cost approach forward. It is Ofgem's intention that total costs will be one of the approaches to be used in the regression analysis rather than the only technique.
- 6.31. Ofgem considers that it is appropriate to review fault costs on a total cost basis as it is more appropriate to examine the issue of faults by looking at the output, i.e. the fault repair and the total costs of that work, irrespective of whether a particular DNO has treated that expenditure as operating expenditure or capital expenditure. Ofgem will benchmark these costs and it is possible that it will also undertake bottom-up modelling in this area.
- 6.32. Ofgem has amended the RAGs to provide greater clarity about which types of fault costs should be treated as capital expenditure and which fault costs should be treated as an operating cost. The Historical BPQ will collect data on fault costs for the period 200/01 to 2002/03. This data will be reviewed to assess its robustness for use in the total cost modelling.

- 6.33. The treatment of overheads and in particular how they are accounted for by the DNOs has been a major issue for price control reviews to consider. This is particularly complicated at the moment because of the differing corporate structures within the industry and the differing use of outsourcing.
- 6.34. Ofgem recognised the issue of overhead allocation and corporate structures as being a problem when it was revising the regulatory accounting requirements and included an activity analysis in the RAGs to try to help address these issues. It has been agreed with the DNOs that the activity analysis as defined in the electricity distribution business RAGs provides the best way forward for comparing the performance of the companies in this way.
- 6.35. The activities specified in the RAGs are:
- ◆ network asset ownership;
  - ◆ new connections;
  - ◆ network operation maintenance;
  - ◆ asset management;
  - ◆ metering;
  - ◆ consumer services;
  - ◆ provision of information;
  - ◆ commercial;
  - ◆ other activities; and
  - ◆ overheads.
- 6.36. Ofgem has also included in the Historical BPQ some sub-activities of the main activities defined in the RAGs and outlined above. These will also provide valuable information in assessing the efficiency of the DNOs, e.g. call centres.

- 6.37. In addition the Historical BPQ separately identifies direct costs and overheads. Direct costs can be thought as the direct materials, direct labour and direct expenses that have been incurred directly in performing the activity. Overheads represent the other indirect costs of the DNOs such as the costs of the treasury department.
- 6.38. Ofgem also recognises that the levels of fixed and variable costs are important factors to be considered when determining the price control settlement and has included questions in the Historical BPQ to clarify this issue. These issues are more complicated for this price control review than at the last review given the mergers that have subsequently taken place since 1999.
- 6.39. Since the last distribution price control review, there have been a number of mergers in the sector. In May 2002 Ofgem published a policy statement on electricity distribution mergers<sup>27</sup> which established a policy of applying a £32 million reduction in charges over 5 years to the merging companies but otherwise treating efficiency savings arising from mergers in the same way as any other cost reduction. The acquisition of SEEBOARD by EdF Energy (then LE Group) was taken forward under this policy.
- 6.40. Prior to this date, Ofgem's policy was to pass on the benefits of merger savings five years after the merger, applying a minimum £12.5 million per year reduction in charges, and to assume that the merged entity would reach the efficiency frontier by that time. Most of the mergers in the sector took place under this policy.
- 6.41. Ofgem's intention is to apply the merger policy under which each merger took place, as far as this is reasonably practical.
- 6.42. In addition, Ofgem would not intend the way in which benchmarking is undertaken to introduce artificial incentives to merge. It is likely that benchmarking will be undertaken both at the DNO and "DNO group" level, particularly for overheads.

---

<sup>27</sup> Mergers in the electricity distribution sector – policy statement, Ofgem, May 2002 (Ref 35/02).



However, it is also relevant to consider that even those groups with a single DNO generally have a range of other related activities.

- 6.43. Further, Ofgem will consider whether projections of costs should take account of prospective savings from any mergers announced during the price control review which create greater scope for economies of scale than currently available in the sector.

### ***Review of actual costs***

- 6.44. Ofgem will review the actual costs incurred by the DNOs in 2000/01, 2001/02, 2002/03 and 2003/04. The historical BPQ and regulatory accounts will be used to perform this review. Although most of the review will involve a detailed evaluation of costs in 2002/03 it is still important to review information in the previous years to adjust for any one off effects, to identify trends and to increase confidence in the reliability and suitability of the 2002/03 information. The 2003/04 regulatory accounts will contain the most recent cost information available to Ofgem before it makes its final proposals for the price control review. It will be important to analyse this information as an input for determining the operating cost and capital expenditure allowances.

