

June 2001

Review of Transco's price control from 2002

Draft proposals

Executive Summary

This document sets out Ofgem's draft proposals for new price controls to apply to Transco from 1 April 2002. It is proposed that separate price controls should apply to each of the following Transco activities:

- ◆ its National Transmission System (NTS) in its role as transmission asset owner (TO);
- ◆ the NTS in its role as system operator (SO);
- ◆ Transco's 12 local distribution zones (LDZs) in aggregate; and
- ◆ metering services and meter reading services.

It is important when setting price controls to be clear not only about the level of revenues Transco will be able to earn, but also about the level and quality of services Transco is expected to provide in return. There must be strong incentives on Transco both to operate efficiently and to provide services to a high standard. The price control must also balance the need to ensure that customers receive good value for money in the services they receive from Transco with the need to ensure that Transco has the resources to finance the safe operation and development of its network.

Ofgem is proposing to apply 5-year RPI-X price controls to the NTS TO and LDZs, with improved links between Transco's revenues and its output performance. The NTS SO will be subject to an incentive arrangement.

As a result of developments in the Great Britain gas market Transco is expected to continue to face uncertainty over the level of demand for access to the NTS and the location of that demand during the next price control period. This document sets out proposals for an NTS TO price control based on Transco investing to deliver pre-defined baseline output measures for the level of NTS entry and exit capacity (and system linepack). The TO price control, together with the SO incentive arrangements, will give Transco strong financial incentives to deviate from these baseline output measures in response to changes in the market where it is efficient to do so. For example, Transco will receive additional revenues where it invests efficiently to deliver capacity over and above the baseline outputs in response to changing customer demand. Transco will also

have a stronger incentive to invest in a timely manner to meet increased demand (either in aggregate or at a particular location) as it will be exposed to a proportion of the costs of any constraints on the NTS.

This document also sets out a framework for output measures for the LDZs complemented by proposals for new standards of service.

For metering and daily metered meter reading services, Ofgem is proposing to implement individual price caps on certain services for a two year period at which point they will be reviewed in the light of the development of competition. Ofgem is proposing to remove price controls from non-daily metered meter reading services.

Ofgem has determined indicative levels of revenues under each control by assessing the expected future levels of Transco's efficient operating and capital expenditure, its efficient cost of capital and the appropriate regulatory value to place on Transco's assets.

An important issue at this price control review has been establishing a definitive approach to setting the regulatory value of Transco's assets. At previous price control reviews two approaches have been advocated: the so-called focused and unfocused approaches. Adopting the focused approach would lead to a regulatory value some £2 billion lower than if the unfocused approach was used. In February Ofgem stated that this document would set out Ofgem's definitive view on which approach should be used in the light of consultation and further research.

Although there are strong arguments in favour of adopting the focused approach, Ofgem has decided to adopt the unfocused approach used by the MMC to set Transco's current price control. Ofgem believes that the benefits of maintaining consistency with the approach used at the last price control review outweigh the arguments in favour of adopting a focused approach. In particular Ofgem would expect the greater regulatory consistency implied by this decision to be reflected in a relatively lower cost of capital.

In assessing the appropriate cost of capital for Transco, Ofgem has taken account of precedents from price control reviews of other businesses, developments in financial markets and the risks to which Transco is exposed. A number of the proposals in this document, such as providing flexibility in NTS revenues to reflect changing patterns of demand and the adoption of an unfocused regulatory value, are designed to reduce the

risks to which Transco is exposed. Ofgem is therefore proposing a range for Transco's pre-tax real weighted-average cost of capital of 6.0 to 6.25 per cent.

Ofgem has assessed Transco's expected future levels of operating and capital expenditure in the light of a range of evidence including Transco's own business plans, advice from accountancy, engineering and economic consultants, Transco's comments on that advice and Transco's past performance.

Over the current price control period Transco is expected to reduce its controllable operating expenditure at a compound rate of 4.3 per cent per year. Over the next period Transco expects its costs to fall at a much lower rate of only 1.4 per cent per year with controllable operating costs no lower in 2006/07 than in 1999/00. Both past experience and advice from Ofgem's consultants suggest that further scope for cost reductions beyond those included in Transco's forecasts will exist. Ofgem has therefore based its draft proposals on compound annual reductions in controllable operating costs between 1999/2000 and the last year of the next price control period of 3.5 per cent.

Transco's investment plans imply gross capital and replacement expenditure over the next price control period of £4.3 billion in total over 5 years under its base-line demand scenario. Higher levels of demand for NTS capacity would increase this forecast by up to £1 billion. Based on evidence from its advisers Ofgem has based its draft proposals on total capital and replacement expenditure over the 5 years of £3.6 billion for base-line demand.

Taking these assumptions together, Ofgem has calculated the level of revenues required to finance Transco's activities over the next price control period on the basis that Transco will continue to be subject to an RPI-2 price control. The assumptions above imply that revenues in the first year of the new price control period would be 14 per cent lower than in the current year (with reductions in real terms of 2 per cent in each following year). This document sets out how these revenues would be allocated between the proposed separate controls.

This base case is Ofgem's assessment of the maximum potential reduction in Transco's revenues, based on projected volumes. In practice revenues may be higher than this level for a number of reasons including:

- ◆ Ofgem may revise its cost projections upwards in the light of continuing work between Ofgem, its consultants and Transco, and responses to this consultation;
- ◆ this base case assumes a cost of capital of 6.0 per cent for transportation, with a slightly higher allowance for metering giving an average cost of capital of 6.1 per cent for Transco as a whole. This is at the lower end of Ofgem's 6.0 to 6.25 per cent range;
- ◆ the market's requirements for NTS capacity may be higher than the base-line assumptions on which these proposals are based; and
- ◆ Transco is likely to be required to increase the scale of its LDZ mains replacement programme.

Transco's programme of LDZ mains and service pipe replacement is a significant element of its costs. This programme is driven by the need to maintain a safe and reliable network which minimises the risk of injury and fatalities that might arise from gas escapes. The scale of the programme is determined by the requirements of the Health and Safety Executive (HSE). Transco's business plans are based on a programme to replace 8,531 kilometres of gas main between 2002 and 2006 at a net cost of £1.9 billion over five years. Ofgem's draft proposals are based on Ofgem's assessment of the efficient cost of carrying out this programme.

The HSE is at present reviewing Transco's replacement programme and is likely to require Transco to increase the speed with which mains are replaced. Although the HSE has yet to take a decision, Transco has estimated (based on its discussions with the HSE) that the cost of its replacement programme may rise to between £2.5 billion and £3.8 billion in total over the period 2002 to 2006. If such a decision were adopted Ofgem would need to adjust its price control proposals to ensure that Transco was able to finance this programme of work.

These draft proposals have been calculated by treating replacement expenditure, for regulatory purposes, as part of Transco's capital expenditure – which is added to Transco's regulatory value and on which Transco receives allowances for regulatory depreciation and a return on capital. Its existing price control was set on this basis. However, as the costs of this work increases it may become more appropriate to treat

some or all of this item as part of operating expenditure, which is fully financed in the year expenditure is incurred, in order to ensure that Transco can finance its activities at an efficient cost of capital. At present Ofgem estimates that if replacement expenditure was around £2 billion higher than Ofgem's base case assumptions, and was treated in whole as operating expenditure, this would lead to an overall increase in Transco's revenue rather than the reduction set out above. It is clearly important that any decision to increase Transco's replacement programme takes account of this impact on prices to customers.

Ofgem's base-case proposals for the overall level of revenues are summarised in the following table. Ofgem's final proposals may involve higher revenues (and therefore lower price cuts) than the base case for the reasons explained above.

	Current price control (1997/98-2001/02) MMC's projections	Next price control (2002/03-2006/07)	
		Transco BPO proposals	Ofgem base case
Regulatory value	Unfocused	Unfocused	Unfocused
Cost of capital	7.0%	at least 7.0%	6.0%
Total operating expenditure (five-year total)	£7.1 billion	£6.4 billion	£5.3 billion
Controllable operating expenditure: annual reduction	5% (1997/98-2001/02)	0 (1999/00-2006/07)	3.5% (1999/00-2006/07)
Capital expenditure (five-year total)	£3.0 billion	£2.4 billion	£1.9 billion
Replacement expenditure (five-year total)	£1.5 billion	£2.0 billion	£1.7 billion
Initial reduction in revenues	21%		14%
X	2%		2%

All figures are in 2000 prices.

Cost of capital is pre-tax real.

Controllable operating expenditure excludes prescribed rates and gas transporter licence fees.

Capital and replacement expenditure are gross totals (before deducting customer contributions).

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- Appendix 2 Summary of seminar held at the British Library on 5 April 2001
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Draft Regulatory Instructions and Guidance (available on Ofgem's website www.ofgem.gov.uk)

1. Introduction

- 1.1 The existing Transco price controls are due for revision from 1 April 2002. This document sets out Ofgem's draft proposals for new controls to apply from that date. It builds on three previous Ofgem documents:
- ◆ in May 2000, Ofgem published an Initial Consultation Document¹ on the review of Transco's price controls to apply from April 2002. A seminar to discuss the issues was held on 9 August 2000;
 - ◆ in November 2000 Ofgem published an update paper² and held a seminar on 11 December 2000 on the development of the outputs framework for the price control; and
 - ◆ in February 2001, Ofgem published its Initial thoughts consultation document³ and held a seminar on 5 April 2001.
- 1.2 The responses to the February 2001 consultation document are summarised in Appendix 1 and the issues raised at the April seminar are summarised in Appendix 2.
- 1.3 The February 2001 consultation document set out information from Transco's responses to a business plan questionnaire on projected operating costs and capital expenditure over the period until 2007, and also gave details of Transco's performance in maintaining gas supplies to customers and in meeting existing standards of performance. The paper described Ofgem's initial thinking on the main issues relevant to the price control review including financial issues.
- 1.4 In its February paper, Ofgem proposed that separate controls should apply to different parts of Transco's business:
- ◆ its National Transmission System (NTS);
 - ◆ its 12 Local Distribution Zones (LDZs); and

¹ Review of Transco's price control from 2002, Initial consultation document, Ofgem, May 2000

² Review of Transco's price control from 2002, Update paper, Ofgem, November 2000

³ Review of Transco's price control from 2002, Initial thoughts consultation document, Ofgem, February 2001

- ◆ its metering and meter reading activities.
- 1.5 The February paper also proposed that the NTS control should distinguish between Transco's roles as transmission asset owner (TO) and system operator (SO).
- 1.6 A single control was proposed to cover all 12 LDZs. However, Ofgem indicated that, after the conclusion of this price control review, it would carry out a further consultation and analysis on the appropriateness of disaggregating the LDZ control within the next price control period.
- 1.7 This price control review takes account of a number of developments in the regulation of Transco's business:
- ◆ in March 2001 Ofgem published the conclusions of its review of long term investment incentives and signals on the NTS⁴. Ofgem proposed the use of output measures under the price control, with long term capacity auctions and improved financial incentives on Transco based around the output measures. These would provide incentives on Transco to invest in a timely manner in response to changes in demand. This document explains how these proposals will be implemented as part of this price control review;
 - ◆ as part of the development of new gas trading arrangements (NGTA) Ofgem has also consulted on reforms to Transco's NTS exit capacity, interruptible capacity and LNG regimes, and to further reform of the gas balancing regime⁵. It is expected that any reforms implemented in these areas will take place after Ofgem has published final proposals for new price controls in September. If any reforms in these areas impact on Transco's costs it may therefore be necessary to revise those final proposals to take account of the net increase or decrease in projected efficient cost levels;
 - ◆ in March 2001, Ofgem published its metering strategy⁶. This document set out a range of measures designed to promote effective competition in metering and meter reading services. The objective of promoting

⁴ Long term signals and incentives for investment in transmission capacity on Transco's National Transmission System - The New Regime, Ofgem, March 2001

⁵ The New Gas Trading Arrangements - Further reform of the gas balancing regime - A Consultation Document, Ofgem, February 2001

competition has influenced the design of the proposals. It is Ofgem's intention to remove price regulation from Transco's metering activities once effective competition is established. Therefore, to some extent the need to implement the proposals set out in this document is contingent on the development of competition between now and April 2002.

- ◆ earlier in June 2001 Ofgem consulted on proposed guaranteed and overall standards to apply to gas and electricity licence holders⁷. That document proposed that guaranteed and overall standards for Transco should be developed as part of this price control review for implementation in April 2002, and this document therefore sets out such proposals.

- 1.8 When setting price controls it is important to define not only the revenues that Transco will receive, but also the level and quality of service it will provide in return. This document sets out proposals for output measures and incentives for the NTS, based on the March document. It also sets out proposed output measures and incentives and guaranteed and overall standards for the LDZs. Ofgem will be consulting separately on proposed guaranteed and overall standards for other gas transporters.
- 1.9 This paper sets out draft proposals for the revenues to be associated with each control, the incentives regime applicable to each Transco price control, and the arrangements for the monitoring of expenditure and medium-term performance under the controls.
- 1.10 As part of the price control review, Ofgem has taken advice from a range of consultants and advisers. In August 2000, Ofgem appointed accountants Mazars Neville Russell as consultants to advise on efficient levels of costs for the Transco business over the next control period. Mazars have appointed Petroleum Development Consultants as technical consultants and Europe Economics as economic consultants to assist them in this task. Arthur Andersen are providing advice to Ofgem on the allocation of costs and expenditure to separate price controls for the NTS (TO and SO), LDZs, metering and meter reading.

⁶ Ofgem's strategy for metering - A consultation paper, Ofgem, March 2001

⁷ Guaranteed and overall standards of performance - Further consultation, Ofgem, June 2001

Setting of price controls

- 1.11 In setting the price controls for components of Transco's activities it is important to be transparent about the way in which price controls are calculated.
- 1.12 Setting RPI-X price controls requires an estimate of the revenue that would be sufficient to finance an efficient business. In this paper, Ofgem sets out draft price control proposals for the NTS and LDZs (in aggregate) over the next five years. Ofgem has derived estimates for each price control block of:
- ◆ efficient operating expenditures;
 - ◆ capital expenditure forecasts;
 - ◆ a path of regulatory asset values; and
 - ◆ the cost of capital to use as the appropriate return.
- 1.13 These are combined to give the path of allowed revenues over the five-year price control period for each price control block. At this stage, the revenues are expressed as a base-line scenario, to be refined in the light of responses to this consultation and further analysis, before final proposals are announced around the end of September 2001.
- 1.14 Given a set of allowed revenues for the period of the control the appropriate level of revenues year by year must be considered in order to form a smooth path of prices to customers. The price adjustment in the first year of the next price control period is referred to as a Po cut. The subsequent annual adjustment in prices is referred to as X, and this paper discusses the balance between Po and X.
- 1.15 During the course of the price control period, the allowed revenues may be adjusted as a result of the incentives proposed for the NTS and LDZs as described in chapters 2, 3 and 4.
- 1.16 As regards metering and meter reading services, Ofgem's February paper proposed tariff caps on specific services or baskets of services. The setting of this type of control needs to have regard to the impact of the structure and level of such tariff caps on the development of competition, as well as the sustainability

of Transco's own business. This document sets out in more detail the structure of tariff caps being proposed, and gives an indication of the level of the tariff caps.

Rationale

- 1.17 Under the Gas Act 1986 (the Gas Act), as most recently amended by the Utilities Act 2000, Ofgem's principal objective is to protect the interests of consumers, where appropriate by promoting effective competition between persons engaged in, or in commercial activities connected with, the shipping, transportation or the supply of gas. The regulatory framework is described in more detail in Appendix 3.
- 1.18 In fulfilling this principal objective Ofgem must take account of a number of factors, including the ability of licence holders to finance their functions and duties provided by statute, and protecting the public from dangers arising from gas transportation.
- 1.19 In the light of these duties, the objective of the Transco price control review project is to produce new price controls for implementation from 1 April 2002 which will:
- ◆ protect the interests of consumers while providing Transco with the resources it needs to meet its licence obligations to its customers in an efficient manner;
 - ◆ be structured so as to facilitate competition where appropriate;
 - ◆ provide incentives to promote efficient use and development of the gas transportation system;
 - ◆ reflect the impact of NGTA and the new regime for long-term signals and incentives for investment in transmission capacity on the NTS; and
 - ◆ recognise Transco's different roles and activities including system operation and emergency service provision.
- 1.20 In 1999/2000, Transco's allowed revenue from gas transportation, metering and meter reading charges was £2.9 billion. For domestic customers, these charges

represent 35 per cent to 40 per cent of end-user tariffs, with a somewhat lower percentage applying to industrial and commercial users. They form a significant element of cost for households, particularly for those who find it difficult paying their bills.

1.21 This revenue can be broken down by main price control blocks as follows:

<i>Price controlled blocks</i>	<i>Allowed revenues £ billion</i>
NTS	0.4
LDZs (including emergency services)	2.0
Metering and meter reading	0.5
Total	2.9

1.22 Ofgem currently estimates that the direct costs to Ofgem of this price control review, including associated work on NTS incentives and the development of metering price controls, will be some £2 million.

Structure of the document

1.23 This document describes Ofgem's draft proposals and future programme of work on the following issues:

- ◆ Chapter 2: the form and structure of the transportation (NTS and LDZ), metering and meter reading price controls;
- ◆ Chapter 3: the NTS outputs framework;
- ◆ Chapter 4: the LDZ outputs framework;
- ◆ Chapter 5: the Guaranteed and Overall Standards of Performance which should apply to the LDZs from April 2002;
- ◆ Chapter 6: analysis of Transco's operating and capital costs and replacement expenditure;
- ◆ Chapter 7: financial issues including establishing Transco's regulatory value;

- ◆ Chapter 8: the price control calculations including the assessment of Transco's ability to finance its activities; and
- ◆ Chapter 9: regulatory framework, outlining proposed licence changes, including frameworks for monitoring expenditure.

1.24 Chapter 10 then sets out the timetable and way forward.

Responding to this document

1.25 Ofgem is holding a briefing on the issues in this document on 1 August 2001 (see Annex 1).

1.26 If you would like to comment on these issues, please respond by 3 August 2001. Written responses should be sent to:

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Electronic replies should be sent as an MS-Word document or else in the main body of the e-mail message. Please mark your comments clearly if you consider that they must be regarded as confidential. Ofgem would prefer that responses are provided in a form that can be placed in the Ofgem library.

2. Form and scope of transportation controls

- 2.1 This chapter sets out Ofgem's proposals for the form and scope of the price controls to apply to Transco's gas transportation business and its metering and meter reading businesses.

Introduction

- 2.2 The present price control was set in 1997, and covered Transco's transportation, metering and meter reading activities. Transco's provision of non-daily metered (NDM) meter reading services was subject to a cost pass-through, subject to economic purchasing. All other activities were covered by an RPI-X form of control. In May 2000 Ofgem published proposals to remove the cost pass-through from NDM metering reading, and create individual price controls (of an RPI-X form) for Transco's transportation, metering and meter reading activities.⁸ These were implemented through a licence modification⁹ in January 2001.
- 2.3 In its February paper, Ofgem explained that the differing roles of the NTS and LDZs make it appropriate to separate the price controls for these two activities. The NTS provides bulk transportation and is a hub for gas marketing and balancing, whereas LDZ demands are driven by the aggregate demand of individual end users. This is reflected in the different capacity regimes which have evolved. Separate price control conditions within Transco's Gas Transporter (GT) licence will allow incentives to be set which are appropriate to the different roles.
- 2.4 Ofgem also explained that it was investigating the introduction of a separate control for the system operator (SO) activity within the NTS, since separation of transmission asset owner (TO) and SO functions has the potential to provide clearer incentives for each activity. At Ofgem's request Transco has provided information on its SO activities and this is described along with Ofgem's proposals.

⁸ Securing effective competition in gas metering and meter reading services - The Director General's final proposals, Ofgem, May 2000

⁹ Securing Effective Competition in Gas Metering and Meter Reading Services - Modification of Transco's Public Gas Transporter Licence, Ofgem, January 2001

2.5 Set out below are Ofgem's proposals for:

- ◆ the form and scope of the NTS TO and LDZ controls;
- ◆ the use of revenue drivers within these controls;
- ◆ the form and scope of the NTS SO incentive scheme;
- ◆ regulation of charges for providing emergency services to other gas transporters;
- ◆ the costs which should be subject to automatic pass-through; and
- ◆ the form and scope of metering and meter reading controls.

Form and scope of NTS (TO) and LDZ controls

2.6 In its February paper, Ofgem proposed that separate controls should apply to the NTS and to the aggregated LDZ activities of Transco. At the same time Ofgem recognised the potential benefits that might arise from individual LDZ controls provided that there was consistent and reliable information available on costs, performance and investment requirements, and provided that there has been sufficient consultation, particularly on the pricing implications of separate controls.

2.7 Transco's responses to Ofgem's earlier papers indicate its preference for separate LDZ price controls. In its February paper, Ofgem said that if Transco accepts Ofgem's final proposals for the aggregated LDZ price control to be published in September, it should be possible (subject to receiving the necessary information from Transco) to consult in Autumn 2001 and early 2002 on the merits of introducing separate LDZ controls.

Responses to the February 2001 paper

2.8 All respondents who discussed the issue favoured the introduction of separate NTS and LDZ controls. Transco and a number of other respondents were in favour of individual LDZ controls. Some urged Ofgem to retain the option of introducing separate LDZ price controls for April 2002, or that it should

maintain the pressure for early implementation. All respondents who commented on this issue favoured retaining the RPI-X approach.

- 2.9 Two respondents suggested a roll-over of efficiency gains so that they would be retained by Transco for a rolling 5 year period, rather than for the fixed period of the control, as this would remove any incentive for cyclical investment and could be applied to efficiencies achieved in operating expenditure as well as capital expenditure.

Ofgem's draft proposals

- 2.10 Ofgem has concluded that separate RPI-X forms of control over a five-year period should be applied to the NTS (TO) and to the LDZs in aggregate, but with strengthened links between these price controls and pre-defined output measures.
- 2.11 Ofgem believes that these controls will create strong incentives for efficiency in the ownership and maintenance of network assets, and that the development of an outputs framework as described in chapters 3 and 4 will mitigate against any incentive that there may be for Transco to rephase expenditure within or between price control review periods.
- 2.12 Nevertheless it is difficult to forecast accurately capital expenditure in advance for a full five-year price control period. As regards the NTS, Ofgem has addressed these concerns through the proposals to set specific baseline capacity output requirements for each year of the control, with commercial incentives to respond to market signals of demand for capacity below or above these output measures.
- 2.13 As regards LDZs, in the present price control period the main areas of concern in relation to capital expenditure are mains replacement and meter replacement. The replacement of distribution mains to meet the safety policy agreed with the Health and Safety Executive (HSE) forms part of the outputs monitoring framework that Ofgem proposes to put in place for the next price control period. It will be the subject of ongoing (at least annual) scrutiny through the next price control period by both the HSE and Ofgem against defined objectives. Metering will be subject to different arrangements in the next price control period under

which Transco would not have financial incentives to defer investment in regulatory assets.

- 2.14 After the conclusion of this price control review, Ofgem intends to carry out a further consultation and analysis on the appropriateness of disaggregating the LDZ control within the next price control period.
- 2.15 It is proposed that the NTS and LDZ price controls will be supported by an ongoing regime of network health monitoring as discussed in Chapter 4, and expenditure monitoring as discussed in Chapter 9.

Financial Incentives - NTS

- 2.16 Ofgem has concluded that the financial incentives associated with Transco meeting NTS output measures for entry, exit capacity and linepack should be included within the SO incentive scheme. This is discussed in more detail later in this chapter.
- 2.17 Under Ofgem's proposed form of TO control for Transco, Ofgem and Transco will agree at the price control review a level of output measures and capital expenditure. Transco will be required to offer for sale at least the agreed level of outputs (the revenues from which will count against its allowed TO price control revenue) and Transco will be required to buy-back any capacity rights that it has sold but for which capacity is not physically available.
- 2.18 In agreeing the level of outputs, Ofgem and Transco will set the outputs on the basis of a particular, plausible view of the future development of the NTS. However, given the uncertainty surrounding future demand levels and supply patterns, any such view of future capacity requirements are unlikely to be accurate. Agreed outputs should therefore be seen as a baseline rather than a firm commitment with regard to the delivery of the outputs. Transco will be incentivised in such a way that it may choose to deviate from delivering the agreed outputs in response to future market developments. For instance, under its incentive arrangement Transco should:
- ◆ invest and deliver additional capacity over and above the agreed output measures at any location where market demand signals the need for additional capacity. If Transco undertakes this additional investment, it will

see an increase in its RAV at the end of the price control period. In addition, it will retain the revenues from the auction for the additional sales of capacity (less the allowed revenue associated with the increase in the RAV - for capacity sold during any period where the assets are in the asset base); and

- ◆ forego investment and under-deliver capacity compared with the agreed output measures at any location where market demand signals the output level capacity would be excessive in comparison with demand. In this case, Transco will face a RAV reduction at the end of the price control period. However, for the remainder of the control period, Transco will retain the allowed revenues associated with the capital expenditure necessary to deliver the agreed output measures.

2.19 Transco is therefore incentivised to respond to changing market demand for capacity. If Transco does not respond to market demands for:

- ◆ additional capacity, it will be likely to see high prices in the primary auctions for capacity. As now, Transco will not be able to keep any additional auction revenue (therefore not benefiting from the higher prices) but it will continue to bear liabilities in the buy-back market. As capacity is now a more scarce resource, we would expect the extent of these liabilities would increase, for example, when buying back for maintenance and /or plant failures; and
- ◆ reduced capacity, Transco will see low prices in the capacity auctions and will therefore be exposed to low levels of liabilities associated with the buy-back of capacity. However, at the next price control review, a decision would be made on whether the investment would be allowed into the RAV. If it was clear that Transco's investment was not justified, not only would Transco lose the benefit under its incentive scheme of reducing capital expenditure, but it would also run the risk of Ofgem disallowing some or all of the investment from the RAV at the next price control review.

2.20 In undertaking its assessment of evolving market requirements, each year Transco will continue to produce a ten year statement. Under either of the

scenarios where Transco does not respond to clear market signals, Ofgem could consider action under the licence.

- 2.21 The overall NTS control described above will be subdivided into a TO control and an SO incentive scheme. In undertaking this split, the TO will be given all responsibility for delivering capacity services (e.g. investing and maintaining the physical infrastructure). The TO will provide these services to the SO.
- 2.22 The NTS TO will, therefore, receive allowed revenue consistent with the predetermined baseline output measures.
- 2.23 It is proposed that the NTS financial incentives will apply from April 2002.

Financial incentives - LDZ

- 2.24 After considering the responses to its February paper, Ofgem has concluded that Transco's performance in meeting specific output performance levels in respect of interruptions to supply should be incentivised. The introduction of this regime will require the development of robust reporting arrangements as early as practicable. Ofgem has been working with Transco to develop the framework for this and details are set out in Chapter 4. It is not anticipated that the financial incentive arrangements could be implemented before 2004.

Revenue drivers

- 2.25 The present transportation price control links allowed revenues to a volume-based revenue driver with a deadband range. Fifty percent of Transco's revenues are fixed and fifty percent are determined by volume flows measured in kilowatt hours outside the deadband. The price control also distinguishes between volumes supplied to large loads (such as power stations) and those supplied to medium-sized or smaller loads. This is because larger loads, which are often directly connected to the NTS, impose lower incremental costs on Transco. The existing price control has therefore been structured so that a change in volumes transported to large loads has a lower impact on Transco's revenues.
- 2.26 Ofgem's February paper noted that a volume-based driver for NTS revenues is not appropriate given the capacity outputs framework proposed for the next price control period.

- 2.27 For the LDZs, a revenue driver is important in order to incentivise Transco to meet customer demands for new capacity and for the connection of new customers. However, the component of driven cost needs to reflect both the need for energy efficiency in the use of gas and also the additional costs incurred by Transco in meeting additional demand.
- 2.28 Capacity in each LDZ is driven by peak capacity requirements which, given the stable load factor of LDZ demand year-on-year, can be represented by the level of annual LDZ demand. Ofgem's February paper therefore proposed retaining a revenue driver within the LDZ control which allows for the changes in annual LDZ demand.

Responses to February 2001 update paper

- 2.29 A number of respondents expressed the view that the revenue driver needed to provide Transco with sufficient incentives for it to expand the geographical scope of its network, particularly recognising the benefits to the fuel poor of access to a gas supply. One respondent noted the proposals by the DTI for a connections task force to form an industry wide policy to provide incentives for the extension of the gas network generally. This would need to take into account the role of Transco and other gas transporters. Another respondent said that the current volume driver, based on total throughput, encouraged Transco to over-contract for interruptible loads.
- 2.30 Transco suggested consideration of customer numbers as a driver, but also recognised that a lower volume driver might be appropriate. It supported the retention of a separate large load component.
- 2.31 Transco also noted the following:
- ◆ the use of actual annual throughput introduces weather volatility to Transco's revenues. (It should be noted that Transco has already adjusted its forecast throughputs for weather patterns over the last 20 years and for the introduction of the climate change levy); and
 - ◆ large loads, and particularly interruptible loads, form a large proportion of load in some LDZs. Transco cites Wales LDZ where, in 2000, three large

interruptible loads consumed 11 per cent of annual throughput and 1 large firm load consumed 13 per cent of annual throughput.

2.32 Transco suggested the following examples of revenue arrangements that would mitigate the risks to itself:

- ◆ retain a large load driver, perhaps with a lower threshold definition;
- ◆ replace the large load driver with an interruptible measure;
- ◆ a higher fixed element in the control which would also mitigate weather volatility; or
- ◆ replace the annual throughput driver with a customer numbers driver.

Ofgem's draft proposals

2.33 Analysis by Ofgem indicates that the marginal cost of LDZ capacity is between £0.11million per GWh/day and £0.22million per GWh/day. Based on a peak LDZ demand of 4750 GWh/day (the average over the period 2002-2006 under Transco's base-line investment scenario), the cost of additional LDZ capacity is between 25 per cent and 50 per cent of total allowed revenues.

2.34 Therefore, Ofgem has concluded that the 50 per cent revenue driver is at the higher end of the range of costs which Transco incurs to meet additional demand.

2.35 The relevant costs are those related to providing firm capacity, and Ofgem considers that, as a measure, annual firm demand better reflects peak capacity than total annual demand which includes interruptible loads.

2.36 Large loads are often interruptible loads which do not contribute to peak capacity requirements. Ofgem is therefore proposing to include only firm demand (which does contribute to capacity requirements) in the revenue driver. In this case the added precision that would arise through including a separate driver for large loads may not justify the added complexity in the revenue driver definition that would be needed. However, Ofgem would welcome views on whether a separate large user driver would be appropriate.

- 2.37 Ofgem considers that the revenue driver should be lower than 50 per cent and proposes to implement a value of 35 per cent for the next price control period. However, Ofgem is concerned that any change to the level of the volume driver should not affect Transco's incentives to extend its network.
- 2.38 In May 2001, Ofgem published a document setting out the results of Ofgem's December 2000 survey of competition in gas and electricity connections¹⁰. This report discusses the issues concerned with network extensions, and reported that the DTI is setting up a working group (with representatives from the Department for Environment, Food and Rural Affairs and Ofgem, amongst others) to consider how best to encourage the extension of the gas network to rural areas. In addition, Ofgem will shortly consult on a proposal to amend the Gas (Connections Charges) Regulations 1986 (SI 86/1448) to extend the period of cost recovery from 5 to 20 years which may address some of the issues inhibiting infill development. The paper also discussed the possibility of setting up an allowance scheme to enable GTs to meet their licence and statutory obligations in respect of connections (particularly the so called "10-metre rule").
- 2.39 Given this programme of work to encourage network extensions, which is taking place alongside the price control review, Ofgem does not consider that additional incentives need to be embedded in the price control itself. Also, Ofgem would be concerned that providing specific allowances in the price control for investment in new rural connections would lead to inappropriate cost allocations between different customer groups including the fuel poor.
- 2.40 Ofgem proposes to define for each year of the price control a level of fixed LDZ costs and a unit charge rate for the volume driver.
- 2.41 Ofgem does not consider that revenues allowed for mains replacement should form part of the volume driven component. The analysis presented above is based on the replacement programme included in Transco BPO. If decisions taken by the HSE on Transco's replacement policy lead to significantly different LDZ allowed annual revenues to those presented for the base case in chapter 8, Ofgem would wish to retain the volume driven costs at about the same level as in the base case.

¹⁰ Review of competition in gas and electricity connections: Report, Ofgem, May 2001

2.42 Ofgem does not consider that a change in the percentage of total revenue subject to a revenue driver necessarily affects the charging structure that Transco applies to LDZ loads. A point to consider is that the total allowed revenues take into account forecast changes in LDZ demand, and so the fixed component of the revenue driver already reflects forecast load changes. Any proposals that Transco has for revising its charging methodology would need to be considered via the usual consultation process under Standard Condition 4 of its licence.

Form and scope of NTS SO incentive scheme

2.43 In its February paper, Ofgem discussed the role of the NTS system operator (SO). It proposed that in the next price control period Transco's NTS system operation role be recognised and defined. This would allow for the establishment of a separate NTS SO incentive scheme that would provide incentives for the efficient management and operation of the NTS SO activity.

2.44 The primary role of the NTS SO is to achieve safe and efficient day-to-day management of the NTS. This includes efficient energy balancing (ensuring that the aggregate of shippers' inputs to and offtakes from the NTS over the gas day are within the physical limits of the network), capacity constraint management (ensuring transportation bottlenecks arising because of shipper flows are efficiently resolved), managing NTS shrinkage gas, providing gas quality services and managing operational margins. The NTS SO has a number of tools at its disposal in carrying out these tasks, including adjusting linepack, trading on the on-the-day commodity market (OCM), the capacity market, moving gas into or out of LNG and other storage facilities and invoking interruptible contracts.

2.45 The February paper also suggested that it might be appropriate for the NTS SO to be responsible for some of Transco's shipper services function.

2.46 It should be noted that the proposed price control for the LDZs would cover both TO and SO activities at the LDZ level.

Responses to February 2001 update paper

2.47 The majority of respondents who commented favoured introducing a NTS TO/SO split. However, one respondent said that the linkages between the TO and SO were such that introducing a separate control could introduce

inefficiencies. Another respondent did not see benefits from introducing a separate SO and thought it might cause confusion and inefficiency. Respondents who commented on separate SO controls for the LDZ networks were generally not in favour of this approach, although one commented that more definition would be needed.

- 2.48 A number of respondents were concerned that the SO has not been defined with sufficient clarity, and that existing incentives on Transco under the balancing regime should be retained within the NGTA framework. Any impact on daily balancing costs would need to be reflected in reductions in costs elsewhere.
- 2.49 The HSE noted that the introduction of the SO might require a revision to Transco's safety case.

Ofgem's draft proposals

- 2.50 Ofgem has concluded that there should be an incentive scheme for Transco's NTS System Operator (SO) role separate from the price control for the TO. All of Transco's SO costs will be included within the umbrella of this single SO incentive regime.
- 2.51 Under the NTS SO incentive scheme, Transco will be incentivised to reduce the total costs of system operation, which are ultimately paid for by customers. The total cost of system operation consists both of:
- ◆ SO internal costs such as operational and capital costs associated with providing the system control centre, staff, IT systems and other SO services; and
 - ◆ SO external costs associated with buying and selling gas for balancing, operating entry capacity markets close to real time and procuring other system balancing services;
- 2.52 The rationale underpinning a single scheme for both internal and external NTS SO costs is that, at the margin, Transco may be able to spend more on its own internal costs to realise greater cost savings on external costs (or, indeed, vice versa), which would be to the overall benefit of customers, who pay the total costs. It will also encourage Transco to focus management and staff expertise

on the reduction of the overall costs of system operation. Under the current arrangements, Transco has a strong incentive under the existing price control to reduce its own internal costs but only limited incentives to manage the external costs of system operation.

- 2.53 Initial assessments for the level of the SO internal costs and some components of the SO external costs are given in Chapter 6.

SO internal costs

- 2.54 The internal costs that Transco incurs in its role as system operator are mainly the operating and capital expenditure associated with system operation itself (such as the costs associated with running Transco's system operation department at Hinckley).
- 2.55 Ofgem considers that shipper services are not strictly an NTS SO internal cost – any improvements in performance in providing these services would not interact with the level of external costs incurred by the SO. For this reason Ofgem believes that shipper services should remain part of the TO price control.

SO external costs

- 2.56 The SO's external costs will include the costs of:
- ◆ energy balancing: the costs incurred through transacting with market participants to maintain the balance of the system during the gas day, given the flows on the system by shippers;
 - ◆ entry capacity buy backs: the costs incurred in the purchases of entry capacity from market participants that Transco had initially sold but is not physically available on the day. The TO may not, on the day, be able to provide the entry capacity that it had initially sold for a number of reasons, including:
 - demand conditions on the network effectively reduce the available entry capacity at certain locations;

- maintenance of entry terminals by the TO reduces entry capacity at those sites¹¹; and/or
- a decision by the TO not to invest in long-lived assets to meet a short term constraint on the basis of market signals of long term demand levels at a particular location.

In this role, the SO will be acting as an agent for the TO, using its market knowledge and expertise, to buy back entry capacity efficiently;

- ◆ demand side management: the costs associated with entering into, or calling, interruption either to manage exit capacity constraints or for gas balancing purposes;
- ◆ NTS shrinkage: in operating the NTS, Transco incurs an amount of gas shrinkage, principally from using gas as fuel for compression. Transco must make up this shortfall through purchases of additional gas from participants;
- ◆ maintaining gas quality: on occasion, Transco may have to intervene in the market to ensure that the quality of gas across the NTS meets, in aggregate, the appropriate quality benchmarks; and
- ◆ ensuring that operational margins are maintained: Transco will incur costs in ensuring that there are sufficient reserves of gas to meet defined security and safety objectives through its holdings of linepack, storage and other flexibility tools.

NTS SO incentives

2.57 The current SO capacity incentive scheme, which operates close to real time to ensure all capacity is available to the market, would form part of the deeper SO capacity incentive scheme (including long-term sales and buy-backs of capacity). The deep capacity incentive, along with other aspects of the regime pertinent to system operation (such as exit capacity, linepack, gas balancing costs, NTS

¹¹ A further type of buy-back may arise in reaction to the incentive scheme. In this case Transco may choose not to incur capital expenditure implied by the provision of additional entry capacity up to the output measure, but rather to incur the (presumably lower) costs associated with buying back the associated entry capacity from participants.

shrinkage, operating margins, gas quality and the SO internal price control costs) would come together into a single inclusive SO incentive scheme.

The entry capacity component

- 2.58 The SO will act in the entry capacity market, offering capacity for sale, assessing the required level of capacity and undertaking buy-backs of capacity. The SO will be the market facing "agency", interfacing with and responding to the market. Under this split, any revenues from additional capacity sales or any costs from capacity buy-backs will be dealt with through the SO incentives. To the extent that Transco is not able to meet its output measures with physical capacity, the SO will be responsible for buying back entry capacity from participants on behalf of the TO. The SO will face the costs of these buy-back transactions and will, under the SO incentive scheme, receive an allowance for these costs.
- 2.59 In addition, the regime will ensure that Transco is incentivised to react to changes in demand for entry capacity as signalled by the entry auctions. Should the auctions of entry capacity, at volumes consistent with the output measures, suggest that a greater or lesser amount of capital expenditure is actually required, Transco will be financially incentivised to adjust its investment plans. This will ensure that the volumes of entry capacity made available to the market are consistent with shippers' demands for capacity as expressed through the entry capacity prices, although the volumes may be different from those specified in the base-line output measures.
- 2.60 Since Transco's SO and TO functions are under common ownership, Transco has incentives to operate the TO so as to minimise the sum of TO and SO costs. For example, where, under the SO incentive scheme, a choice exists between the TO providing physical capacity or the SO incurring buy-back costs, Transco will be incentivised to choose the least costly of these two options.
- 2.61 The initial baseline entry capacity output measures will be determined through a consultation process which is presently ongoing. The price control analysis presented in this paper is based on Transco's baseline supply/demand scenario (Transco's "scenario C" as described in chapter 3). Adjustments to the analysis

may need to be made when the results of the entry capacity consultation are known.