### ***Bottom up modelling***

- 6.45. Bottom up modelling can be used for all costs. It is particularly valuable when the main drivers of costs can be identified and the corresponding quantities of work and unit costs of the work can also be identified.
- 6.46. For this price control review, Ofgem intends to use bottom up modelling where appropriate and practicable. The areas where it is most likely to be used are:
- ◆ load related operational capital expenditure;
  - ◆ non-load related operational replacement capital expenditure;
  - ◆ fault expenditure; and

- ◆ if possible, for the evaluation of repair and maintenance costs.
- 6.47. In support of this work Ofgem will gather the inputs required for the models in the Historical and Forecast BPQs and although the construction of the models will probably be completed by consultants Ofgem will own the models and be heavily involved in their preparation.

### ***Top down modelling***

- 6.48. Ofgem and other regulators like Ofwat have placed considerable reliance in assessing costs by comparing and benchmarking the costs of individual companies with those of other comparable companies. The use of comparators is an important regulatory tool and as a result, when individual DNOs have merged with each other, Ofgem has continued to request information for the individual DNOs and the licence is maintained by the individual DNO. However Ofgem also recognises that the management of a company is an important determinant of how efficient a company is, so Ofgem intends to perform regression analysis on the basis of both the 14 individual DNOs and the 8 groups (if the Scottish and Southern Energy acquisition of Aquila Networks proceeds, the number of groups will be reduced to 7). Ofgem recognises that both of these sample sizes are small but considers that this analysis provides valuable insights into the efficiency of the DNOs. It may also be useful in some situations to compare groups that have a similar number of companies. It is also important to consider any trade offs between operating costs and capital expenditure.
- 6.49. At the last price control review, Ofgem decided that the most appropriate approach to top down modelling of operating costs was to use an adjusted ordinary least squares method. There are other ways of performing this regression analysis and Ofgem will consider whether it is appropriate to use stochastic frontier analysis and data envelope analysis techniques.
- 6.50. Stochastic frontier analysis techniques involve the use of a regression analysis that combines a determination of where a company lies in relation to the best fit line but then also investigates why the variances between an individual companies

performance and the best fit line have arisen by separately considering the effect of the sampling error and the efficiency or inefficiency.

- 6.51. Data envelope analysis techniques look at combinations of inputs and other factors like cost drivers and outputs. A typical input would be cost and a cost driver would be units distributed, line length or consumers. These combinations are then modelled to produce an efficiency frontier. This frontier can then be used to project an efficient level of costs. The frontier can be constructed in a number of dimensions but generally when there is a small sample size the results are less accurate if you have more than two dimensions. Three of the dimensions that could be used are cost per line length, cost per unit distributed and cost per consumer.
- 6.52. Ofgem has appointed Cambridge Economic Policy Associates to assess the approach taken to regression analysis at the last review and to provide initial advice on whether any improvements could be made, including looking at alternative techniques.

### ***Review of forecast costs***

- 6.53. As mentioned below Ofgem will receive the completed Forecast BPQ in December 2003. It is essential that the forecasts provided by the DNOs in the Forecast BPQ are as robust as possible which will mean they will have to be based on sound assumptions e.g. a realistic assumption on the level of efficiency improvements that a DNO can make. For some aspects of the forecast information it will also be important to take appropriate account of consumers' willingness to pay. Ofgem recognises that there will be some uncertainties in the operational scenario to be used in this forecast and will provide appropriate guidance in the Forecast BPQ on the factors to be considered, particularly in relation to distributed generation and quality of supply. A draft of the Forecast BPQ will be sent to the DNOs in July 2003 and discussions will take place with them over the summer.
- 6.54. Ofgem is aware of concerns expressed by DNOs that insufficient weight has been placed on the use of their forecasts in the past. Experience has generally shown that

these forecasts have not been sufficiently robust and are less reflective of out-turn costs than the projections Ofgem has made through the price control process. It seems that there is now a better understanding of costs and forecasting processes across the industry and Ofgem hopes that the responses to the Forecast BPQ will be sufficiently robust and realistic to allow Ofgem to use the forecast information as an important part of its assessment of costs for this price control review.

- 6.55. Ofgem also intends to appoint consultants to undertake some work on assessing Total Factor Productivity (TFP). This will look at the overall scope for future efficiency for the DNOs and consider how this compares to other sectors of the economy. This will be one of the inputs that Ofgem will use to assess whether DNOs should be able to continue to cut their costs in the future and if so at what rate.

### ***Information sources***

- 6.56. The following documents will provide the main information sources for the assessment of costs.

### ***Historical BPQ***

- 6.57. The Historical BPQ (HBPQ) was issued (and published on Ofgem's website) in June 2003 and completed forms are due to be submitted to Ofgem in September 2003. Where appropriate, the HBPQ incorporates the comments of the DNOs regarding the type of information requested, the level of detail required and how it is to be calculated. The DNOs received a copy of the first draft of this document in April 2003 and a number of meetings have been held with them to discuss it. The Historical BPQ covers the period 1998/99 to 2002/03 but mainly focuses on the period 2000/01 to 2002/03.

### ***Forecast BPQ***

- 6.58. The Forecast BPQ (FBPQ) will be published in September 2003 and completed versions are due to be submitted to Ofgem by the DNOs in December 2003.

Generally, the tables require information for the five year period 2005/06 to 2009/2010. To enable high level modelling beyond 2010, which is especially important when considering how the decisions on operating costs and capital expenditure for 2005-2010 affect the long term financial health of the DNOs, Ofgem has also requested the provision of some information for the period 2010/11 to 2019/20. This will allow Ofgem to consider the financial position of the DNOs to 2020. This will be important when considering the approach to depreciation and the longer term path of prices to consumers.

- 6.59. Ofgem will also need to consider the basis on which DNOs should forecast their costs. For example, it may be appropriate for DNOs to submit a number of different forecasts based on different assumptions (or scenarios) of the amount of generation connected to the network and/or the quality of service delivered to consumers and the resilience of the network. If scenarios are used it will be necessary to define them on a robust basis so that companies can forecast their cost levels with more certainty. It would also be necessary to consider who should define the scenarios – Ofgem and/or the DNOs.

### ***Regulatory accounts***

- 6.60. Regulatory accounts and associated information returns have been provided by the DNOs since 1990/91. The regulatory accounts for the period 1998/99 – 2003/04 will be used by Ofgem to inform its thinking on this price control. These regulatory accounts have either already been audited or for 2002/03 and 2003/04 will be audited in due course and as such provide an important high level verification of the information that Ofgem is using to assess the costs of the DNOs and ultimately to determine their allowed revenue.
- 6.61. Analysis of the 2001/02 regulatory accounts shows that the distribution businesses are on average outperforming the existing operating cost assumptions by approximately 22% and the capital expenditure assumptions by approximately 12%. These numbers need to be treated with caution as there were inconsistencies in the DNOs' calculations of their results on the basis of DPCR3 accounting policies. For capital expenditure it is also useful to consider the cumulative position

which for the period 2000/01 – 2001/02 shows an 11% underspend. The DNOs have said that this underspend is due to general efficiency savings, for example in asset management and procurement, higher capital contributions and deferment of some projects.

### ***Asset risk management survey***

6.62. Ofgem is aware that since the last price control the DNOs approach to asset management has undergone significant development. Ofgem also conducted an Asset Risk Management Survey in 2002. This has proved to be a valuable exercise both in promoting greater visibility of asset risk management and developing Ofgem's understanding of how it is addressed in each company. The 2002 survey was path-finding in nature and indicated that it is important when looking at asset risk management to consider both the cost of more effective asset risk management and the benefits that the approach brings. The survey was a snapshot of the approaches adopted in 2002 and highlighted that ongoing improvements were underway in several DNOs.

6.63. Ofgem will update the survey for the DNOs during 2003/04. This will focus on improving Ofgem's understanding of the methods and assumptions that support the DNOs' expenditure predictions and on developing a better understanding of the relative strengths and weaknesses of individual approaches to asset management. It is important that this work also improves Ofgem's understanding of how a condition based approach to asset management influences the profile of network expenditure compared with an age-based approach.

### ***Views invited***

6.64. Views are invited on any of the issues raised in this Chapter and in particular on:

- ◆ the approach to assessing companies efficiency and their forward costs – both opex and capex, including:
  - the use of bottom up and top down modelling

- improvements that could be made to the approach taken at the last price control review;
- the use of the asset risk management survey;
- the use of total factor productivity analysis; and
- how companies' own cost projections should be reviewed.

## 7. Financial issues

### ***Introduction***

- 7.1. Ofgem set out its thoughts on the majority of financial issues relevant to the DNO price control review in the June 2003 document on developing network monopoly price controls. This Chapter sets out a brief summary of Ofgem's thoughts and explains the work that is being undertaken over the rest of the price control review. Ofgem will review responses to both this document and the June 2003 document before setting out its further thoughts on financial issues in the October 2003 update document for the price control review.
- 7.2. The issue of the rolling forward of the Regulatory Asset Value and the retention of capex efficiency savings for a fixed period of five years is discussed in Chapter 3.