The exit capacity component

2.62 Ofgem has consulted on developing an exit capacity regime for the NTS, but these proposals may not be implemented in full after the price control review is completed. As part of the proposals, Ofgem suggested changing the commercial incentives on Transco relating to its use of LNG and interruptible capacity as a substitute for pipeline investment to deliver exit capacity. Any changes to Transco's financial incentives will be implemented through the SO incentive arrangements. The TO control will be set on the basis of allowing Transco to fund the efficiently incurred costs associated with meeting the baseline output exit capacity levels agreed as part of the TO price control.

2.63 As part of the review of Transco's exit and interruptible capacity arrangements, it may be necessary to consider the current commercial boundary between NTS and LDZ connected loads. As many of the interruptible sites are connected within LDZs and not directly to the NTS, it will be important to ensure that large interruptible loads are treated consistently under any new arrangements. This will avoid any perverse incentives on Transco to favour interruption of certain loads (on the NTS or LDZ) or on new loads to locate on the NTS or within an LDZ because of inconsistencies in the interruptible regimes. It may, for example, be necessary to 'deem' certain large loads to be connected to the NTS to allow them to participate in the new exit arrangements. This issue will be considered further as part of the ongoing review of Transco's exit arrangements.

Other external cost components

2.64 As part of its proposals to reform further the gas balancing arrangements, Ofgem has proposed that NTS linepack is sold to shippers by way of a price auction. Any sale of NTS linepack will be based on the output measures agreed as part of the TO price control. Any commercial incentives on Transco relating to the sale (or purchase by Transco) of system linepack will be implemented through the SO incentive arrangements.

- 2.65 Ofgem's SO proposals may require the transfer of certain provisions relating to its existing capacity and gas balancing incentives which are currently set out in Transco's Network Code incentives in to Transco's Gas Transporter's licence.

Way forward

- 2.66 A final assessment of the SO internal costs will be published in September 2001, together with draft proposals for the SO external costs. If the SO internal cost estimates given in this document are updated, adjustments may be necessary to the NTS TO price control revenues and these will be included in Ofgem's final proposals in September 2001. Final proposals for the NTS SO incentive scheme will be published in November 2001.

LNG storage

- 2.67 As discussed in Ofgem's February paper, stored LNG can provide a substitute for transmission pipeline capacity at periods of high demand. LNG that delivers this service is known as constrained LNG. LNG also can provide a reserve of gas to deal with short-term supply problems that might arise, for example, because of a failure of Transco's equipment or because of an offshore supply problem. This reserve of gas is called operating margins gas. LNG is also used to provide gas to four Scottish independent undertakings via a tanker service at Glenmavis.
- 2.68 In the February paper, Ofgem proposed four possible regulatory treatments for LNG storage. Namely that:
- ◆ LNG might be incorporated as part of transportation price control;
 - ◆ a regulated price for LNG could be included as part of Transco's licence (in other words, a separate price control for LNG);
 - ◆ LNG could offer its services in the market along with all other forms of storage (so LNG would be treated as a separate entity outside Transco's regulatory ring-fence); or
 - ◆ a combination of the above may be appropriate taking into account the different roles of LNG depending on location.

- 2.69 Ofgem has concluded that LNG storage should be treated as a separate entity outside of Transco's regulatory ringfence on the basis that LNG storage should be in a position to compete with other forms of flexibility and storage on an equal footing. LNG's role in competing to provide services to Transco's SO business and TO business will be set out in more detail in Ofgem's ongoing review of exit capacity arrangements.
- 2.70 Ofgem's views on LNG's role in the storage market, where competition is still developing, and the basis on which LNG would be regulated under general competition law and under the Gas Act was set out in more detail in our October 2000 review of the development of competition in the gas storage market.

Emergency service

- 2.71 In its February paper, Ofgem discussed the provision by Transco of emergency services to other gas transporters. Transco's charges to these gas transporters are not regulated through the price control. Transco provides these services as one of its excluded services.
- 2.72 Ofgem also noted that the lack of existing competition suggests that, in the absence of some form of regulation, Transco's charges to other gas transporters may be higher than necessary and suggested two routes by which Ofgem could address such a problem. In particular it asked for views on whether it would be appropriate to separately price control the provision of an emergency service to other gas transporters, or whether the Competition Act 1998 can be relied upon to address any monopoly power Transco may possess in this area.

Responses to February 2001 update paper

- 2.73 Respondents supported the retention of the emergency services within Transco's overall price control (and by implication the retention of services to other gas transporters as an excluded service). None supported establishing a separate price control for Transco's emergency services. One respondent supported the introduction of a separate licence condition to ensure that the charges made for this service by Transco are reasonable. Transco and another respondent

supported the view that the Competition Act 1998 could be relied upon to address any monopoly power that Transco may have in this area.

Ofgem's draft proposals

- 2.74 Ofgem concludes that separate price controls are not appropriate for Transco's emergency service, but that an additional licence condition would provide an important additional discipline on Transco to ensure that its charges reflect the costs it incurs in providing the service. This approach also provides added flexibility in addressing concerns in individual cases.

Cost-pass through

- 2.75 Ofgem's February paper identifies two areas of cost where it may be appropriate to allow Transco to pass these costs through to its customers. These were:
- ◆ prescribed rates (sometimes known as "formula rates"): the level of the rates is set by central government, and is levied on the basis of a rateable value and a charge rate multiplier; and
 - ◆ the gas transporter licence fees: these are set by Ofgem.

Responses to February 2001 update paper

- 2.76 One respondent did not support the pass through of costs in Transco's allowed revenue, stating that all businesses are subject to non-controllable costs which can affect expected returns under existing contracts.
- 2.77 Transco suggested that a number of additional items, including top-up costs, and the the cost of new regulations, legal or environmental requirements should also be considered as pass through items.

Ofgem's draft proposals

2.78 In October 2000, Ofgem and the Department of Trade and Industry issued a consultation paper¹² on the approach to setting and collecting licence fees. In May 2001, Ofgem issued a letter setting out its policy on the arrangements for recovering licence fees in future years¹³. In summary these arrangements are that:

- ◆ licence fees are to be charged only to natural monopoly businesses including Transco;
- ◆ price controls are to include a full-pass through of these fees; and
- ◆ where companies operate in the same sector (as Transco and independent gas transporters do), licence fees are to be allocated based on a common activity driver. The details of this allocation are still to be resolved.

2.79 In Transco's price controls, the treatment of Ofgem licence fees will be in accordance with the arrangements published by Ofgem in May 2001. The fees will be allocated to Transco's NTS and LDZ controls.

2.80 It is important that Transco has incentives to minimise the costs over which it has some influence. In practice, Transco can influence the level of most taxes it pays. However, it has little influence over the level of prescribed rates which form a significant proportion of Transco's costs (approximately 17 per cent of its operating expenditure). In addition, there is considerable uncertainty over the level of these rates through the next price control period. Allowing pass-through of these costs will reduce Transco's business risks and allow it to focus on achieving efficiency savings in areas more directly within its control. The NGC price control review allowed prescribed rates as a pass-through item for these reasons.

2.81 Ofgem concludes that both transportation prescribed rates and gas transporter licence fees should be pass-through items and allocated to the NTS and LDZ

¹² The calculation of annual licence fees and licence modifications, Joint consultation paper, Ofgem and Department of Trade and Industry, October 2000

¹³ Policy on Licence fees: Arrangements for recovering costs in future years, Ofgem, May 2001

price controls. Any rates applicable to meters should be borne by the metering business.

Metering and Meter Reading controls

- 2.82 In its February paper, Ofgem stated that the need to regulate the prices of Transco's metering and meter reading activities depended on the development of competition. Ofgem also proposed, to the extent that price regulation continued to be appropriate, a change in the form of control. The current RPI-X average revenue form of control would be replaced by a tariff cap approach.
- 2.83 Ofgem sought views on the structure of such a tariff cap approach and, in particular, which services should be capped. In Ofgem's view, a tariff cap is more appropriate in the context of the development of competition. It represents a more transparent regime for potential market entrants, and is more flexible in accommodating changes in Transco's market share and the development of new services.

Responses to February 2001 update paper

- 2.84 The majority of respondents supported the continuation of price controls in whole or in part beyond April 2002, although a few considered price controls inappropriate for a market open to competition. Many respondents stated that Ofgem should use explicit and transparent criteria in deciding when to lift price controls.
- 2.85 A large number of respondents endorsed the proposed tariff cap form of the control. However, a small number expressed concerns that the tariff caps risked not covering fixed costs, and were not aligned with the revenue allocation system for electricity. Subject to concerns about potential abuse of dominance, most respondents who commented considered that Transco's new services should not be subject to a price control.
- 2.86 Many respondents supported the proposed range of tariff caps, but others felt they could be simplified, or lifted altogether for meter reading services. Respondents suggested amending the caps to reflect, variously, the variation in industrial and commercial (I&C) metering charges, limited daily metered (DM)

meter reading competition, and increasing non-daily metered (NDM) meter reading competition.

- 2.87 Transco stated that price controls were not necessary for either metering or meter reading, as the provision of these services is contestable. Transco considers NDM meter reading sufficiently competitive and DM meter reading sufficiently contestable that the only price control potentially necessary from April 2002 was a transitional control for the provision and maintenance of existing meters, lasting no longer than two years. Transco supported a reference tariff approach, with price caps on a few services and all other charges set relative to these prices.

Ofgem's draft proposals

- 2.88 Ofgem has stated on a number of occasions that price controls on metering would be removed when competition was developed sufficiently to afford adequate protection for consumers. A description of the factors Ofgem uses in its assessment of the state of competition is provided in Appendix 4.

Scope and duration of control

- 2.89 Ofgem is presently minded to remove price regulation from Transco's provision of NDM meter reading services with effect from 1 April 2002. This decision reflects three factors:
- ◆ evidence from Ofgem's competitive market review of metering and meter reading services carried out in Autumn 2000¹⁴;
 - ◆ Transco's operational separation of NDM meter reading from its transportation business; and
 - ◆ the presence of viable alternative NDM meter reading service providers, and increasing evidence of shippers' ability to transfer business away from Transco to other service providers without incurring undue cost and risk.
- 2.90 However, it is Ofgem's view that shippers are not yet able to exercise effective choice over metering and DM meter reading services – and that the factors

constraining choice will not be fully removed before April 2002. To the extent that shippers use Transco out of necessity rather than choice, price regulation should therefore remain in place as a means of protecting the interests of consumers.

- 2.91 Price regulation in metering should however be seen as a transitional measure, to be in place only until competition has developed. Ofgem expects price controls on Transco's metering activities will remain in place until April 2004.

Form of control

- 2.92 Ofgem continues to believe that the approach set out in its February document is the appropriate model. The initial proposals set out in this document are therefore based on a tariff cap approach. However, Ofgem believes that the regime can be further simplified, by reducing the number of tariff caps, without reducing the degree of protection afforded to customers.

- 2.93 Ofgem is proposing tariff caps on four of Transco's metering and meter reading services:

- ◆ the annual charge for providing and maintaining the assets that constitute a domestic credit meter installation,
- ◆ the annual charge for providing and maintaining the assets that constitute a prepayment meter installation;
- ◆ the one-off charge for replacing a domestic credit meter with a prepayment meter;
- ◆ the annual charge for daily metered (DM) meter reading.

- 2.94 The tariff caps defined above only cover some of Transco's metering services. Ofgem is proposing to regulate Transco's other metering charges (including its charges for any new services it may introduce) through a new non-discrimination licence condition. In effect, the tariff caps would act as reference points upon which all of Transco's metering charges could be assessed against this non-discrimination obligation.

¹⁴ Review of competition in metering and meter reading services. A Survey document, Ofgem, September

- 2.95 In Ofgem's view, the proposed approach provides effective protection for customers, while at the same time providing Transco with greater flexibility over the range of metering services it offers and the manner in which it supplies these services. It also provides a more transparent regulatory regime for potential market entrants and for those seeking alternative metering service providers.
- 2.96 In respect of Transco's provision of prepayment meter services, Ofgem is proposing a specific set of measures to promote competition. These are explained in Chapter 8.

Views invited

- 2.97 Ofgem seeks views on any of the proposals set out in this chapter, but in particular on:
- ◆ whether RPI-X controls supported by the proposed outputs frameworks are appropriate for Transco's NTS TO and LDZ activities;
 - ◆ whether the proposed LDZ revenue driver provides appropriate incentives on Transco to develop its network; and
 - ◆ whether the proposed form, scope and duration of controls for Transco's metering and meter reading services provide the appropriate level of protection to consumers.

3. NTS outputs

- 3.1 This chapter presents the progress Ofgem has made to date in setting Transco's NTS output measures. The focus in this chapter is primarily on explaining the process to date for setting the NTS entry capacity baseline output measures, before outlining the initial estimation of the entry capacity output measures under different scenarios and our initial thoughts with regard to the entry capacity output measures.
- 3.2 As set out in the previous chapter, Ofgem will also be setting NTS exit capacity and linepack output measures as part of the TO price control. Transco's initial estimates of these output measures under each scenario were set out in the output measure matrices published on its website in May. Ofgem invited views on Transco's proposed output measures in May. Ofgem's final decision on the output measures relating to entry, exit capacity and linepack will be set out in the September final proposals document.

Progress to date

Long term investment and price control documents

- 3.3 The December 2000 document on improving the long term signals and incentives for investment in Transco's NTS and the February 2001 Price Control document set out the framework for the use of output measures¹⁵. Ofgem developed the framework and summarised respondents' views to the proposals in the March 2001 document¹⁶ on improving the long term signals and incentives for investment in Transco's NTS.

Use of output measures

- 3.4 Ofgem's previous documents explained that under the proposed framework it would be necessary to set output measures that would underpin Transco's incentives under the next price control.

¹⁵ "Long term signals and incentives for investment in transmission capacity on Transco's National Transmission System: Conclusions on the framework", Ofgem, December 2000.

"Review of Transco's price control from 2002: Initial thoughts consultation document", Ofgem, February 2001.

¹⁶ "Long term signals and incentives for investment in transmission capacity on Transco's National Transmission System", Ofgem, March 2001.

- 3.5 The initial firm entry and exit capacities (which Transco will be committed to make available to market) and system linepack will be set consistent with Transco's price control allowed revenues. However, Transco will be incentivised to invest to deviate away from these baseline levels of capacity in response to emerging market signals of the need for capacity (where these exist) and in response to their licence obligations.
- 3.6 For example, if entry auctions or subsequent market prices signal the need for additional capacity over and above the output level set for entry at a particular terminal, Transco will have an incentive to invest in additional capacity. This is because Transco will be able to keep additional revenue it receives from selling the incremental capacity.
- 3.7 If the entry auctions signal that planned capacity (set as part of the baseline output measures) is not required at a particular location, Transco need not invest. However, Transco will be required to offer the levels of firm capacity set as output measures, exposing it to buy-back costs. This will ensure that Transco does not have an incentive simply to under-invest to reduce its own costs but trades-off the cost of buying-back capacity against the cost of additional investment.

Definition of NTS output measures

- 3.8 Ofgem proposed that output measures be set for:
- ◆ NTS entry capacity at each entry terminal level;
 - ◆ NTS exit capacity at each individual offtake on the NTS that is connected to an individual user and for each LDZ (all NTS offtakes to an individual LDZ will be aggregated and a separate output measure determined); and
 - ◆ NTS linepack defined as the maximum available for a given demand level.

Initial determination of NTS output measures

- 3.9 Ofgem suggested that, in setting the forthcoming price control, output measures associated with the NTS would be set initially through an improved Base Planning Assumptions (BPA) process.

- 3.10 This BPA process uses information provided by shippers, producers, suppliers, customers and other interested parties to determine the amount of new NTS capacity needed under a number of scenarios. These scenarios reflect different assumptions about underlying demand growth in the Great Britain gas market and different assumptions, for a given level of demand, about the pattern of beach supplies to meet that demand.
- 3.11 As part of the price control review process, Transco completed a business plan questionnaire (BPO) in December 2000. In March 2001, Ofgem asked Transco to complete a set of matrices providing information on the maximum available level of physical NTS entry and exit capacity and linepack implied by the three investment scenarios created in its response to the BPO. A letter setting out the consultation process for setting the NTS output measures was placed on Ofgem's website on 1 May 2001.

Independent audit

- 3.12 At the request of shippers, Ofgem asked Transco to commission an independent technical report from an engineering consultant on the maximum available level of physical NTS entry capacity. Ofgem is expecting to receive the auditor's report in July 2001 to help inform the decision on NTS output measures.
- 3.13 Ofgem continues to support moves toward greater transparency in the BPA process with Transco making planning data, investment plans and its scenario assumptions widely available.

Respondents views on output measures

- 3.14 Respondents have had the opportunity to comment on both the output framework and the process for setting the initial output measures. These views are summarised in detail in Ofgem's March 2001 document.
- 3.15 The vast majority of respondents to these documents supported the use of output measures to underpin the new price control arrangements. A number of respondents raised concerns about the exact application of the output measures, including questioning whether further reliance on market signals was appropriate and the application of output measures to exit capacity.

- 3.16 Respondents also largely supported enhancing Transco's BPA process and the use of scenarios in the setting of output measures.

Transco's output measure matrices

- 3.17 In March 2001, Ofgem provided Transco with the template for the output matrices it was required to complete for four different scenarios. The output matrices requested information on the level of NTS entry, exit and linepack capacity under each scenario with associated capital expenditure. Ofgem also set out a methodology for completing the matrices for off-peak days.
- 3.18 Ofgem asked Transco to complete the matrices for the three scenarios (scenarios A, B and C) set out in Transco's 10 Year Statement plus an additional scenario which was a variation on scenario C with additional power station related load. The completed matrices were published by Transco on 1 May 2001 and provided Ofgem and all other interested parties with an opportunity to comment on the initial estimate of the output measures.
- 3.19 As Transco's completed matrices are based on the responses from the industry to the BPA questionnaire and on the bilateral meetings that Transco is currently holding with industry players, Ofgem requested that all responses on the completed matrices were submitted by 31 May 2001. We summarise respondents' views to the matrices below.
- 3.20 Subsequent to Transco submitting its output matrices, it published a consultation on its future plans for investment on 25 May 2001¹⁷. This document reviewed the BPA process, outlined key areas of uncertainty remaining in the planning process and updated the peak capacity output measures assumed under one of the scenario - scenarios A. This document also outlined some additional analysis that it had undertaken with regard to improving NTS flexibility (the ability to deliver more capacity off-peak) and resilience (the ability to cope with a supply shock). Transco presented the content of this document at a workshop on 6 June 2001 and allowed industry participants to respond to the consultation by 15 June 2001.

¹⁷ Transporting Britain's Energy, Transco, May 2001

3.21 Transco anticipates publishing a further document in July 2001 that will outline respondents' views on the issues concerning the setting of output measures. Ofgem expects that the Transco consultation process will feed into the price control discussions regarding the determination of output measures.

Description of the matrices

Scenarios

3.22 Ofgem asked Transco to complete the output measure matrices under three different scenarios outlined in Transco's 2000 Ten-Year Statement on which its BPQ response was based. These consist of two levels of demand for gas – base level and strong demand – against two supply patterns. The first supply pattern assumes most additional gas is supplied via St. Fergus while the second assumes greater imports via the Bacton-Zeebrugge interconnector. In addition, Ofgem requested that Transco consider an additional scenario consistent with that adopted during the NGC price control review. The latter is based on an increase in gas-fired electricity generation with installed capacity of 5 GW, distributed across the National Grid, and is described as scenario F below.

3.23 The three scenarios from the 2000 Ten-year statement are:

Supply	Baseline demand	Strong demand
Interconnector Balance	C	A
St Fergus Expansion		B

3.24 In the above scenarios, Transco is either assuming that the emerging GB supply deficit is met by:

- ◆ future discoveries of new UK gas supplies and the import of Norwegian Contintal Shelf gas through St.Fergus (St. Fergus expansion case); or
- ◆ a combination of limited additional supplies at all terminals, with the Bacton - Zeebrugge Interconnector providing increased flexibility to provide a match (interconnector balance case).

3.25 The demand cases largely determine the extent and timing of the forecast gas supply deficit. Baseline demand assumes a reduction in industrial demand. In the strong demand cases, this reduction in industrial demand is more than offset by an increase in greater demand for gas for electricity generation.

3.26 A more detailed list of assumptions is included in Appendix 5.

Results – completed scenarios

3.27 The completed matrices can be found on Transco’s website (www.transco.uk.com). This section presents a selection of the results.

Demand scenarios

3.28 Figures 3.1 and 3.2 present Transco’s forecasts of future annual and peak NTS throughput for the period to 2008.

Figure 3.1. Forecast NTS annual load to 2008

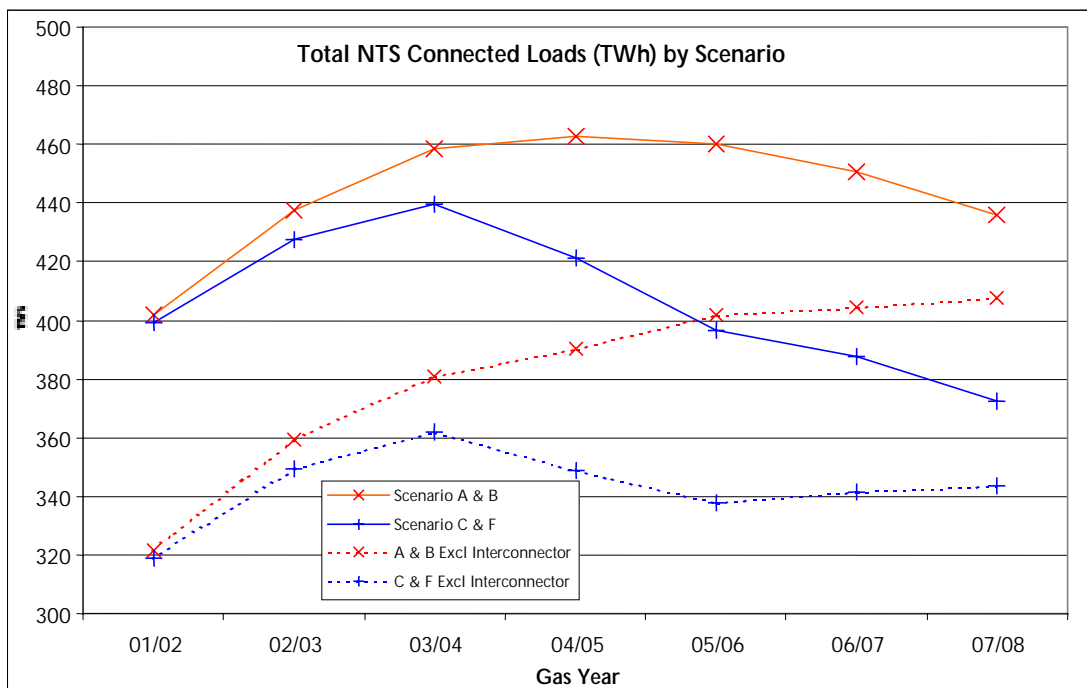
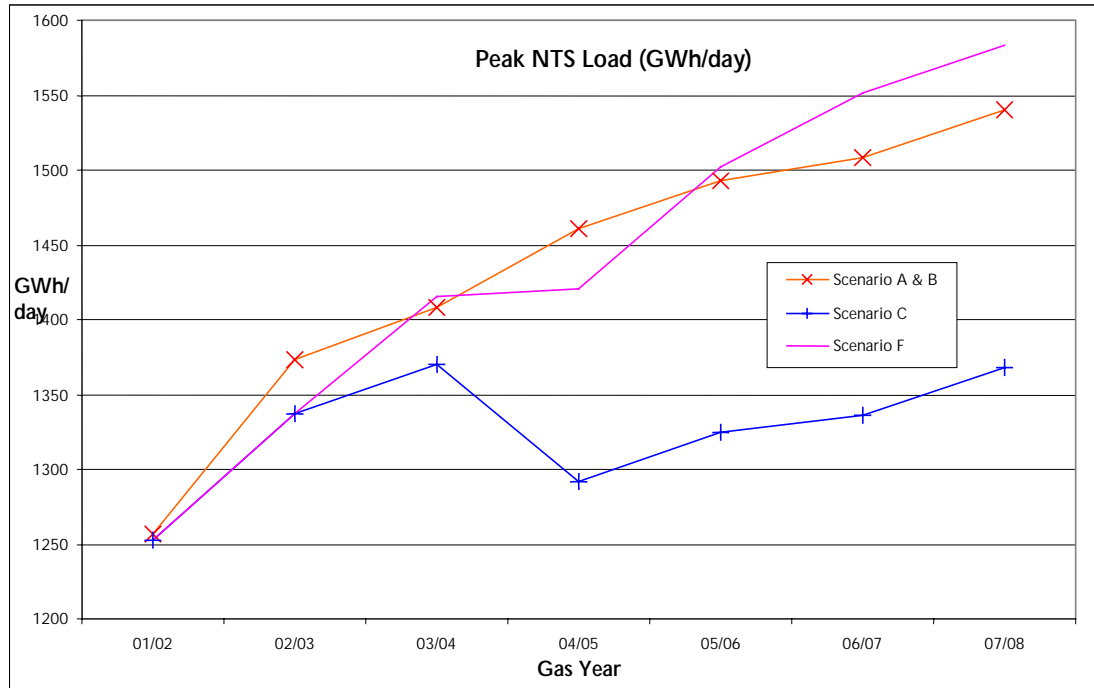


Figure 3.2. Forecast NTS peak load to 2008



3.29 From these figures it can be seen that Transco forecasts that:

- ◆ in the final two years of the control period, total annual NTS throughput reduces in all cases. This is due to assumptions that:
 - ◆ the Bacton–Zeebrugge interconnector changes from being a net exporter of gas to the continent and becomes a net importer (all cases);
 - ◆ economic slowdown and the increasing switch to a service based economy reduces industrial demand (cases C and F); and
 - ◆ reduction in Irish interconnector flows.
- ◆ in the strong demand cases (A and B) and the increased generation case (F), peak demand increases year on year. This is due to assumptions regarding increased gas fired electricity plant operating more as peak rather than base-load plant.

Supply scenarios and capital expenditure – impact on entry capacity availability

3.30 This section presents the results of the completed matrices for NTS entry capacity and the associated capital spending under the different scenarios.

3.31 Transco has not been able to provide clarity on the relationship between the capital expenditure figures it has presented by in the matrices and the

expenditure figures for scenarios A, B and C presented in its BPO and reported on in Chapter 6. This chapter discusses, in particular, terminal entry flows and the capital expenditure figures for providing entry capacity as given by Transco in the matrices.

3.32 In looking at all of the terminals under the scenarios, it appears that:

- ◆ the largest increases in available capacity occurs at St. Fergus in all scenarios;
- ◆ in the high St. Fergus scenario (B), the volume of available capacity decreases year on year at all other terminals from 2002. In particular, large year in year reductions occur at Teesside, Theddlethorpe and Easington to accommodate the large percentage increases at St Fergus. In the “Bacton swing” cases (A,C and F), this reduction occurs but to a much lesser extent; and
- ◆ in the Bacton swing cases, available capacity increases (or does not reduce) in the final year of the price control period for all terminals.

3.33 It also appears that investment:

- ◆ in aggregate is biased to the end of the price control period with 77 per cent of the forecast investment scheduled from 2004/5 onwards, for all scenarios. Transco reports that this reflects the lead times on Transco’s major investment planning will mean that considerable new build cannot be started until around this time;
- ◆ is focused on St. Fergus with between £67 million and £821 million expected to be spent at that terminal across all scenarios. This accounts for between 70 per cent and 88 per cent of all forecast capital expenditure in each scenario. Across the scenarios, total capital expenditure in NTS entry capacity ranges from a low of £95 million (C and F) to a high of £930 million (B);
- ◆ at Bacton occurs primarily towards the beginning of the control period; and
- ◆ in scenarios A, C and F, no (or very little) capital expenditure is forecast for the final year of the price control.

3.34 Figures 3.3 – 3.8 present the annual forecast available levels of peak (January), shoulder (October) and off-peak (July) entry capacity at the St. Fergus and Bacton entry terminals for scenarios A, B and C. These are the terminals where investment is focused under these scenarios.

Figure 3.3: Peak, shoulder and off-peak entry capacity availability and associated capital expenditure at St. Fergus – Scenario A

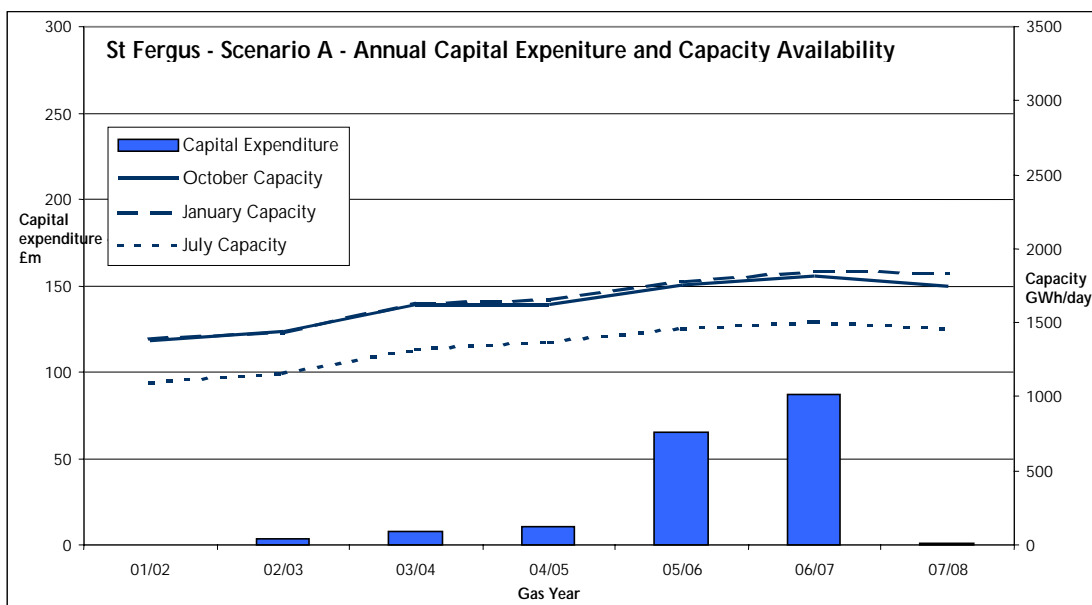


Figure 3.4: Peak, shoulder and off-peak entry capacity availability and associated capital expenditure at Bacton – Scenario A

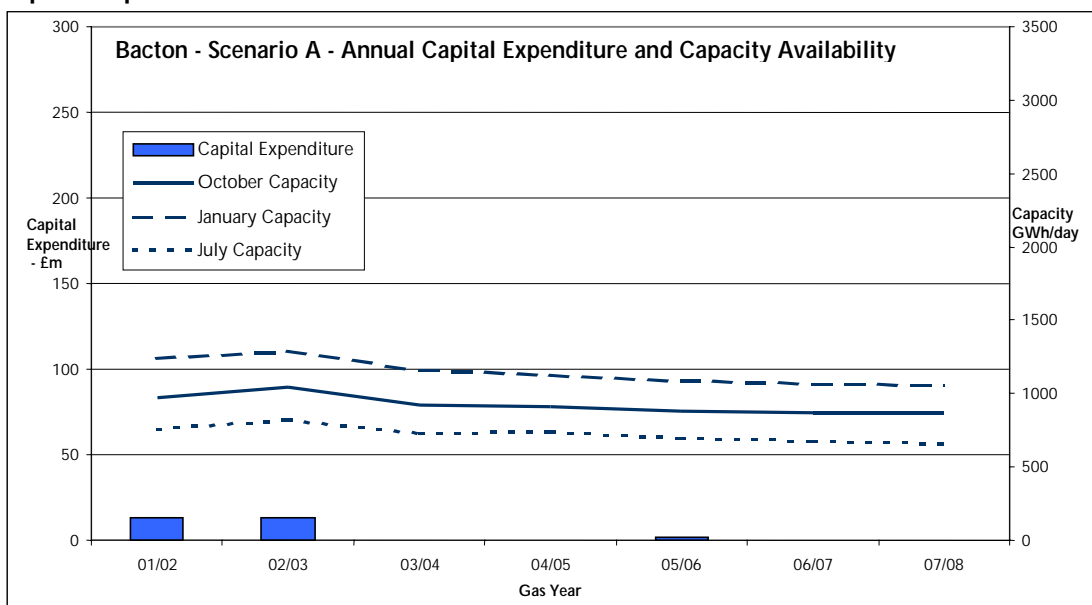


Figure 3.5: Peak, shoulder and off-peak entry capacity availability and associated capital expenditure at St. Fergus – Scenario B

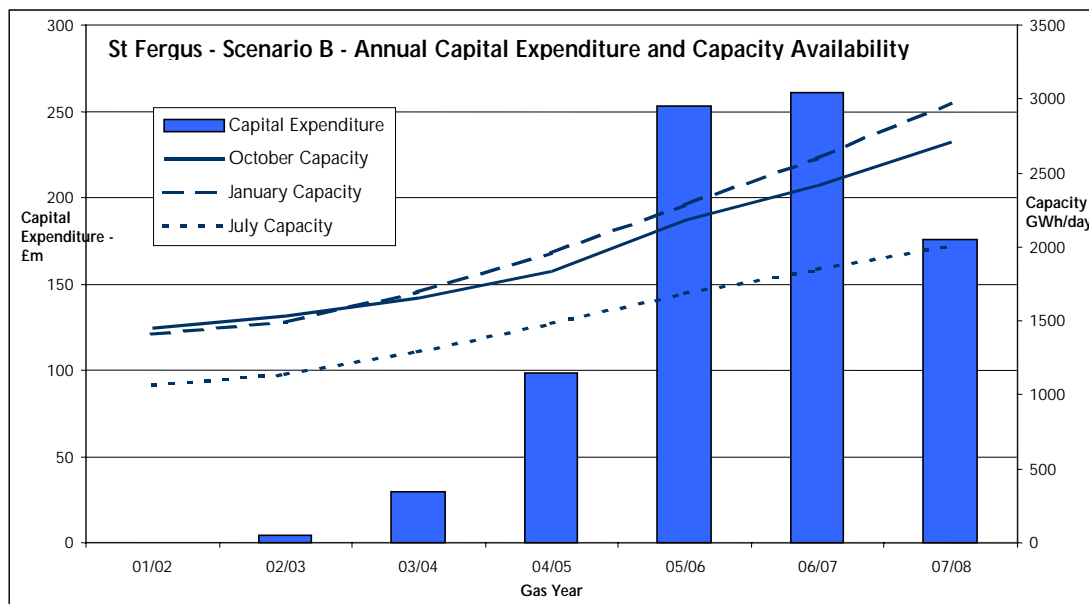


Figure 3.6: Peak, shoulder and off-peak entry capacity availability and associated capital expenditure at Bacton – Scenario B

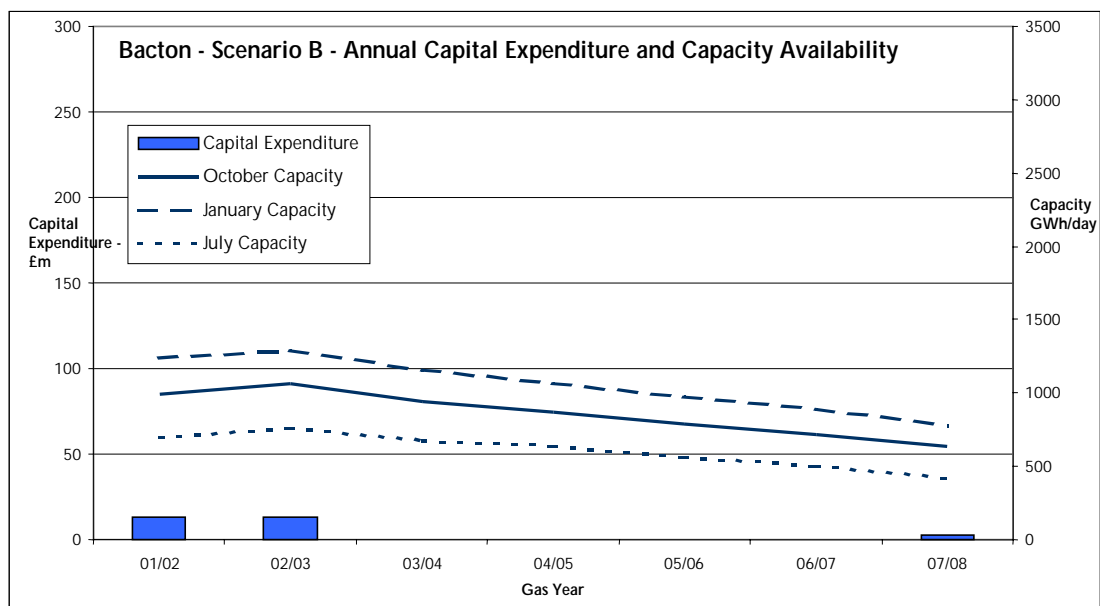


Figure 3.7: Peak, shoulder and off-peak entry capacity availability and associated capital expenditure at St. Fergus – Scenario C

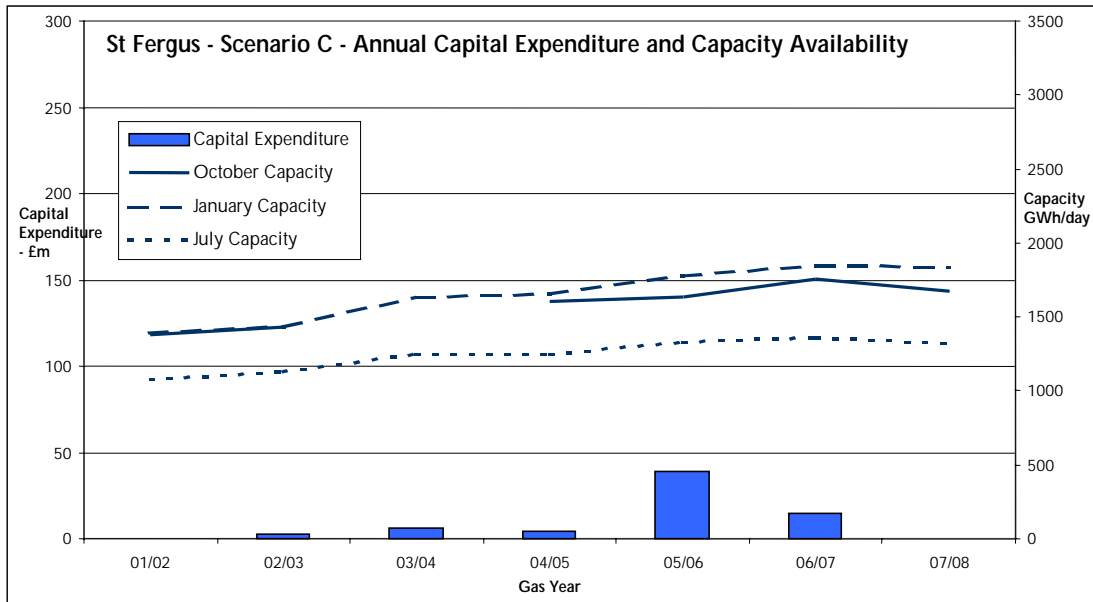
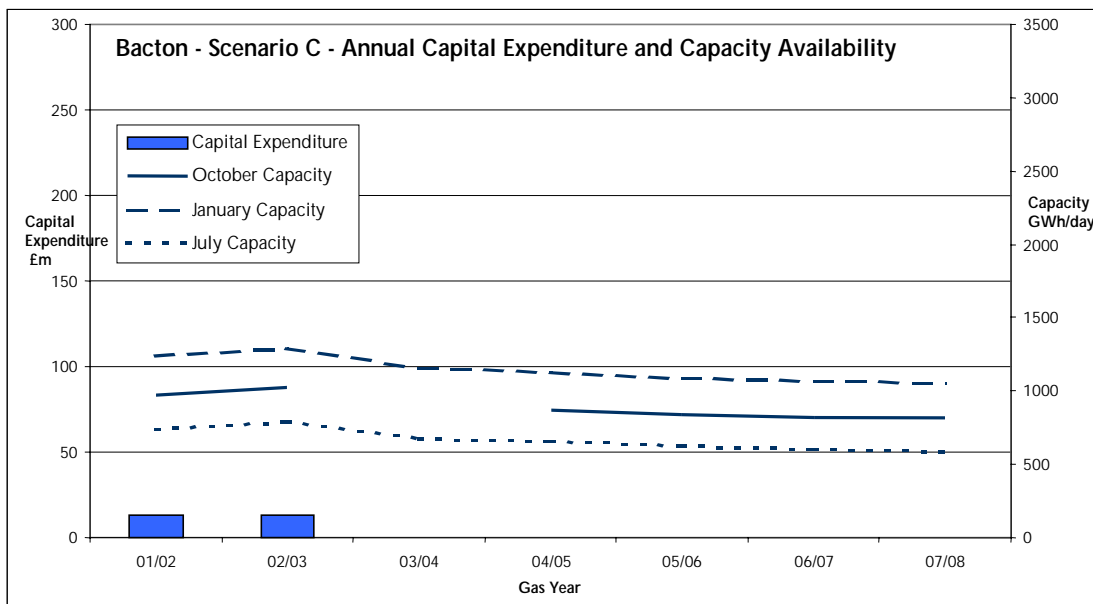


Figure 3.8: Peak, shoulder and off-peak entry capacity availability and associated capital expenditure at Bacton – Scenario C



Peak and off-peak capacity flexibility

- 3.35 The ratio of peak to off-peak capacity at St Fergus increases in two of the scenarios (B and C). Table 3.1 reports the ratio of peak available capacity to off-peak available capacity at St. Fergus under the different scenarios. Given the associated nature of most gas at St. Fergus, this suggests that the level of off-peak constraint could increase under these investment scenarios.