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

- 7.3. The June document explained that both Ofgem and licence holders have duties and obligations with respect to the financing of companies. In setting price controls, Ofgem seeks to ensure that:
- ◆ an efficient company should be able to earn a return on its RAV that is at least equal to the allowed cost of capital; and
  - ◆ companies are able to raise finance from the capital markets on reasonable terms.
- 7.4. In assessing the financial impact of a price control on a company, Ofgem will need to consider whether it can finance the level of investment that is required. In doing so, it will look at the scope for the company to raise new debt and, where appropriate, equity finance.
- 7.5. Ofgem uses a financial model to help assess the financial impact of the new price controls on companies. This model primarily looks at the financial position and



viability of the licence holder in the light of the proposed price control. It is important that appropriately financed companies can continue to access funds at a reasonable cost to meet their investment requirements. This assessment will be based on the ability of the licence holder to maintain a satisfactory level and trend of key financial ratios consistent with a credit rating that is comfortably within the investment grade category – based on the level of gearing used in estimating the cost of capital and tested against a number of scenarios.

- 7.6. The financial model will take the outputs from the cost assessments (opex and capex) and model the financial impact of these on the companies – by calculating the impact on the key financial ratios that will be used. The financial model will also calculate the expected financing costs and tax liabilities of companies based on the assumptions underlying the price control. Ofgem is working on developing the financial model and, following discussion with the joint Ofgem/DNO Working Group on financial modelling, it intends to publish a first draft in October 2003 – although this will contain no real company data. The financial model will be revised as the method and principles underlying the price control become clearer. Ofgem will publish a version of the financial model with companies' data included alongside the price control review proposals.
- 7.7. Ofgem indicated in the June document that two related issues need to be considered in relation to financing duties and obligations:
- ◆ whether the financial ringfence provisions in companies' licences need to be strengthened – this will be further developed over the coming months; and
  - ◆ the potential impact of the introduction of a special administration regime in the event of the financial failure of a network monopoly company.

### ***The cost of capital***

- 7.8. The June 2003 document on developing network monopoly price controls set out Ofgem's thoughts on the cost of capital in the light of the conclusions of the report,

commissioned jointly by the UK economic regulators, by Smithers & Co on certain aspects of the cost of capital and the views of respondents. Ofgem's main thoughts were that:

- ◆ it will continue to use CAPM to estimate the cost of equity but given the uncertainty surrounding estimates of the inputs into CAPM, there may be merit in considering the aggregate return on equity alongside the traditional building block approach. The relative weight placed on these approaches will depend on the characteristics of the underlying data and the extent to which the equity risks of the regulated business are similar to the market average;
- ◆ where possible, estimates of the various components of the cost of capital should be based on forward looking market based data as this provides the most robust estimate of future rates;
- ◆ in estimating the allowed cost of capital Ofgem intends to use a level of gearing that is consistent with companies maintaining a credit rating that is comfortably within the investment grade category;
- ◆ it will be necessary to consider the expected tax position of each company as part of the financial modelling. Where expected liabilities differ significantly from allowances implicit in the approach used at previous reviews for reasons other than company efficiency or temporary timing differences which are expected to reverse, it may be appropriate to use company specific allowances for tax liabilities. It would seem appropriate to bring the treatment of tax efficiencies more into line with arrangements for other cost efficiencies and pass the benefits on to consumers after a period of time; and
- ◆ in view of the relatively stable recent trends in real interest rates, in general Ofgem is not minded to provide additional allowances to reflect historic debt that is now out of the market. However, it will consider the merits of specific points made to Ofgem on this issue by companies and will keep the

position under review, particularly if there is a significant change in market rates.

- 7.9. Ofgem will continue its work on assessing the cost of capital over the coming months. Responses to the June 2003 document and this document will be reported in October 2003, although initial estimates for the components of the cost of capital will not be published until the March 2004 policy document.

### ***Assessing the RAV and the approach to depreciation***

- 7.10. The February 2003 document explained that in order to secure continuing access to investment funds on acceptable terms, network monopoly companies need to provide a return on the capital invested in their business – both the capital employed at flotation and investments made since then. Ofgem confirmed that it does not intend to change the method used for assessing the initial value of the RAV. Changes may be required where parts of the business become competitive (e.g. metering) or are separated out from the core regulated business (e.g. through commercial transactions) or, in exceptional circumstances, to reflect other changes in the regulatory framework.
- 7.11. Projection forward of the RAV from the 1997/98 numbers used at the last price review will be based on the definition of capital expenditure used in that review together with an adjustment for meter re-certifications. This is essential to avoid consumers paying twice or not at all for particular categories of expenditure (for example, expenditure allowed as opex in the current price control cannot now be re-classified as capex and included in the RAV as this would involve consumers paying twice). This will require detailed examination and verification of the historical cost information provided by DNOs.
- 7.12. For the period after 2005, these considerations no longer apply and different definitions may be appropriate. Indeed, there would be significant advantages in increased clarity. This will be considered as the analysis of costs progresses.
- 7.13. Ofgem indicated that it is important that companies have incentives to manage their assets efficiently including decisions regarding the disposal of assets. It is also

appropriate that consumers benefit from the efficiency savings that companies make from the disposal of assets. On this basis, Ofgem will make an adjustment to the RAV to deduct the disposal proceeds received from the sale of assets (or where these have been transferred out of the licensee) five years after the year in which the disposal was made.

7.14. Ofgem explained that the approach to depreciation will depend on a number of factors including:

- ◆ balancing the interests of both present and future consumers;
- ◆ ensuring that companies can finance their licensed activities including that they can raise finance from the capital markets on reasonable terms;
- ◆ the impact on incentives to invest efficiently; and
- ◆ consistency of approach across companies.

7.15. There is a particular depreciation issue that needs to be considered in relation to the DNO price control review. In setting the price control in 1999 Ofgem explained that, if the existing assumptions with respect to depreciation were used, there would be a sharp fall in the allowed level of depreciation (and therefore allowed revenue) once flotation assets had been fully depreciated. To mitigate the short term financial impact on companies, an adjustment was made to the depreciation profile of those companies affected in this price control period. This adjustment was cashflow neutral in net present value (NPV) terms. Ofgem will need to consider whether this should be extended to all companies or whether an alternative approach would be more appropriate (possibly including expensing a portion of replacement expenditure as in the Transco price control review). It will only be possible to make a decision on this issue once Ofgem has assessed the financial impact of the new price controls. In making a decision, a number of factors will need to be considered including those set out above.

7.16. Further thoughts will be set out in the March 2004 policy document. Any changes to the previous approach to depreciation will not affect the value of cashflows in NPV terms.

### ***Treatment of pension fund costs***

7.17. Ofgem set out in detail in the June 2003 document the guidelines that it intends to adopt in relation to the treatment of pension fund costs and the rationale behind its thinking. These can be summarised as follows:

- ◆ consumers of network monopolies should expect to pay the efficient cost of providing a competitive package of pay and other benefits, including pensions, to staff of the regulated business, in line with comparative benchmarks;
- ◆ in principle, each price control should make allowance for the ex ante cost of providing pension benefits accruing during the period of the control, and similarly for any increase or decrease in the cost of providing benefits accrued in earlier periods resulting from changes in the ex ante assumptions on which these have been estimated;
- ◆ pension costs should be assessed using actuarial methods, on the basis of reasonable assumptions in line with current best practice;
- ◆ increases or decreases in the future costs of providing accrued benefits resulting from under- or over-funding in prior periods will need to be considered on a case-by-case basis;
- ◆ increases or decreases in the future cost of providing accrued benefits resulting from differences between ex ante and ex post investment returns in prior periods will also need to be considered on a case-by-case basis;
- ◆ liabilities in respect of the provision of pension benefits that do not relate to the regulated business should not be taken into account in assessing the efficient level of costs for which allowance is made in the price control; and

- ◆ companies will also be expected to absorb any increase (and may retain the benefit of any decrease) in the cost of providing enhanced pension benefits granted under severance arrangements which have not been fully matched by increased contributions.
- 7.18. Ofgem will continue to develop its thoughts on the treatment of pension costs in the light of responses to this document and the June 2003 document. Ofgem needs to consider the information that it will require to assess the impact of pension fund costs in the light of the principles outlined above. Ofgem expects to discuss the availability of information with the DNOs and intends to issue a request for data in October 2003.

### ***Views invited***

- 7.19. Ofgem would like to hear views on any of the issues raised in this Chapter and in particular on:
- ◆ any changes that should be made to the financial ringfence and the implication of the introduction of a special administration regime;
  - ◆ the approach to the cost of capital including the treatment of tax costs;
  - ◆ the approach to the RAV and depreciation; and
  - ◆ the treatment of pension costs.

## 8. Timetable and consultation process

### *Introduction*

- 8.1. This Chapter sets out the detailed timetable for the price control review. The timetable has been developed to 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. The timetable sets 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 will be published; and
  - ◆ information will be collected from companies.
- 8.2. There are four main stages to the price control review. The first stage of these is the development stage, which encompasses the work that has already been undertaken on developing network monopoly price controls and on identifying the objectives, key issues and timetable for the review.
- 8.3. This document represents the start of the second stage of the review. During this stage Ofgem will build on the work already completed and will undertake the main information collection for the review and begin the assessment of DNOs' costs and complete the first phase of the consumer research. Ofgem will also work towards resolving as many of the policy issues as possible by March 2004.
- 8.4. The third stage of the review will begin in January 2004 and will include the main workstreams for assessing the forecast information provided by the DNOs, finalising the work on efficiency analysis, completing the consumer research and estimating the allowed level of revenue that an efficient company will require over the period of the next price control. The third stage of the review will be completed in November 2004 with the publication of the final proposals document.