Table 3.1: Ratio of peak to off-peak investment at St Fergus.

Case	Peak / Off-Peak Ratio	
	2002/3	2007/8
A	1.27	1.26
B	1.33	1.48
C	1.29	1.40
F	1.29	1.35

- 3.36 The reason for this deterioration in the peak to off-peak ratio is because these scenarios are used by Transco to plan for meeting the 1 in 20 peak capacity obligation. As such, these scenarios do not address issues concerning the off-peak flexibility of the NTS to accept gas flows at different entry points at different times of the year.
- 3.37 Subsequently, Transco has undertaken a separate analysis to assess the investment requirements that would be needed to deliver the 1 in 20 peak day level of capacity in the summer (e.g. that is the ability to deliver a flat profile of gas from each terminal throughout the year). Transco's initial estimate of the capital expenditure required for this level of output is £430 million.

Transco's views on the matrices

- 3.38 In submitting its output matrices, Transco raised some concerns about the analysis that it had undertaken. In particular, Transco felt that the analysis submitted to Ofgem did not fully take account of terminal interactions. Transco also argued that it was unsure how the data in the matrices were to be used and therefore had reservations over whether the data in the matrices were completely fit for purpose. These reservations were published in a covering letter that accompanied the publication of the completed output matrices.

Respondents' views on the matrices

- 3.39 Ten respondents commented on the proposed output measures. In general, there was no clear indication as to a preferred or more likely scenario. Two respondents supported scenario A, arguing that both a larger increase in gas demand and the supply gap being met by additional gas from Europe landing at the Bacton terminal are likely within the next price control period. One of the respondents noted that the likelihood of gas landing at Bacton was higher due to the existing price differential between the St. Fergus and Bacton terminals.
- 3.40 All of the respondents commenting on Transco's output matrices raised concerns regarding the process and methodology used to determine the output measures. In particular, respondents felt that:
- ◆ the data presented in the matrices are based on out of date supply information (being based on last years BPA process and the 2000 Ten Year Statement) and therefore omit essential but more recent information such as projected Norwegian and interconnector gas flows;
 - ◆ some inconsistencies were evident between Transco's output matrices and similar data published in Transco's document "Transco Periodic Review, Strategic Business Plan 2001 – 2007";
 - ◆ the data take no or only limited account of the interactions between terminals or the extent of upstream contracts; and
 - ◆ more focus should be placed on summer capacity requirements rather than just focusing on the 1 in 20 peak (for example, by introducing a 1 in 20 summer gas peak).
- 3.41 Some respondents expressed concerns regarding the process for setting output measures and argued that the process should be established on a more formal basis, possibly through a licence obligation on Transco. Respondents expressed further concern regarding the possibly piecemeal nature of the release of information to the industry, noting that it is difficult to formulate a detailed response on the basis of incomplete data and a lack of detailed assumptions. Some shipper's noted that the scenarios assume largely constant trading arrangements and wanted to see the possible impact of Ofgem's initiatives on, for instance, gas balancing and exit capacity.

Ofgem's initial views

- 3.42 Having completed its initial analysis of the completed matrices, Ofgem was concerned that the submitted figures for entry capacity do not accurately reflect the "maximum physical" level of capacity at each entry point. It appears that Transco has provided an estimate of the likely available capacity at each entry terminal on a peak day given an assumed pattern of inputs. This interpretation is supported by the declining levels of available peak capacity year on year at a number of the entry terminals (for example, Barrow, Theddlethorpe and Easington) that is reported under each of the scenarios. Ofgem would expect that the physical capacity to evacuate gas from a given terminal would not decline over time (unless this involved, for instance, shutting down a compressor or losing the use of a pipe through asset retirement).
- 3.43 While Transco has provided an estimate of maximum capacity given the assumed flow pattern, we believe that this underestimates the full flexibility of the NTS at entry to accommodate flows that are different from the ones assumed by Transco's modelling. Given the level of uncertainty that Transco has identified with regard to future gas flows, it is important that all market participants have better information with regards to the flexibility of the NTS to accommodate flows that deviate from Transco's assumptions.
- 3.44 Ofgem's definition of "maximum physical entry capacity" is the actual maximum amount of gas that could be evacuated from a specific entry terminal given a fixed level of network investment and given an assumed pattern and level of demand. This is independent of the initial assumed pattern of gas entry flows and provides a clearer view of the capacity that Transco's network will be able to provide if actual flow patterns are different to Transco's assumptions. It therefore provides a clearer idea of the level of inter-terminal substitutability that could be managed by Transco.
- 3.45 In June 2001, Ofgem asked Transco to undertake an estimate of the actual maximum physical capacity available at each terminal. Transco will submit these revised figures to Ofgem and publish them shortly and they will be used to inform the decision on output measures.

Conclusions and way forward

- 3.46 Based on Transco's completed matrices, Ofgem has found that:
- ◆ additional capacity under the scenarios are focused on St. Fergus. Assumptions of more gas entering at Bacton and substituting for St. Fergus landed gas serves to reduce the required level of NTS investment;
 - ◆ the completed matrices provide an estimate of the expected available level of capacity given assumed flow patterns rather than the maximum physical level of capacity that will be available at each terminal; and
 - ◆ Transco needs to undertake additional analysis, particularly to fully explore the extent of inter-terminal substitutability and interaction.
- 3.47 In agreeing the final determination of output measures, Ofgem will continue to engage in discussion with Transco. Ofgem believes that in choosing between scenarios, it is prudent to identify the risks associated with actual flows being different than assumed. In general, under-investment at any individual terminal could result in physical constraints arising and the costs associated with these constraints out-weighting the costs of incremental investment. On the other hand, over-investment at any terminal could lead to stranded investment and higher transportation charges than otherwise required. Given the large amount of uncertainty regarding the actual future flow of gas, Ofgem believes that it is important that Transco is incentivised to respond to market signals where these indicate deviations from the agreed output measures

Issues for consideration

- 3.48 Ofgem welcomes views on the approach it has adopted for setting NTS output levels.

4. LDZ and shipper service outputs and medium-term performance reporting

Introduction

- 4.1 The February 2000 document set out Ofgem's initial thoughts on the appropriate framework for LDZ and shipper service outputs and medium-term performance reporting. Ofgem proposed that this should have three main elements:
- (a) output measures linked to financial incentives under the price control that should cover the number and duration of non-contractual supply interruptions;
 - (b) output measures, not linked to financial incentives, to monitor other areas of performance between reviews. These should cover safety, the accessibility of data to shippers and the resolution of shipper queries; and
 - (c) reports on the medium-term performance of Transco's NTS and 12 LDZ networks.
- 4.2 Respondents to the February document broadly agreed with the scope of the output measures, although a small number suggested some additional measures should be introduced such as the speed of extension of Transco's network to supply new areas and the quality of resolution of queries.
- 4.3 Ofgem considers that the broad framework proposed in the February document is appropriate. The detailed definitions of the output measures and guidance for reporting them are set out in the accompanying draft regulatory instructions and guidance (RIGs) paper. This chapter will focus on the high-level issues concerning the development of the LDZ and shipper service output measures and medium-term performance reporting.
- 4.4 Under the Gas Act, Ofgem has powers to set Guaranteed and Overall Standards of Performance to apply to Transco and other licence holders. The development of these standards needs to be coordinated with the development of LDZ outputs, to ensure that there is no undesirable duplication (or omission) in their

coverage. Ofgem's draft proposals for Guaranteed and Overall standards to apply to Transco are set out in Chapter 5.

- 4.5 The work on developing the outputs regime for Transco's businesses has built on the existing work on capital expenditure outputs for the current price control period. The draft RIGs illustrate how the existing capital expenditure monitoring outputs map onto the draft output measures, supporting measures and medium-term performance measures for the new price control period.

LDZ output measures incentivised under the price control

- 4.6 Ofgem proposes that the number and duration of non-contractual supply interruptions should be output measures that are directly incentivised through the price control. The majority of respondents to the February paper supported the use of these measures as the most appropriate measures of the quality of performance of Transco's LDZ networks.

Definition of interruption measures

- 4.7 There are a number of different types of non-contractual interruptions which can be planned or unplanned. Unplanned interruptions include interruptions due to:

- ◆ Transco's network fault or repairs;
- ◆ Transco meter faults; and
- ◆ third-party damage.

- 4.8 Planned interruptions include interruptions due to:

- ◆ service replacement;
- ◆ mains replacement;
- ◆ meter replacement; and
- ◆ customer or shipper initiated work.

- 4.9 Ofgem's initial view set out in the February document was that Transco should report the number and duration of all non-contractual interruptions upstream of

the meter, including planned interruptions and interruptions due to third-party damage. Of the five respondents that commented on this issue, four supported Ofgem's view. One respondent suggested the measures should only include unplanned interruptions within Transco's influence.

- 4.10 Ofgem considers that customers are primarily concerned with the extent of disruption to their supplies rather than the cause of the disruption. Ofgem proposes to include all non-contractual interruptions upstream of the meter in the LDZ output measures. This will allow Ofgem to develop a better understanding of non-contractual interruption as a whole and the extent of costs and inconvenience caused to customers. Work on the development of the incentive scheme will address the issue of whether the number of planned interruptions and the number of third-party interruptions should be incentivised. This is discussed further below.
- 4.11 Some respondents noted the importance of developing detailed definitions. The definitions are set out in the draft RIGs.

NTS interruptions

- 4.12 One respondent noted that it would be inappropriate to implement an incentive regime in relation to non-contractual NTS interruptions. Ofgem agrees that it would be inappropriate to introduce such an incentive scheme as unplanned interruptions on Transco's NTS networks rarely occur. Such interruptions will be measured and reported in accordance with the RIGs. Ofgem would be concerned if any adverse trends were identified.

Metering interruptions

- 4.13 A small number of respondents to the February document suggested that interruptions due to meter faults, meter replacement or meter exchange work should be included in the output measures.
- 4.14 The development of competition in metering will mean that the number and duration of meter-related interruptions will increasingly be outside Transco's control. To the extent that metering interruptions are of concern to customers, Ofgem anticipates that suppliers and customers would include measures to incentivise meter providers to minimise these interruptions through their

contracts. Ofgem does not therefore propose to include metering interruptions in the output measures.

Disaggregation of the non-contractual interruption measures

4.15 The February paper proposed that the non-contractual interruption measures should be disaggregated by:

- ◆ cause;
- ◆ LDZ; and
- ◆ type of customer.

4.16 Details of the disaggregated measures are set out in the draft RIGs. The majority of respondents that commented on this issue supported the development of disaggregated output measures, although a small number were concerned that the costs of providing this information might be prohibitive.

4.17 Transco has estimated that recording data on the number and duration of non-contractual supply interruptions will cost a total of £5 million in operating expenditure during the next price control period. Ofgem considers that this cost is small relative to the potential benefits from a better understanding of the causes of non-contractual interruptions and providing appropriate incentives for Transco to improve its performance. Ofgem therefore confirms its proposal for Transco to report disaggregated information on interruptions and has included £1 million per annum to cover the associated costs in its projections of operating expenditure in Chapter 6.

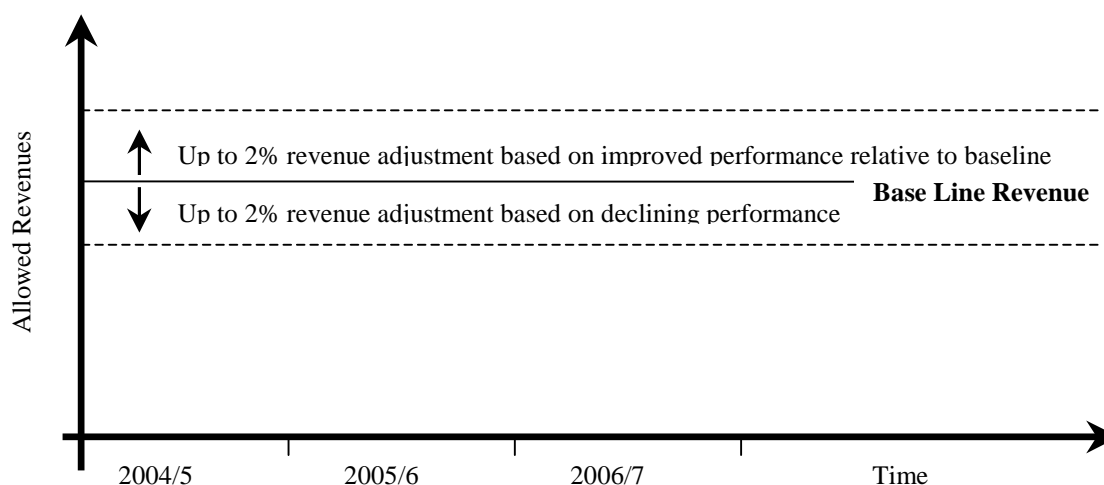
Incentive scheme

Form of the scheme

4.18 The majority of respondents who expressed an opinion supported an incentive scheme on interruptions based on exposure of up to 2 per cent of allowed LDZ revenues. One respondent asked for further clarification on the proposed 2 per cent of LDZ revenues. Another respondent was concerned that end users would bear increased costs from the introduction of such an incentive scheme.

- 4.19 There were mixed views on the symmetry of the incentive scheme. Some respondents suggested a symmetric scheme would be appropriate, as Transco should be rewarded for improved performance in reducing interruptions. Others supported an asymmetric scheme where Transco would be penalised for a failure to meet pre-defined interruption targets.
- 4.20 Ofgem considers that it is important to establish strong incentives for quality of supply improvements. Transco should be rewarded for improved performance on interruptions as well as penalised for declining performance. Ofgem therefore proposes a symmetric incentive scheme for Transco based on a range of performance around a baseline. The maximum revenues exposed under the incentive scheme will be ± 2 per cent of Transco's LDZ revenues (or equivalently ± 2 per cent of LDZ transportation charges.) This would amount to around £40 million based on allowed revenues for the 2000/1 formula year. The customer research described in Chapter 5 suggests that in aggregate customers would be willing to pay this amount for significant improvements in performance on interruptions.
- 4.21 Allowed revenues for the LDZ price control will be set on the assumption that the number and duration of interruptions remains constant. An initial baseline for the number and duration of interruptions will then be determined using the first year's data collected by Transco as part of the outputs framework.
- 4.22 Ofgem will carefully monitor Transco's interruption performance to ensure that it does not decline significantly in the proposed base year, which would enable Transco to benefit from lax performance targets in the incentive scheme. High-level data on compensation payments paid out under the guaranteed standard of performance and the number of supply incidents affecting more than 250 customers will be used for this purpose.
- 4.23 The incentive scheme is illustrated in Figure 4.1 below. If Transco's performance improves relative to the baseline its LDZ revenues may be adjusted upwards by up to 2 per cent. Similarly, if its performance worsens its allowed revenues may be adjusted downwards by up to 2 per cent. The revenues exposed under the incentive scheme may be reduced to below 1 per cent of LDZ revenues in the first year if Ofgem has concerns about the robustness of the data.

Figure 4.1 Symmetric Incentive scheme



4.24 It should be noted that this approach is equivalent to setting allowed revenues for the LDZ price control period on the assumption that Transco would meet target reductions in the number and duration of interruptions. Transco's allowed revenues would be set at a higher level but adjusted downwards if it failed to meet the targets. However, as the data on the number and duration of interruptions on Transco's network is limited at present, it is not possible to determine the current level of performance or to set target levels of interruption at this stage. The interruption output measures will ensure there is improved data and allow Ofgem to set appropriate targets for the beginning of the incentive scheme. This suggests that setting the price control on an "as-is" basis for interruptions and developing symmetric incentives is the most appropriate solution.

IIP incentive scheme

4.25 Ofgem's initial thoughts on the appropriate form of incentive scheme for the electricity distribution businesses under Ofgem's Information and Incentives Project (IIP) were set out in January. Two forms of scheme were considered. Each electricity distribution business could be assessed on the basis of:

- ◆ its own performance based on absolute measures; or
- ◆ its performance relative to its peers.

- 4.26 Ofgem held a workshop to consider the form of the incentive scheme in May. Ofgem's initial proposals for the incentive scheme will be published in July, taking views expressed in the workshop and responses to the consultation into account. Ofgem will make use of lessons learnt in the IIP in establishing a suitable incentive scheme for Transco.

National or LDZ performance targets

- 4.27 Ofgem considers that Transco's incentive scheme should be based on national performance targets while Transco's LDZ networks remain under a single LDZ price control. At present, Transco levies the same level of charges in all LDZs. If targets were set on an LDZ basis, the increase or reduction in transportation charges related to a particular LDZ's performance would be smeared across all of Transco's LDZ customers.

- 4.28 However, if separate LDZ price controls are introduced it may be appropriate to develop individual LDZ performance targets. Increases or reductions in transportation charges related to performance under the incentive scheme could then be targeted at customers in the appropriate LDZ.

Absolute versus relative performance

- 4.29 Ofgem considers that while all LDZs remain in common ownership, regulatory incentive schemes based on relative performance are unlikely to be effective. Transfers of revenue between LDZs will have no financial impact on Transco as a whole. However, Ofgem believes that incentives based on relative performance should be considered if Transco sells one or more of its LDZ networks.

Treatment of capital expenditure related to quality of supply improvements

- 4.30 Ofgem is considering how capital expenditure related to reductions in the number and duration of interruptions should be treated. If Transco's interruption performance improves it will receive increased allowed revenues under the incentive scheme. If related capital expenditure is included in Transco's regulatory value (RV) at the next price control review Transco will also receive a rate of return on this expenditure in future price control periods. It is important

to ensure that Transco does not receive incentives to overinvest in capital expenditure to reduce interruptions.

- 4.31 One way of addressing this issue would be to include capital expenditure related to reductions in the number and/or duration of interruptions in the RV at the next review, but to revise the baseline level of performance upwards to take into account the resulting improvements in performance.
- 4.32 Ofgem would welcome views on how capital expenditure related to quality of supply improvements should be treated.

Treatment of different types of interruption

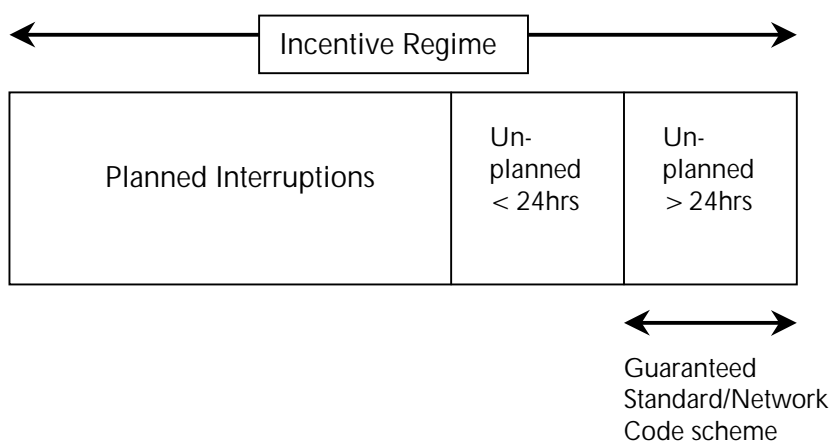
- 4.33 Work on the detailed development of the outputs regime will begin in 2003 as the initial interruptions data become available. As part of this process Ofgem will consider the treatment of different "types" of interruption within the incentive scheme as part of the work to develop an incentive regime in 2003. For example, Ofgem will consider:

- ◆ whether it is appropriate to include planned interruptions in the incentives relating to the number of non-contractual interruptions. Most planned interruptions relate to mains replacement under policies agreed with the HSE or work initiated by shippers or final customers. In some cases they are therefore outside Transco's control;
- ◆ whether it is appropriate to include interruptions relating to third-party damage in the incentives relating to the number of interruptions. Although many of these interruptions may be due to negligence on the part of contractors working for other parties (for example, builders or other utilities), Transco may be able to reduce the number of interruptions by providing better information to contractors concerning the location of its pipes or by identifying repeat offenders; and
- ◆ whether all non-contractual interruptions should be included in incentives relating to the duration of interruptions. While some interruptions may be caused by factors outside Transco's control, Transco is typically able to influence the duration of those interruptions.

Relationship between the incentive scheme and standard of performance on interruptions

4.34 In addition to an incentive scheme on non-contractual interruptions, Ofgem is proposing to introduce a guaranteed standard on restoring domestic customers' supplies. Transco will be required to restore domestic customers' supplies within 24 hours following unplanned supply interruptions. Where Transco fails to achieve this level of service it will be required to pay compensation for each further period of 24 hours, or part of such a period, that the customer is off supply. The draft standard of performance is set out in Chapter 5. Industrial and commercial customers will receive similar protection through an existing Network Code scheme.¹⁸ It is therefore important to ensure that there is clarity in the relationship between the proposed incentive scheme and the guaranteed standard and Network Code provisions. This relationship is outlined in Figure 4.2 below.

Figure 4.2 Incentive scheme, guaranteed standard and network code provisions



4.35 The guaranteed standard on interruptions will ensure that domestic customers worst affected by interruptions receive an appropriate level of compensation for the cost and inconvenience they suffer. The Network Code compensation scheme for industrial and commercial customers will ensure that they receive a similar level of protection. The purpose of the incentive regime on interruptions will be to ensure Transco faces appropriate incentives to reduce the extent of non-contractual interruptions as a whole, including the number and duration of

¹⁸ This is set out in sections J3.52 to J3.54 of Transco's Network Code.

unplanned interruptions lasting less than 24 hours and the average duration of planned interruptions.

- 4.36 In setting the incentive scheme it will be important to take into account compensation paid out under the guaranteed standard and the Network Code provision.
- 4.37 One approach to this issue is to define a rule for how compensation payments will be treated in the incentive scheme. Ofgem could set a baseline level of compensation based on the total amount paid out during the 2003/4 formula year. Changes in the level of compensation in subsequent formula years could then be netted off against changes in allowed revenues under the incentive scheme.
- 4.38 For example, suppose Transco's performance on interruptions improved so that it was entitled to an extra £1 million. If compensation payments under the guaranteed standard on interruptions and Network Code obligation fell by £200,000, Transco's allowed LDZ revenues would be adjusted upwards by a net figure of £800,000. Suppose Transco's performance on interruptions worsened so that it was entitled to £1 million less. If compensation payments rose by £200,000, Transco's allowed LDZ revenues would be adjusted downwards by a net figure of £800,000.
- 4.39 Another option is to maintain regulatory discretion as to the treatment of compensation payments. The burden of proof would be on Transco to show that the incentive scheme should be adjusted for compensation payments related to particular supply incidents or categories of incident.
- 4.40 Ofgem would welcome views on how compensation payments should be treated in the incentive scheme.

Accuracy of data and timing of implementation

- 4.41 Several respondents to the February document suggested that it might be premature to introduce an incentive scheme related to interruptions in April 2004, as this would be based on only one year's data. They recommended that the introduction be delayed until April 2005.

- 4.42 As Ofgem indicated in the February paper, there is clearly an issue of whether introduction in April 2004 will provide a sufficient track record on Transco's performance to allow Ofgem and Transco to agree the targets for the incentive schemes. However, delaying the introduction of the incentive scheme until 2005 would mean that Ofgem would possess less experience of the incentive scheme to inform the next Transco price control in 2007.
- 4.43 One way of addressing this issue is by reducing the amount of revenue at risk in the first year of the incentive scheme and by commissioning audits of the processes for measuring the number and duration interruptions and the initial data collected by Transco. Ofgem will set a target levels of accuracy for the interruptions measures for the beginning of the incentive scheme.

Output measures to monitor performance between reviews

- 4.44 The February document proposed a number of further output measures, which would not be linked to financial incentives. The majority of respondents to the February document supported the development of such output measures addressing Transco's performance in resolving shipper queries, improving the accessibility of data to shippers and gas safety.

Resolution of shipper queries

- 4.45 Ofgem confirms its proposal to adopt the percentage of shipper queries resolved within 10 days and the percentage of queries resolved within 20 days as output measures. In addition, Transco should report the mean time taken to resolve queries that are outstanding after 20 business days. Ofgem proposes that these measures are collected on a monthly basis and the data reported to Ofgem quarterly. Detailed definitions of the measures and requirements for reporting them at a disaggregated level are set out in the draft RIGs.
- 4.46 The following targets for the output measures have been agreed by Transco and the shippers and will be used for the purposes of setting the price control. Transco should achieve targets of 80 per cent of queries resolved within 10 days and 95 per cent resolved within 20 days during the price control period. In addition Ofgem would expect the mean time taken to resolve queries outstanding after 20 days to fall over this time.

Accessibility of data to shippers

- 4.47 The majority of respondents supported the introduction of an output measure addressing the accessibility of data to shippers. In the February document Ofgem suggested that the reliability of the internet data service for shippers might be an appropriate measure of data accessibility. However, the present system is a prototype, which is being used to inform future developments. Ofgem considers that it would be inappropriate to introduce an output measure for this service until a more permanent solution has been adopted.
- 4.48 Ofgem therefore proposes an alternative output measure on the provision of M-number database information to shippers in CD-ROM format. Transco should provide data to shippers in CD-ROM format in accordance with an agreed schedule. Transco should also report to Ofgem on the proportion of the data that has been validated or updated. The detailed definition of this measure is set out in the draft RIGs.
- 4.49 Ofgem recognises that this is an interim measure of the accessibility of data to shippers. The measure may be revised during the price control period in accordance with the change mechanism described below. Ofgem would expect Transco's performance in making data accessible to shippers to improve over time.
- 4.50 The quality of Transco's data is also being addressed as part of the medium-term performance reporting. Transco will be required to report on the quality of invoice critical data capture relating to both domestic and industrial and commercial customers. This is discussed further below and in the draft RIGs.

Gas safety

- 4.51 A small number of respondents to the February document were concerned that gas safety was being proposed as an output for Transco's LDZ networks, while it had not been included as an output in the Information and Incentives Project (IIP) for the electricity distribution businesses.
- 4.52 While it is important to achieve consistency between gas and electricity regulation, Ofgem must also take into account the differences between the two industries. Transco currently reports information on mains replacement to both

Ofgem and the Health and Safety Executive (HSE) and mains replacement for safety forms a significant element of Transco's expenditure. The HSE is currently undertaking a review of Transco's mains replacement policy. Ofgem will monitor Transco's performance against the mains replacement policy accepted by the HSE. Any data on mains replacement reported to Ofgem by Transco will be shared with the HSE.

- 4.53 The mains replacement policy forms part of Transco's Safety Case, and deviation from the Safety Case may result in enforcement action by the HSE. Ofgem has set out proposals in Chapter 6 for aligning expenditure on mains replacement with the actual mix of mains abandoned or taken off risk.

LDZ capacity

- 4.54 The primary output measures for the reliability of Transco's LDZ networks are the number and duration of interruptions. However, some interruptions may be caused by a failure to provide sufficient capacity to meet customers' peak demand. Ofgem considers that it is important to measure the provision of capacity to shippers on LDZ networks. This will help Ofgem to better understand Transco's performance. Ofgem proposes that at the end of each formula year Transco should report the estimated 1 in 20 peak demand for the current year in each LDZ and the forecast 1 in 20 peak demand for the next ten years in each LDZ. Transco should also confirm that it has made sufficient capacity availability to meet 1 in 20 peak demand in the previous and current formula years. The detailed definition of this output measure is set out in the draft RIGs.

Medium-term performance reporting

- 4.55 The majority of respondents to the February document supported Ofgem's proposal to introduce medium-term performance reporting for Transco's NTS and LDZ networks. There were mixed views on the approach to developing such a report. Some supported a discretionary approach allowing Transco to choose the most appropriate measures of medium-term performance. Others believed Transco should report on a range of pre-determined measures supported by an appropriate narrative.

- 4.56 Ofgem confirms its proposal for Transco to provide an annual report on the medium-term performance of its NTS business and each of its LDZ networks.
- 4.57 Ofgem considers that it is important to pre-specify a set of medium-term performance measures and supporting measures for the NTS and each pressure tier of Transco's individual LDZ networks. This will ensure continuity and consistency in the information provided to Ofgem during the price control period. Ofgem's draft proposals for these measures have been developed in discussion with Transco and are set out in the draft RIGs. Ofgem intends to collect information in four main areas, namely:
- ◆ an analysis of fault rates and causes on gas transmission and distribution systems including plant and equipment;
 - ◆ activity based information on the number of "units" replaced of an asset that has been identified as poorly performing and is subject of a replacement programme;
 - ◆ environmental measures including estimated methane and NOx emissions; and
 - ◆ the accuracy of NDM demand forecasts and quality of data capture.
- 4.58 In addition to the reporting of medium-term performance measures, Transco will also be required to provide a supporting narrative. The narrative should clearly explain the performance of the NTS and each LDZ by pressure tier. Particular issues that the narrative should cover, include:
- ◆ a statement on asset management, to include a commentary on the broad philosophy and overall approach that is adopted for asset management;
 - ◆ an explanation of the trends observable from the reliability information – to include actions taken to improve reliability or identify and replace or improve deteriorating assets, together with a prediction of future performance;

- ◆ any additional condition monitoring and post-fault investigation carried out to identify the condition of assets, and the prognosis for future condition and performance;
- ◆ an explanation of any adverse trends in the reliability of sub-asset groups not covered by the RIGs but collected by Transco's NTS and LDZ networks as part of their asset management strategies;
- ◆ confirmation that Transco is complying with the Pressure Systems regulations and other relevant legislation and standards; and
- ◆ an environmental report.

4.59 The environmental report will need to take into account guidance from the Government, the Environment Agency and other relevant bodies. It should explain levels of methane, carbon dioxide and nitrous oxide emissions (where appropriate) and performance against any other relevant environmental targets.

4.60 It is not Ofgem's intention to unduly constrain Transco's approach to reporting medium-term performance. The framework for reporting medium term performance will develop over time and as such Transco is encouraged to report any additional indicators and/or narrative that it considers appropriate.

4.61 Ofgem proposes that Transco should publish the first report in 2002 incorporating data on historic performance and future projections. It is recognised that data collection in some areas may not be fully implemented at that stage, but the report should set out progress and delivery timescales in these areas.

4.62 As part of the medium-term performance report Transco's directors should provide confirmation that appropriate work is being carried out to maintain the medium-term performance of its NTS and LDZ networks.

Supporting measures

4.63 In addition to output measures and medium-term performance reporting, Ofgem proposes that Transco should report information for a small number of supporting measures. These measures are required to facilitate the development

of an expenditure monitoring framework discussed in Chapter 9. It is important that there is a comprehensive set of measures that fully encompass Transco's capital and replacement expenditure. The definitions of the supporting measures are set out in the draft RIGs.

Cost of developing and implementing new processes for output measures

- 4.64 Transco already collects some of the information required for reporting outputs and medium-term performance. For example, Transco already estimates the forecast 1 in 20 peak demand for each LDZ as part of the Ten Year Statement. The measures for resolving shipper queries are currently part of Transco's Business Rules for the resolution of shipper queries. Transco currently reports information on mains replacement to both Ofgem and the HSE.
- 4.65 However, Transco will need to develop new systems and procedures to record data on interruptions. As noted above, Transco has estimated that recording data on the number and duration of non-contractual supply interruptions will cost a total of £5 million in operating expenditure during the next price control period. Ofgem has included £1 million per annum in its projections of operating expenditure in Chapter 6 to support the development of systems and processes for monitoring interruptions.

Licence condition for outputs reporting

- 4.66 As discussed in Chapter 9, Ofgem is proposing that the outputs reporting regime should be formalised in a new special licence condition. This will set out the high-level requirements for collating and reporting "Specified Information" and refer to the RIGs for more detailed definitions and related instructions and guidance.
- 4.67 Ofgem recognises the importance of minimising the uncertainty that Transco faces with regards to outputs during the next price control period. It is also important that changes can be made to develop and refine the definition of particular output measures and allow reporting of some additional information to support the introduction of the incentive regime.

- 4.68 As regards the LDZ and shipper services outputs, and medium-term performance reporting, the change mechanism will be similar to that implemented as part of the IIP for the electricity distribution businesses. Changes to outputs will only be made at price control reviews unless Ofgem has the prior agreement of Transco. Changes to the RIGs, however, may be made to improve definitions of output measures, remove inconsistencies, improve presentation or style or to set out additional supporting information needed to set the incentive scheme. For example, some errors in the RIGs may be identified in the first year of outputs reporting. It is important that these can be corrected.
- 4.69 NTS outputs and associated RIGs may need to change to reflect any changes in the exit and balancing regime.

Auditing

- 4.70 In the February document Ofgem explained the need for an audit of the output and medium-term performance measures. Ofgem proposes to commission a high-level audit of Transco's processes and measurement systems during the 2002/3 formula year to ensure that consistent and accurate information is provided by Transco's NTS and LDZ businesses over time. Ofgem will then commission a more detailed audit of outputs data during the 2003/4 formula year to determine how accurately the number and duration of interruptions are being recorded. Given that data on the number and duration of interruptions is currently limited it is not possible to specify levels of accuracy for the beginning of the price control period. However, Ofgem intends to set accuracy targets for the beginning of the incentive scheme in April 2004 based on the audit information.

Way forward

- 4.71 Ofgem will publish the final regulatory instructions and guidance for reporting output measures in September. This will include, where appropriate, revised definitions of the output measures, medium-term performance measures and supporting information.
- 4.72 Where the relevant systems are in place for measuring outputs, collection of data and should start in April 2002. However, Ofgem recognises that for the

interruption output measures Transco will need to develop new systems and processes to record the data. Ofgem will allow Transco a lead-time for these systems to be established and therefore proposes that Transco should start measuring and reporting information on the interruption measures during the 2002/3 formula year but not later than 31 March 2003. As noted above Ofgem will commission audits of the processes and measurement systems for recording outputs and the initial outputs data during the 2002/3 and 2003/4 formula years.

- 4.73 Ofgem will monitor the delivery of outputs on an ongoing basis to determine any trends in performance and to ensure that Transco's quality of supply does not deteriorate. It will also be important to monitor Transco's medium-term performance. The process of monitoring outputs will begin in August 2002, as soon as the first quarter's data on output measures becomes available. Ofgem proposes to monitor medium-term performance on an annual basis.
- 4.74 Ofgem will consult on the development of the incentive scheme relating to the number and duration of interruptions in 2003. This will address the more detailed form of the incentive scheme and how much of the proposed ± 2 per cent of LDZ allowed revenues should be exposed. Ofgem will also commission an audit of the initial interruptions data to verify the quality of the data. This will enable Ofgem to set an accuracy target for the start of the incentive scheme in April 2004.
- 4.75 The key milestones for developing the outputs regime are set out in Table 4.1 below.

Table 4.1 Key milestones

Dates	Milestones
September 2001	Final proposals for regulatory instructions and guidance containing detailed definitions of outputs Draft licence condition for outputs reporting
April 2002	Implementation of new price control: outputs framework comes into force Reporting begins for output measures where systems are already in place
April 2002 – March 2003	Data collection begins for interruption measures (not later than 31 March 2003). Reporting for these measures begins (not later than 1 August 2003). High-level audit of processes and measurement systems for outputs information
April 2003 – March 2004	Detailed audit of outputs data Consultations on the development of the incentive scheme
April 2004	Implementation of incentive regime

Issues for consideration

4.76 Views are invited on any of the issues discussed in this chapter, but in particular:

- ◆ on the initial definitions of the output measures;
- ◆ the appropriate approach for Transco to report the medium-term performance of the NTS and each of its LDZ networks;
- ◆ the timetable for the introduction of output-based incentives on Transco; and
- ◆ the draft RIGs.

5. Guaranteed and overall standards of performance

Introduction

- 5.1 The Gas Act has empowered Ofgem to set guaranteed and overall standards of performance for gas transporters.
- 5.2 Under guaranteed standards of performance the licensee must pay fixed compensation to customers for failure to meet the required level of service. Overall standards of performance cover areas where it is inappropriate to give individual guarantees, because the nature of the service means there is an inherent level of variability in performance. However, overall, customers have a right to expect the licensee to deliver pre-determined, minimum levels of service.
- 5.3 Ofgem believes that it is important to introduce guaranteed and overall standards of performance in respect of certain non-contestable activities carried out by Transco. They will provide the primary protection to Transco's final consumers in relation to quality of performance, at least until they are supplemented by financial incentives on interruptions under Transco's price control, as discussed in Chapter 4.
- 5.4 The June 2001 document on standards of performance set out draft secondary legislation to introduce revised standards of performance for electricity distribution businesses and ex-PES supply businesses.¹⁹ The existing gas transportation standards of performance for Transco and other gas transporters will be retained until 31 March 2002, within the current regulatory framework.²⁰ This chapter sets out Ofgem's draft proposals for transportation standards of performance to apply to Transco from 1 April 2002. Ofgem will be consulting separately on any standards to apply to other gas transporters.

¹⁹ "Guaranteed and overall standards of performance - Further consultation", Ofgem, June 2001.

²⁰ Therefore, retaining Standard Licence Condition 19 in the new transporter licences. Transco's licence would, as now, contain a modified version of Standard Licence Condition 19.

Existing standards of performance

- 5.5 At present there are no guaranteed or overall standards of performance that apply to Transco. However, Standard Condition 19 of the GT licence requires licensed gas transporters to establish standards of performance in respect of connections to domestic premises and in relation to the prevention of gas escapes and the provision of adequate heating and cooking facilities to priority customers. Transco's public standards of service also include a number of voluntary standards, such as standards of service on making and keeping appointments and customer visits.
- 5.6 A detailed review of Transco's national performance against these standards was set out in Ofgem's October consultation paper on standards of performance.²¹ Ofgem reviewed Transco's performance at an LDZ level in the February initial thoughts paper.²² In the period from 1 January 1997 to 31 December 2000, Transco met or exceeded all of its performance targets at a national level. In addition it met most of the targets at an LDZ level. However, there was significant variance in performance between the LDZs.

Customer survey

- 5.7 IFF Research Ltd has undertaken a survey of domestic and business customers' views on standards of performance on behalf of Ofgem. This work has been split into two stages:
- ◆ a qualitative phase with 8 domestic focus groups and 14 in-depth telephone interviews with business customers; and
 - ◆ a quantitative phase with 2,575 domestic telephone interviews and 1,203 business telephone interviews. This included booster samples of those who have had dealings with Transco.
- 5.8 The purpose of the research is to assess:
- ◆ customers' awareness of Transco and other gas transporters;

²¹ "Guaranteed and overall standards of performance – Final proposals", Ofgem, January 2001.

²² "Review of Transco's price control from 2002 – Initial thoughts consultation document", Ofgem, February 2001.

- ◆ customers' satisfaction with Transco's level of performance;
- ◆ customers' views on the appropriate standards of performance and compensation levels;
- ◆ customers' willingness to pay for improvements in standards of performance; and
- ◆ the cost of supply interruptions.

5.9 The high-level results of this work have been used to inform the development of the draft standards of performance. More detailed analysis of the results is currently underway and Ofgem will publish a report on the survey in July.

Development of standards of performance

5.10 The February initial thoughts paper invited views on a number of key issues concerning the development of regulatory standards for April 2002. These were:

- ◆ the appropriate scope of Transco's standards of performance;
- ◆ the appropriate performance levels and whether they should apply individually to each LDZ;
- ◆ the appropriate coverage of the standards and form of the compensation schemes;
- ◆ the role of qualitative standards; and
- ◆ whether Transco should provide additional information on its performance in attending gas emergencies.

5.11 This section sets out respondents' views on each of these issues and Ofgem's proposals for how they will be taken forward.

Scope of standards of performance

Transportation

- 5.12 There was broad support for Transco's standards of performance for transportation being based on the existing public standards of service with additional standards in a number key of areas, including the reconnection of customers' supplies following unplanned interruptions and informing customers of the expected reconnection programme. Ofgem's draft proposals for transportation standards of performance convert a number of the existing standards of service into guaranteed and overall standards of performance and include three new standards. The proposals are set out in Tables 5.1 and 5.2 below.

Connections

- 5.13 There were mixed views on the need for guaranteed and overall standards of performance for connections. Some respondents argued that these are not necessary as Transco has a number of connections standards of performance already in place. Others argued that gas customers still have little choice in procuring connections. They suggested that while competition is yet to develop standards on connections should be reinforced.
- 5.14 Transco has a number of connection standards of performance imposed by an enforcement order issued by Ofgem in February 1999 under section 28(1) of the Gas Act. These are set out in Appendix 7. Ofgem does not consider it appropriate to convert these into standards of performance under the Gas Act as this would merely be transferring the standards between two forms of regulation. Ofgem will consult separately on whether similar standards should apply to other gas transporters.

Metering

- 5.15 Ofgem's January 2000 final proposals document²³ on standards of performance proposed that metering standards should be placed on suppliers until effective competition in metering is established. In addition there may be complementary

²³ "Guaranteed and overall standards of performance – Final proposals", January 2001.

standards placed on Transco to ensure that all suppliers are able to secure the appropriate level of service. These standards of performance are set out in Appendix 7.

- 5.16 Transco has estimated the additional cost of responding to pre-payment meter faults in 3 hours rather than 4 hours to be £11.4 million per annum in operating expenditure and £0.4 million per annum in capital expenditure. Ofgem is investigating the basis for these cost estimates.
- 5.17 There were mixed views on the need for metering standards of performance for Transco in response to the January document and February price control document. Several respondents suggested that metering standards were needed to ensure that suppliers could procure the appropriate level of service. However, a number of respondents reaffirmed their view that metering standards should apply only to suppliers, who act as the primary “hub” for consumers.
- 5.18 Ofgem will issue a further consultation paper on guaranteed and overall standards of performance for metering in the coming weeks, once it has given further consideration to some of the issues. Ofgem intends to introduce standards of performance for metering. As the proposals and date of implementation are still under consideration, the costs of new metering standards of performance are not included in the figures for capital and operating expenditure set out in this document.

Appropriate performance targets and whether they should apply individually to LDZs

Respondents' views

- 5.19 Several respondents expressed concern that Ofgem was intending to ratchet up existing performance targets for overall standards of performance because Transco had outperformed them during the current price control period. They suggested that Ofgem should take into account customers' views and the additional costs involved before deciding whether to raise the standards.
- 5.20 Nine respondents commented on whether standards should apply to individual LDZs. Six respondents believed that this would be appropriate. One respondent accepted that individual LDZ standards might be appropriate in future. Two

respondents were in favour of standards of performance only being reported and monitored at an LDZ level with a national LDZ standard.

Ofgem's proposals

- 5.21 Ofgem is proposing to convert a number of existing public standards of service and Transco internal standards into overall standards of performance. Ofgem does not propose to raise the existing performance targets for these standards. Raising the targets would impose significant costs on Transco, while only benefiting a small number of customers.
- 5.22 Ofgem proposes to apply the standards to each LDZ individually to ensure that customers in each LDZ are offered a similar level of protection. This will also help align the regulation of electricity distribution businesses and gas transporters by applying standards on a less centralised basis. Transco should also report performance against guaranteed standards on an LDZ basis.
- 5.23 Ofgem considers that LDZ standards are important because there is significant regional variation in Transco's performance. For example, East Anglia LDZ met the standard of making and keeping appointments in 93 per cent of cases in 2000 against a national target of 95 per cent. By contrast North, Southeast and Wales LDZs met the standard in 99 per cent of cases. Southwest LDZ met the standard on notification of planned work in 94 per cent of cases in 2000 against a national target of 95 per cent. However, East Anglia met the standard in all cases.
- 5.24 Customer satisfaction with standards of performance also varies significantly between LDZs. Transco carried out a customer satisfaction survey among customers who had made complaints in the period February to November 2000. Figure 5.1 illustrates customers' satisfaction with the ease of contacting Transco about their complaint. 66 per cent of customers were very satisfied or fairly satisfied with the ease of contacting Yorkshire LDZ. However, only 47 per cent of customers were very satisfied or fairly satisfied with the ease of contacting North London LDZ.
- 5.25 Figure 5.2 shows customers' satisfaction with the outcome of their complaints. Customers were very satisfied or fairly satisfied with the outcome of 60 per cent

of complaints relating to Southern LDZ. However, in North London customers were only satisfied with the outcome in 43 per cent of cases.

Figure 5.1: Ease of contacting Transco

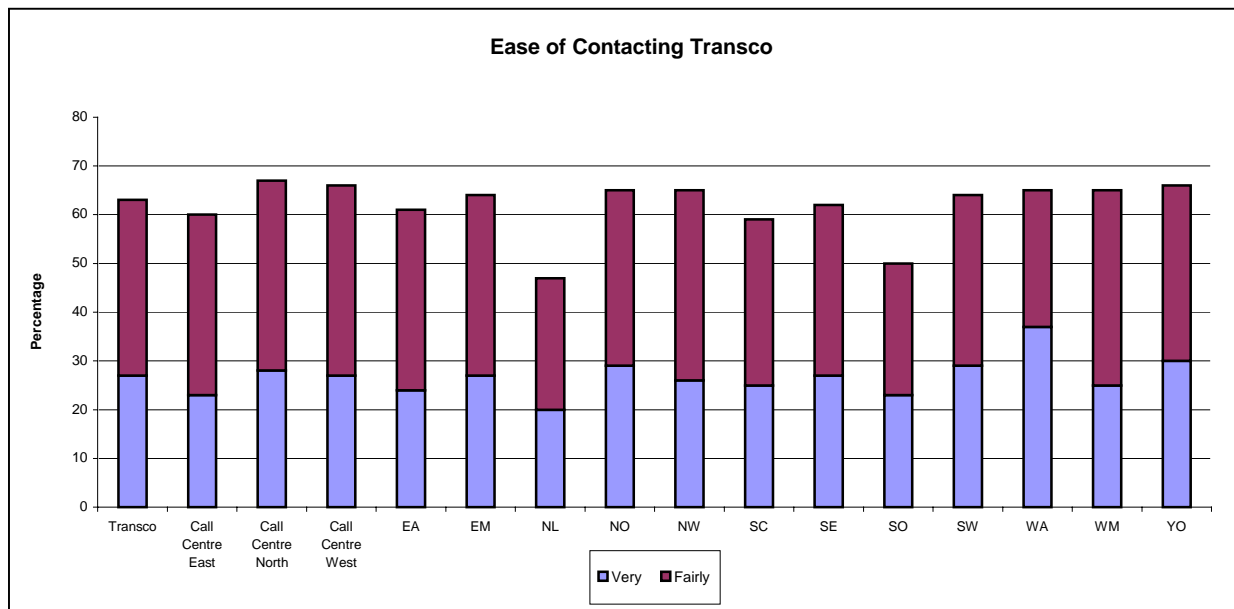
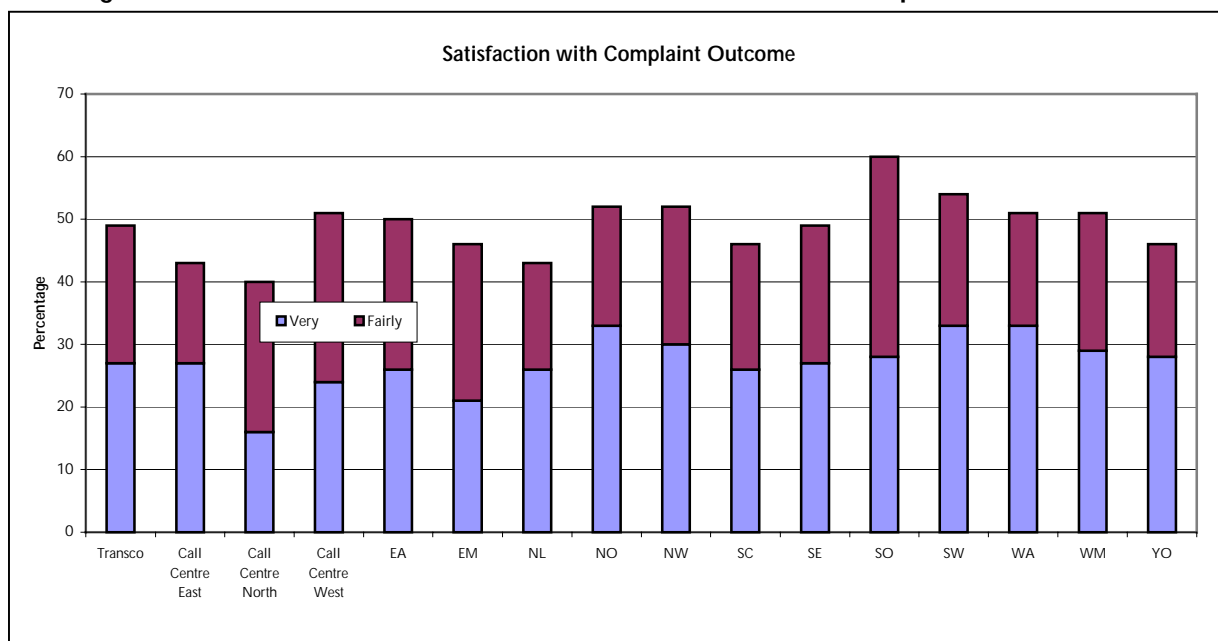


Figure 5.2: Customer satisfaction with the outcome of their complaints



5.26 Ofgem recognises that applying standards of performance to each LDZ implies a tightening of the standards. Transco will no longer have the flexibility to outperform the standard in some LDZs and underperform in others. To date Transco has estimated that the additional cost of complying with the emergency service standard in the Scotland LDZ will be approximately £0.9 million per

annum, although it has indicated there may be some other (as yet unquantified) costs associated with complying with the standards on an LDZ basis. Ofgem has therefore included £1 million per annum to cover the cost of compliance with the standards on a LDZ basis in its projections of operating expenditure in Chapter 6.

Coverage of the standards and form of the compensation schemes

Respondents' views

- 5.27 Eight respondents commented on the coverage of the guaranteed and overall standards of performance. Three respondents suggested that the standards should be focused on domestic customers. Three respondents believed that the standards should focus on domestic customers and smaller business customers that lack the resources necessary to negotiate service level agreements or appropriate protection in their supply contracts. The others suggested that the standards should apply to all customers.
- 5.28 The majority of respondents supported Ofgem's view that the compensation payments should reflect the cost and inconvenience to customers of Transco failing to provide an adequate level of service. One respondent suggested that compensation should be based on the price paid by the customer for the service rather than focusing on costs and inconvenience.
- 5.29 There were mixed views on the appropriate form of the compensation schemes. Some respondents favoured compensation based on gas consumption levels. Others favoured a simpler solution with fixed levels of compensation for different categories of customer.

Ofgem's proposals

- 5.30 Ofgem proposes that standards of performance should apply to all customers connected to Transco's LDZ networks, with the exception of the standard on reconnecting customer supplies where industrial and commercial customers will continue to be covered by the Network Code compensation scheme. Compensation for failure to meet guaranteed standards should be based on the cost and inconvenience to customers of Transco failing to provide an adequate level of service.

5.31 Ofgem believes that a simple compensation scheme should be developed to avoid imposing unnecessary costs on Transco. Ofgem therefore proposes to introduce fixed levels of compensation for domestic and non-domestic customers respectively. These levels of compensation will be informed by the results of the IFF customer survey. Ofgem recognises that the cost and inconvenience of supply interruptions lasting greater than 24 hours will increase with the consumption of I&C customers. This is reflected in Ofgem's proposal to retain the Network Code provision for failure to make gas available to I&C customers. This relates the level of compensation to capacity bookings. Larger I&C customers will therefore receive a higher level of compensation. This is discussed further below.

Qualitative standards of performance

Respondents' views

5.32 The majority of respondents agreed with Ofgem's views that it would be impractical to set qualitative standards of performance. One respondent accepted that it would be difficult to implement qualitative standards, but felt some progress could be made towards meeting this objective at a high level. One respondent felt it would be possible to construct robust qualitative standards.

Ofgem's proposals

5.33 Ofgem therefore does not propose to introduce qualitative standards of performance on Transco. However, Transco undertakes customer surveys each year to assess customers' satisfaction with its level of performance. Transco should make the results of these surveys available to help Ofgem monitor Transco's quality of performance and ensure that it does not deteriorate.

Additional information on performance in attending gas escapes

Respondents' views

5.34 Two respondents commented on this issue. They supported the collection of additional information in respect of gas escapes.

Ofgem's proposals

5.35 Ofgem therefore confirms its proposal for Transco to provide information on the number of controlled and uncontrolled gas escapes against response times and calculate the median and mean response times in each case. This information should be reported to Ofgem as part of the medium-term performance report as set out in the draft RIGs.

Guaranteed standards of performance for transportation

5.36 Table 5.1 sets out Ofgem's draft proposals for guaranteed standards of performance for transportation. These proposals have been informed by the high-level results of IFF's customer survey. Ofgem's final proposals will take the detailed analysis of the customer survey results and further views of Transco, energywatch, other licensees and interested parties into consideration.

Table 5.1 Draft Guaranteed Standards of Performance

No.	Standard	Definition	Payment
1	Restoring domestic customers' suppliers after an unplanned interruption*.	Where domestic customers are interrupted for a period of greater than 24 hours, a fixed compensation payment will be made for each subsequent period of 24 hours or part of such a period customers are off supply. (This excludes third-party and water ingress interruptions where more than 50,000 customers are affected. It also excludes cases where gas has been restored up to the meter, but Transco is unable to gain access to complete the reconnection)	(£20-50)
2	Reinstatement of customers' premises	On completion of Transco initiated work to re-lay service pipes on a customer's premises, the premises will be permanently reinstated within 10 working days. If the premises are not permanently reinstated within this time, customers will be paid fixed compensation. An additional payment will be made for each further period of 5 working days until their premises are permanently reinstated.	(£25-50) initial payment plus (£25 –50) for further periods of 5 working days (domestic) (£50-125) initial payment plus (£50–125) for further periods of 5 working days (non-domestic)
3	Making and keeping appointments	Transco should arrange a morning or afternoon appointment for customer initiated work, or a timed appointment if requested by the customer. This standard excludes metering work ²⁴	(£20–40)
4	Adequate heating and cooking facilities.	If it is necessary for safety reasons for Transco to disconnect the gas supply to premises occupied by a domestic customer who is disabled, chronically sick, or of pensionable age and who lives alone, or shares the premises with other persons in the same category, or with a minor, they will not be deprived of adequate heating and cooking facilities.	£24

*Compensation for business customers will be covered by Transco's network code.

²⁴ There will be a parallel guaranteed standard of performance for making and keeping appointments on metering business as part of the metering standards.

GS 1: Restoring domestic Supplies

- 5.37 Transco is currently required under its Network Code to pay compensation for failure to make gas available for offtake from its system. It must pay:
- ◆ consumers on its network using less than 73,200 kWh £20 for each consecutive period of 24 hours, or part of such a period, commencing with the expiry of the first 24 hours of the failure; and
 - ◆ consumers on its network using more than 73,200 kWh the greater of £20 and a sum calculated in accordance with a formula set out in the Network Code.
- 5.38 The Code requires that Transco make any payments that are owed under this provision to the relevant shipper. The payments are then passed onto the relevant supplier and the final customer.
- 5.39 In the February document Ofgem suggested that it might be appropriate to introduce a guaranteed standard of performance on restoring customers' supplies following unplanned interruptions. The majority of respondents who commented on this issue were in favour of the development of such a standard, especially for domestic customers, and agreed that it should take into account differences between gas and electricity such as the need to enter customers' premises to restore the gas supply safely. Some respondents also suggested that the standard should apply to interruptions caused by third parties, such as developers digging through one of Transco's mains.
- 5.40 Ofgem therefore proposes to introduce a guaranteed standard on restoring domestic supplies following unplanned interruptions on Transco's network, including cases of third-party damage or water ingress where less than 50,000 customers are affected²⁵. This will replace the existing Network Code provision for domestic customers. Transco will be required to restore domestic customers' supplies within 24 hours following interruptions. Where Transco fails to achieve this level of service it will be required to pay compensation for each further period of 24 hours or part of such a period that the customer is off supply. The

²⁵ The largest gas supply interruption in recent years involved approximately 30,000 customers in Worthing in 1994.

treatment of third party and water ingress interruptions is discussed in more detail below.

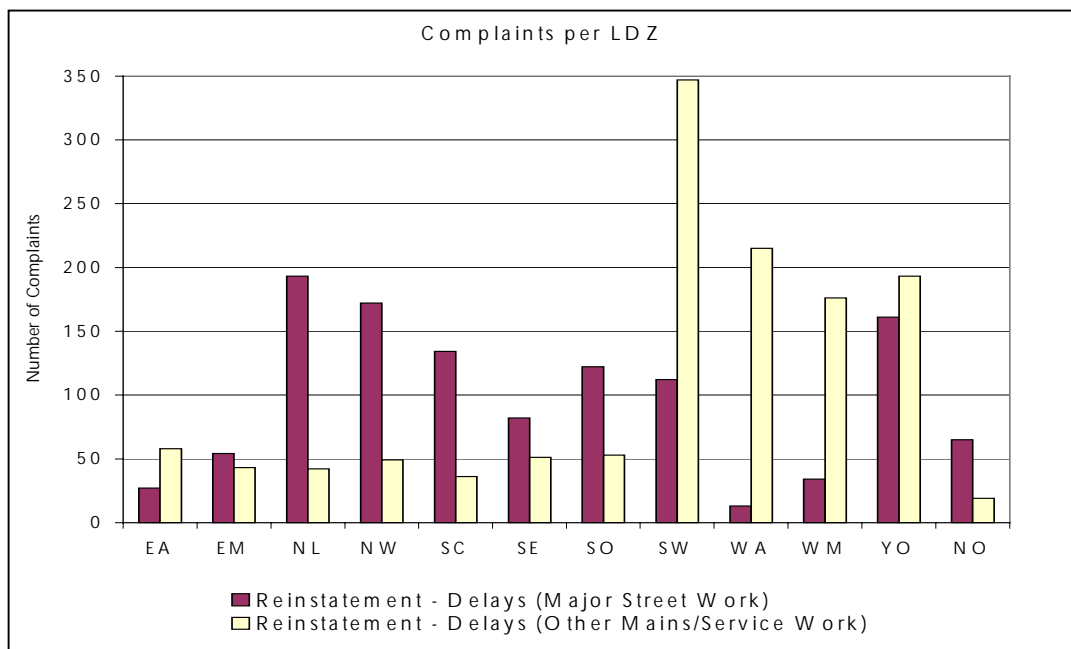
- 5.41 Ofgem believes that the introduction of this standard will help align regulation in gas and electricity and ensure that domestic customers are entitled to a similar level of protection from both industries. It will also increase customer awareness of their entitlement to compensation.
- 5.42 IFF's quantitative research suggests that 73 per cent of domestic customers and 72 per cent of non-domestic customers would find it acceptable for their supplies to be restored within 24 hours following an unplanned interruption. IFF has also researched domestic and businesses customers' views on the cost of interruptions lasting over 24 hours and the level of compensation required. For example, domestic customers may have to purchase take-away food or use electric heaters. The initial qualitative research suggests that customers consider gas interruptions to be less disruptive than electricity interruptions. The results of this work will inform the proposed fixed level of compensation for domestic customers. Ofgem currently considers that the compensation should be in the range of £20 to £50 per 24-hour period.
- 5.43 Ofgem considers that the compensation scheme for industrial and commercial customers should remain in Transco's Network Code as this relates the level of compensation to capacity bookings. Larger industrial and commercial customers therefore receive a higher level of compensation. However, it may be appropriate to revise the minimum compensation payment for industrial and commercial customers based on the results of IFF's customer research.
- 5.44 Ofgem would welcome views on whether it is appropriate to introduce a guaranteed standard on restoring domestic customers' supplies within 24 hours and the appropriate level of compensation. Ofgem would also welcome views on the appropriate minimum level of compensation for non-domestic customers.

GS 2: Reinstatement of customers' premises

- 5.45 Transco receives a significant number of complaints each year concerning the reinstatement following work carried out by Transco, which are recorded on its

Complaints Management System. The number of complaints per LDZ in 2000 relating to reinstatement delays is illustrated in Figure 5.3.

Figure 5.3. Complaints per LDZ concerning reinstatement in 2000



5.46 A number of these complaints relate to major street work delays. Ofgem does not propose to introduce a standard of performance in relation streetworks as Transco is required to meet the standards established under the New Roads and Street Works Act 1991. Local Highway Authorities monitor compliance with this legislation. However, many of the complaints relate to other mains and service work, including work on customers' premises. Ofgem believes it is important to ensure that customers' premises are reinstated in a timely manner.

5.47 Ofgem therefore proposes to introduce a guaranteed standard on Transco requiring permanent reinstatement of customers' premises within 10 working days of completion of work to re-lay service pipes on their premises. If Transco fails to meet this level of service it will be required to pay a fixed level of compensation to customers. Additional compensation will then be payable for each further period of 5 working days until the customers' premises are permanently reinstated.

5.48 IFF's quantitative research suggests that 76 per cent of domestic customers and 67 per cent of business customers would be satisfied with this level of

performance. IFF is also researching customers' views on the appropriate level of compensation for failure to meet the standard. The results of this work will be used to inform the proposed fixed level of compensation for domestic and non-domestic customers. Ofgem currently considers that the compensation should be in the range of £25 to £50 for domestic customers and £50 to £125 for non-domestic customers for the initial failure to meet the standard and for any further periods of 5 working days where Transco fails to permanently reinstate the customers' premises.

GS 3: Making and keeping appointments

- 5.49 Ofgem proposes to convert the existing public standard of service for making and keeping appointments for customer initiated work into a guaranteed standard of performance. Transco will be required to make a morning or an afternoon appointment, or a timed appointment if requested by the customer.
- 5.50 IFF's quantitative research suggested that 82 per cent of domestic customers and 85 per cent of business customers would be satisfied with this standard.
- 5.51 Ofgem considers that it is important that similar levels of compensation are paid for failure to meet standards for making and keeping appointments in both gas and electricity. This suggests a compensation payment of £20. IFF has researched domestic and business customers' views to help determine whether a higher level of compensation might be appropriate for gas transportation. The results of this work will be used to inform the proposed fixed level of compensation for domestic and non-domestic customers.

GS 4: Adequate heating and cooking facilities

- 5.52 Ofgem proposes to convert the existing public standard of service on providing adequate heating and cooking facilities to priority customers into a guaranteed standard of performance. Transco should provide adequate heating and cooking facilities in the event of a gas emergency or any non-contractual interruption upstream of the meter. Transco currently makes a discretionary payment of £20 for failing to provide these facilities. Ofgem proposes to revise this upwards to £24 under the guaranteed standard, to take into account inflation between 1996 and 2002.

Overall standards of performance for transportation

5.53 Table 5.2 below sets out Ofgem's draft proposals for overall standards of performance for transportation. Ofgem proposes that the standards should apply to Transco at a national level and to each LDZ individually.

Table 5.2 Draft overall standards of performance

No	Standard	Definition	Annual Target
1	Telephone calls	Transco's call centres will answer telephone calls within 30 seconds. Emergency calls will be given priority over other types of call.	90%
2	Notification of planned supply interruptions	For planned maintenance or replacement work, which involves interruption of the gas supply, a standard notification letter will be provided to customers directly affected at least 5 working days in advance of starting the work.	95%
3	Informing customers of when they are due to be reconnected	For unplanned supply interruptions which are expected to last over 24 hours and: (a) less than 250 customers are affected Transco will inform individual customers that they have been interrupted and the expected programme for reconnection within 12 hours of it having knowledge of the interruption. (b) more than 250 customers are affected Transco will provide public announcements to inform customers that they have been interrupted and the expected programme for reconnection within 6/12 hours of it having knowledge of the interruption. (For example, using local P.A. broadcasts and local radio.) Progress charts and the reconnection programme should be displayed locally and updated information should be provided to customers every 24 hours. (The expected programme for reconnection should include the expected day of reconnection)	97% 97%
4	Acknowledging correspondence	All correspondence from gas customers or members of the general public will receive an acknowledgement within 5 working days of receipt. This will indicate when a substantive response may be expected.	90%
5	Visits	Where a visit is appropriate following receipt of correspondence or a complaint: a) contact will be made within 2 working days of receipt of the correspondence; and b) the visit will be made within 5 working days of contact with the customer or later if requested by the customer/member of the public.	93%
6	Substantive response to complaints	Customer shall receive a substantive response to complaints from whatever source within 10 working days other than in exceptional circumstances. (This would include complaints relating to metering until this market become competitive and connections work where it has legal obligations.)	90%
7	Gas emergencies	Where Transco receives a report of a gas emergency or gas escape, significant spillage of carbon monoxide or other hazardous situations, it will attend as quickly as possible within the following timescales: a) all uncontrolled escapes within 1 hour. b) all controlled escapes within 2 hours.	97% 97%

* All annual performance targets apply nationally and to each LDZ individually.

OS 1: Answering telephone calls

- 5.54 Ofgem proposes to convert the public standard of service for answering telephone calls into an overall standard of performance. Ofgem believes that it is appropriate to retain the existing target performance level of answering 90 per cent of telephone calls within 30 seconds. Moving to a higher performance target would impose additional costs on Transco without yielding significant customer benefits.
- 5.55 Transco estimate that moving to a standard of 90 per cent of calls being answered within 15 seconds would require 7 to 9 per cent additional call handling resources, costing an extra £1.5 million per annum in operating expenditure. However, the results of IFF's customer survey show that 98 per cent of domestic customers and 96 per cent of business customers found the existing performance standard acceptable. It therefore seems inappropriate to revise the standard.
- 5.56 Table 5.3 below shows call centre performance for each category of telephone line in 2000. Emergency gas escape calls (which are given priority over other calls) were answered on average within 3 seconds while other calls were answered on average within 8.5 seconds, significantly below the 30-second target.

Table 5.3 Telephone call service levels and ringing times

Line	Service level (%)	Average ringing time (seconds)
Gas escape lines	99	3.0
Enquiries line	92	8.5
M-number helpline	91	8.3
Repairs helpline	95	8.2

- 5.57 An independent customer survey carried out for Transco in 2000 showed that 63 per cent of customers found the response time to be quicker than expected.

OS 2: Notification of planned work

- 5.58 Ofgem proposes to convert the existing public standard of service on the notification of planned interruptions into an overall standard of service. Transco should give customers 5 working days notice before the start of planned maintenance or replacement work that requires interruption of customers' supplies. Ofgem considers that it is appropriate to retain the existing performance target of meeting the standard in 95 per cent of cases.
- 5.59 The results of the qualitative research conducted by IFF indicate that 5 days is the appropriate amount of notice for customers. The quantitative study supported this, suggesting that 97 per cent of domestic customers and 92 per cent of business customers would find it acceptable for Transco to give 5 working days notice before planned interruptions.
- 5.60 Ofgem has considered whether this should be a guaranteed standard of performance. Ofgem believes that this is unnecessary as where Transco fails to notify customers 5 days before the interruption they will typically give customers a shorter period of notice. Any inconvenience caused will therefore be limited. However, Ofgem would be concerned if Transco gave notice of less than 2 days in any cases.

OS 3: Informing customers of the expected reconnection programme

- 5.61 Ofgem proposes to introduce an overall standard on informing customers that they have been interrupted and the expected programme for reconnection. For interruptions where less than 250 customers are affected Transco should inform customers individually that they have been interrupted and provide the expected programme for reconnection of their supplies within 6 or 12 hours of it having knowledge of the interruption. For larger interruptions Transco should provide public announcements to inform customers. Progress charts should be displayed locally and updated information provided every 24 hours.
- 5.62 IFF's customer survey asked for customers' views on the appropriate form of this standard. 88 per cent of both domestic and business customers supported a standard requiring Transco to inform them of the day their supply would be reconnected. The proposed standard ensures that customers receive this

information. It also addresses concerns that it may be difficult to inform customers individually of expected reconnection times during a large incident and takes Transco's existing incident procedures into account. Ofgem considers that better information provision during an incident will enhance Transco's ability to reconnect customers in a safe and timely manner.

5.63 IFF's survey results showed that customers' top three priorities for standards of performance were:

- ◆ restoring supplies following unplanned interruptions;
- ◆ keeping appointment times; and
- ◆ improving information during unplanned interruptions.

5.64 IFF's qualitative research also highlighted the importance of improving information to customers in the event of unplanned interruptions.

5.65 Ofgem's decision on the appropriate target time for informing customers will take into account the results of the customer survey, respondents' views and the marginal costs of informing customers in 6 rather than 12 hours.

5.66 Ofgem would welcome respondents' views of the form of this standard and appropriate target times for informing customers of the interruption and expected reconnection programme.

OS 4: Visits

5.67 Ofgem proposes to convert the existing public standard of service for visits into an overall standard of performance. This covers cases where it is appropriate for Transco to visit a customer's premises following receipt of correspondence or a complaint. Ofgem believes it is appropriate to retain the existing performance target of making contact within 2 working days and visits within 5 working days in 93 per cent of cases.

5.68 IFF's customer survey results suggest that 50 per cent of domestic customers and 51 per cent of business customers would be satisfied with a standard requiring visits to take place within 10 working days of the acknowledgement of a complaint. 86 per cent of domestic customers and 75 per cent of business

customers would be satisfied with the proposed standard requiring visits to take place within 5 working days of the acknowledgement of a complaint.

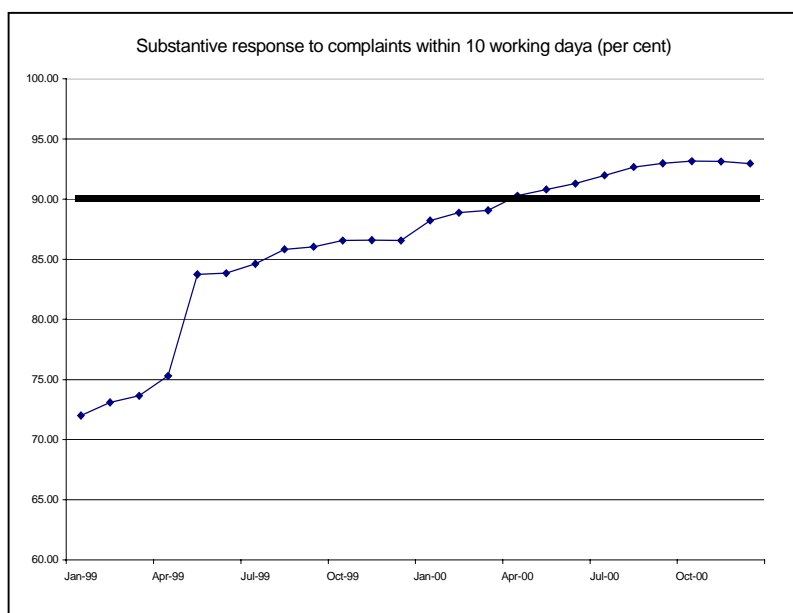
OS 5: Acknowledging correspondence

- 5.69 Ofgem proposes to convert the existing public standard of service for replying to correspondence into an overall standard of performance. Ofgem considers that it is appropriate to retain the existing performance target of acknowledging 90 per cent of correspondence within 5 working days. The acknowledgement should make clear when a substantive response can be expected.
- 5.70 IFF's customer survey shows that 69 per cent of domestic customers and 72 per cent of business customers would find it acceptable for Transco to acknowledge receipt of their correspondence within 10 working days. 92 per cent of domestic customers and 94 per cent of business customers would find it acceptable for Transco to acknowledge their correspondence within 5 working days.

OS 6: Resolving complaints

- 5.71 The existing public standard of service for customer complaints requires that Transco keeps a record of all complaints. Transco has an internal standard that it should make a substantive response to 90 per cent of complaints within 10 working days. Transco's performance against this standard is shown in Figure 5.4

Figure 5.4 Substantive response to complaints



- 5.72 There was a significant improvement in Transco's performance between January 1999 and October 2000 with the percentage of responses sent out within 10 working days increasing from 72 per cent to approximately 92 per cent. Ofgem proposes to convert this internal Transco standard into an overall standard of performance with the existing performance target retained. As this is an existing internal standard no additional expenditure should be required.
- 5.73 IFF's customer survey showed that 57 per cent of domestic customers and 52 per cent of business customers would find it acceptable for their complaint to be resolved within 20 days. 76 per cent of domestic customers and 71 per cent of business customers would find it acceptable for their complaint to be resolved within 10 working days.

OS 7: Gas emergencies

- 5.74 The Gas Safety (Management) Regulations 1996, SI 1996 No 551 the (GS(M)R) apply to Transco's role as emergency service provider. Under the GSMR, Transco has an obligation to attend gas escapes as soon as reasonably practicable. The HSE is primarily concerned with investigating individual cases, where it considers there may have been a breach of the regulations.
- 5.75 Separately under standard condition 19 of its licence Transco is required to establish a standard for the overall level of service it provides in the prevention of gas escapes, spillages of carbon monoxide and other hazardous situations. Under the existing standard Transco is obliged to respond to such situations as quickly as possible, and within one hour for uncontrolled escapes and two hours for controlled escapes in 97 per cent of cases. Transco cannot change this standard without the consent of the Authority.
- 5.76 Ofgem proposes to convert the existing standard into an overall standard of performance. Ofgem believes it is appropriate to retain the existing performance target of attending 97 per cent of uncontrolled escapes within 1 hour and 97 per cent of controlled escapes within 2 hours respectively. Transco estimates that the marginal cost of moving to a 98 per cent target for uncontrolled escapes and a 99 per cent for controlled escapes would be up to £10 million per annum in operating expenditure.

5.77 However, in addition to the overall standard, Ofgem proposes that Transco should provide further information on the number of controlled and uncontrolled gas escapes against response times and calculate the median response time in each case. The information should be provided as part of the medium-term performance reporting for the LDZ networks discussed in chapter 4 and will be shared with the HSE.

Third-party and water ingress interruptions

5.78 A significant number of interruptions occur each year due to third-party damage or water ingress into Transco's networks. The majority of these only involve a small number of customers but there have also been larger incidents affecting several thousand customers.

5.79 For example, 9,000 properties were affected by an incident in Marlborough and Hungerford on the 31 March 2000. Transco received approximately 3,500 calls at its call centre in Gloucester. By the evening of 2 of April 1,000 properties had been reconnected. By the evening of 3 April almost all properties were reconnected other than those where Transco was unable to gain access to restore supplies.

5.80 Customers have typically received no compensation for these interruptions, although in a small number of cases water companies have voluntarily agreed to pay compensation for water ingress interruptions to Transco's customers.

5.81 The industry has been working on a solution to ensure that customers affected by third-party or water ingress interruptions receive the same compensation as customers affected by interruptions that are Transco's responsibility. It has been widely agreed that the most practical solution is for Transco to pay out compensation for third-party and water ingress interruptions on its network on the same basis as other interruptions. Transco proposes to take out insurance to cover the cost of compensation payments for larger incidents.²⁶ Compensation for interruptions which involve a smaller number of customers will fall into the insurance excess and form part of Transco's operating expenditure.

²⁶ As noted above the standard on reconnection of domestic customers supplies will not apply for third-party and water ingress interruptions where more than 50,000 customers are affected.

- 5.82 Ofgem currently considers that Transco should be given a fixed allowance in each year in its price control to cover the costs of the insurance premia and compensation payments that fall into the insurance excess. This will ensure that Transco has appropriate incentives to minimise the costs. However, Ofgem would welcome views on the appropriate treatment of the costs.
- 5.83 Ofgem will also expect Transco to provide adequate heating and cooking facilities to priority customers affected by third-party and water ingress interruptions in line with GS 4 above.
- 5.84 A draft understanding between Ofgem and Transco on how third party interruptions and water ingress interruption should be handled is set out in Appendix 6.
- 5.85 This includes an interim solution for the period September 2001 to April 2002. Transco will take out insurance to cover the 6-month period and Ofgem will include an allowance, currently estimated at £0.5 million in its operating expenditure forecast for the next price control period to cover the costs of the insurance and payments that fall into the excess.

Interruptions on Transco's system causing failure of an IPGT network

- 5.86 Ofgem considers that customers should receive compensation for unplanned supply interruptions lasting longer than 24 hours, regardless of the network they are connected to. The proposed guaranteed standard of performance for restoration of domestic supplies and the existing network code provisions will ensure that the worst affected customers on Transco's network receive such compensation. Ofgem will consult on whether a similar standard of performance should apply to other gas transporters.
- 5.87 To date there have been few supply failures on Transco's network that have caused customers downstream on IPGT networks to be interrupted. However, as the number of IPGT networks increases such cases may become more common. It is therefore important to consider how such interruptions should be treated in future.
- 5.88 At present, where Transco fails to make gas available to independent networks for a period longer than 24 hours, it must pay compensation to the relevant gas

shipper so that compensation can be passed on to end customers. The level of compensation is similar to that provided to customers directly connected to Transco's network. If the level of compensation to domestic and business customers on Transco's network is raised, it may be appropriate to raise the minimum compensation to customers on IPGT networks in line with this.

5.89 Ofgem would welcome views on how such interruptions should be addressed.

Auditing of standards of performance

5.90 Ofgem considers that it is important for standards of performance information to be audited. This will help Ofgem to ensure that Transco's performance is being accurately recorded and that customers receive compensation they are entitled to.

5.91 Ofgem needs to consider the nature of any audit that is introduced. There are two possible options:

- ◆ Transco could commission an independent audit of its standards of performance with rules for the appointment of the auditor set out by Ofgem; or
- ◆ Ofgem could appoint an independent auditor.

5.92 Under the first option Transco would bear the cost of the audit. Under the second option Ofgem would be responsible for these costs. Ofgem would welcome views on the appropriate form of the audit of Transco's standards of performance.

Network Code standards of service

5.93 Transco currently has a number of standards of service defined under its Network Code.

5.94 Ofgem recognises that Transco and/or shippers may propose a number of new standards of service during the next price control period. Ofgem is considering whether it is appropriate to give Transco an allowance in its price control to cover the costs of complying with any new Network Code standards. It is noted that a number of the existing metering standards are in the process of being

taken out of the Code as part of the work to separate Transco's transportation and metering businesses.

Costs of developing and implementing new standards

- 5.95 The majority of the draft standards of performance are based on existing public standards of service, Network Code provisions or internal Transco standards. Transco already has systems in place to collect and record data on these standards and the compliance costs form part of Transco's forecast expenditure for the next price control period.
- 5.96 However, Transco will incur additional expenditure in developing systems and processes to record data for new standards of performance and to achieve compliance with these standards. Transco will also incur extra expenditure in meeting standards on an LDZ basis.
- 5.97 Ofgem's draft proposal is to include in its operating expenditure projections a total allowance of £7.4 million in the 2002/3 formula year and £5.2 million in subsequent formula years for standards of performance improvements. This includes:
- ◆ £2.4 million in 2002/3 and £0.7 million in subsequent formula years for general standards of performance improvements;
 - ◆ £1 million per annum for compliance with standards at an LDZ level; and
 - ◆ £4 million in the 2002/3 formula year and £3.5 million²⁷ per annum in subsequent formula years to cover the cost of insurance for third party and water ingress interruptions and the costs of any compensation payments that fall into the excess.

These costs are provisional and subject to further investigation.