- 8.5. The final stage of the price control review will be concerned with the implementation of the final proposals and will include finalising the necessary licence modifications. The final stage will end with a Section 7 consultation on the licence modifications in February 2005. If companies do not accept the licence modifications Ofgem would expect to refer the matter to the Competition Commission for a decision. In this event, Ofgem would need to consider what protection would be required for consumers if it is not possible to introduce revised price controls by April 1 2005.
- 8.6. Once the price control has been implemented and put into operation, Ofgem will carry out a post project review to assess the success, or otherwise, of the price control review process and to implement changes in information collection and management of the process in preparation for subsequent reviews.
- 8.7. A slightly revised timetable from that included in the March 2003 open letter is set out below along with the main issues that will be covered in each of the consultation documents that Ofgem intends to publish. The only major change to the timetable is that final proposals will now be published in November 2004 (rather than October 2004) to ensure that Ofgem has an appropriate amount of time to consider responses to the September 2004 update document.

**Table 8.1: Updated timetable for the price control review**

Date	Output Milestone
July 2003	<b>1<sup>st</sup> Consultation Paper Published</b> Draft of forecast BPQ sent to companies
August 2003	Receive responses to Initial Consultation Paper Comments due on forecast BPQ
September 2003	Responses received to distributed generation questionnaire Responses received from DNOs to historical BPQ Publish results from first phase consumer research Meetings with DNOs on historical information (from September onwards as needed) Forecast BPQ issued



<b>Date</b>	<b>Output Milestone</b>
October 2003	<b>Update Paper Published</b> Publish first draft version of financial model Structure of Charges decision paper Possible workshop on RPZs and Innovation Funding Incentives
November 2003	Public workshop on review progress, focusing on output incentives (distributed generation, quality of supply, etc) Public workshop on financial model Responses received from interested parties to October update document
December 2003	<b>2<sup>nd</sup> Consultation Paper Published</b> Responses received from DNOs to forecast BPQ
<b>2004</b>	
January 2004	Meetings with DNOs on FBPQ responses (January onwards as needed) Responses received from interested parties to December consultation paper
February 2004	Bilateral meetings with DNOs and other interested parties Undertake second phase consumer survey
March 2004	<b>Policy Paper published</b> Feedback to DNOs on responses to forecast information request
April 2004	Public workshop on March policy document Responses received to March policy document Publish revised version of financial model
May 2004	Finalise cost projections for initial proposals Publish results from second phase consumer research
June 2004	<b>Initial Proposals Paper published (including revenue allowances – P0/Xs)</b>
July 2004	Public workshop on initial proposals Bilateral meetings with DNOs and other interested parties Structure of Charges update paper
August 2004	Review and incorporate 2003/04 out-turns Responses received to June initial proposals
September 2004	<b>Update Paper published</b>
October 2004	Bilateral meetings with DNOs and other interested parties Responses received from interested parties to update document

Date	Output Milestone
November 2004	<b>Final Proposals Paper published (including PO/Xs/review of IIP and proposed Licence modification)</b>
December 2004	Companies indicate whether they are willing to accept the new price controls
<b>2005</b>	
February 2005	Section 7 notice on licence modifications
April 2005	<b>1 April</b> New price controls implemented
Early Summer 2005	Publish report on the price control review process for consultation
Autumn 2005	Publish final report on the price control review process

<b>Workstream (Ofgem Lead)</b>	<b>Update</b>	<b>2<sup>nd</sup> Consultation</b>	<b>Policy</b>	<b>Initial Proposals</b>	<b>Update</b>	<b>Final Proposals</b>
	<b>Oct 2003</b>	<b>Dec 2003</b>	<b>Mar 2004</b>	<b>Jun 2004</b>	<b>Sep 2004</b>	<b>Oct 2004</b>
Scope, Form and Efficiency Incentives  (Cemil Altin)	Update for responses to 1 <sup>st</sup> Consultation  Conclusion on form of losses incentive	Proposals on form and scope of metering control  Proposals on other form and scope issues (revenue drivers, EHV, hydro-benefit etc)	Finalise form of incentives  Conclusion on form and scope of price control (and separate controls if needed for metering etc)			
Costs  (Carl Hetherington)	Report on responses to historical BPQ	Set out overview of normalised historical costs and provide initial comparison  Update approach to efficiency analysis	Report on efficiency analysis of 02/03 costs  Report on forecast BPQ responses and set out initial views	Set out initial cost projections	Take account of comments and actuals in 03/04	Final cost projections
Quality of Supply and other outputs (including environmental)	Discuss key survey results  Initial results of work on comparing	Initial thoughts on changes to standards of performance	Analysis of costs of improvements  Initial proposals for GOSPs	Consultation on draft SI and determinations from GOSPs	Take account of comments and actual performance in 03/04	Final proposals for revised incentive scheme

<b>Workstream (Ofgem Lead)</b>	<b>Update</b>	<b>2<sup>nd</sup> Consultation</b>	<b>Policy</b>	<b>Initial Proposals</b>	<b>Update</b>	<b>Final Proposals</b>
	<b>Oct 2003</b>	<b>Dec 2003</b>	<b>Mar 2004</b>	<b>Jun 2004</b>	<b>Sep 2004</b>	<b>Oct 2004</b>
(Chris Watts)	QoS  Initial thoughts on scope of incentives target setting and exceptional events	Report responses to October update  Further thoughts on incentivisation other outputs	Update on IIP incentive scheme scope and targets  Initial proposals on other incentives	Proposals for form of incentive scheme, targets and incentive rates (quality and other outputs as appropriate)		
Distributed Generation (DG)  (Min Zhu)	Report responses to info request  Further thoughts on proposed incentives and cost recovery	Proposals on form and initial proposed range of DG incentive rates	Confirm incentives and cost recovery	Firm numbers for incentives	Take accounts of comments	
Financial  (Carl Hetherington)	Update for comments  Publish first draft of financial model	Initial proposal for historic RAV  Update on pensions and tax in light of historic BPQ	Propose cost of capital range  Publish revised financial model  Initial view on	Finalise cost of capital range and propose value  Finalise financial indicators and propose test	Update ratios and cost of capital for comments and for market movements	Publish model and data

<b>Workstream (Ofgem Lead)</b>	<b>Update</b>	<b>2<sup>nd</sup> Consultation</b>	<b>Policy</b>	<b>Initial Proposals</b>	<b>Update</b>	<b>Final Proposals</b>
	<b>Oct 2003</b>	<b>Dec 2003</b>	<b>Mar 2004</b>	<b>Jun 2004</b>	<b>Sep 2004</b>	<b>Oct 2004</b>
			<p>approach to replacement capex and depreciation</p> <p>Set out tax allowance or method of calculation</p>	<p>values</p> <p>Projections for RAV and of all financial costs</p>		
Other  (Cemil Altin)				<p>Draft RIA</p> <p>Outline of draft of licence modifications</p>		<p>Final RIA</p> <p>Revised draft licence modifications</p>

# **Appendix 1 Initial Regulatory Impact Assessment (RIA) for the price control review**

## ***Introduction***

It was explained in the Introduction that price controls are an integral part of the regulatory arrangements that provide protection both to consumers from monopoly power and appropriate incentives to companies to meet the requirements placed upon them. This Appendix sets out an initial high level RIA for the price control review.

Ofgem has committed to undertaking a RIA, including environmental impact assessments, for all new significant policies or changes in policy. Ofgem considers that policy decisions are significant if they are likely to lead to significant costs and/or benefits for consumers; if they are likely to result in significant transfers between consumer 'groups'; and if they represent a significant change in Ofgem's approach to carrying out its functions. Where appropriate Ofgem will produce a RIA for new policies introduced as the price control review progresses. At the end of the price control review, as part of its final proposals, Ofgem will produce a final RIA which will set out the expected costs and benefits of the price control.

The estimates of costs and benefits will depend critically on quantification provided by respondents to the consultations – respondents are encouraged to provide quantitative assessments in their comments where possible.

## ***Objectives and key issues***

The Introduction also outlined the key objectives and issues for the price control review. The rest of this document outlines the issues that will need to be considered and the work that Ofgem intends to undertake over the course of the next 18 months to put in place revised price controls from 1 April 2005.

## ***Costs and benefits***

It is difficult, at this stage, to quantify the overall costs and benefits associated with the price control review, although this may become possible with specific policies as the price control review progresses. It is possible to identify the possible areas where costs and benefits are likely to arise. Ofgem has also set out the direct costs that it will incur from undertaking this project.