²⁷ These figures are based on initial estimates of the insurance costs and on the assumption that domestic compensation for interruptions is set at £40 per 24-hour period. This may be revised upwards or downwards if the compensation level is revised upwards or downwards respectively or when further estimates of the insurance costs are obtained. The final decision on the appropriate level of compensation will be informed by the results of IFF's customer survey.

Way forward

- 5.98 Ofgem will publish the final results and analysis of IFF's customer survey on guaranteed and overall standards of performance in July 2001. The final results of the survey will inform Ofgem's final proposals for standards of performance in September 2001 along with respondents' views on issues set out in this consultation paper.
- 5.99 Ofgem is empowered to set guaranteed standards in Statutory Instruments, with the approval of the Secretary of State. Ofgem can separately determine overall standards of performance. The appropriate secondary legislation and determinations will need to be in place for the standards to become effective on the 1 April 2002.
- 5.100 As part of this process it will be necessary to modify the standard licence conditions for standards of performance to remove any duplication between the existing standards required by the licence and new guaranteed and overall standards of performance.
- 5.101 The timetable for the development of guaranteed and overall standards of performance for gas transporters is set out in Table 5.4 below.

Table 5.4 Timetable for developing guaranteed and overall standards of performance

Dates	Milestones
July 2001	Ofgem publishes the final results of the customer survey
September 2001	Ofgem publishes final proposals for Guaranteed and Overall standards of performance for Transco
September – October 2001	Ofgem publishes proposals for standards for other gas transporters
October 2001 – March 2002	Drafting and submission of statutory instruments for guaranteed standards Drafting and publication of determinations for overall standards Consultation on modifying the standard licence conditions for standards of performance
April 2002	Guaranteed and overall standards of performance implemented.

Issues for consideration

5.102 Views are invited on any of the issues discussed in this chapter, but in particular on:

- ◆ whether it is appropriate to introduce a guaranteed standard on restoring domestic customers' suppliers or whether the existing compensation scheme for domestic customers in the Network Code should be retained;
- ◆ the draft guaranteed and overall standards of performance;
- ◆ appropriate levels of compensation;
- ◆ the treatment of third-party and water ingress interruptions;
- ◆ the treatment of interruptions on Transco's network causing failure of an IPGT network; and
- ◆ the appropriate form of audit for standards of performance information.

6. Transco's operating and capital expenditure

6.1 When setting new price controls, Ofgem must have regard to the need to ensure that Transco will be able to finance the activities which are the subject of obligations imposed by or under the Gas Act. For this reason, Ofgem needs to take a view on the level of costs that an efficiently managed business would incur over the period to April 2007.

6.2 As discussed in the February document, it is useful to distinguish between Transco's operating and capital expenditure. Operating expenditure is the day-to-day costs of running the transmission and distribution networks, of which staff costs form an important component. Capital expenditure is investment in assets whose benefits can be expected to last for some years, such as high-pressure pipelines and lower-pressure mains. For pipelines and mains Transco makes a further distinction between capital and replacement capital expenditure. The latter represents the cost of replacing assets, which may for example be for safety reasons or to allow new road construction. Costs incurred in exchanging meters are classified as capital expenditure by Transco. This chapter discusses operating, capital and replacement expenditure separately.

6.3 Ofgem has taken advice from a range of consultants and advisers as part of the price control review. The November 2000 paper explained the tasks Ofgem's consultants are carrying out. In summary these are to assess:

- ◆ Transco's performance since the last price control review;
- ◆ Transco's methods for forecasting outputs and expenditures, its plans for further investment and for the pattern of operating costs in the period of the next price control;
- ◆ areas where the application of best practice would lead to improved performance, and to assess the impact of this on costs; and
- ◆ the appropriate allocation of costs between different businesses.

6.4 In August 2000, Ofgem appointed accountants Mazars Neville Russell (Mazars) as consultants to advise on efficient levels of costs for the Transco business over

the next control period. Mazars appointed Petroleum Development Consultants as technical consultants and Europe Economics as economic consultants to assist them in this task. Arthur Andersen have also provided advice on the base level of operating cost, the allocation of costs and the expenditure framework for the introduction of separate price controls. Although the work of Mazars and Arthur Andersen is separate, it is complementary and in this chapter they are referred to collectively as 'the consultants'.

- 6.5 Europe Economics have also examined Transco's performance and projections, in comparison with companies carrying out similar activities and other network businesses. They have provided an assessment of Transco's achievements in increasing efficiency and the scope for further improvements.
- 6.6 The February document set out Transco's operating, capital and replacement expenditure in the present price control period, and Transco's forecasts of expenditure as set out in its response to Ofgem's Business Plan Questionnaire (BPQ). Ofgem's consultants have analysed the BPQ response in detail. As part of this work they have raised supplementary questions and held meetings with Transco.
- 6.7 Ofgem's consultants have set out their findings in draft reports, which have been provided to Transco. This chapter summarises their draft findings. It then goes on to give Ofgem's initial assessment of the efficient levels of cost in the next period.
- 6.8 The chapter also makes reference to the projections of expenditure made by the Monopolies and Mergers Commission (MMC) in setting the current price controls. These are described in the MMC report of 1997²⁸.
- 6.9 Some comments on the consultants' draft reports have been received from Transco. These comments have been reviewed by Ofgem and its consultants, and issues of factual accuracy have been addressed. However, work is continuing to address other points raised by Transco. Due to this ongoing work, Ofgem has yet to reach final conclusions in all areas. The projections of

²⁸ Monopolies and Mergers Commission: BG plc – a report under the Gas Act 1986 on the restriction of prices for gas transportation and storage services, May 1997

operating, capital and replacement expenditure set out in this chapter therefore represent Ofgem's view based on the information currently available.

- 6.10 The consultants' reports will be finalised in July, and will be published on Ofgem's website in August²⁹. The completed reports will inform Ofgem's final proposals in September 2001.
- 6.11 In April 2001 Transco published a Strategic Business Plan. This identifies areas in which Transco forecasts significant additional costs to those presented in the BPQ. Ofgem is currently seeking to clarify the basis of these costs and will consider whether to include any of these costs in its final proposals.
- 6.12 The costs presented exclude those for LNG, which Ofgem proposes to be outside of the scope of the price controls.
- 6.13 All cost data in this chapter is expressed at 2000 price levels, unless otherwise stated.

Responses the February document

- 6.14 Few respondents to the February document commented on the specific levels of Transco's operating, capital and replacement expenditure. However, a number of respondents expressed concern at apparent under-investment or delayed capital expenditure, compared with that projected by the MMC at the time of the last price control review.
- 6.15 Measures to prevent under-investment in the next period were supported. Suggestions included annual expenditure reporting (underlain by a licence condition), output-based regulation and revenue adjustment mechanisms. One respondent felt that the apparent investment under-spend may be due to inflated forecasting by Transco.
- 6.16 Other comments by individual respondents were as follows:

²⁹ For reasons of commercial confidentiality, it may be necessary to exclude certain material from the publicly available version of the reports

- ◆ a shortage of qualified personnel will create a constraint on the delivery of mains replacement, and recruitment and training of staff will require substantial investment; and
- ◆ some cost savings may be lost as a result of unbundling the business. This should be reflected in the price control mechanism.

Operating Expenditure

- 6.17 The February paper defined Transco's controllable operating costs as total operating costs, less prescribed rates (also known as formula rates), depreciation and replacement expenditure.
- 6.18 Based on this definition, controllable operating costs were £1,029 million in 1999, including £5 million for excluded services. This represented around one third of Transco's allowed revenue. Staff and related costs accounted for approximately 53 per cent of these controllable operating costs.
- 6.19 Chapter 2 proposes that the next price control should include an automatic pass-through of formula rates and GT licence fees. Furthermore, the costs of excluded services will be netted off for price control purposes. In view of this, controllable operating costs are redefined here as total operating costs, less formula rates, GT licence fees, excluded services, depreciation and replacement expenditure.
- 6.20 Transco's total operating costs as presented in the BPO include a negative charge of approximately £25-35 million per year due to the release of customer contributions. These contributions are mainly in respect of capital expenditure on connections and some diversions. The cost has been added back when deriving controllable operating costs, in order to present the efficient cash level of operating expenditure. Contributions received have then been netted off capital expenditure in Ofgem's financial modelling (see Chapter 8), to ensure the appropriate treatment for price control purposes.
- 6.21 The following table shows a breakdown of Transco's operating costs in 1999 by expense type.

Table 6.1: Breakdown of Transco's operating costs (less rates, depreciation and replacement expenditure) in 1999

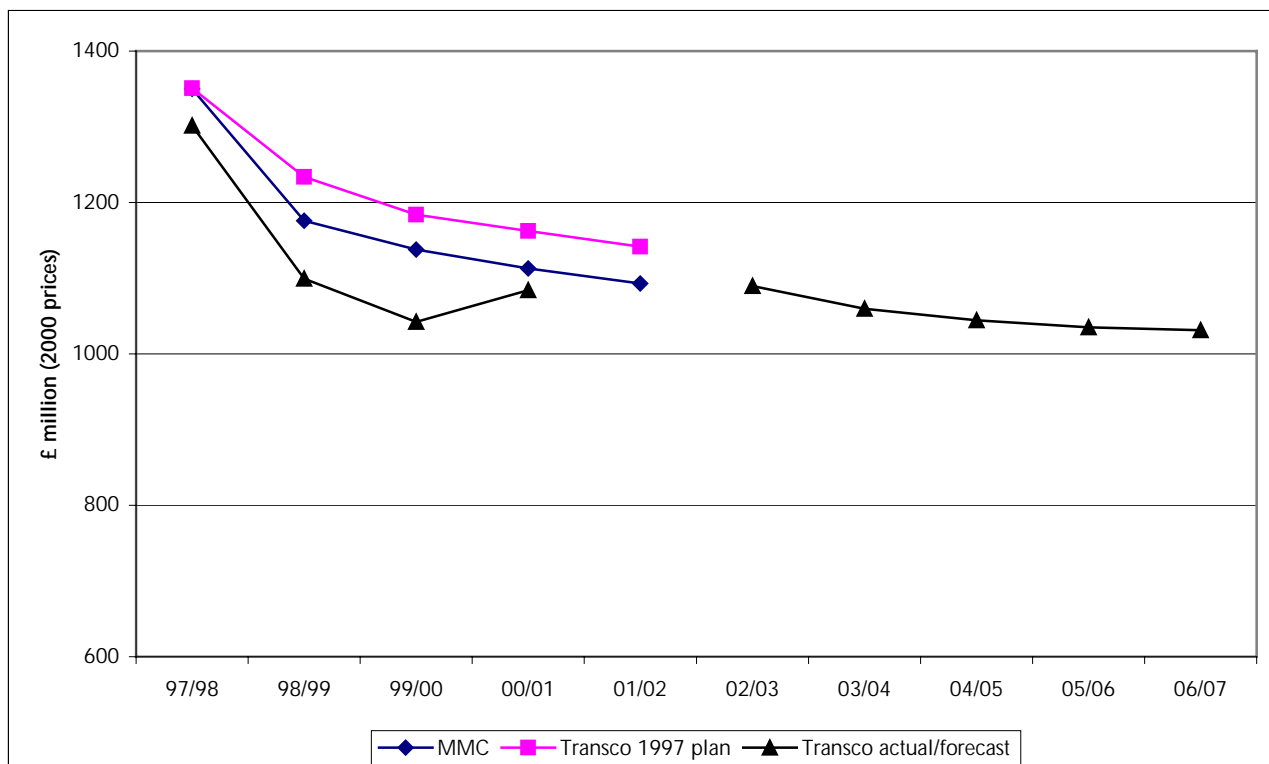
<i>Costs incurred in 1999</i>	<i>£ million</i>
Staff costs (salary, wages, non-salary and agency costs; excludes capitalised items)	544
Materials and contractors	124
Communications/telecoms	52
Research and development (inter-business transfer)	22
Storage charges	26
Corporate charge	68
Shrinkage	63
Software	33
Liability payments	4
Other*	105
Total controllable operating costs	1041
Release of customer contributions	(25)
Excluded Services	5
GT licence fees	8
Total operating costs less formula rates	1029

* other includes accommodation and insurance costs and consultants fees

The costs in Table 6.1 include those for metering, meter reading and connections

- 6.22 Ofgem and its consultants have reviewed the costs in 1999 and Transco's forecasts through to 2007, to examine the path of costs and to determine whether the forecasts reflect efficient operating practices.
- 6.23 Figure 6.1 shows Transco's performance relative to its own and the MMC's 1997 forecasts. This shows that over the first three years of the current price control Transco reduced its costs significantly faster than either it or the MMC had predicted: by 15 per cent in the first year and 20 per cent over the first two years, with gas throughput increasing by 21 per cent in this two-year period.

Figure 6.1: Transco's operating costs (less rates, depreciation and replacement expenditure) 1997/8 to 2006/7



Costs shown include customer contributions released and the GT licence fee, and are therefore not directly comparable with controllable operating costs shown elsewhere in this chapter.

2001/02 costs removed from BPO forecasts at Transco's request.

6.24 These cost reductions might be viewed as indicating the success of RPI-X regulation, which is intended to incentivise companies to operate as efficiently as possible throughout the price control period. Figure 6.1 shows that in practice Transco's costs fell rapidly during the first three years of the new control and have subsequently levelled-off. Indeed they are forecast to rise over the last two years of the current price control. It has been suggested that RPI-X regulation may incentivise companies during the last years of a price control period to delay implementing efficiency savings until after the periodic review. Transco's performance and forecasts appear to raise such concerns.

6.25 Figure 6.1 shows that Transco expects its efficiency to improve far more slowly over the next price control period than was achieved during the current price control period. Over the next price control period as a whole, Transco projects gas throughput to decrease by 1 per cent. It expects its operating expenditure

initially to be higher than 1999/2000 levels, only returning to this level in the last year of the next price control period. Given Transco's ability during the current price control period to outperform its forecasts it is important to ensure that the next price control is based, as far as is possible, on projections of efficient cost levels.

Land Decontamination

- 6.26 Land decontamination costs were examined at the 1997 MMC enquiry. The MMC allowed "some £125m (1996 prices) over the period as a whole for cost relating to legally required decontamination work on operational and joint sites only."³⁰ At 2000 prices, the sum allowed by the MMC was £140 million.
- 6.27 Information provided by Transco indicates that expenditure is forecast to total £102 million to the end of the control period – some £38 million less than allowed.

Table 6.2 : Site Decontamination Costs 1996/7 to 2001/2

£ million	1997/98	1998/99	1999/00	2000/01	2001/02	Total
MMC Allowance	30	30	30	30	20	140
Transco Expenditure	45	39	3	6	11	102
Variance	15	9	-27	-25	-9	-38
% Variance	50%	30%	-89%	-81%	-44%	-27%

- 6.28 Transco has reported that there has been a change in the funding arrangements for meeting the cost of decontamination of the Lattice Property Holdings (LPH) parts of joint sites, a cost which was allowed by the MMC. These costs are now met by Lattice plc.
- 6.29 It is for consideration whether the difference in expenditures is wholly due to a change in funding arrangements and whether other factors are involved.
- 6.30 The treatment of environmental expenditure in the next price control is currently being reviewed by Ofgem.

³⁰ MMC report paragraph 2.163

Expenditure in the next price control period

- 6.31 In producing its projections of operating costs, Ofgem has considered information from a number of sources including the draft reports by its consultants and the arguments made by Transco in response. In its comments, Transco has expressed concern that the work done to date is inadequate to provide a robust indication of the efficiency frontier.
- 6.32 The consultants have derived an efficient level of cost in each year of the next price control period by looking at best practice in specific areas of Transco's business. In particular the consultants have reviewed the following:
- ◆ network operating costs;
 - ◆ staff and related costs including manning levels in the finance and procurement and logistics functions;
 - ◆ other operating expenditure associated with procurement and logistics;
 - ◆ information systems (IS) (the cost of operating the information systems which support Transco's particular role in the UK gas industry, as well as the general IS needs of the business);
 - ◆ shrinkage (the cost of gas leakage from the distribution network, gas used by Transco and gas lost due to theft or other differences between measured inputs and outputs);
 - ◆ restructuring costs;
 - ◆ liability costs;
 - ◆ insurance costs; and
 - ◆ corporate and other re-charges, and leasing costs.
- 6.33 The consultants have also identified exceptional and one-off costs. These may be non-cash items, or costs not expected to be incurred under normal operations. These costs have been removed by the consultants, such that their projections provide a measure of the efficient underlying operating costs of Transco.

6.34 The consultants' draft findings and proposed cost adjustments are summarised in Appendix 8. Their cost projections are shown in the table below, expressed in terms of formula years (April to March).

Table 6.3 : Controllable operating costs

£ million	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	Total (2002/03- 2006/07)
Transco BPO	1,056	1,103	***	1,108	1,080	1,065	1,057	1,055	5,365
Consultants' projection	843	858	882	837	825	821	822	821	4,127

BPO forecasts of 2001/02 costs removed at Transco's request

6.35 There are two major adjustments in the consultants' work which do not relate to potential efficiencies, but rather to how certain costs are treated for price control purposes. The issues for consideration are summarised below, and further detail is set out in Appendix 8:

- ◆ Employee Profit Sharing Scheme (EPSS) costs: the consultants recommend that these costs should be viewed as a reward for above target performance and should be funded by shareholders rather than customers. In their projections they have removed EPSS costs over the next price control period; and
- ◆ pensions costs: the consultants propose adjustments in the next price control period. As described in Appendix 8, Transco participates in the Lattice Group Pension Scheme which is administered by the Lattice Group plc, Transco's ultimate parent company. Ofgem is reviewing Lattice Group plc's contributions to the scheme in respect of Transco employees and the ongoing actuarial cost of providing pensions benefits to these employees, taking into account any surplus in the scheme.

Transco's BPO projections of pensions costs from 2002 were based on the full actuarial cost. In the consultants' draft reports, an adjustment was made based on the difference between the full actuarial cost and the level of contribution currently made by Lattice Group.

It is for consideration whether customers are entitled to the benefits of the pensions scheme surplus, given that they have funded historic contributions through transportation charges. Alternatively, it could be argued that it is

inappropriate for transportation customers to be exposed to the risks associated with the accrual of possible surpluses or deficits in the Lattice Group pensions fund. This latter argument would suggest that the price control should allow the full economic costs of providing pensions benefits to Transco's current employees. It is for consideration which approach is to be adopted.

- 6.36 The consultants' projection may provide an indication of the frontier of efficient operating cost. However work in this area is still ongoing. As mentioned earlier, points raised by Transco on the draft reports are still being considered. Ofgem is also mindful of the difficulty in projecting costs accurately through to 2007. This problem may be compounded by the information asymmetry between regulators and regulated companies, and the fact that Transco itself may not be aware of all areas of potential efficiency saving. The projections of the efficiency frontier will be further developed before final proposals are published in September.
- 6.37 The ongoing work may lead to a narrowing in the gap between these projections and Transco's BPO forecasts. The consultants have identified sensitivities in some of their adjustments, based on alternative assumptions which would lead to higher costs. Also, as set out above, an assessment is being made of whether it is appropriate to include the costs of pensions and the EPSS in the allowed revenues. These effects could increase controllable operating costs to approximately £4,800 million in the next price control period.

Top-Down Analysis

- 6.38 It is useful to compare the results from bottom-up assessments such as that described above with top-down projections, which are based on overall trends in cost efficiency.
- 6.39 Mazars commissioned Europe Economics to carry out a top-down analysis of Transco's costs. This work involved a comparison of Transco's trend in productivity improvement with those achieved in comparable sectors and other privatised companies. A range was then derived for the level of ongoing efficiency improvement that Transco should be able to achieve.

6.40 Europe Economics concluded that this range should be 2 to 4 per cent per annum for real unit operating costs. They also advised that unit costs should be adjusted further as throughput changes, to reflect the economies of scale that are generated. Costs have been projected forward on this basis from a base year of 1999/00, which was the last full formula year before the efficiency study commenced. The results are shown below:

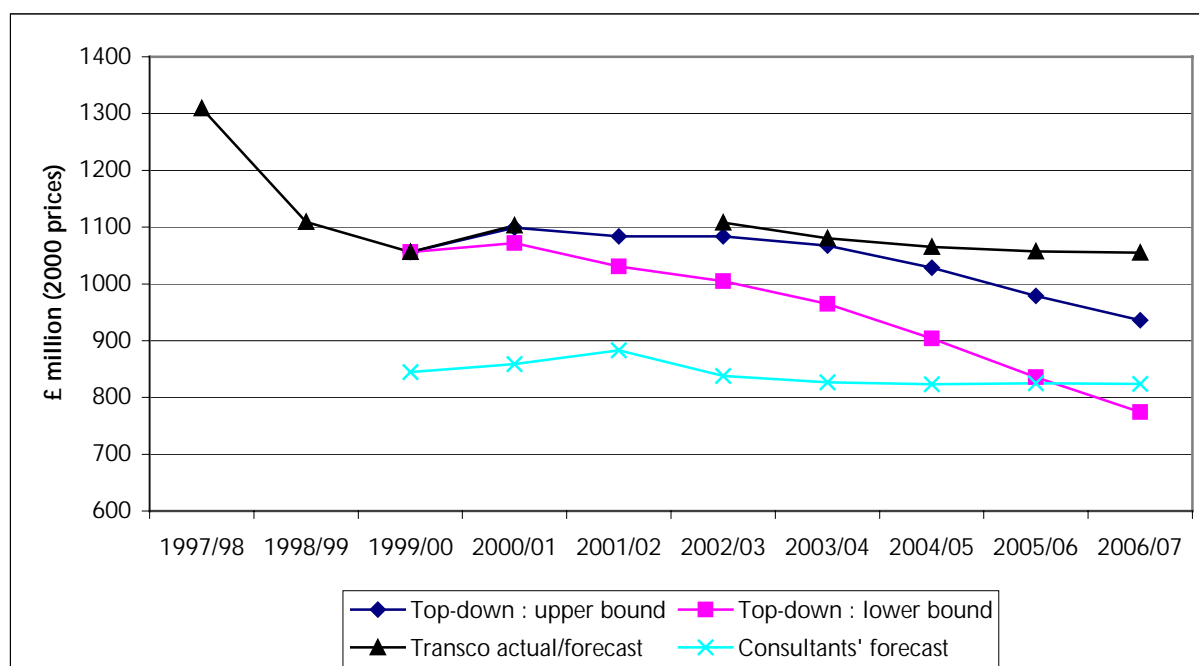
Table 6.4 : Controllable Operating Costs, based on top-down efficiency projections

£ million	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	Total (2002/03-2006/07)
TRANSCO BPO									
Controllable Opex*	1,056	1,103	***	1,108	1,080	1,065	1,057	1,055	5,365
TOP-DOWN RESULTS (adjusted for changes in throughput)									
Assuming 2% pa reduction	1,056	1,099	1,084	1,084	1,068	1,028	979	936	5,095
Assuming 4% pa reduction	1,056	1,072	1,031	1,005	965	904	836	774	4,484

* unadjusted for one-off costs
BPO forecasts of 2001/02 costs removed at Transco's request

6.41 These figures are plotted against the consultants' projections in the figure below.

Figure 6.2 : Controllable operating cost : top-down comparison



2001/02 costs removed from BPO forecasts at Transco's request.

6.42 As can be seen, the consultants' projection gives lower costs in the early years of the price control, although it is within the range of the top-down forecasts by 2007.

Ofgem's projections of operating cost in the next price control period

6.43 As shown by the figure above, while the bottom-up approach has provided a projection of the efficient cost base, it has not addressed the time that Transco may require to achieve these efficiencies. In developing draft proposals Ofgem has given consideration to the appropriate gap closure period.

6.44 Ofgem has concluded that the full gap closure should be achieved by 2004/5. A period of four years from the base year, or two years from the start of the next price control, appears to be sufficient for a well-managed company to achieve the frontier of efficiency. Ofgem has projected controllable operating costs between Transco's actual cost level in 1999/00 and the consultants' projection for 2004/05. This represents an annual compound reduction of 4.9 per cent between 1999/00 and 2004/05. When taken over the full period from 1999/00 to 2006/07, the annual compound reduction is 3.5 per cent. These figures appear to be appropriate in light of Transco's past performance and the average 10 per cent per year reduction achieved in the first two years of the current period. The cost projections are shown in the table below.

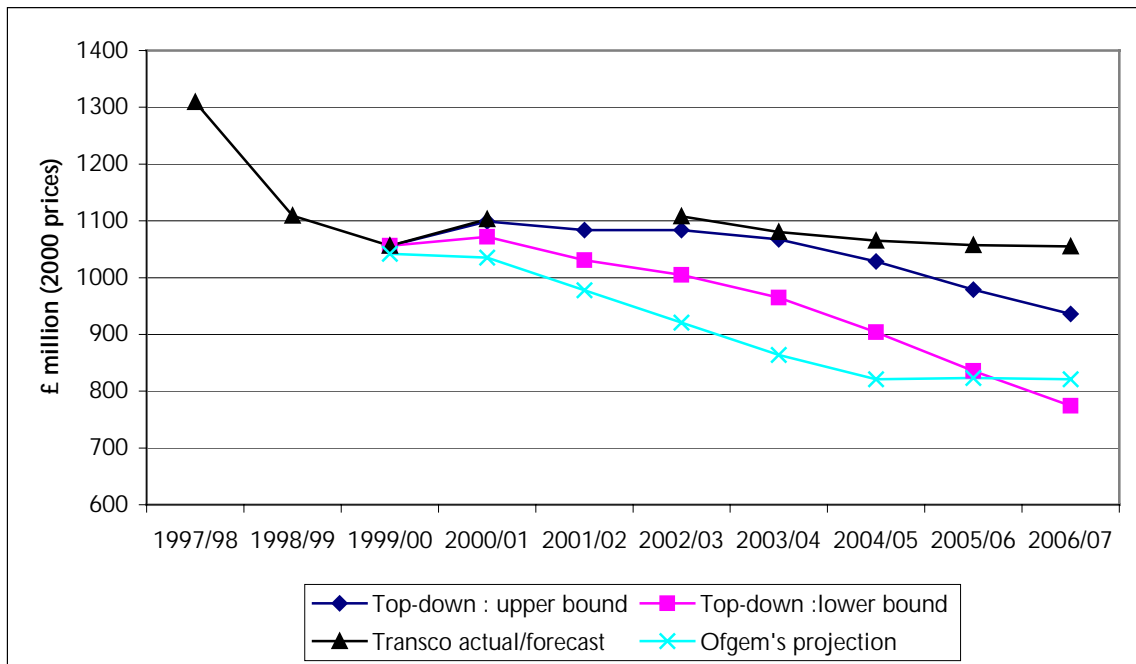
Table 6.5 : Ofgem's projection of Controllable Operating Costs

£ million	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	Total (2002/03- 2006/07)
Transco BPO	1,056	1,103	***	1,108	1,080	1,065	1,057	1,055	5,365
Ofgem's projection	1,042*	1,035	978	921	864	821	823	821	4,250

*Ofgem's projection is below Transco's actual cost in the 1999/00 base year, since a one-off liability of £50 million in 2000 was removed before projecting forward. Other one-off and exceptional costs were included. BPO forecasts of 2001/02 costs removed at Transco's request

6.45 The projection is shown in the figure below, for comparison with the top-down range.

Figure 6.3 : Ofgem's projection of controllable operating costs



2001/02 costs removed from BPQ forecasts at Transco's request.

6.46 As stated previously, controllable operating expenditure excludes the costs of Transco's GT licence, excluded services, and formula rates. These must be added to give total operating costs, minus replacement costs and depreciation, as shown in Transco's BPQ response. Customer contributions released must also be deducted for consistency of presentation with the BPQ figures. These adjustments are shown in the table below.

Table 6.6 : Derivation of Transco's total operating costs, excluding replacement expenditure and depreciation 1999/00 to 2006/07

£ million	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	Total (2002/03- 2006/07)
CONTROLLABLE OPERATING COSTS									
Consultants' projection	843	858	882	837	825	821	823	821	4,127
Ofgem's projection	1,042	1,035	978	921	864	821	823	821	4,250
ADD NON-CONTROLLABLE COSTS									
GT Licence	8	7	10	10	10	10	10	10	48
Excluded Services*	6	3	3	3	3	4	4	4	18
Customer contributions released	-26	-26	-27	-30	-31	-33	-34	-34	-161
Formula Rates	228	214	220	219	222	228	241	256	1166
TOTAL OPERATING COSTS									
Consultants' projection	1,059	1,055	1,086	1,038	1,029	1,030	1,043	1,057	5,197
Ofgem's projection	1,258	1,232	1,183	1,123	1,067	1,030	1,043	1,057	5,320
COMPARISON WITH TRANSCO BPO									
Transco BPO	1,270	1,298	***	1,308	1,282	1,272	1,276	1,288	6,426

Costs shown are based on 'as-is' performance (costs of quality improvements not included)

2001/02 costs removed from BPO forecasts at Transco's request.

* The consultants have identified some costs in Transco's NTS forecasts which they believe to be associated with excluded services. These costs have been transferred out of the transportation revenues in Ofgem's and the consultants' projections.

Costs of quality improvements

6.47 Chapters 4 and 5 set out proposals for improvements in Transco's standards of performance and arrangements for reporting output measures and describe the associated additional costs of these revised arrangements.

6.48 To fund these quality improvements Ofgem proposes to allow Transco £8.4 million in the 2002/3 formula year and £6.2 million per annum in subsequent formula years. A breakdown of these figures is set out in the table below.

Table 6.7 : Operating expenditure allowance for quality changes

£ million	2002/03	2003/04	2004/05	2005/06	2006/07	Total (2002/03-2006/07)
General standards of performance improvements	2.4	0.7	0.7	0.7	0.7	5.2
Compliance with standards at LDZ level	1.0	1.0	1.0	1.0	1.0	5.0
Third-party and water ingress interruptions*	4	3.5	3.5	3.5	3.5	18
Sub-total standards of performance	7.4	5.2	5.2	5.2	5.2	28.2
Monitoring and reporting customer interruptions	1.0	1.0	1.0	1.0	1.0	5.0
Total allowance	8.4	6.2	6.2	6.2	6.2	33.2

* These estimates are based on the assumption that domestic compensation for interruptions is set at £40 per 24-hour period. This may be revised upwards or downwards if the compensation level is revised upwards or downwards. The final decision on the appropriate level of compensation will be set out in the September paper.

6.49 A small element of Transco's operating costs and capital expenditure reflect the role that Transco plays in facilitating competition in gas supply – and in particular its operation of the Supply Point Administration (SPA) system. It is possible that Transco's role may change over the next price control period, for example if activities currently undertaken by Transco are transferred to a third party or if Transco were to take on extended data management role. For the purposes of determining price control revenues, Ofgem has assumed that Transco continues to perform its present role.

6.50 Ofgem's draft proposals for operating expenditure, inclusive of the allowance for quality improvements, are shown in the table below.

Table 6.8 : Ofgem's proposals for operating expenditure

£ million	2002/03	2003/04	2004/05	2005/06	2006/07	Total (2002/03-2006/07)
TOTAL OPERATING COSTS						
'As-is' performance	1,123	1,067	1,030	1,043	1,057	5,320
Allowance for quality improvements	8	6	6	6	6	33
Ofgem's draft proposals	1,131	1,073	1,036	1,050	1,063	5,353

Allocation of operating costs to price control units

- 6.51 Transco's current structure comprises nine functional business areas. Plans for the next price control were produced by Transco managers on a business-area by business-area basis. These business areas provide services to each other and to customers. In setting the new price control, it is important that the costs of these services are allocated to the correct price control units described in Chapter 2.
- 6.52 Transco has developed a "Transaction Model" to carry out this process. Services that are provided between business areas have been defined at a product level, with each product representing a number of activities as defined in Transco's Activity Based Costing (ABC) system. The Transaction Model maps the costs associated with these products between business areas and, ultimately, into the price controlled units. Transco's forecasts of operating cost, unadjusted for the cost changes proposed earlier in this chapter, have been allocated on this basis. The results are shown below.

Table 6.9 : Transco's allocation of BPO operating cost (excluding depreciation and replacement expenditure) to price control units

£ million	2002/03	2003/04	2004/05	2005/06	2006/07	Total (2002/03-2006/07)
NTS TO*	99.3	98.3	96.7	94.5	91.7	480.5
NTS SO*	73.4	74.7	76.5	77.6	79.7	381.8
LDZs*	769.6	740.8	721.4	706.2	681.7	3,619.7
Meters*	116.4	115.9	118.7	125.0	146.5	622.4
Meter Reading*	19.2	19.2	19.6	20.1	20.6	98.7
Excluded Services	1.8	1.7	1.7	1.8	1.8	8.8
GT Licence Fee	9.6	9.6	9.6	9.6	9.6	48.0
Formula Rates	219.0	221.8	228.3	241.0	256.3	1,166.4
TOTAL	1,308.3	1,281.9	1,272.4	1,275.8	1,287.9	6,426.3

* Figures provided by Transco net of capital contributions released, and unadjusted for quality improvements

- 6.53 As discussed in Chapter 2, the NTS SO expenditure includes both internal and external costs. Under Transco's allocation methodology, NTS SO external costs are limited to those associated with Shrinkage and Operating Margins gas. These costs contribute approximately 85 per cent of the NTS SO costs given in the table above. However the costs of Shrinkage and Operating Margins gas

represent some, but not all, of the external costs that will be included in the NTS SO price control.

6.54 Ofgem's consultants have reviewed Transco's Transaction Model. A significant number of costs map straightforwardly to the respective price control blocks, but some need allocation rules to be set. For example, rules are used to allocate central costs, such as those associated with the IS, business planning, finance, regulation, human resources and other headquarters functions, to the operational activities which they support.

6.55 The consultants have reviewed the drivers used to allocate cost. They have also built a replication of the Transaction Model, and have used this to test the sensitivity of Transco's cost allocation methodology to alternative drivers. They have demonstrated that the level of sensitivity is low. Ofgem has concluded that the Transaction Model is appropriate for allocating efficient levels of operating cost to price control units.

6.56 The consultants' model has also been used to allocate operating expenditure under Ofgem's draft proposal. The allocations which result are set out below.

Table 6.10 : Allocation of efficient operating costs to price control units

£ million	2002/03	2003/04	2004/05	2005/06	2006/07	Total (2002/03-2006/07)
NTS TO	89	86	85	84	83	427
NTS SO	59	61	63	65	67	315
LDZs*	659	606	569	569	564	2,967
Meters	103	97	92	93	94	480
Meter Reading	19	19	18	19	19	94
Excluded Services	3	3	3	4	4	17
GT Licence Fee	10	10	10	10	10	48
Formula Rates	219	222	228	241	256	1,166
Capital contributions released	-30	-31	-33	-34	-34	-161
TOTAL	1,131	1,073	1,036	1,050	1,063	5,353

* includes allowance for quality improvements

Capital expenditure

6.57 Transco's capital expenditure projections for the current and next price control periods were summarised in Ofgem's February document. Transco has costed three different supply/demand scenarios. Based on its base-line scenario ("Scenario C"), Transco's forecast of capital expenditure for the period from 2002 is lower than that for the present price control period, as shown in the following table. Since capital expenditure can vary significantly from year to year, average annual figures are shown to aid comparison.

Table 6.11: Transco's average capital expenditure in BPO (£ million)

Period	1997 to 2001	2002 to 2006
NTS (scenario C)	182	106
LDZ (excluding meters)	220	201
Meters	135	122
Other	70	64
Total	607	493

Note: excludes expenditure on mains and services replacement

6.58 NTS capital expenditure is influenced by large supply uncertainties over the entry points for future gas supplies and the size and location of new large loads such as power stations. The following shows a breakdown of NTS expenditure under Transco's scenario C.

Table 6.12 : Transco's NTS capital expenditure under Scenario C (£ million)

Period	1997 to 2001	2002 to 2006
Peak demand related	167	61
Entry flow flexibility	5	21
Other	10	24
Total	182	106

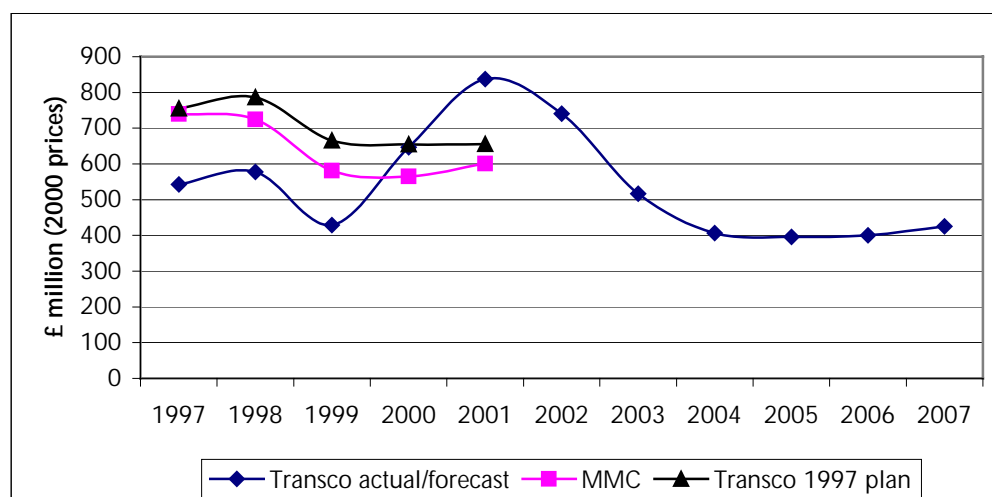
Note: other includes connections, diversions and compressor emission related expenditure

6.59 This section reviews Transco's performance during the current price control period and goes on to discuss Transco's forecasts. These are compared with Ofgem's draft proposal.

6.60 Figure 6.4 shows Transco's performance relative to its own and the MMC's forecasts. This shows that Transco's actual capital expenditure has been lower than forecast for the first three years of the current price control period, but is expected to exceed the MMC's forecast in the last two years. This raises concerns that Transco may have delayed capital expenditure towards the end of the price control period in order to minimise its funding costs while ensuring that

this expenditure will be included in the regulatory value used to calculate the next price control. However, it is also possible that this may reflect more efficient scheduling of work. It is therefore important to compare the basis of Transco's actual investment against with the assumptions on which the MMC's forecasts were based.

Figure 6.4 : Transco's capital expenditure 1997 to 2007



Expenditure in the current price control period

- 6.61 In 1997 the MMC recommended that Ofgas and Transco should put in place arrangements to monitor Transco's capital expenditure on an annual basis during the current price control period. As part of this process Transco has produced a variance report³¹ comparing its actual level of investment with forecasts made by the MMC in 1997. The outcome of the audit³² of Transco's investment by Ofgem's consultants was summarised in the February document. Transco is due to produce a variance report for 2000 shortly. Ofgem's consultants will carry out an audit of the 2000 data and Transco's explanation of variances for publication in September 2001.
- 6.62 An important question arising from this process is whether Ofgem should adjust Transco's revenues in the next control period to reflect any underspend relative to the MMC's projections. Ofgem consulted on this issue in 1999³³. It is

³¹ Capital investment outputs monitoring, 1997-1999, Outputs Variance report, Transco, December 2000.

³² Report of the Auditor to Ofgem under the Transco Capital Expenditure Monitoring framework for the period 1997-1999, February 2001, available on the auditor's website, www.mazars-nr.co.uk.

³³ Monitoring Transco's Capital Expenditure: a report and consultation document, Ofgem December 1999

important that Transco does not benefit financially from under-investment in its network. However, it is also important that Transco has incentives to undertake its investment as efficiently as possible, and any "claw-back" of underspends could undermine these incentives. Ofgem proposed to balance these concerns by distinguishing between underspends due to efficiency savings and underspends due to a failure to deliver the outputs which underlie the MMC's forecasts. In the May 2000 consultation document Ofgem confirmed its intention to follow that approach.

- 6.63 In practice however, it is necessary to interpret the MMC's recommendations in order to identify whether outputs have been achieved. Transco has argued that it has met the required outputs in 18 out of 19 areas, and expects to meet them in all cases by the end of this price control period. The rest of this section sets out Ofgem's assessment of Transco's performance.

NTS Flexibility Projects

- 6.64 The issue of entry flexibility and the need to incorporate additional plant on the NTS to meet customers needs in this area were discussed in the MMC report. No specific projects were identified but the Transco 1997 plan identified a total potential requirement for expenditure of £122 million³⁴. Transco says that over the current period it will have invested in one pipeline and that some compressor projects also contribute to this flexibility. The total expenditure in the current price control period is forecast at £25 million.

NTS Compressors (Emissions)

- 6.65 In its submission to the 1997 MMC Enquiry Transco included £111m for "Major Plant replacement and NOx" of which £59m was identified to meet environmental legislation.
- 6.66 Referring to expenditure on NTS compressors (including NOx reduction measures) and proposed security measures the MMC concluded "...we believe that such expenditure is more likely than not to be required. Should this not be

³⁴ MMC report paragraph 8.16

the case, we consider that any under-investment may be recovered at the time of the next price control review.”³⁵ .

6.67 Ofgem has therefore examined Transco’s investment in NTS compression:

Table 6.13 : NTS compressor investment 1997/98 to 2001/02

£million	1997/98	1998/99	1999/00	2000/01	2001/02	Total
MMC outcome	85.9	96.2	46.4	59.4	60.8	348.7
Actual/projected	62.9	59.4	38.5	51.4	56.2	268.4
Variance	-23.0	-36.8	-7.9	-8.0	-4.6	-80.3
% Variance	-27%	-38%	-17%	-13%	-8%	-23%

6.68 Transco’s investment is likely to be significantly lower than predicted. Transco has explained some of the under-investment but Ofgem notes that some £33m arises from the expectation that NOx conversion kits would need to be fitted to some compressors in order to gain licences under the Integrated Pollution Prevention Regulations. In the event these upgrades were not required. It may therefore be appropriate for the associated saving to be recovered as suggested by the MMC.

Meters

6.69 In the December 2000 outputs variance report, Transco reported a shortfall in the number of meters replaced against the MMC prediction. Transco predicted a recovery of the shortfall during the remainder of the current period.

6.70 The following section provides an analysis of Transco’s metering performance.

³⁵ MMC Conclusions paragraph 2.155

Table 6.14 : Transco's metering performance 1997/8 to 2001/2

	1997/08	1998/09	1999/00	2000/01	2001/02	Total
MMC meter workload (000s)						
Total replacement	1454	1316	1175	1096	1056	6097
Total new meters	351	353	348	343	337	1732
Total meters	1805	1669	1523	1439	1392	7828
Transco actual/ forecast meter workload (000s)						
Total replacement	1256	1154	1182	1315	1351	6257
Total new meters	306	274	245	241	237	1304
Total meters	1562	1428	1427	1556	1588	7561
Variance in workload (000s)						
Total replacement	-198	-162	7	219	295	161
Total new meters	-45	-79	-103	-103	-99	-428
Total meters	-243	-241	-96	117	196	-267
MMC costs (£million)						
Total replacement	187	174	154	139	115	768
Total new meters	56	54	53	52	50	265
Total meters	243	228	207	191	165	1033
Transco actual/forecast cost (£million)						
Total replacement	113	91	83	92	105	484
Total new meters	32	30	26	25	23	135
Correctors & overheads	18	13	14	13	17	75
Total meters	164	133	123	130	145	694
Variance in cost (£million)						
Total replacement	-73	-83	-71	-47	-10	-284
Total new meters	-24	-24	-27	-27	-27	-130
Correctors & overheads	18	13	14	13	17	75
Total meters	-79	-95	-84	-61	-19	-339

6.71 The variance in cost is due to reductions in both actual unit costs and actual workload compared to the MMC forecasts.

6.72 Some £41 million is due to a reduction in workload. However, breaking this variance down reveals that the workload for pre-payment meters was underestimated, resulting in an over-spend of £87 million (using MMC unit prices) and the workload for the remaining meter activities was overestimated, resulting in an under-spend of £128 million (using MMC unit prices).

6.73 The total variance in the above table of £339 million is therefore made up of £41 million due to workload, and £298 million due to change in unit prices.

Expenditure in the next price control period

6.74 Ofgem's consultants have carried out a detailed review of Transco's forecasts of investment and workload levels for the period to 2007. The review has focused on the following key areas:

- ◆ **high-pressure pipeline costs:** the unit costs of NTS and LTS pipelines, both in the current period to date and as forecast through to 2007;
- ◆ **compressor costs:** the cost of investing in compression on the NTS, to satisfy both capacity and environmental requirements;
- ◆ **mains and services costs:** the unit cost and workloads associated with Transco's obligations to meet capacity and safety requirements below 7 bar;
- ◆ **meters:** the costs associated with both the purchase and installation of gas meters; and
- ◆ **procurement:** the costs of Transco's procurement of capital items.

6.75 The consultants review considered both capital and replacement expenditure. The draft findings and proposed cost adjustments are summarised in Appendix 8.

6.76 The cost projection which results from this work is shown in the table below.

Table 6.15 : Gross capital and replacement expenditure (£ million)

£ million	2002/03	2003/04	2004/05	2005/06	2006/07	Total (2002/03- 2006/07)
CAPITAL EXPENDITURE						
Transco BPQ	697	496	405	397	406	2402
Consultants' projection	624	426	327	309	309	1996
REPLACEMENT EXPENDITURE						
Transco BPQ	400	392	395	415	394	1996
Consultants' projection	366	339	337	350	329	1721

Ofgem's projections of capital expenditure in the next price control

6.77 In developing projections of capital expenditure, Ofgem has been informed by its consultants' findings and the arguments made by Transco in response. Transportation and metering activities have been considered separately in developing Ofgem's proposals.

6.78 The capital expenditure projections have been mapped into the price-control units proposed from 1 April 2002 (as described in Chapter 2).

Transportation projections

6.79 Ofgem's projections have been developed based on the following assumptions:

- ◆ reduced growth in NTS and LTS steel linepipe cost, as proposed by the consultants;
- ◆ adjustment of NTS compressor costs, as proposed by the consultants. Ofgem acknowledges that the phased replacement of older compressors may be appropriate in future but has allowed for the replacement of four compressors, one in each year from 2004. Transco will thus have a renewal programme in place when the IPPC regime is applied to existing installations and can approach the next review with more certain proposals to comply with the IPPC regulations and to address its ageing compressor fleet;
- ◆ adjustment of LTS costs for inefficiencies relative to the NTS, as identified by the consultants' benchmarking analysis;
- ◆ adjustment of mains and services capital expenditure, as proposed by the consultants; and
- ◆ adjustment for procurement costs, as proposed by the consultants.

6.80 In making its projections, Ofgem is aware that its consultants work is still to be finalised, and points raised by Transco are still being considered. This may result in Ofgem's draft projections being revised. Ofgem considers that the proposed adjustments to NTS compressor and LDZ mains and services capital costs may be particularly sensitive to revised assumptions.

Metering projections

6.81 Forecasts of capital expenditure on meters are inherently uncertain due to the difficulty in predicting the impact of competition on Transco's market share in metering. Transco has provided its forecast under the assumption that, broadly speaking, it will continue to perform the same level of metering services as is presently the case. While this assumption is open to challenge it does not significantly affect the calculation of tariff caps – as long as costs and volumes, and therefore unit costs, are estimated on a consistent volume basis.

6.82 Ofgem is, however, concerned about some of the assumptions Transco has used to estimate the level of capital expenditure consistent with its current market share – which could inform the appropriate levels for tariff caps. These concerns relate to two particular areas. First, Transco’s forecast levels of ‘policy meter exchanges’. Second, Transco’s forecast of unit costs for prepayment meters.

‘Policy exchanges’

6.83 Transco has a statutory obligation³⁶ to ensure that the meters it provides are, on an ongoing basis, ‘in proper order for correctly registering the quantity of gas supplied’. In order to meet this obligation, Transco has a rolling programme of ‘policy exchanges’.

6.84 Transco’s policy is to replace a meter type if 30 per cent or more (based on sample evidence) register outside a tolerance range of plus or minus 2 per cent. This range is the current statutory tolerance range for new meters. In effect, Transco’s policy is therefore to seek to ensure that its existing meters are within the range of accuracy tolerances allowable for new meters.

6.85 For the period of the current price control, the MMC forecast that Transco would perform 3.5 million ‘policy exchanges’. Of this total, around 3 million exchanges relate to the accelerated replacement of two specific meter types (‘Black Spot’ and ‘Black Square’ U6 meters). It is Transco’s current view that it will meet this target. Ofgem will review the likelihood of this before finalising its proposals. It may, in principle, be necessary to make a compensating adjustment if Transco’s actual level of policy exchanges is significantly below the level forecast.

6.86 Looking forward, Transco forecasts a significant increase in the number of policy exchanges over the period 2002 to 2007. Despite replacing around 24 per cent of the domestic meter stock between 1997 and 2001, Transco forecasts that it will have to replace 27 per cent of the remaining domestic meter stock between 2002 and 2007. Transco has cited new evidence of inaccurate meter types as the main driver.

³⁶ The Gas Act, paragraph 3(2), Schedule 2B

- 6.87 While Transco's evidence provides some support for continuing with current levels of policy exchanges, in Ofgem's view Transco has not adequately explained the forecast increase in activity over current levels.
- 6.88 For the avoidance of doubt, Ofgem is not implying that Transco's stated meter replacement policy is inappropriate. The policy represents Transco's interpretation of how to meet a statutory obligation. Rather, it is Ofgem's view that an efficient level of policy exchanges consistent with Transco's stated policy is significantly below Transco's forecast. Customers should not be asked to fund an inefficiently high number of policy exchanges through their metering charges.

Prepayment meter costs

- 6.89 Prepayment meter costs account for 45 per cent of Transco's total forecast expenditure on meters. Transco has assumed a unit cost of £138.32 in the current year – and estimates that this unit cost will fall in total by 6 per cent over the next three years.
- 6.90 In Ofgem's view, under the assumption that Transco continues to provide all pre-payment meters, this forecast is overstated for three reasons:
- ◆ the cost of new prepayment meters can be reduced more quickly;
 - ◆ Transco's assumed proportion of refurbished meters being re-installed is too low (in part because assumed growth in the total prepayment population is, in Ofgem's view, too high) – and its assumed cost of refurbishment is too high; and
 - ◆ the effective cost of new prepayment meters can be reduced further by Transco taking a more pro-active stance in offering shippers a choice of less complex, and cheaper, types of Quantum or compatible pre-payment meters.
- 6.91 In Ofgem's view, the effective unit cost of prepayment meters can be reduced by around 25 per cent over the next three years relative to Transco's forecast.

6.92 In the light of the two factors identified above (the cost of pre-payment meters and the level of policy changes), Ofgem estimates the following potential savings in respect of Transco's forecast levels of capital expenditure on meters for formula years 2002/03 to 2006/07.

Table 6.16 : Ofgem's projections for metering capital expenditure 2002 to 2007

£ million	2002/03	2003/04	2004/05	2005/06	2006/07	Total
Transco forecast	147	141	153	153	148	742
Adjustment	38	38	63	66	62	267
Ofgem projection	109	103	91	87	86	476

Figures may not cast due to rounding

6.93 Transco's cost projections include an element for the replacement of non-domestic meters. Without evidence to support this item, Ofgem has not allowed for the costs for this work (which total £48 million over the period 2002/3 to 2006/7) when calculating the range of efficient costs.

Summary of capital expenditure projections

6.94 Based on the approach described above, Ofgem's projections of capital expenditure are as set out in the table below.

Table 6.17 : Ofgem's projection of capital expenditure

£ million	2002/03	2003/04	2004/05	2005/06	2006/07	Total (2002/03-2006/07)
TRANSCO FORECASTS						
NTS	192	109	57	76	81	514
LDZ	354	244	193	167	176	1,134
Metering	147	141	153	153	148	742
Meter Reading	4	3	1	2	2	12
Total Gross Investment	697	497	404	397	406	2,402
OFGEM PROJECTIONS						
NTS	183	95	53	60	60	452
LDZ	312	212	166	143	148	981
Metering	109	103	91	87	86	476
Meter Reading	4	3	1	2	2	12
Total Gross Investment	608	413	310	292	296	1,920

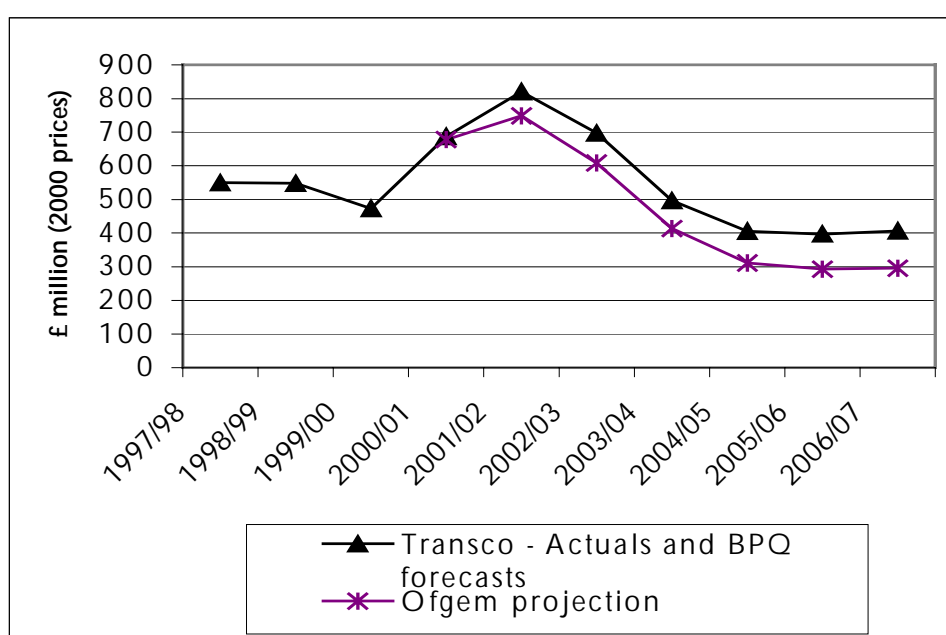
Figures may not cast due to rounding

6.95 Ofgem notes that 55 per cent of the adjustments to capital expenditure relate to metering. Ofgem considers that is it appropriate for a large proportion of the cost reductions to be associated with metering. This is because 76 per cent of the

investment activities carried out at the LDZ level (which accounts for the majority of total investment) relate either to replacement (which is reviewed elsewhere in this chapter) or to metering.

6.96 The cost profiles over the period 1997/ to 2006/7 under Ofgem's projection are shown the figure below.

Figure 6.5 : Gross Capital Expenditure 1996/7 – 2006/7



6.97 In applying capital cost adjustments for price control purposes it is necessary to consider the impact of these adjustments on the level of customer and other contributions which will be recoverable. In Transco's BPQ response, its estimates of contributions account for approximately 50 per cent of capital expenditure for mains and 100 per cent of capital expenditure for services. Therefore in deriving the efficient level of net capital expenditure in the next price control period, Ofgem has reduced adjustments in these costs by these factors. The contributions in the BPQ for the other major areas of capital expenditure (NTS, LTS and meters) are all relatively low (less than 5 per cent), so the adjustments have not been reduced.

Replacement Expenditure

- 6.98 In 1999, Transco's gross replacement expenditure totalled £228m (2000 prices). Of this £3 million related to the LTS, and the remainder was associated with the replacement of mains and services. There was no expenditure on the NTS which was classified as replacement. While Transco incurred costs in the exchange of meters, this is classified as capital rather than replacement expenditure.
- 6.99 The following discussion therefore focuses on mains and services replacement, with particular reference to the Health and Safety Executive's policy on replacement.

Expenditure in the current price control period

- 6.100 As with capital expenditure, Ofgem has reviewed Transco's expenditure against its performance in delivering the outputs that underlie the MMC's projections.

Mains

- 6.101 Transco's performance during 1997 to 1999 was reviewed in Ofgem's February consultation paper. The table below indicates Transco's projected mains replacement expenditure over the current control period and combines audited results for 1997 to 1999 with Transco forecasts for 2000 to 2002. This includes expenditure on the replacement of both cast-iron and ductile-iron mains.

Table 6.18: Gross mains replacement 1997/8 to 2001/2

£ million	1997/98	1998/99	1999/00	2000/01	2001/02	Total (1997/98 – 2000/01)
MMC	159.0	179.6	196.1	203.6	204.7	738.4
Actual/Forecast	115.3	125.3	149.3	198.3	***	588.2
Variance	-43.7	-54.3	-46.8	-5.3	***	-150.2
% Variance	-27%	-30%	-24%	-3%	***	-20%

BPO forecasts for 2001/02 removed at Transco's request

- 6.102 The forecasts show that for the period 1997/98 to 2000/01, investment is some £150 million, or 20 per cent, lower than that expected by the MMC.
- 6.103 Similarly, Transco's performance between 1997 and 1999 in terms of kilometres of mains de-commissioned has been combined with Transco forecasts for 2000

to 2002. The table below indicates Transco's projected performance over the current control period.

Table 6.19: Main de-commissioned 1997/8 to 2001/2

kilometres	1997/98	1998/99	1999/00	2000/01	2001/02	Total
MMC	1,775	1,982	2,163	2,276	2,333	10,528
Actual/Forecast	1,948	1,874	1,933	1,928	2,112	9,794
Variance	173	-108	-231	-348	-221	-734
% Variance	10%	-5%	-11%	-15%	-9%	-7%

- 6.104 The forecast shows the total length de-commissioned is likely to be 7 per cent, or 734 kilometres of mains, lower than projected by the MMC.
- 6.105 In the last two years of the price control period (years 2000/1 and 2001/2), expenditure is driven partly by the HSE's requirement that Transco replace all medium-pressure ductile-iron mains within 30 metres of premises by the end of 2002. This impact is reflected in the step increase in costs in these years. As a result Transco will replace more ductile-iron mains than envisaged in its 1997 proposal to the MMC. Since medium-pressure ductile-iron replacement is a relatively expensive activity the impact on expenditure will be more pronounced than the impact on the length of mains de-commissioned.
- 6.106 During the calendar years 1997 to 1999 Transco has replaced pipes of a smaller average diameter than expected by the MMC. It has pointed out that the use of smaller diameter replacement mains has enabled the greater use of insertion techniques and that it has been able to abandon some dual³⁷ mains without replacement. Based on current practice, Transco replaces approximately 90 per cent of the total length of mains abandoned.
- 6.107 Ofgem has considered the factors influencing Transco's mains replacement expenditure. Transco's forecast for the current period was based on a range of projections and assumed replacement across the diameter range. The lower expenditure in the first three years of the price control appears to be due to a combination of smaller diameter pipes being replaced and efficiency gains by Transco. The smaller diameter of pipes replaced does not appear to be an

efficiency gain, and in principle some adjustment to future revenues to reflect this benefit to Transco might be appropriate. However, this benefit to Transco is expected to be substantially cancelled out by the costs of the enhanced ductile-iron replacement programme required by the HSE. Ofgem intends to examine the overall position further, taking account of Transco's performance during 2000, before reaching conclusions in September.

Services

6.108 The table below indicates Transco's projected service replacement expenditure over the current price control period and combines audited results for 1997 to 1999 with Transco's forecasts for 2000 to 2002.

Table 6.20: Gross service expenditure 1997/8 to 2001/2

£ million	1997/98	1998/99	1999/00	2000/01	2001/02	Total (1997/98 – 2000/01)
MMC	69	71	72	72	72	284
Actual/Forecast	52	56	63	59	***	230
Variance	-18	-15	-9	-13	***	-54
% Variance	-25%	-21%	-13%	-19%	***	-19%

BPO forecasts for 2001/02 removed at Transco's request

6.109 The forecast projects a reduction in investment for the period from 1997/98 to 2001/02 of £54 million, or 19 per cent of that allowed by the MMC.

6.110 Transco's performance during 1997 to 1999 has been combined with forecasts for 2000 to 2002. These figures are presented in the table below, indicating Transco's projected performance over the current control period.

Table 6.21 : Services replaced³⁸

000s	1997/98	1998/99	1999/00	2000/01	2001/02	Total
MMC	288	302	318	327	335	1570
Actual/Forecast	243	247	245	231	206	1173
Variance	-45	-55	-72	-96	-129	-397
% Variance	-16%	-18%	-23%	-29%	-38%	-25%

³⁷ In some streets there is a main in each footpath. Where this occurs it is usually more economic to replace the two mains with one or to abandon one main and transfer the service connections to the other. Historically mains abandoned exceed replacement mains laid by 5 to 10 per cent.

³⁸ Job numbers include all domestic and non-domestic replacements and service transfers, but exclude service replacements at customer request (in association with changed meter positions).

- 6.111 The forecast projects a reduced workload of 25 per cent, or 397,000 services less than planned.
- 6.112 For the years 2000/01 and 2001/02, Transco's forecast reduction in service replacement reflects the change in mains replacement workload. Medium-pressure ductile-iron mains have fewer service connections than average.
- 6.113 For the earlier years of the current price control period, Transco has pointed out that the proportion of services transferred rather than re-laid was higher than expected. Transco is able to transfer modern services in good condition at a lower cost than full replacement.
- 6.114 With the HSE's requirement to replace medium-pressure ductile-iron mains within 30 metres of premises, Transco has replaced associated services where necessary (which are mainly non-domestic) but has replaced fewer services associated with cast-iron replacements (mainly domestic).
- 6.115 Ofgem is concerned at the size of the variance in both financial and volume terms and considers that Transco may have made an error in its original forecast. It appears unlikely that Transco will make significant inroads into the deficit and Ofgem is considering whether this should be taken into account in setting the next price control.

Mains diversions

- 6.116 In addition to mains replaced due to policy or condition (as described above) Transco is required to divert mains, usually as a consequence of road construction or alterations. In most cases Transco is able to recover the cost of this work from the promoting authorities, although cost recovery can in certain circumstances be limited to 82 per cent or 92.5 per cent of the cost of the works. Workload in the current period is shown in the table below. Transco's workload is forecast to be 35 per cent lower than expected by the MMC for the control period.

Table 6.22 : Mains diversions 1997/8 to 2001/2

Kilometres	1997/98	1998/99	1999/00	2000/01	2001/02	Total
MMC outcome	225	225	225	225	225	1125
Transco forecast/actual	163	135	122	154	154	728
Variance	-62	-90	-103	-71	-71	-397
Variance %	-28%	-40%	-46%	-31%	-32%	-35%

Figures include both re-chargable and non re-chargable diversions

6.117 Transco has pointed out that, in the period 1997 to 1999, workload was lower than expected but unit costs were higher, reflecting the nature of the work ordered by the highway authorities. Nonetheless, Transco's expenditure is expected to be £37 million less than expected by the MMC for 1997/98 to 2000/01, as shown in the table below.

Table 6.23 : Gross mains diversion expenditure 1997/8 to 2001/2

Chargeable & Non-Chargeable Diversions (£ million)	1997/98	1998/99	1999/00	2000/01	2001/02	Total
MMC Outcome - Gross Cost	31	31	30	29	29	121
Transco Forecast/Actual - Gross Cost	27	25	20	20	***	92
Variance	-5	-6	-10	-10	***	-29
Variance %	-15%	-20%	-32%	-33%	***	-24%

Figures include both re-chargable and non re-chargable diversions
BPO forecasts for 2001/02 removed at Transco's request

Ofgem's projections of replacement expenditure in the next price control period

6.118 Transco's mains replacement expenditure is driven by two factors: the size of the programme it agrees with the HSE, and the cost of implementing this programme. In assessing this area of expenditure, Ofgem accepts that Transco has to ensure that its programme of work satisfies any requirements set out by the HSE. However, Ofgem must ensure that the level of expenditure allowed in setting the price control is not higher than the efficient cost of implementing this programme.

Mains

6.119 In its BPO response on safety policy replacement, Transco suggested that annual mains replacement volumes would decrease from 2,000 kilometres per year at the start of the price control period to 1,620 kilometres per year at the end of the period, with unit costs significantly higher than those achieved in the early years of the current review period.

6.120 Ofgem has reviewed the mains replacement programme which has been proposed by Transco in terms of lengths and diameters of mains to be replaced, and has sought to form a balanced view of its likely cost over the next control period. Ofgem has assumed completion of the ductile-iron replacement programme in accordance with the HSE enforcement order.

6.121 Ofgem's view has been informed by the its consultants, who have identified possible savings arising from:

- ◆ the correction of inappropriate unit costs used in producing the forecasts;
- ◆ more efficient performance by Transco's EPC contractors than assumed in the BPQ response;
- ◆ more rigorous application of value analysis within Transco; and
- ◆ lower polyethylene pipe costs.

6.122 The table below shows Transco's proposal together with Ofgem's view of the likely cost range taking into account the savings identified above.

Table 6.24 : Ofgem projections for mains replacement (excluding diversions) 2002/3 to 2006/7

	2002/03	2003/04	2004/05	2005/06	2006/07	Total
Length (kilometres)	2,000	1,624	1,644	1,644	1,620	8,531
Transco BPQ (£ million)	302	281	288	306	293	1,471
Ofgem Projection (£ million)	269	228	229	239	227	1,191

Services

6.123 In the BPQ response, Transco suggested annual service replacement volumes in the range 226,000 to 302,000 per year and unit costs higher than those achieved in the early years of the current review period.

6.124 Ofgem has reviewed Transco's proposed service replacement workload taking into account performance in the current period and the mains replacement workload proposed for 2002 to 2007. Transco's projections are shown in the table below.

Table 6.25 : Transco projections for service replacement 2002/3 to 2006/7

	2002/03	2003/04	2004/05	2005/06	2006/07	Total
Transco Workload (000s Jobs)	226	301	302	301	295	1,426
Transco Cost £m	60	71	71	69	68	338

6.125 With the exception of the first year of the programme, where the impact of the ductile-iron mains replacement programme is apparent, Transco proposes to replace significantly more services than it has achieved in recent years. The proposal includes more services than will be generated by Transco's mains replacement programme and the necessary replacement of services after leakage.

6.126 The safety benefit arising from service replacement is recognised but Ofgem believes that service replacement should be primarily driven by the mains replacement programme and that other service replacement³⁹ should be limited to that strictly necessary to maintain safety levels.

Table 6.26 : Ofgem projections for service replacement 2002/3 to 2006/7

	2002/03	2003/04	2004/05	2005/06	2006/07	Total
Ofgem workload (000s Jobs)	213	235	237	237	234	1,156
Ofgem cost (£million)	58	59	58	58	56	290

6.127 As for capital expenditure, Ofgem is aware that its projections may need to change as its consultants develop their work further and consider comments from Transco.

Mains diversions

6.128 Ofgem accepts Transco's view of the likely volume of mains diversion work in the next control period. However Transco's costs have been adjusted below in accordance with the recommendations of Ofgem's consultants.

³⁹ Bulk service replacement, where services are relaid but not mains.

Table 6.27 : Mains diversions 2002/3 to 2006/7

	2002/03	2003/04	2004/05	2005/06	2006/07	Total
Length (km)	150	150	150	150	150	750
Transco BPO (£ million)	22	22	22	22	22	109
Ofgem's Projection (£ million)	20	19	19	19	18	95

Recent Proposals by the HSE

6.129 The HSE has reviewed the progress Transco has made in replacing cast-iron and ductile-iron mains and is considering whether a change in policy is appropriate. Iron mains are responsible for most of the incidents arising from Transco's system.

6.130 The HSE has suggested that it may require Transco⁴⁰ to replace those cast-iron and ductile-iron mains likely to give rise to risk at rates such that these components are removed from the system over the next 25 to 35 years. Transco has submitted a revised programme to Ofgem in its Strategic Business Plan (SBP) to reflect these possible requirements.

6.131 The SBP outlines a low case aimed at meeting the HSE's requirements over 35 years at maximum rate of 2,563 kilometres per year and a high case which assumes volumes ramping up to 4,250 kilometres per year by 2007. The high case would achieve the HSE's requirements over 25 years.

Table 6.28 : Proposed accelerated mains replacement programmes 2002/3 to 2006/7

	Mains		Services		Total
	km	£ million	000s	£ million	£ million
Transco BPO	8,533	1,471	1,426	338	1,809
SBP Low Case (35 years)	11,916	2,056	1,575	415	2,471
SBP High Case (25 years)	16,852	3,215	2,077	596	3,812

*Transco has indicated that it would also incur additional operating costs

6.132 The total cost of the programme (over either 25 or 35 years) is expected to be about £18 billion. This would involve the replacement of 93,000 kilometres of mains or one third of Transco's system.

6.133 Ofgem accepts Transco's duty to maintain and improve safety levels (which are already very high) and recognises the human impact of the fatalities that on

⁴⁰ Using powers under the Pipelines Safety Regulations

occasion result from failures in Transco's network. However, Ofgem is concerned to ensure other factors are taken into account, such as;

- ◆ the impact of the expenditure proposed on transportation charges and ultimately gas costs to consumers, particularly the fuel poor;
- ◆ the impact of the proposed programme on the general public in terms of the costs associated with traffic and general disruption and inconvenience;
- ◆ that the cost per life saved by the programme should be in line with other areas such as road or rail safety, where similar investment decisions are taken on behalf of both users and the public as a whole; and
- ◆ that any new requirement should be defined in such a way that it will permit Transco to proceed on the most economic and innovative basis.

6.134 The impact of the different mains replacement assumptions on Transco's allowed revenues (and hence on its transportation charges) is set out in Chapter 8.

6.135 Whilst these issues are being considered, Ofgem has chosen to allow expenditure that will permit the existing programme as set out in Transco's BPO for the next price control period. Should higher levels of mains and service replacement be required by the HSE, then it will be necessary to make an adjustment to Transco's price control once that decision has been taken.

Implications for form of control

6.136 One respondent to the February paper argued that Transco should be actively incentivised to accelerate the replacement of cast iron and ductile iron pipes saying that this was fundamental to safety and the public perception of gas as a safe fuel.

6.137 Ofgem believes that an additional financial incentive for replacement would be inappropriate but notes that if the HSE imposes a physical replacement requirement upon Transco (as discussed above), rather than relying solely on the application of policy as at present, then the need for such an incentive would be removed.

6.138 Another respondent suggested that a revenue adjustment mechanism should be included in the control such that it is clear how variations in investment requirements will be handled.⁴¹

6.139 Ofgem believes that such a mechanism may be appropriate in the mains replacement field where it is not possible to forecast accurately the length and diameter of the mains to be replaced or the new mains to be laid. Large diameter mains can cost considerably more to replace than smaller diameter mains although size for size replacement is not always inevitable. Ofgem seeks to address this uncertainty by defining the allowed expenditure for the next control period in terms of pipe replaced (and risk removed) rather than in new pipe laid. This approach aligns with the principal objective of reducing risk and provides an additional incentive to Transco to optimise the length of pipe abandoned each year.

6.140 The table below is illustrative of the approach and Ofgem will undertake further work with Transco to develop the approach and populate the table so that it may be used to evaluate any change in expenditure in the next control period.

6.141 Transco's allowed costs would be generated by the length of each main actually abandoned and its diameter. In the example below the total length assumes that ten percent more main is abandoned than new main is laid. Individual lengths are illustrative rather than prescriptive and cumulative costs will be allowed up to the maximum (£1,191 million in the example) for the control period.

Table 6.29 : Example - mains abandoned : allowed cost/metre

Diameter	Length abandoned (km)	Allowed unit cost (£/m)	Total (£m)
2-3"	512	46	24
4-5"	4,119	70	288
6-7"	1,988	120	239
8-10"	1,563	195	305
12"	688	230	158
15-18"	309	300	93
21-24"	188	400	75
30-36"	13	500	7
48" +	6	600	4
Total	9,386		1,191

The diameter bands reflect the population in the ground

⁴¹ In its response to Ofgem's February paper, Transco rejected the suggestion that forecasting inaccuracies or the failure to meet expected outputs should be treated differently from efficiency gains.

Environmental benefits of mains replacement

- 6.142 Natural gas consists mostly of methane which is a potent green house gas. Transco's network produces emissions of methane through leakage from the system. The mains replacement programme described in the previous section would be expected to lead to a reduced level of methane leakage. This has been reflected in the consultants' proposed adjustments to Transco's projections of gas shrinkage costs described in Appendix 8. A faster rate of mains replacement will therefore produce environmental benefits through reductions in the level of methane emissions, as well as improving the safety of Transco's network.
- 6.143 Ofgem has estimated that in 1999/2000, Transco's LDZ networks produced emissions of around 380,000 tonnes of methane. Ofgem has also commissioned research to place a value on the environmental costs created by methane emissions⁴². Such estimates are sensitive to a number of assumptions, but this work suggests that the environmental costs of methane leakage might be in the range £20 to £180 per tonne of methane released into the atmosphere, with a central estimate of around £80 per tonne. These costs imply that the environmental cost from emissions from Transco's LDZ networks might be in the range £8 million to £70 million per year, with a central estimate of £30 million per year.
- 6.144 The benefits to the environment that might be achieved by accelerating Transco's mains replacement will be the reduction in these environmental costs from reduced leakage. The maximum level of these benefits would at most be £70 million per year, or more likely around £30 million per year. Ofgem estimates that in practice Transco's current level of mains replacement, combined with other actions by Transco, would reduce the level of methane emissions by around 2.5 per cent (about 10,000 tonnes) each year. This compares with the cost of replacing Transco's network of cast-iron mains which, according to Transco's estimates, varies between £1.8 billion and £3.8 billion over the next price control period (depending on the scale of the programme). On the basis of this evidence it therefore seems unlikely that an acceleration in

the mains replacement programme could be justified purely on environmental grounds. Nevertheless, to the extent that an accelerated programme might be justified on safety grounds, this will produce environmental benefits from reducing the level of methane emissions from Transco's distribution networks. The level of methane emissions from Transco's networks will be monitored by Ofgem as part of the medium-term performance reports described in Chapter 4.

Summary of Ofgem projections for replacement expenditure

6.145 Ofgem's draft proposals for replacement expenditure are set out in the table below, for comparison with the Transco BPO forecasts.

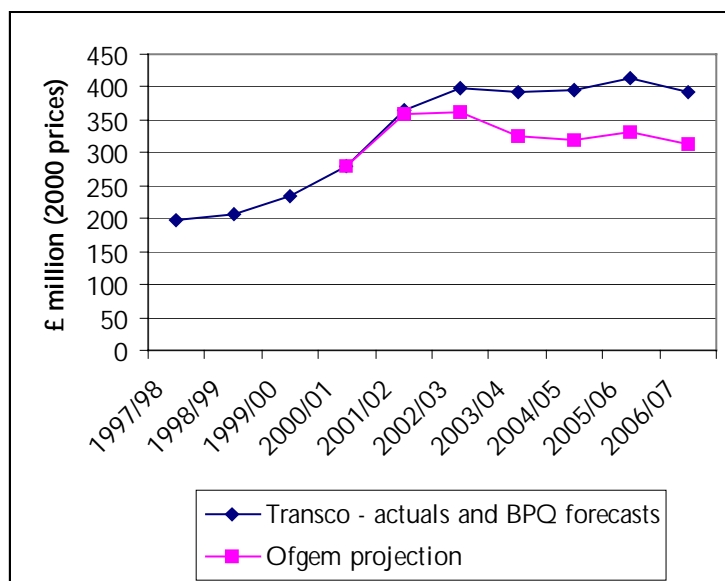
Table 6.30 : Summary of gross replacement expenditure 2002/3 to 2006/7

	2002/03	2003/04	2004/05	2005/06	2006/07	Total
TRANSCO BPO FORECASTS						
NTS	0	0	0	0	0	0
LTS	8	12	7	10	4	41
Mains Replacement	302	281	288	306	293	1471
Services Replacement	60	71	71	69	68	338
Mains Diversions	22	22	22	22	22	109
Central Capitalisation	7	7	7	8	8	37
TOTAL BPO	400	392	395	415	394	1996
OFGEM PROJECTION						
NTS	0	0	0	0	0	0
LTS	8	12	7	10	4	41
Mains Replacement	269	228	229	239	227	1,191
Services Replacement	58	59	58	58	56	290
Mains Diversions	20	19	19	19	18	95
Central Capitalisation	7	7	7	8	8	37
TOTAL OFGEM	363	326	320	333	313	1654

6.146 Cost profiles over the period 1997/8 to 2006/7 under each of these scenarios are shown in the figure below.

⁴² "The benefits of reducing methane emissions", research carried out for Ofgem by Dr Chris Hope, University of Cambridge, June 2001.

Figure 6.6 : Gross replacement expenditure 1997/8 to 2006/7



Connections

- 6.147 Transco has legal obligations in respect of certain customers for the provision of connections. These obligations are set out in Appendix 10.
- 6.148 For certain larger customers, Transco is able to recover the cost of a new connection from the relevant customer. For certain smaller customers, including most domestic customers, Transco does not charge for the first 10 metres of service pipe laid from the relevant main. Transco is able to recover certain costs incurred in providing these statutory connections from all its customers through its transportation charges.
- 6.149 Transco has announced its intention to set up a separate connections business as a subsidiary of Transco plc. Transco and customers would then contract with the new connections business or independent contractors for the construction of the connections themselves. As regards statutory connections, the connections business will recover some costs from customers, and some from Transco in accordance with Transco's legal obligations.
- 6.150 Ofgem has asked Transco to provide a detailed breakdown of its projected connections costs and the associated contributions from customers in order to determine the flow of funds from Transco to its connections business. Transco

has not been able to provide a breakdown to the level of detail required. The following table shows Ofgem's assumptions in this area.

Table 6.31 : Ofgem's assumed projections of connections costs (£ million)

Price controlled unit	Total for period 2002/3 – 2006/7	Average annual cost
NTS		
Capital expenditure	14	3
Capitalised operating expenditure	7	1
Total expenditure	21	4
Less contributions	21	4
Net cost to Transco	0	0
LDZ		
Capital expenditure	338	68
Capitalised operating Expenditure	93	18
Total expenditure	431	86
Less contributions	346	69
Net cost to Transco	85	17
Metering		
Capital expenditure	14	3
Capitalised operating Expenditure	6	1
Total expenditure	20	4
Less contributions	20	4
Net cost to Transco	0	0

6.151 The above table shows that Transco's connections business may require funds of up to £85 million over the price control period to meet Transco's legal obligations in respect of connections, providing approximately 350,000 new connections to existing housing. Ofgem will be carrying out further investigations to confirm this cost.

Reconciliation with financial model

6.152 Costs have been presented in this Chapter in formula years, but data input to Ofgem's financial model are in calendar years. A reconciliation is therefore provided here. As agreed between Ofgem and Transco, operating costs in the next price control period are converted from calendar years to formula years using a 75:25 split. Capital and replacement costs in the next period are converted using an 80:20 split. These conversions have been applied in the tables below.

Table 6.32 : Operating expenditure conversion (£ million)

AS FINANCIAL MODEL						
	2002	2003	2004	2005	2006	2007
Operating Cost	1,163	1,108	1,055	1,070	1,080	1,106
Less customer contributions released	-30	-31	-32	-33	-34	-35
Add excluded services	3	3	3	4	4	4
Total Operating Cost	1,137	1,081	1,026	1,041	1,050	1,076
Convert using 75 : 25 split						
AS DRAFT PROPOSALS, CHAPTER 6, TABLE 6.7.						
	2002/03	2003/04	2004/05	2005/06	2006/07	
Total Operating Cost	1,123	1,067	1,030	1,043	1,057	

Operating cost in the financial modelling here excludes additional allowances for quality improvements.

Table 6.33 : Capital expenditure conversion (£ million)

AS FINANCIAL MODEL						
	2002	2003	2004	2005	2006	2007
Gross Capital Expenditure	650	438	315	293	288	324
Convert using 80 : 20 split						
AS DRAFT PROPOSALS, CHAPTER 6, TABLE 6.17.						
	2002/03	2003/04	2004/05	2005/06	2006/07	
Gross Capital Expenditure	608	413	310	292	296	

Table 6.34 : Replacement expenditure conversion (£ million)

AS FINANCIAL MODEL						
	2002	2003	2004	2005	2006	2007
Gross Replacement Expenditure	372	328	316	335	323	272
Convert using 80 : 20 split						
AS DRAFT PROPOSALS, CHAPTER 6, TABLE 6.30.						
	2002/03	2003/04	2004/05	2005/06	2006/07	
Gross Replacement Expenditure	363	326	320	333	313	

Excluded Services

6.153 Excluded services are services whose revenues and costs fall outside of the price control. There are often efficiency arguments for such services being provided

by Transco; for instance, in past years Transco has rented out space on its mobile phone masts to other mobile phone companies. Clearly, this allows economies of scope to be achieved in the use of these assets and reduces mast proliferation, which can be viewed as environmentally beneficial. However, Ofgem needs to ensure that there are no cross subsidies between the provision of price controlled services and the provision of excluded services - in other words, that excluded services customers pay for their use of the regulated business's assets.