There are a number of areas where the price control could give rise to costs and benefits including:

- ◆ **ensuring that consumers' interests and the financial incentives provided to companies are aligned** – the alignment of companies' financial incentives with consumers' interests is an important input in ensuring that both the regulator and the companies can meet their statutory objectives and licensed duties. This alignment provides clear benefits to both consumers and companies;
- ◆ **ensuring that the price control and incentive framework reflects the statutory duties and licensed obligations of the companies and those of the regulator** – statutory duties and licensed obligations can change between price control reviews. For example, the Utilities Act 2000 has strengthened Ofgem's social and environmental duties and it is important that the price control and incentive framework takes this into account;
- ◆ **ensuring that companies have sufficient revenue to finance their licensed activities and meet the requirements placed upon them** – it is vital that companies have sufficient revenue to finance their licensed activities and meet the requirements placed upon them. If this is not the case then there is a risk that quality and security of supply, or the delivery of other requirements, could be compromised. This could give rise to significant costs for companies and ultimately consumers;
- ◆ **the quality of service that they receive** – companies can influence the quality of service that is delivered to consumers through their operational and investment decisions. It is important that the price control provides sufficient revenue and incentives to companies to deliver the quality of

service that is required by consumers. The efficient costs associated with achieving this aim will be met by consumers through the charges that they pay for distribution services. Where companies fail to meet the quality of service requirements placed upon them, Ofgem would expect that there would be some form of financial consequence and similarly where companies outperform there should be the possibility of earning additional rewards;

- ◆ **environment** – companies can influence environmental factors through their operational and investment decisions. Of particular importance are the costs and benefits that may arise from specific mechanisms such as incentives to DNOs for reducing electrical losses and for connecting and utilising distributed generation. A separate RIA has already been developed for Ofgem’s proposals for strengthening the losses incentive and its review of the structure of electricity distribution charges. In relation to distributed generation, the incentives provided under the price control to DNOs for accommodating distributed generators, should be seen in the context of the specific support that has been made to generators by the government through the ROCs and other funding mechanisms. It may be difficult to isolate the costs and benefits of proposals put forward under the price control. There are also a number of other environmental areas that could be impacted on by the price control, including reporting of environmental performance, amenity issues, the use and management of SF6 and water pollution arising from oil filled cables;
  
- ◆ **security of supply** – companies can influence the security of supply of the network through their investment and operational decisions. It is important that the price control provides sufficient revenue and, where required, appropriate incentives to companies to maintain (or improve) the security of their network. The efficient costs associated with achieving this aim will be met by consumers through the charges that they pay for distribution services.

Ofgem’s direct internal costs for the price control review are around £6.25 million. This includes an allowance for consultancy support. The DNOs will also incur costs as part of the price control review, including those associated



with management input to the process and collating information that Ofgem will need to set the price controls. These costs are not likely to be significant in comparison to the financial impact that the price control could have on the companies and the benefits that consumers will realise.

### ***Distributional effects***

Ofgem does not expect that there will be any significant new distributional effects between different 'types' of consumers. All consumers that are included within the price control should benefit from any price reductions resulting from the new price controls or to fund any required increase in companies' costs – for example to improve quality and security of supply.

### ***Risks and unintended consequences***

It is possible that as the price control review progresses new issues that have not been identified so far might emerge. If this is the case, then Ofgem would need to consider the impact on the price control review, including the timetable. It would consult on any significant changes in policy or timetable. Ofgem will be using an internal risk and issues log to help manage the impact on the price control review.

### ***Competition***

Ofgem's principal objective is to protect consumers (present and future), wherever appropriate by promoting effective competition. Although this project is specifically aimed at protecting consumers from the possible abuse of monopoly power it is clear that the price control and related arrangements could impact on competition in other sectors of the industry, including:

- ◆ the provision of metering services;
- ◆ the provision of certain connection services;
- ◆ generation; and
- ◆ supply.

It will be important to ensure that the price control facilitates competition in those parts of the industry where it is appropriate and practicable and protects consumers from the possible abuse of monopoly power where it is not.

## ***Review and compliance***

The new price controls will need to be implemented through modifications to the existing licence conditions or, where appropriate, the introduction of new licence conditions. Ofgem will consult on the form and detail of any licence modifications as the price control review progresses. An initial draft of the licence modifications will be published in November 2004. There will be a series of iterations to revise the licence modifications which will culminate in a consultation under Section 7 of the Utilities Act 2000 in February 2005. If companies do not accept the licence modifications, Ofgem expect to refer the matter to the Competition Commission for a decision.

Once the new price controls have been implemented Ofgem will monitor companies' compliance against the relevant licence conditions. This will be facilitated through the collection of information from companies on a regular basis. Where it is clear that a company is in breach of a licence condition Ofgem would need to consider what remedial steps may be appropriate.