- 6.154 For the purposes of the price control review Ofgem needs to assess the likely levels of excluded services revenues which will be earned by Transco. Ofgem has asked Transco for current levels of revenues in these businesses and for a view as to likely levels of growth in revenues over the period of the next price control. Ofgem proposes to obtain advice on the latter assumptions from its consultants.

Disposals of Telecoms Assets

- 6.155 Transco is in the process of disposing of a number of telecoms sites to Spectrasite Transco Communications Limited (SST). SST is a joint venture between Lattice Group (Transco's ultimate holding company) and Spectrasite International Inc, a US based company. SST will acquire or construct and lease out communications towers and rooftop masts and provide services in planning, maintaining and managing wireless networks. Transco estimates that up to 700 sites with communications structures already located on them and a substantial number of sites which may be developed for mast use, will be transferred to SST from Transco.
- 6.156 Ofgem is in the process of ensuring that the valuation of the assets prior to transfer is appropriate, and that the transfers have and will be treated correctly in the accounts of the regulated business. Ofgem will use this information to assess whether it is appropriate to make any further adjustments to Transco's regulatory value to reflect these disposals.

Issues for consideration

- 6.157 Views are invited on any of the issues discussed in this chapter, but in particular on:

- ◆ Transco's performance in the current period, compared with that projected by the MMC;
- ◆ the appropriate levels of operating, capital and replacement expenditure in the price control period from 2002 to 2007;
- ◆ the levels of cost allocated to individual price control units;
- ◆ Ofgem's proposal for adjusting revenues associated with mains replacement;
- ◆ the costs associated with Transco's legal obligations in respect of connections; and
- ◆ Ofgem's approach in reviewing excluded services.

7 Financial issues

Introduction

- 7.1 The May and November 2000 consultation documents established a framework for the assessment of financial issues during the Transco price control review. This formed the basis of the analysis set out in the Initial Thoughts document published in February 2001. The framework involves establishing a regulatory value for Transco's asset base and estimating a return equivalent to the cost of capital on the regulatory value. Other regulators and the Competition Commission (formerly the Monopolies and Mergers Commission (MMC)) have adopted similar approaches in setting price controls. As a supporting check on these calculations it is necessary to consider the financial position of Transco over the period of the next price control and beyond.

Cost of Capital

- 7.2 The level of return that is required by the financial markets to provide capital to a company is called its cost of capital. The cost of capital is usually calculated as a weighted average of the cost of debt and equity finance. As well as providing a return on debt and equity, companies must also finance corporation tax payments. The cost of capital can be adjusted to provide an allowance for corporation tax. For price control purposes, the relevant cost of capital is that for the regulated business, rather than the cost of capital for the Lattice Group as a whole.

Separate price controls

- 7.3 Chapter 2 outlines proposals for separate price controls for the NTS, LDZs, metering and meter reading. It can be argued that these price controls require different costs of capital, reflecting the different risks that the businesses face. The counter argument, expressed in the February paper, is that while the businesses remain under common ownership, an overall cost of capital would be more appropriate.
- 7.4 Transco has expressed the view that a company wide cost of capital might be reasonable if all the price controls are for activities that will remain monopoly

activities, but where unbundled activities are potentially competitive a single company wide cost of capital could distort incentives. Furthermore, Transco has said that separate costs of capital would help to create appropriate incentives and facilitate industry restructuring around the separate ownership of LDZs.

- 7.5 There appears to be some merit in the arguments made by Transco that activities subject to competitive pressure are likely to have a higher cost of capital. Where metering is concerned, Transco's analysis suggests that the cost of capital should be about 0.7 percentage points greater than that of the transportation business. For meter reading it suggests that, as there are relatively few assets employed in the meter reading business, an approach based on a margin on turnover would be more appropriate. Chapter 2 describes issues relating to metering and sets out draft proposals for metering tariff caps. It adopts a uniform cost of capital for metering activities.
- 7.6 It is not clear that the differences between the LDZs and NTS are sufficient to justify a different cost of capital. Both are large businesses with substantial monopoly power. Their costs and revenues are relatively stable and both need to fund significant capital expenditure programmes. The analysis below establishes an overall cost of capital for the LDZs and the NTS.

Gearing and the weighted average cost of capital

- 7.7 Companies can be financed by both debt and equity. The proportion of debt to debt plus equity is referred to as gearing. In calculating an average cost of capital it is necessary to make an assumption about gearing. Gearing also influences the cost of both debt and equity finance. In setting the price control it is appropriate to assume that Transco has a reasonably efficient level of gearing, in order to encourage financial efficiency and to protect the interests of consumers.
- 7.8 Debt finance is usually cheaper than equity finance. There are two main reasons for this. First, debt holders have a prior claim on the distribution of a company's income ahead of equity holders and so face lower risk. Second, debt can be a tax efficient form of finance. In these circumstances, a company may be able to reduce its weighted average cost of capital (WACC) by increasing the proportion of its debt finance. However, increasing gearing will tend to put

some upward pressure on the underlying cost of both debt and equity finance. At higher levels of gearing a company may no longer be able to access finance at a reasonable cost. This suggests that there is some notional level, or more likely a range, of gearing at which the WACC is minimised. This range will reflect an efficient capital structure.

- 7.9 Specialist credit rating agencies assign rating grades to issuers and to individual debt issues by assessing the degree of credit risk. The rating categories that represent the lowest risk are classified as investment grade, indicating suitability for a wide range of investors. Ratings representing higher risk are classified as speculative, indicating suitability only for limited types of investors. In consequence, there is a marked difference in the ease of access to and cost of debt finance for speculative grade borrowers. Ofgem has modified Transco's licence to require it to maintain an investment grade credit rating on its debt.
- 7.10 Transco's gearing (measured as net debt over regulatory value⁴³) was 41 per cent in December 2000. At the level of Transco Holdings, which holds an additional £1.5 billion of debt, the gearing was 54 per cent.
- 7.11 In the electricity transmission price control review of the National Grid Company (NGC) in 2000, Ofgem assumed that an efficient range for its gearing was between 60 and 70 per cent. NGC has increased its gearing in recent years, from 43 per cent in 1998/99 to an estimated level above 60 per cent in 2000/01⁴⁴. NGC's debt has retained its investment grade credit rating and it is presently rated at single A, the same level at which Transco's debt is rated. The 60 to 70 per cent range for efficient gearing forms the basis for the analysis set out in this paper.

⁴³ Calculated on an unfocused basis, as described later in this chapter.

⁴⁴ Measured as debt divided by regulatory value and estimated from numbers in National Grid Group's annual report.

Components of the Cost of Capital

Cost of debt

- 7.12 The cost of debt finance can be thought of as having two components, a risk-free component (the risk-free rate) and a company-specific risk premium (debt premium).

Risk-free rate

- 7.13 Although the real risk-free rate is not directly observable, it is possible to derive an estimate from the return available on UK government index-linked gilts (ILGs) and conventional bonds.
- 7.14 At the time of the last Transco price control review, Ofgas estimated a range for the risk-free rate of 3.5 to 3.8 per cent⁴⁵. Since then, redemption yields on ILGs have fallen significantly. This has led Ofgem to estimate a risk-free rate of 2.5 per cent in the 1999 electricity distribution price control review⁴⁶ and a range of 2.5 to 2.75 per cent in the 2000 NGC review⁴⁷. In its report on two water only companies in September 2000⁴⁸, the Competition Commission (CC) used an estimate of 3.0 per cent for the risk-free rate, based on a range of 2.75 to 3.25 per cent.
- 7.15 Several respondents to the February consultation paper, including Transco, were concerned that the current yields on ILGs are artificially low due to certain UK-specific liquidity factors. The main factor cited was the Minimum Funding Requirement (MFR) for pension funds which, it is said, encourages pension funds to hold a large proportion of their investments in ILGs, suppressing the yields on such securities. The Myners Review on Institutional Investments (published on 6th March 2001) recommended that the MFR should be abolished and the government has subsequently indicated its intention to implement these

⁴⁵ "1997 Price Control Review – British Gas Transportation and Storage, The Director General's final proposals", Ofgem, August 1996

⁴⁶ "Review of Public Electricity Suppliers 1998 to 2000 - Distribution Price Control Review, Final Proposals", Ofgem, December 1999

⁴⁷ "The transmission price control review of the National Grid Company from 2001, Final proposals", Ofgem, September 2000

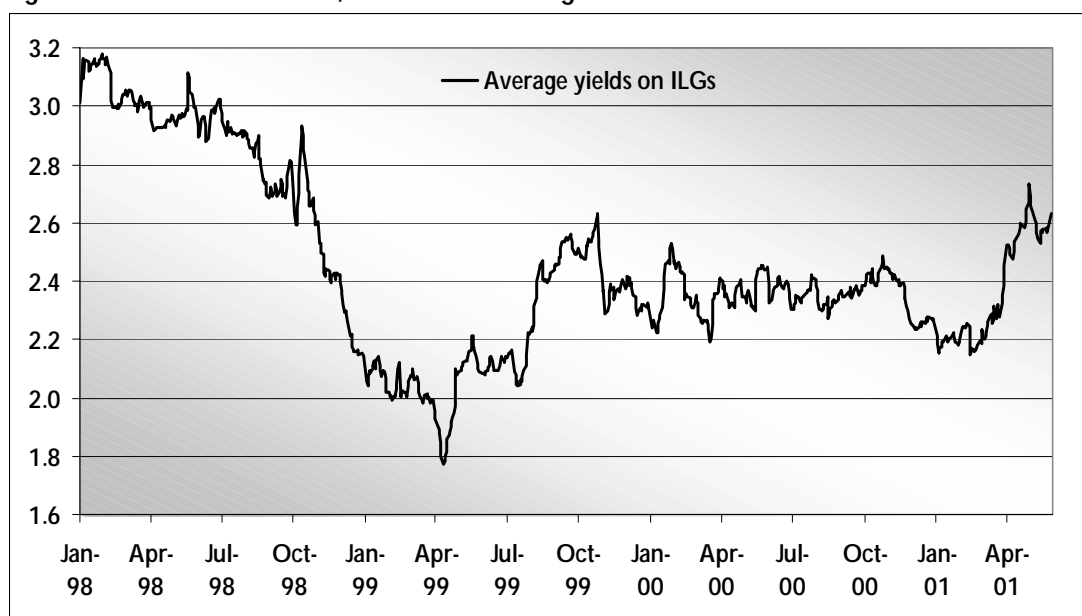
⁴⁸ "Mid Kent Water plc – A report on the references under sections 12 and 14 of the Wwater Industry Act 1991", Competition Commission, August 2000

proposals. The yields on ILGs have increased and this has narrowed the differences with yields on conventional gilts.

7.16 The ratio between conventional bonds and ILGs gives the implied market expectations of future inflation, together with any inflation risk premium. If yields on ILGs were artificially depressed, this implied inflation would be artificially high. At present the implied short, medium and long term inflation estimates derived from short, medium and long term ILGs and conventional bonds range from 2 to 2.5 per cent. In its inflation report (February 2001), the Bank of England estimates current inflation at 2.0 per cent and forecasts inflation at 2.0 per cent for 2001, rising to 2.5 per cent by 2003. In light of this, the implied inflation expectations noted above do not seem unreasonable, and the present yields on ILGs appear to give a reasonable approximation of the risk-free rate.

7.17 Yields on ILGs over the last year indicate a band of about 2.2 to 2.6 per cent, with an average of 2.4 per cent, while at present, the yields range from about 2.3 to 2.9 per cent with an average of approximately 2.6 per cent.

Figure 7.1: Yields on short, medium and long-term ILGs



7.18 Average real yields on conventional bonds of similar duration are at present 2.5 per cent, based on a forward-looking inflation rate of 2.5 per cent.

7.19 Considering the uncertainty around these yields, the impact of the MFR and its proposed abolition, as well as past precedent, the most appropriate figure for the risk-free rate appears to be around 2.75 per cent.

Debt risk premium

7.20 The debt risk premium reflects the additional return required by the providers of debt finance to hold corporate rather than government debt and can be estimated as a premium over the real risk-free rate. A measure of the debt risk premium is the differential (or spread) between the yield on corporate bonds and those on gilts of comparable maturity. In deciding on the appropriate debt risk premium for Transco, it will be appropriate to assume that Transco maintains an investment grade credit rating on its debt, consistent with an efficient capital structure.

7.21 Transco's calculations based on the yields on their current bonds, presented in its response to the February consultation paper, give debt premiums of 90, 140 and 150 basis points (bps) for short, medium and long term bonds respectively. Transco's financial advisers suggest a standard benchmark figure for medium term debt of 135 bps. Transco says it should be able to maintain a single A credit rating (representing a strong investment grade), which it says is the minimum required to provide suitable access to a sufficient range of both short and long term debt finance. Transco suggests that a further premium of 60 bps would be required if the rating was to be lowered to triple B (which is a weaker investment grade).

7.22 Data from HSBC for single A corporate and utility bonds over the last year suggest debt premiums over ILG yields for short, medium and long term bonds at about 100, 170 and 200 bps respectively. Currently, the premiums for the same bonds are 60, 145 and 180 bps. Premiums on triple B+ utility bonds lie 30 to 40 bps above those carrying a single A rating.

7.23 Assuming that Transco maintains a balanced portfolio of debt with different maturities, the appropriate debt premium appears to be around 150 bps, assuming its debt retains a single A rating, or 190 bps if its debt was downgraded to triple B.

- 7.24 Taking an estimate for the risk-free rate of around 2.75 per cent and a debt risk premium of 1.5 to 1.9 per cent suggests an overall cost of debt in the range 4.25 to 4.65 per cent.

Embedded debt

- 7.25 Previous regulatory reviews that have projected a forward looking cost of debt have also acknowledged that it may be appropriate to adjust for existing debt commitments, known as embedded debt. Companies raising debt will do so based on prevailing interest rates and inflationary expectations that may vary from those at the time of the price control review. These adjustments may either increase or decrease the estimate for the overall cost of debt finance.
- 7.26 Transco, in its response to the February document, was concerned that no allowance for embedded debt had been discussed during the current review and set out additional costs it believed should be considered. Transco has calculated incremental costs for embedded debt (both fixed rate and floating rate) of between 33 to 45 bps, which includes the costs of converting some previously fixed rate debt to variable rates. Transco says these conversion costs should be amortised over the remaining life of the debt in question.
- 7.27 Since the setting of the last price control, Transco has separated from BG Group, undertaking a substantial refinancing programme in December 1999. Therefore, Transco has had the opportunity to influence its financial structure and target an appropriate level of gearing.
- 7.28 The past control period over which Transco has been able to raise debt finance has been roughly concurrent with the previous period for NGC, considered during the last electricity transmission price control review. Over this time, the real yields on medium and long-term debt have not been materially different from current yields. No adjustment was deemed necessary for NGC and it is not clear that an adjustment is necessary with respect to Transco.

Cost of Equity

- 7.29 There are a number of methods for estimating a company's cost of equity, including the Capital Asset Pricing Model (CAPM), the Dividend Growth Model (DGM) and Arbitrage Pricing Theory (APT). CAPM has been widely used by

regulators and the Competition Commission to estimate the cost of equity capital. DGM has been used to provide a supporting check on the results provided by CAPM. APT is not widely used by regulators in the UK.

- 7.30 CAPM derives an estimate for the cost of equity finance by adding an estimate of the real risk-free rate to an estimate of the appropriate company specific Equity Risk Premium (ERP). The estimation of the risk-free rate was discussed above in the section on the cost of debt. In estimating the appropriate company specific ERP, two factors are taken into consideration, the ERP for the market as a whole and the riskiness of the company relative to the market (known as its beta value).

Equity Risk Premium (ERP)

- 7.31 The appropriate method of estimating the ERP for the market as a whole has been the subject of considerable debate. This has mainly focused on whether the ERP should be based on observing past returns, surveying investors' expectations or combining estimates of dividend yields and real dividend growth.
- 7.32 In recent years, doubts have been raised regarding how relevant the ERPs from the past are in predicting the risk premiums that will be required for the future. As certain features of past returns are no longer relevant to the present situation, the estimates produced by using such trends are usually regarded as too high. Surveys of institutional and investor opinion tend to produce considerably lower estimates. These doubts have been reinforced by the observed ERPs for the last 10 years, which tend to be considerably lower than the longer run averages.
- 7.33 In its 1996 estimate of Transco's cost of capital, Ofgas used a range of 3.5 to 4.5 per cent for the ERP for the market as a whole. Ofgem's final proposals for the PES distribution businesses and NGC, in 1999 and 2000 respectively, were based on an ERP of 3.5 per cent. In its 2000 report on the two water-only companies, the Competition Commission used an estimate of 4.0 per cent, consistent with the MMC's 1999 report on Cellnet and Vodafone⁴⁹, in which it used a range of 3.5 per cent to 5.0 per cent.

⁴⁹ "Cellnet and Vodafone: reports on references under section 13 of the Telecommunications Act 1984 on the charges made by Cellnet and Vodafone for terminating calls from fixed-line networks", MMC, January 1999.

7.34 In its report on the two water only companies, the Competition Commission considered the results of a number of surveys of investors' expectations. Table 7.1 summarises the findings.

Table 7.1: Surveys considered by the Competition Commission:

%	PW ³	From Ofwat ¹			From Ofgem ²		Other	
		EA ⁴	SRU ⁵	NERA ⁶	ML ⁷	SBC ⁸	MAM ⁹	ACT ¹⁰
Low	2.7	2		3	2		2	
High	4.5	4		4	3		4	
Midpoint	3.6	3	3.9	3.5	2.5	3.5	3	1.5

- 1 Final determination document, November 1999
- 2 Draft proposal for electricity transmission price control, June 2000
- 3 "Reporting in Search of Shareholder Value", Price Waterhouse, 1998
- 4 Various Equity Analysts
- 5 "Risk and return in the UK water sector...", CLSE, October 1998
- 6 "Survey of water industry cost of capital...", NERA, January 1999
- 7 Report on electricity companies, Merrill Lynch, September 1998
- 8 Report on cost of capital, SBC Warburgs, October 1997
- 9 Report on Strategic Asset Management, Mercury Asset Management, 1997
- 10 "Pensions and Low Inflation", P M C Meredith, N P Horsfall, J M Harrison, K Kneller, H N Knight and R F Murphy, 2000

7.35 The Competition Commission said that the longer that equity valuations remain high, the greater the confidence that the ERP may be lower than the historical average.

7.36 In its response to the February consultation paper, Transco has referred to the BT price control. Transco states that Oftel recognised the balance between the consumers' short and long-term interest and used an estimate of the ERP at the top end of the range, arguing that this would attract investment and benefit BT's customers in the long run. While recognising the importance of investment, it is clear that the gas transportation industry is not facing a similar period of rapid growth or innovation as the telecom industry, and there seems no convincing reason to take a conservative view of the ERP.

7.37 One other respondent stated that Ofgem had taken a cursory and selective view. This was supported by Transco, who were also concerned that Ofgem appeared to have placed great weight on two recent studies, which it believed Ofgem had misinterpreted. Respondents generally suggested values for ERP in the range 3.0 to 4.7 per cent.

- 7.38 The two recent studies in question, which are subsequent to the Competition Commission's report in August 2000, are those of the Millennium Book II⁵⁰, and a study by Adrian Fitzgerald⁵¹. The study in the Millennium Book II presents a different approach to resolving the tension between the results of past trends compared against the outcome of recent surveys. The authors have analysed why the historical numbers differ from current estimates, and come up with two factors that have tended to inflate the historical numbers: unanticipated dividend growth and the higher level of risk premiums required in the past compared with the present day. They have estimated the impact of these and adjusted the historical averages accordingly. This results in estimates for a forward-looking ERP with numbers for the UK in the range 2 to 4 per cent⁵².
- 7.39 The work in the Millennium Book II is paralleled by a recent analysis by Adrian FitzGerald. He corrects the historical average for unexpected dividend growth, unexpected equity re-rating and unexpected gilt returns. The result is a method for estimating the ERP with which, the author states, it would be difficult to arrive at a risk premium expectation above 3 per cent, given the present environment.
- 7.40 All together, past trends, recent surveys and modelling, including developments subsequent to the Competition Commission's conclusions in August 2000, suggest an ERP of around 3.5 per cent.

Beta values

- 7.41 An indication of the specific riskiness of a company relative to the market is given by its beta coefficient. This aims to predict the extent to which a company's share price would tend to change in response to changes in the level of the overall market, and seeks to measure a company's non-diversifiable risk relative to equities in general. Beta estimates are usually based on historical data; for example the London Business School (LBS) publishes beta values estimated on monthly observations over a five-year period. It is debatable whether such estimates accurately reflect the market's forward-looking

⁵⁰ "Millennium Book II, 101 Years of Investment Returns", Elroy Dimson, Paul Marsh and Mike Staunton, ABR-AMRO and London Business School, 2001

⁵¹ "Still puzzling over the equity risk premium", Adrian FitzGerald, Professional Investor, February 2001

⁵² A point estimate of 2.4 per cent was calculated within the Millennium Book II. A range of 2-3 per cent or 3-4 per cent can be derived by using arithmetic or geometric means respectively.

expectations of risk, but these estimates have informed previous price control reviews.

7.42 A difficulty in using observed betas to estimate a beta for Transco's regulated business is that Transco is not a separately quoted company. It may be possible to use estimates of the Lattice Group beta as a proxy for Transco's in the future, but this stock currently has a relatively short trading history following its demerger from the BG Group. Estimates will not be available from the LBS for at least a year and other estimates based on its present trading history may be unreliable. In the light of these factors there are three approaches to estimating Transco's equity beta:

- ◆ beta decomposition - obtain an estimate for Transco's beta by eliminating the effects of the other businesses within the former BG Group plc;
- ◆ comparator companies - estimate the betas for comparator companies and use these as a basis for estimating Transco's beta; and
- ◆ regulatory precedents.

Beta decomposition

7.43 At the time of the Transco demerger, the BG Group consisted mainly of Transco, BG International and BG Storage. BG International comprised three business groups: Exploration and Production (E&P), Gas Transmission and Distribution (T&D) and Power Generation. Assuming that the Power Generation and BG Storage were insignificant in size and that the Gas Transmission and Distribution business had the same beta as Transco, then BG Group's beta before the demerger can be expressed as:

$$\beta_{BG} = (\omega_{Transco} + \omega_{T\&D})\beta_{Transco} + \omega_{E\&P}\beta_{E\&P} \quad \text{Equation (7.1)}$$

where, for each of BG's businesses, β_i and ω_i would be the beta of business i and the weighting given to this business, respectively.

7.44 In its response to the February document, Transco made several comments on the method of beta decomposition. One comment was that the historical equity beta should be de-g geared using an average market capitalisation over the

previous 5 years, consistent with the 5 years over which the LBS betas are normally calculated.

- 7.45 Transco proposed that Ofgem should weight the businesses by profits and turnover, suggesting that E&P represented between 15 and 20 per cent of group activities. The trading values of the business segments at demerger would suggest a higher weighting for E&P assets.
- 7.46 To complete the calculations, proxies for the separate businesses' betas are needed. In order to compare betas between companies, it may be necessary to adjust for differences in gearings. The adjusted beta is called an asset beta and can be calculated from the equity beta by the following formula:

$$\beta^A = \beta^E (1 - g) \quad \text{Equation (7.2)}$$

where, β^A is the asset beta, β^E the equity beta and g the level of gearing.

- 7.47 The last equity beta for BG Group published by London Business School (LBS) before the demerger was 0.77. BG Group's 5-year average gearing up to the point of demerger was 33 per cent. This gives an estimated asset beta for the BG Group of about 0.5
- 7.48 An estimate of BG's E&P business' beta is needed to complete the calculation set out in equation 7.1. This can be obtained by using an average beta of comparable companies. LBS's Risk Measurement Service gives an E&P sector equity beta of about 1. Using each company's average gearing for the last 5 years, this translates to an asset beta of about 0.7.
- 7.49 Using 0.7 as an estimate of BG Group's E&P business' asset beta and 0.5 as BG Group's asset beta, equation 7.1 gives an estimate for Transco's asset beta of between 0.45 and 0.5 depending on whether turnover or profits are used as weights.

Comparator companies

- 7.50 Both Ofgem and Transco have suggested that relevant comparators for Transco include Railtrack, the water and sewerage businesses, the PESs, and National Grid Group plc. Table 7.2 lists the equity and asset betas for selected network

utilities, based on information from the LBS and their latest company annual reports.

Table 7.2: Asset betas for selected comparators of Transco*

	Market cap. [†]	Equity beta ^{††}	Gearing [‡]	Asset beta
Anglian	1922	0.54	37%	0.34
National Grid Group	4528	0.66	24%	0.50
Scottish Power	6646	0.63	28%	0.46
Thames Water	2988	0.36	23%	0.28
United Utilities	3803	0.60	34%	0.40
Kelda Group	1578	0.58	16%	0.48
Pennon Group	964	0.51	25%	0.38
Railtrack	4557	0.68	22%	0.53
Scottish & Southern	4057	0.66	13%	0.57
Severn Trent	2589	0.34	28%	0.24
Viridian	770	0.55	6%	0.52
Weighted average^{††}		0.58		0.44

* The year-end of the latest available annual report has been used as the data point for all companies.

[†] 5-year average £ million.

^{††} From LBS Risk Measurement Service.

[‡] Net debt (from annual reports)/ (net debt + market capitalisation), 5-year average.

^{††} By market capitalisation

7.51 The average asset beta of the companies that are thought to be the closest comparators to Transco is 0.44, within a range of 0.24 to 0.57. These betas are for the quoted holding companies which in most cases will include unregulated business, which might be expected to be higher risk than Transco. While Ofgem has compared Transco's risk to that of NGC, Transco has stated that its business is more closely comparable to that of a large water company such as Severn Trent, although Transco also believes that some of the asset betas for water and sewerage companies are unrealistically low. This view was not supported by the Competition Commission in its reports on water companies in September 2000.

Regulatory precedent

7.52 During the NGC price control review, Ofgem estimated an asset beta for NGC of between 0.3 and 0.4 and an equity beta of 1.0. OFWAT in its determination of the cost of capital for the water and sewerage companies in December 1999 used an equity beta of 0.9-1.0. ORR used a beta of 1.0 to 1.1 for Railtrack. Ofgem used an asset beta of 0.5, giving an equity beta of 1.0, for the PES distribution price control reviews. In its September 2000 report on two water-

only companies the Competition Commission assumed asset betas for these businesses of 0.5, implying an equity beta of 1.0 with a gearing of 50 per cent.

Discussion and conclusion

- 7.53 One respondent to the February paper suggested using 'Barra' betas instead of the more traditional beta measures calculated by the LBS, and arrived at an estimated 0.7 for Transco's asset beta. Another respondent suggested an appropriate range for the asset beta would be between 0.3 and 0.4.
- 7.54 It is not clear that any of the techniques for calculating beta values discussed above will produce an accurate estimate of the market's future expectations of relative risk. The evidence that is available suggests an asset beta for Transco in the range 0.4 to 0.5. Using a gearing for Transco of 60 per cent suggests an equity beta of around 1 to 1¼. There is however only limited empirical evidence supporting a mechanistic link between higher levels of gearing and higher equity betas. There are indications that the simple relationship given by equation (7.2) above is inappropriate. Considering alternative approaches to calculating asset betas such as those used in a price control review in Victoria, Australia⁵³ or that suggested by I. Alexander et al. (2000)⁵⁴, may imply lower estimates. In light of these, it may be more appropriate to take a conservative view of the equity beta for Transco. The calculations at the end of this chapter use an equity beta of 1, consistent with the average risk for the market as a whole. Given the traditional perceptions of utility businesses as low risk, this appears to be relatively generous.

Dividend growth model (DGM)

- 7.55 The Dividend Growth Model (DGM) estimates the post-tax cost of equity as the current dividend yield plus an assumption for annual dividend growth. While a previous review by Ofgem⁵⁵ indicated that CAPM is more widely used in the UK financial service industry, the DGM has been used in UK price control reviews as a supporting check on the results provided by CAPM.

⁵³ "2001 Electricity Distribution Price Review – Issues Paper", pp140 – 142, Office of the Regulator-General, Victoria, February 2000

⁵⁴ "A few things transport regulators should know about risk and the cost of capital", I. Alexander, A. Estache and A. Oliveri, Utilities Policy 9 (2000)

⁵⁵ "The transmission price control review of the National Grid Company from 2001: transmission asset owner. Final proposals, September 2000."

- 7.56 In 2000, Lattice paid dividends of 7p per share. Based on Lattice's average share price since flotation, the dividend yield was 5.0 per cent. Based on statements in the Lattice Group 'Introduction to the Official List', a document published in relation to its flotation, and using analysts' predictions, an appropriate range of estimates for expected real dividend growth is between 0 and 2 per cent. This results in a predicted cost of equity of between 5.0 to 7.0 per cent, compared to the 6.25 per cent derived for Transco using CAPM.
- 7.57 The DGM can also be used to check the validity of the estimates for the risk-free rate and equity risk premium used in CAPM. Over the last three and last five years, the dividend yield on the FTSE-100 share index has averaged around 2.6 and 3.1 per cent respectively. Assuming dividend growth in line with the overall anticipated growth for the economy, as forecast by the Bank of England, gives a range of 2.25 to 2.75 per cent. Combining these estimates suggests a range for the overall market cost of equity between 4.9 and 5.9 per cent. In comparison, using the estimates for the risk-free rate, the market beta of 1 and ERP gives an estimated cost of equity of 6.25 per cent. The above application of DGM suggests that the results arrived at using CAPM are reasonably generous.

Adjusting for taxation

- 7.58 As well as paying dividends and interest, companies must also finance corporation tax payments. As interest payments are allowable against corporation tax, the cost of debt finance does not need to be adjusted upwards to take account of corporation tax.
- 7.59 In its report on Cellnet and Vodafone, the MMC adjusted the cost of equity finance upward by a tax wedge to take account of corporation tax payments. In calculating the tax wedge, the MMC assumed that the companies would pay the mainstream rate of corporation tax of 30 per cent, giving a multiplier of $1/(1-0.3)$ or 1.429. Ofgem used this approach in its final proposals for the electricity distribution and transmission price control reviews (published in December 1999 and September 2000 respectively). In its September 2000 reports on two water only companies, the Competition Commission estimated an effective tax rate of 20 per cent based on its financial modelling. Ofgem is currently minded to use the mainstream rate, rather than the actual rate. However, it is for

consideration which approach produces an appropriate amount of cash to meet the corporation tax liabilities associated with Transco's business.

Weighted Average Cost of Capital

- 7.60 Overall, respondents' views suggested a cost of capital in the range 5 to 7 per cent, although several indicated a figure below 6 per cent might be too low. Some respondents commented on the uncertainty created by specific factors such as whether regulatory asset values should be focused or unfocused. This uncertainty is dealt with in the following section.
- 7.61 Table 7.3 sets out estimates of the weighted average cost of capital, based on the above information.

Table 7.3: Transco's Weighted Average Cost of Capital

Component	Low %	High %
<i>Cost of debt</i>		
Risk-free rate	2.75	2.75
Debt risk premium	1.50	1.90
Cost of debt	4.25	4.65
<i>Cost of equity</i>		
Equity risk premium	3.5	3.5
Gearing	62.5	62.5
Equity Beta (value)	1.0	1.0
Post tax cost of equity	6.25	6.25
Taxation adjustment (multiplier)	1.43	1.43
Pre-tax cost of equity	8.9	8.9
<i>WACC</i>		
Pre-tax WACC	6.0	6.25

Regulatory asset base

- 7.62 In order to secure continuing access to funds on acceptable terms, an enterprise needs to provide a return on the capital invested in its business. In the last Transco price control review the capital invested in Transco's business, or its regulatory value (RV), was considered in two parts, an initial valuation and the value of subsequent investments.

Initial valuation of assets

- 7.63 In its 1993 report the MMC distinguished between assets in existence on 31 December 1991 and investments made after that time. The same approach was used by Ofgas in its initial and final proposals in 1996 and by the MMC in its 1997 report. The May, November and February documents described issues surrounding the valuation of Transco's assets at 31 December 1991, and two different approaches that can be used to arrive at a value for these assets.
- 7.64 As British Gas's market value in 1991 was significantly less than its current cost book value, a RV equal to its book value would have resulted in windfall gains to shareholders. Accordingly, the MMC calculated a regulatory value for British Gas plc in December 1991 by reducing its current cost book value by the application of the market-to-asset ratio (MAR) of 60 per cent.
- 7.65 In December 1991, British Gas consisted of some assets associated with its unregulated activities, such as its exploration and production (E&P) business, as well as its regulated activities (its gas transportation, storage and supply businesses). In order to determine the value of the assets for the regulated activities, it was necessary to estimate a value for the unregulated assets, which could be subtracted from the MAR-adjusted value of British Gas. Ofgas and the MMC identified two possible valuations during the 1997 review: the unregulated assets could be valued at a market value (the 'focused' approach), or they could be valued at their MAR-adjusted current cost book value (the 'unfocused' approach).
- 7.66 The February document set out calculations for the focused and unfocused approaches considered by the MMC in 1997. The difference between the two methods was approximately £2 billion in 2000 prices. Based on a cost of capital of 6 to 6.25 per cent and assuming no change to the level of regulatory depreciation, this implies a difference in Transco's revenues of approximately £120 million to £125 million per year, or a difference in transportation charges for each customer of approximately £6 per year on average.

7.67 In deciding on a focused or unfocused approach, the February document set out a number of factors that would need to be considered including:

- ◆ ensuring that the regulatory value used accurately reflects shareholders' and debt providers' accumulated investment in the different British Gas businesses in 1991;
- ◆ consistency with regulatory reviews of other UK price-controlled businesses, where it can be argued that in all cases other than Transco a focused approach to the valuation of regulatory assets has been used;
- ◆ the views of both customers and investors; and
- ◆ the views of the MMC in 1993 and 1997 which on both occasions used an unfocused approach to value Transco's assets.

Market Evidence and 1991 Asset Values

7.68 To assist with the assessment of the first issue identified in paragraph 7.67, Ofgem commissioned Ernst and Young to consider the information available to investors as at December 1991 (the reference date used by the MMC in 1993). This would inform the debate on:

- ◆ whether shareholders distinguished between the regulated gas business and other businesses (mainly E&P) of British Gas;
- ◆ whether shareholders distinguished between the individual regulated activities of supply/trading, property, storage, transportation, metering; and
- ◆ whether there is evidence that investors considered the economic value of the E&P assets in pricing British Gas shares at that time.

7.69 Additionally, Ernst and Young were asked to review other, specific evidence that has come to light since December 1991 to establish the extent to which it should affect the considerations set out in paragraph 7.68. This included the Arthur Andersen report commissioned by the Gas Forum in April 1996, the 1997 Ofgas submission to the MMC and financial analysis and analysts notes in connection with the Centrica demerger.

- 7.70 Based on their review, Ernst and Young⁵⁶ were of the opinion that the majority of investor analysis of British Gas concentrated on dividend yield rather than a detailed evaluation of separate parts of the business. Where there was evidence of more detailed work, the analysis does not translate in a straightforward way to values for the separate parts of British Gas.
- 7.71 Assessment of this more detailed work by Ernst and Young suggested that while investors were cognisant of the different businesses within British Gas and may have placed significant worth on some of them, such as the E&P assets, investors would have found it difficult, if not impossible, to accurately value the separate businesses due to a lack of information. In particular, for the E&P assets, the report recognises that there is some evidence that analysts valued these assets at around book or replacement value, but that there was no consistent view of the effect of this on market values. Investors may have applied a discount against any underlying valuation of the E&P assets to arrive at a price for the shares, but the extent of this discount cannot be accurately assessed. There is some evidence that it may have been less than that of the 40 per cent implied by the overall MAR for British Gas.
- 7.72 Any attempt at a reassessment of the initial RV, using estimates from the information available to investors in 1991, would require the exercise of judgement and could be considered arbitrary. This is consistent with the description given by the MMC in 1993 of focused asset value calculations for Transco. It can be concluded that the information available to the market in 1991 verifies the view taken by the MMC in 1993 that an unfocused approach to asset valuation is not unreasonable.
- 7.73 Consideration also needs to be given to whether there is any new information that has emerged since 1991 that warrants an adjustment to the unfocused approach adopted by the MMC. This new information might include that emerging from corporate restructuring, share price movements or regulatory decisions.

⁵⁶ The full report will be available on the Ofgem web site at www.ofgem.gov.uk in July 2001.

- 7.74 Centrica was demerged in February 1997 and it has been suggested that this could be used to assess the value of the British Gas supply business in 1991. Ernst and Young have expressed the view that this would not be appropriate as market conditions, investor perceptions and other factors changed considerably between 1991 and 1997. Similar arguments hold for information at the time of the Lattice flotation in October 2000. Furthermore, a focused calculation using information from the Centrica demerger was submitted by Ofgas to the MMC in 1997, but was rejected.
- 7.75 A further source of information that might be used to help consider whether the RV accurately reflects shareholder and debt providers' investment within BG plc is that contained within the BG share price and overall returns to shareholders (in terms of dividends and capital growth). The question is whether these returns indicate an erroneous valuation for the RV.
- 7.76 At the time of the 1997 investigation by the MMC, both Ofgas and BG plc submitted comparisons of the returns to BG shareholders against returns to market indices, namely the FTSE All-Share and FTSE-100 Indices (with dividends reinvested). BG also submitted a log of the key events during the period since August 1993 and their effect on the share price.
- 7.77 As can be seen from table 7.4, there are three periods in which BG has consistently outperformed the FTSE All-Share index. The first one is from December 1986 to December 1993 (about 4 per cent per year on average). The Government then announced its decision on the 1993 MMC report and BG shares entered a period of under-performance against the FTSE All-Share index, until about October 1996. This was followed by a two-year period of rapid growth (66 per cent per year) following take-over speculation in December 1996 and the Centrica demerger in February 1997. Subsequent to this there was another period of poor performance until March 2000. In this period capital flowed to the IT and Telecom sectors. In addition, oil prices were low (down to \$11 per barrel), probably having a downward effect on the value of BG's E&P assets.
- 7.78 Despite the low oil prices in the first half of 1999, BG plc presented good results for the year as a whole in February 2000. This was followed by an

announcement of BG plc's plans for the restructuring of Transco and Transco Holdings in March 2000, resulting in a sustained rise in its share price of about 20 per cent within the space of several weeks.

Table 7.4: Over/ under-performance of BG Group's share price versus FTSE All-Share:

From	To	BG Group [†] End of per.	FTSE A-S [†] End of per.	Over/ under-performance	
				In period	Annualized
Dec-86	Dec-93	256	202	35%	4%
Dec-93	Oct-96	140	245	- 66%	- 32%
Oct-96	Oct-98	415	290	177%	66%
Oct-98	Mar-00	311	365	- 51%	- 42%
Mar-00	Apr-01	440	344	48%	34%

[†] Index: 1 Dec 1986 = 100. Monthly averages.

7.79 It is not necessarily straightforward to interpret movements in the share prices. Nevertheless, the evidence does not appear to justify a change in the approach to asset valuation.

Regulatory Consistency

7.80 There is some difference of opinion between Ofgem, Transco and other respondents as to the extent to which a focused approach to assets has been applied by regulators in the past, but it is clear that the focused method has been applied in the majority of cases.

7.81 In particular, the MMC's report on Northern Ireland Electricity plc⁵⁷ (NIE) proposed a focused approach based on estimated market values for its unregulated businesses. Similarly, when calculating the RV for NGC's price control in 1996, OFFER had to deduct an estimate for the value of Energis, NGC's telecommunications subsidiary, from the total value assigned to NGC. OFFER valued Energis based on market information rather than accounting information, i.e. using a focused approach.

Views of interested parties, including customers and investors

7.82 Transco has said that the approach adopted by the MMC for BG plc in 1993 was consistent with other regulatory reviews and that it was only the presentation by

⁵⁷ MMC "Northern Ireland Electricity plc" A report on a reference under Article 15 of the Electricity (Northern Ireland) Order 1992, HMSO, March 1997.

the MMC that differed. Transco also remarked that the MMC found no inconsistency in proposing a focused approach for NIE in 1997.

- 7.83 Transco has also said that there is no precedent for any other purely focused approach, in which the entire market/book discount has been focused solely on the regulated assets, saying that it is only in Transco's case that any reassessment would lead to a significant reduction in regulatory value. Transco's view is that the initial RV should not be amended as this would undermine regulatory consistency and increase the cost of capital.
- 7.84 The majority of other respondents (including views expressed by network owners, brokers, shippers and suppliers) also raised this issue of regulatory consistency, and the potential impact on other regulated utilities if the RV was adjusted.
- 7.85 Conversely, some respondents favoured the use of a focused RV, with one saying this would be more consistent with customers' interests. Another stated that both focused and unfocused approaches are equally arbitrary in their valuation of the initial RV and suggested that the MAR may lie in the range 81 to 92 per cent rather than the 60 per cent previously assumed.
- 7.86 Analysts were concerned about changing the present unfocused method for valuing Transco's initial RV, saying that continuity in this value is necessary to avoid any increase in Transco's risk profile, and consequently its cost of capital. These concerns were heightened by Transco's need to finance a substantial new investment programme. Similarly, discussions with the main credit rating agencies have indicated that a change in the approach to asset valuation would be an important factor for them in considering any downgrading of Transco's credit rating.

Views of the MMC and Conclusions

- 7.87 There may be some scope to place different interpretations on the approaches adopted by regulators to asset valuation, although it seems clear that regulators have typically adopted approaches that have more in common with a focused rather than an unfocused approach. However, in the case of Transco the MMC has consistently applied an unfocused approach to asset valuation.

- 7.88 A focused approach to the RV may appear to have advantages for consumers as, other things being equal, it would reduce prices. However, it is also important to consider the views of the MMC. As noted above, in its 1993 and 1997 reports, the MMC used an unfocused approach to asset valuation. A change to the value of the initial RV would create uncertainty and may increase the cost of capital.
- 7.89 The report by Ernst and Young, and a review of the other information that is available, have not revealed any substantive new information that suggests a focused approach to asset valuation would now be more appropriate than when the MMC considered these issues in 1997.
- 7.90 As time progresses, the RV will increasingly reflect the value of new investment undertaken since December 1991. The value of assets from the pre-December 1991 period will diminish with the annual deduction of depreciation. It is important that investors retain confidence in the regulatory framework if this new investment is to be financed efficiently.
- 7.91 In light of these considerations, the draft proposals retain an unfocused valuation for Transco's initial RV, consistent with the MMC's 1997 report. This approach will be retained in future Transco price control reviews. This will substantially reduce the uncertainty facing Transco, and is consistent with the cost of capital set out earlier in this chapter.

Valuation of subsequent investments

- 7.92 As well as providing a return on the unamortised balance of Transco's assets at December 1991, the present Transco price control was designed to allow for the financing of network capital expenditure between December 1991 and the end of the present price control in 2002. The next price control will also allow for the financing of Transco's efficiently incurred capital expenditure between December 1991 and the present, and an efficient level of projected capital expenditure to the end of the next price control period in 2007. There is no MAR adjustment to the investment made since 1991 so Transco is able to earn a full return on allowed capital expenditure.

7.93 In rolling forward the RV it is necessary to establish the level of capital expenditure undertaken since the last review, assess whether this has been efficient and make projections of capital expenditure for the next period. These matters are dealt with in chapter 6. The capital expenditure incurred also needs to be updated to take account of inflation in order to reflect the real, rather than the nominal, value of the additions. This approach is consistent with that adopted during the price control reviews for the PES distribution businesses and NGC.

Asset lives and depreciation

7.94 The roll forward of the RV also needs to be adjusted for depreciation both on assets existing at the end of this price control period (pre-April 2002), and on the projected capital expenditure to be undertaken between April 2002 and March 2007.

7.95 In its 1997 report on BG plc the MMC adopted a range of asset categories each with different average asset lives, as provided to them by BG plc (for example, 48 years for NTS pipelines, 23 years for above ground installations, 35 years for compressors). The asset lives were then used to project estimates of the depreciation charge for both existing assets and new investment during the current price control period. The MMC also adjusted the depreciation on pre-1991 assets by using the 60 per cent MAR. The combination of these factors makes the overall approach relatively complex, difficult to monitor and it relies on Transco providing detailed information on additions and disposals across a relatively large range of asset categories.

7.96 Ofgem will continue to use the MMC's method in rolling assets forward to 2002. However, for regulatory transparency, it may be beneficial to simplify the number of asset life categories used in calculating the depreciation charge post-April 2002. The intention would not be to change to the profile of depreciation but to make the existing calculations more transparent. It will be necessary to discuss these issues further with Transco before formulating any final proposals.

7.97 Transco has provided figures, as set out in table 7.5, for the roll forward of the RV from 1997 to April 2002 on the basis of its actual and projected depreciation. It has said that these numbers are approximately equal to the forecasts provided

by the MMC. Ofgem has reviewed this reconciliation and has asked Transco to provide further information to verify that the proposed depreciation charges are accurate.

Table 7.5: Reconciliation of depreciation⁵⁸

1996 prices		1997 9 mths £ bn	1998 £ bn	1999 £ bn	2000 £ bn	2001 £ bn	2002 3 mths £ bn	Period £ bn
Assets:								
Pre 1.4.97								
Depreciation	Transco	(0.4)	(0.5)	(0.5)	(0.5)	(0.5)	(0.1)	(2.5)
	MMC	(0.4)	(0.6)	(0.5)	(0.5)	(0.5)	(0.1)	(2.6)
	Variance	0.0	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.1)
Closing RV	Transco	10.5	10.0	9.5	9.0	8.5	8.4	8.4
	MMC	10.5	9.9	9.4	8.9	8.4	8.3	8.3
	Variance	0.0	0.1	0.1	0.1	0.1	0.1	0.1
Post 1.4.97								
Net additions	Transco	0.4	0.6	0.5	0.7	1.0	0.2	3.4
	MMC	0.6	0.8	0.7	0.7	0.7	0.2	3.6
	Variance	(0.2)	(0.2)	(0.2)	0.1	0.3	0.0	(0.1)
Depreciation	Transco	0.0	0.0	(0.0)	(0.1)	(0.1)	(0.0)	(0.2)
	MMC	0.0	0.0	(0.0)	(0.1)	(0.1)	(0.0)	(0.2)
	Variance	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
Closing RV	Transco	0.4	1.0	1.5	2.2	3.1	3.3	3.3
	MMC	0.6	1.4	2.0	2.6	3.2	3.4	3.4
	Variance	(0.2)	(0.3)	(0.5)	(0.4)	(0.1)	(0.1)	(0.1)
Total Closing RV	Transco	10.9	11.0	11.0	11.2	11.6	11.7	11.7
	MMC	11.1	11.3	11.4	11.5	11.6	11.7	11.7
	Variance	(0.2)	(0.3)	(0.4)	(0.3)	0.0	0.0	0.0

Numbers may not cast due to rounding.

- 7.98 According to Transco, the pre-1997 variance in the closing RV of £106 million (rounded to £0.1 billion) has arisen largely because the impact on depreciation of the actual level of disposals by Transco has been less than that originally assumed by the MMC.
- 7.99 Post 1997, Transco's reported and projected net additions amount to £139 million (rounded to £0.1 billion above) less than MMC forecasts over the formula period. As a result of this, and due to the difference in expenditure profile between the MMC forecasts and Transco's actual investment, total depreciation is expected to be £26 million (rounded to £0.0 billion above) less by the end of the control period.

⁵⁸ Storage excluded

7.100 Overall, there seem to be reasonable explanations for the reported differences over the formula period between Transco's figures and the MMC's projections. However, this needs to be confirmed once more precise figures are received from Transco. Transco's calculations of depreciation have been used to roll forward the initial RV to 1 April 2002.

Impact of separate controls

7.101 To implement separate controls, it will be necessary to assign Transco's existing RV between the price control blocks: NTS, LDZs, and Metering. Transco has proposed separating the businesses according to the relative book value of the assets, but with a transfer from metering to transportation to reflect the recovery of certain stranded costs. This transfer would not be consistent with the approach adopted by the MMC in 1997 to the unbundling of storage assets. Therefore, an unfocused approach will be used consistent with the method for valuing Transco's RV. On this basis table 7.6 separates the RV between NTS, LDZs and metering.

Table 7.6: Separation of RV into business areas (as at 31 December 2001):

Business	RV (£ million 1996 prices)	RV (£ million 2000 prices)	%
NTS	1,907	2,125	16.4
LDZs	8,347	9,304	72.1
Metering	1,339	1,492	11.5
Total excluding storage	11,592	12,921	100.0

Financial modelling

7.102 Ofgem has developed a financial model of Transco's regulated business, which derives an appropriate level of revenue for Transco, based on Ofgem's projections of the efficient level of costs. This financial modelling will inform judgements on the proposals for revised price controls.

7.103 In order to maintain financial efficiency it is necessary for Transco to have access to finance on acceptable terms. A key test of this will be Transco's ability to retain an investment grade credit rating and this is the focus of the financial modelling. This is consistent with the approach adopted in the 2000 review of

the transmission business of NGC and the 1999 review of electricity distribution businesses.

- 7.104 The main credit rating agencies stress the importance in determining credit ratings of qualitative factors such as overall management strategy and perceptions of the regulatory environment, as well as of quantitative assessments based on modelling. Nevertheless, there is some published guidance on the financial analysis they undertake, both generally and specifically in respect of utilities. The general approach is to examine earnings, cash flow and capital structure in relation to debt service obligations, working capital and capital expenditure requirements. Particular emphasis is placed on levels of debt, cash and cash flow in view of the difficulty of comparing reported earnings and balance sheet data between companies operating under different regulatory regimes and following different accounting conventions. Therefore measures such as the coverage of interest charges by funds from operations (FFO) and the ratio of FFO to total debt are considered more relevant and reliable than earnings coverage or balance sheet gearing.
- 7.105 Measures of financial protection, as revealed by such analysis, are considered in the context of the utility's business profile. A company with a strong business profile may have less financial protection than one with a weaker business profile, yet achieve a similar credit rating (and vice versa). In general, gas and electricity transmission and distribution businesses have strong business profiles, reflecting limited business risk. They are therefore able to sustain lower interest coverage and higher gearing, compared to businesses that operate in a more competitive environment with greater cash flow volatility. Table 7.7 contains information extracted from a matrix produced by Standard and Poor's in June 1999 for US utilities, illustrating the relationship between credit rating and key ratios for a company with a strong business profile.

Table 7.7: Standard and Poor's corporate credit rating criteria assuming a business profile score of 2 (1 = strongest, 10 = weakest)

Ratio	Single A		Triple B	
	From	To	From	To
FFO/total debt	16%	21%	10.5%	16%
FFO/interest coverage	2.5	3.3	1.5	2.5
EBIT/ interest coverage	2.3	2.9	1.3	2.3
Total debt/total capital	51%	56.5%	56.5%	63.5%

See Appendix 9 for definitions of financial terms

7.106 Following discussions with institutions, rating agencies and investors, Ofgem has set out the indicators in Table 7.8, which it is presently using to assess the impact of revised price controls. Ratios for Transco plc (rather than Lattice Group or Transco Holdings) at December 2000 are also shown.

Table 7.8: Ofgem's financial indicators for Transco

Indicator	Minimum levels for Transco	Transco plc actuals (December 2000)*
EBIT interest coverage	Min 1.5x	2.39
EBITDA interest coverage	Min 2.25x	3.72
FFO interest coverage	Min 2.0x	3.49
FFO to total debt	Min 12%	17.6%

* Source: Transco estimates

7.107 The above table sets out minimum levels for key financial indicators consistent with an investment grade credit rating. As noted earlier, it is appropriate to put more weight on the cash rather than earnings based ratios. In addition credit rating agencies increasingly have regard to the percentage of total debt to RV, with a range of 60 to 70 percent being consistent with a solid investment grade. Transco has said that it should be able to retain its existing relatively strong rating of single A in order that it continues to have access to a wide range of debt finance on reasonable terms. There appears to be some force in these arguments and in reaching judgements on final proposals it will necessary to give further consideration to these matters.

Summary of Issues

7.108 Ofgem invites views on any of the issues set out in this chapter, but in particular on

- ◆ the range for the cost of capital;
- ◆ whether the approach to the calculation of regulatory depreciation should be simplified and made transparent;
- ◆ key financial indicators for Transco; and
- ◆ whether Transco should retain a single A credit rating.

8 Price Control Calculations

Introduction

- 8.1 Setting RPI-X price controls requires an estimate of the revenue that would be sufficient to finance an efficient business. This is derived by considering projections of operating costs, allowances for capital expenditure or depreciation and the appropriate level of return for capital already invested in the business.
- 8.2 This chapter explains how Ofgem has derived an initial estimate for Transco's price control revenue over the period 2002/03 to 2006/07, incorporating the analysis set out earlier in this paper. At this stage significant uncertainties remain as to the level and funding of replacement expenditure. These issues are explained in paragraph 8.14. The level of replacement expenditure that will be appropriate in the future and the funding of this expenditure should be resolved over the coming months. It will also be necessary to refine the estimates for the overall level of capital and operating costs. It is possible that this process will result in Transco having to bear higher costs than have been used in these initial calculations. Therefore, the price control revenue set out in this chapter should be considered to be a low case, with the possibility that a higher level of revenue may be appropriate when these proposals are finalised.

Transportation controls

- 8.3 Over time, transportation prices may be considered the sum of:
- ◆ efficient operating expenditures;
 - ◆ an allowance for depreciation on the regulatory asset base; and
 - ◆ a return on the regulatory asset base.

Operating and capital expenditure

- 8.4 The levels of operating and capital expenditure used in the calculations below reflect the conclusions of Chapter 6.

- 8.5 In setting the present price control replacement expenditure was treated as capital expenditure and added to the regulatory asset value. Therefore, rather than being allowed for in the year that it is incurred, it was funded by making an annual allowance for depreciation and allowing a return on the remaining unamortised value. This approach has also been used in the calculations below.

Regulatory Depreciation

- 8.6 The approach to asset values and regulatory depreciation was explained in chapter 7. An unfocused approach to Transco's regulatory asset valuation will be appropriate in the future, consistent with the approach previously adopted by the MMC, giving an opening asset value of about £12.8 billion in April 2002. This leads to a regulatory depreciation charge of between £0.5 billion and £0.6 billion per year. The calculation of regulatory depreciation may need to be further refined in the light of the considerations set out in chapter 7.

Cost of Capital

- 8.7 A weighted average cost of capital of 6 per cent has been used for NTS and LDZ assets, consistent with the 6 to 6¼ per cent range set out in Chapter 7. A 6¾ per cent cost of capital has been used for metering assets. This gives an overall average of about 6.1 per cent.

Allocating P₀ and X

- 8.8 It is necessary to decide how to sculpt the price control revenue over the period, thus allowing projections of revenue for each year of the price control. The revenue reduction in the first year of the next price control period is referred to as the P₀ reduction. The subsequent annual reduction in revenue is referred to as X.
- 8.9 Transco has expressed a preference for a revenue profile that reflects the scope for further efficiencies in costs over the period. Given that allowances for operating costs make up less than half of Transco's price control revenue this suggests an X value of between 1 and 2 per cent. Higher levels of X risk giving a misleading picture of the scope for sustainable price cuts, as well as creating a greater risk of unsustainably low prices at the end of a review period. Ofgem has assumed an X of 2 per cent for the next price control period, consistent with

Transco's present price control. Therefore the change to the overall level of price control revenue will be made by adjusting to PO.

Draft proposals

8.10 Taking into account the considerations described above, the initial calculations of Transco's price control revenue suggest a maximum PO reduction of 14 per cent in 2002/03 followed by further real reductions in revenue of 2 per cent each year over the period 2003/04 to 2006/07. Nevertheless, as explained below significant uncertainties remain to be resolved and in formulating final proposals it may be necessary to allow for a greater level of costs. This would lead to smaller price reductions for customers.

8.11 The following table sets out the calculation of Transco's price control revenue. The present value of the allowances for operating costs, depreciation and returns over the five year period of the new control are matched against the present value of a projection of price control revenue over the five year period. Given an X of 2 per cent this gives an initial reduction in revenue of 14 per cent. These are overall reductions in revenue rather than reductions in average price levels, which will be affected by factors demand growth.

Table 8.1: Transco's price controlled revenues (PO = 14 per cent, X=2)

£ billion	2002/3	2003/4	2004/5	2005/6	2006/7	Total
Opening asset values	12.8	13.0	13.1	13.1	13.1	
Depreciation	(0.6)	(0.5)	(0.5)	(0.5)	(0.5)	
Capital expenditure	0.8	0.6	0.5	0.5	0.5	
Closing values	13.0	13.1	13.1	13.1	13.1	
Operating costs	1.15	1.10	1.06	1.07	1.09	
Depreciation	0.60	0.55	0.54	0.53	0.51	
Return	0.79	0.79	0.80	0.80	0.80	
Total	2.53	2.43	2.40	2.40	2.40	
PV of totals	2.46	2.23	2.07	1.95	1.84	10.54
Price control revenue*	2.53	2.48	2.43	2.38	2.33	
PV of revenue	2.45	2.27	2.09	1.93	1.79	10.54

*In 2001/02 Transco's price control revenue is projected to be £2.95 billion

8.12 The results of the above analysis have been translated into a financial model of Transco and assessed against the financial indicators set out in chapter 7. On the basis of Transco's existing levels of debt the initial results of this modelling

indicate that Transco should be able to retain an investment grade credit rating on its debt, although it may not be able to retain its present relatively strong rating. It is for consideration whether this would be appropriate.

Remaining Uncertainties

- 8.13 A continuing uncertainty is the outcome of the review by HSE of Transco's replacement policy and the associated level of replacement expenditure. As set out in chapter 6, there are three replacement scenarios as follows:
- (a) continuation of the current policy with a workload for mains replacement as set out in Transco BPO;
 - (b) replacement of cast iron mains within 25 years; and
 - (c) replacement of cast iron mains within 35 years.
- 8.14 Transco estimates that a 25 year replacement programme would increase costs by around £0.4 billion per year over its BPO base case. This 25 year programme is the most extreme of the various scenarios that Transco has presented. If this was treated as capital expenditure and added to the regulatory asset base then this would put a significant strain on key financial ratios and perhaps jeopardise the ability of Transco to retain the investment grade credit status of its debt. In these circumstances it would be necessary to consider alternative funding arrangements for this expenditure, such as treating either all or a proportion of it as operating expenditure and so making a full revenue allowance in the year that it is incurred. If all this expenditure was allowed for in the year it was incurred then this would have a very significant effect on the calculations of Transco's price control revenue. Reducing capital expenditure by around £0.3 billion per year (the present Ofgem projection of replacement expenditure) and increasing the allowances for operating costs by £0.7 billion a year (the £0.3 billion plus the £0.4 billion referred to above) would increase the requirements for regulated revenue by about £0.65 billion, leading to an overall increase in Transco's revenue of 5 to 10 per cent, rather than a reduction. In general this would strengthen the financial position of Transco.
- 8.15 In making final proposals it will also be necessary to finalise the estimates of other operating and capital expenditure within the framework set out in chapter

6. It will also be necessary to make a judgement on the cost of capital, within the 6 to 6¼ per cent range set out in chapter 7. Nevertheless, this is likely to have a smaller effect on price control revenues and PO values than the possible adjustments for replacement expenditure described above.

8.16 Further calculations are required to separate the total level of price control revenue between the NTS, LDZs, metering and meter reading consistent with the proposals made in chapter 2. The work of the consultants on assessing expenditure has included the allocation and attribution of the different categories of expenditure to each of these price control units. The unfocused approach to asset valuation suggests that the regulatory asset base should be divided between activities on the basis of the net assets existing in 2001/02. Transco has suggested that this may put too high a value on the metering assets. Similar issues were considered by the MMC in 1997 in allocating a value to the storage assets of British Gas. The MMC concluded that an unfocused approach to valuing storage assets would be appropriate. On this basis it is appropriate to apply an unfocused approach to valuing metering assets. The extent that Transco is able to recover this value will depend on, among other things, its success in competing in the developing markets for metering services.

8.17 Initial calculations of NTS, LDZ and metering costs and returns are set out in the tables below. It will be necessary to further refine these calculations before making final proposals.

Table 8.2: NTS Costs and Returns

£ billion	2002/3	2003/4	2004/5	2005/6	2006/7
Opening asset values	2.1	2.2	2.2	2.2	2.2
Depreciation	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)
Capital expenditure	0.2	0.1	0.1	0.1	0.1
Closing values	2.2	2.2	2.2	2.2	2.1
Operating costs	0.18	0.18	0.18	0.19	0.19
Depreciation	0.08	0.08	0.08	0.08	0.08
Return	0.13	0.13	0.13	0.13	0.13
Total	0.39	0.39	0.39	0.39	0.40

Table 8.3: LDZ Costs and Returns

£ billion	2002/3	2003/4	2004/5	2005/6	2006/7
Opening asset values	9.2	9.4	9.5	9.5	9.6
Depreciation	(0.4)	(0.3)	(0.3)	(0.3)	(0.3)
Capital expenditure	0.6	0.4	0.4	0.4	0.4
Closing values	9.4	9.5	9.5	9.6	9.7
Operating costs	0.81	0.77	0.73	0.74	0.75
Depreciation	0.37	0.33	0.32	0.32	0.31
Return	0.56	0.57	0.57	0.57	0.58
Total	1.74	1.66	1.63	1.63	1.64

Table 8.4: Metering and Meter Reading Costs and Returns

£ billion	2002/3	2003/4	2004/5	2005/6	2006/7
Opening asset values	1.5	1.4	1.4	1.3	1.3
Depreciation	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)
Capital expenditure	0.1	0.1	0.1	0.1	0.1
Closing values	1.4	1.4	1.3	1.3	1.2
Operating costs	0.16	0.15	0.14	0.15	0.15
Depreciation	0.15	0.14	0.14	0.13	0.12
Return	0.10	0.10	0.09	0.09	0.08
Total	0.40	0.38	0.37	0.36	0.36

Metering and meter reading controls

8.18 This section describes how Ofgem has derived its draft proposals for the price regulation of Transco's metering activities from April 2002 onwards.

Approach

8.19 As explained in chapter 2, Ofgem is proposing the following maximum tariff caps for Transco's metering activities to apply with effect from April 2002:

- ◆ annual charge for providing and maintaining the assets that constitute a domestic credit meter installation,
- ◆ annual charge for providing and maintaining the assets that constitute a prepayment meter installation;
- ◆ one-off charge for replacing a domestic credit meter with a prepayment meter; and

- ◆ meter reading at DM supply points.

- 8.20 Transco's other metering charges will be covered by a non-discrimination condition. This would oblige Transco to ensure that its charges for other metering services did not unduly discriminate with reference to the published tariffs.
- 8.21 A tariff cap approach is more appropriate than an average revenue cap in the context of the development of competition in metering and meter reading services. It creates a more transparent regulatory regime for potential market entrants, shippers, suppliers and consumers. It also sets a clearer framework for future deregulation, as competition becomes established and specific price caps can be removed.
- 8.22 It should be noted that the proposed tariff caps represent maximum prices. They do not represent a revenue entitlement. The extent to which Transco can charge up to these levels will depend on competitive pressures – and Transco's reaction to such pressures. The behaviour of Transco in this regard will be subject to the constraints of general competition law.

Prepayment meters

- 8.23 In designing the overall form of control to apply to metering, Ofgem has given specific consideration to reducing costs and promoting choice in prepayment metering. This issue was highlighted in Ofgem's metering strategy document⁵⁹, published in March 2001. Ofgem has identified a series of measures that, in Ofgem's view, will deliver value to prepayment customers. These measures are discussed below.
- 8.24 Prepayment meters serve a number of different functions. Market research indicates that many customers who have prepayment meters value them highly as a means of budgeting for the costs of buying gas and electricity. For customers who are in debt, prepayment meters can be installed as a last resort alternative to disconnection.

⁵⁹ "Ofgem's strategy for metering – A consultation document", Ofgem, March 2001

- 8.25 It is therefore important that suppliers can provide a prepayment meter for a customer if requested, or more importantly, if it is the only means of avoiding disconnection.
- 8.26 Around 1.7 million gas customers use prepayment meters. All of these meters are currently provided and maintained by Transco. Transco is obliged by its licence to provide a meter of a type specified by a shipper. A single type of prepayment meter (the 'Quantum' meter) is used by all shippers. The use of a single meter type mirrors the use of a single payment and settlement system, the Quantum system, by all suppliers.
- 8.27 Transco does not provide the Quantum payment and settlement system. Suppliers contract directly with Siemens (an unlicensed third party) for the provision of payment cards and settlement services, and most suppliers also contract through Siemens for access to a network of payment outlets (operated by Consignia (formerly The Post Office) and Paypoint).
- 8.28 Transco's costs of providing and maintaining Quantum meters are ultimately borne by customers. The costs are significant. Transco procures Quantum meters for around £140 per unit. Each meter requires a new battery every 30 months, at a cost of £5 per battery. In addition, Quantum meters have proven to require significant numbers of unplanned maintenance visits, although the number of such visits has been reduced as ongoing software faults have been resolved.
- 8.29 The extent to which these costs are borne specifically by prepayment customers depends on Transco's charges for prepayment meters – and the extent to which suppliers pass these costs on. To date, Ofgem has maintained that Transco's additional charge for prepayment meters should be limited to £15 a year – a level that, in Ofgem's view, reflects forward-looking efficient costs of gas prepayment metering.
- 8.30 Transco has contended that the £15 cap is below the level implied by its actual costs of providing and maintaining Quantum meters. It has stated that actual costs imply an additional charge in excess of £50 per year.

- 8.31 In Ofgem's view, it is not appropriate for any difference between an efficient level (£15) and Transco's actual costs to be charged out directly to prepayment customers. In effect, this would focus an historical cost inefficiency disproportionately on a specific class of customer. Such an arrangement could be seen as discriminatory – given that shippers and suppliers have not, to date, had effective choice over the prepayment system that they use.
- 8.32 However, while this cap on charges protects the relative interests of prepayment customers in the short term, the longer term interests of customers would not be best served by retaining the Quantum system where there are cheaper, more reliable prepayment systems available. Ofgem has therefore reviewed the ways of facilitating change in the context of this price control review.
- 8.33 Ofgem has identified three options. In developing and assessing these options Ofgem has considered the following factors. First, the need to ensure that prepayment meters continue to be available to customers and suppliers – at reasonable cost. Second, the opportunities for new providers to enter the market. Third, the intended future deregulation of Transco's metering activities.
- 8.34 The options are as follows:
- Option 1:** fund Transco to develop and implement a new prepayment meter system;
- Option 2:** allow Transco to increase, possibly on a phased basis, its charges to shippers for providing and maintaining Quantum meters; and
- Option 3:** remove Transco's last resort obligation to provide Quantum meters.
- 8.35 Ofgem has ruled out Option 1 for three reasons. First, funding Transco to implement a new system would confer significant market power on Transco in prepayment meter services – which may not best serve the interests of customers in the context of a future deregulated metering market. Second, shippers and suppliers have stronger incentives than Transco to procure such a system (or systems) efficiently. Third, given technological developments and the range of different systems available it is not clear that a Transco-led, industry-wide system is the appropriate model.

- 8.36 Having rejected Option 1, Ofgem has considered how best to facilitate the introduction of non-Transco prepayment systems while continuing to protect customers during any transitional period.
- 8.37 Ofgem has identified the following approach as the most appropriate to put forward for consultation in these initial proposals :
- ◆ introduce an explicit tariff cap, to remain in place until April 2003, on Transco's annual charge for providing and maintaining prepayment meters at a level £15 greater than Transco's charge for providing and maintaining a domestic credit meter;
 - ◆ retain a form of price regulation to apply beyond April 2003, either explicitly or through an undertaking from Transco, in respect of the ongoing provision and maintenance of prepayment meters installed before April 2003; and
 - ◆ remove Transco's obligation to provide new Quantum meters with effect from April 2003.
- 8.38 If Transco were to continue to provide new prepayment meters after 2003 in competition with other service providers, then it is envisaged that such a service would not be subject to price regulation.
- 8.39 In Ofgem's view, this approach creates the appropriate incentives upon shippers and suppliers to reduce costs and improve standards of service for prepayment customers, and creates a significant window of opportunity for new providers of prepayment meters to enter the market. Importantly, the retained £15 cap protects customers while alternative arrangements are being put in place by suppliers and prepayment meter services providers.
- 8.40 Ofgem would welcome views on its proposed approach, and in particular in respect of:
- ◆ The ability of shippers and suppliers to put in place by April 2003 alternative arrangements for the efficient procurement and maintenance of prepayment meters; and

- ◆ The form of regulation required beyond April 2003 in respect of the stock of Quantum meters installed before April 2003.

Derivation of tariff caps

- 8.41 The choice of a tariff cap rather than an average revenue cap does not fundamentally alter the nature of the analysis required. It is still necessary to make an assessment of an efficient level of operating costs and capital expenditure attributable to metering and meter reading.
- 8.42 The discussion of operating costs and capital expenditure in Chapter 6 estimates a range for efficient operating costs and capital expenditure attributable to metering. Chapter 7 identified that an appropriate opening regulatory value for metering is £1.4 billion, and that an appropriate cost of capital for Transco's metering business is 75 basis points above the transportation cost of capital.
- 8.43 If Ofgem were to set price caps for all of Transco's metering services, then the tariff caps would be set so as to enable Transco to be able to recover the revenues set out in the table above if it charged up to the level of the caps.
- 8.44 The set of complete tariff caps consistent with these revenues can be derived in a number of different ways. Ofgem has derived these caps using a four-stage process.
- 8.45 First, Transco's current meter costs, labour costs and estimated job times have been used to derive a baseline set of relative costs for its range of metering services. Second, these baseline relative costs have been adjusted to reflect the efficiency savings identified in Chapter 6. Third, tariffs consistent with these efficiency-adjusted relativities and the overall level of metering revenues were derived. These tariffs were then rescaled to account for the constraint on charges in respect of prepayment meters.
- 8.46 This process identifies, on the basis of the information and analysis currently available to Ofgem, the following tariff caps for the period 2002 to 2004:

Tariff	Level of cap
Provide and maintain a domestic meter	£10 - £13
Exchange a domestic credit meter for a prepayment meter	£40 - £50

- 8.47 A similar process has been used to derive efficient meter reading charges from the overall level of meter reading revenues. This implies a tariff cap for DM meter reading of £330 to £370 per datalogger per year.
- 8.48 To the extent that price controls on Transco's metering activities remain in place beyond that date, the level of such tariff caps will be reviewed and possibly revised.
- 8.49 The ranges for the tariff caps expressed above reflect the ongoing work to identify efficiency savings for Transco as a whole, to allocate these savings where applicable to metering and meter reading, and to in turn focus the identified efficiency savings on to specific services, where possible.

9 Transco's GT licence

- 9.1 The Gas Act provides for the separate licensing of Gas Transporters (also referred to as GTs in relation to licences and previously referred to as PGTs), gas shippers and gas suppliers. Transco is the largest Gas Transporter in Great Britain. The relevant regulatory framework is described in Appendix 3.

Gas Transporters' Licence

- 9.2 GT licences will soon be subject to a new set of standard licence conditions. This will significantly change the format of the current Transco licence. Transco will remain subject to standard and special licence conditions. Where licence condition numbers and conditions are referenced in this document they relate to Transco's existing licence. Standard licence conditions apply to all GTs. Transco's GT licence comprises both Standard and Special Conditions. Further details are presented in Appendix 10, including details of Transco's obligations in respect of certain connections.

Proposed changes to Transco licence

- 9.3 The following modifications to Transco's licence are proposed to implement changes consistent with the price control review.

Transportation revenue controls

- 9.4 Special Condition 9C - restriction of prices of transportation services – is to be replaced with separate paragraphs related to separate NTS, LDZs and SO price restrictions and to delete references to metering.
- 9.5 Special Condition 9D - restriction of prices for LNG services – to be replaced with a revised restriction to reflect the commercial role for LNG, but providing charge protection to Transco's transportation activities.
- 9.6 New Special Condition 9E – metering and meter reading – will restrict the prices of certain metering services and implement a non-discrimination condition in relation to other metering services.

- 9.7 Special Condition 17 – emergency services to or on behalf of other public gas transporters – will implement a requirement that charges for emergency services should be cost reflective.
- 9.8 New Special Condition - incentive regime - will initially cover the NTS incentives to invest in response to market signals from April 2002.

During 2003, Ofgem will consult on the introduction of LDZ incentives to be introduced from 2004, including the appropriate licence condition.

Guaranteed and Overall Standards

- 9.9 Ofgem is consulting on the appropriate Guaranteed and Overall standards that should apply to customers supplied by gas transporters including Transco. These standards will be implemented through Statutory Instruments (for Guaranteed standards) and Determinations (for Overall Standards). One of these standards will set out the gas transporter's obligations in relation to the provision of alternative heating and cooking facilities in the event of an interruption of gas supplies to a priority customer. Given the implementation of the Statutory Instrument this particular obligation will be removed from Standard Condition 18.
- 9.10 Standard Condition 19 sets out the requirement for standards of performance and the requirements for reporting on these standards and the provision of compensation payments. The requirement for standards from April 2002 will be set out in the Statutory Instrument, and so this condition will be deleted.

Outputs framework

- 9.11 A new Special Condition will be introduced to secure the collection of outputs information on a consistent and reliable basis and to an appropriate degree of accuracy in order to facilitate the establishment and operation of an incentive scheme.
- 9.12 Transco will be required to establish appropriate systems, processes and procedures to measure and record Specified Information from a certain date and in accordance with Regulatory Instructions and Guidance.

- 9.13 The licence will permit Ofgem to appoint an examiner to examine the systems, processes and procedures and their operation, the specified information and the extent to which each complies with the Regulatory Instructions and Guidance.
- 9.14 The process for amending the Regulatory Instructions and Guidance will be set out in this licence condition.
- 9.15 Draft versions of the Regulatory Instructions and Guidance (June 2001) are published on Ofgem's website www.ofgem.gov.uk . Details of the Specified Information are set out in Chapter 4 and in the draft Regulatory Instructions and Guidance.

Expenditure monitoring

- 9.16 Ofgem's February document includes proposals for the formal introduction of expenditure monitoring procedures.
- 9.17 Expenditure monitoring will provide information related to Transco's performance in meeting the outputs specified in the outputs framework, including:
- ◆ details of actual and forecast expenditures within the price control period as well as longer-term expenditure forecasts, where these impact on current or forecast outputs delivery; and
 - ◆ areas where there are changes in the relationship between capital and operating expenditures.
- 9.18 This monitoring will also facilitate future price control review analyses through the identification of efficiency gains as distinct from gains arising from changes in expenditure drivers. The monitoring would normally be carried out at the end of each year within the price control period. The capital expenditure monitoring framework already in place provides a starting point for this monitoring.
- 9.19 In certain cases expenditure monitoring outside the agreed outputs framework may be required. These would be in cases where Transco is required to meet new defined regulatory objectives (for example a specific task required by the HSE).

- 9.20 The licensee's obligations for expenditure monitoring will be detailed in a new Special Condition. Transco will be required to provide expenditure reports and Ofgem will appoint an auditor to examine the reports provided by Transco.
- 9.21 Ofgem's proposals for Regulatory Accounting Guidelines⁶⁰ will provide a basis for Transco to prepare accounts at the Transco level, with a detailed breakdown for each price controlled component. These will be developed in detail by the end of 2002 and will guide the development of both expenditure and Exit Code monitoring.

Exit code monitoring

- 9.22 As explained in Ofgem's February paper, the introduction of separate price controls will require the development of an Exit Code to govern the interface between the NTS and the LDZs and potentially other NTS customers (for example, power stations and other networks). The interface between the NTS and LDZs may need to cover, for example, the provision of diurnal storage by the NTS for use in LDZ system balancing.

Responses to February 2001 update paper

- 9.23 A number of respondents were concerned about how the different price controlled blocks within Transco would operate together, and that the exit code would not be able to adequately cover this, or that because of its complexity it may not be implemented fully by April 2002.
- 9.24 One respondent was concerned that the overall proposals should retain the integrated operation of NTS and LDZs.

Ofgem's proposals

- 9.25 Ofgem proposes that Transco should report regularly on the transfer prices used for each service (usually at the same time as the regulatory accounts are presented) and to demonstrate that the price of each service is on a cost reflective basis. Ofgem may include an audit requirement in the licence condition.

⁶⁰ "Regulatory accounts, Final proposals", Ofgem, November 2000

- 9.26 It is anticipated that the development of this code could take a substantial period of time. Ofgem is therefore proposing to discuss an interim code with Transco which would apply only to the NTS/LDZ interface from April 2002, with this being developed in consultation with shippers and other interested parties after April 2002. This may need to be implemented through a separate licence condition.
- 9.27 If full separation of price control blocks within Transco is necessary, the Exit Code could provide the framework under which the Transco reports the services and associated charges between price control blocks in a transparent manner. The main charges will be between the NTS and LDZs, but the Exit Code may need to extend to the relationship between other price controlled blocks as well. For example, if additional price control blocks are put in place at a later date (such as individual LDZ controls) then the monitoring proposals would need to be extended to cover the more detailed framework.

SO control

- 9.28 Ofgem is considering moving Transco's incentives related to capacity buy backs, energy balancing, NTS shrinkage, and gas quality (which are currently in the Network Code) into the licence. Whilst these items are within the Network Code, modifications can be raised by any shipper. Moving them into the licence will provide a more appropriate framework for incorporating these cost items within a single SO price control.
- 9.29 Ofgem will require Transco to report separately on the NTS SO costs, with the SO expenditure forming part of the proposed expenditure monitoring and Exit Code arrangements.

Summary of Issues

- 9.30 Ofgem seeks views on
- ◆ whether the proposed licence changes are consistent with the proposals for new price controls;
 - ◆ whether the expenditure framework will provide an adequate level of information on which to assess Transco's performance in delivering outputs

set as part of the price control review and whether Transco has achieved efficiency gains;

- ◆ whether the Exit Code framework will provide appropriate information on the allocation of costs between the NTS and LDZs; and
- ◆ whether the removal of SO incentives from the Network Code into Transco's licence is appropriate.

10 The way forward

10.1 Ofgem is developing Transco's price control proposals in line with the timetable set out in the May 2000 and subsequent consultation documents:

Progress to date	
Initial consultation document published	May 2000
Related seminar	August 2000
Draft Business Plan Questionnaire sent to Transco	September 2000
Final Business Plan Questionnaire sent to Transco	October 2000
Update paper published	November 2000
Related seminar	December 2000
Completed Business Plan Questionnaire received from Transco	December 2000
Initial thoughts consultation document (including summary provided by Transco of information obtained in the Business Plan Questionnaire) published	February 2001
Related seminar	April 2001
Long term signals and incentives for investment in transmission capacity on Transco's National Transmission System: The New Regime published	March 2001
Draft proposals consultation document published	June 2001
Future programme	
Results of consultation on supply/demand scenario for the NTS price control	July 2001
Draft proposals briefing	August 2001
NTS SO price control: Draft proposals	August 2001
Final proposals decision document published	September 2001

NTS SO price control: Final Proposals	November 2001
Implementation of new price controls	From April 2002

- 10.2 Ofgem welcomes responses to the proposals set out in this paper by 3 August 2001 and will hold a briefing on 1 August 2001 to discuss these proposals. Those wishing to attend the briefing are asked to complete and return the invitation form at Annex 1.

Annex 1 Draft proposals briefing

FORMAT

- 1.1 The seminar will last for a half-day. The main sessions will include short presentations by Ofgem and Transco, and periods for open discussion.
- 1.2 The themes to be covered on the day are as follows:
- form and structure of controls;
 - output measures and framework;
 - investment requirements and efficiency; and
 - financial issues and pricing implications.

VENUE

- 1.3 The venue is:

Mechanical Engineering Lecture Theatre
Imperial College
Exhibition Road
London SW7 1LU

DATE AND TIME

- 1.4 The seminar will be held on 1 August 2001, starting at 2.00 pm.

INVITATION

RESPONSE FORM FOR ATTENDANCE AT THE SEMINAR ON THE TRANSCO PRICE CONTROL REVIEW

Draft proposals seminar 1 August 2001, commencing at 2.00 pm

Name and position

Organisation

Address

Telephone No.

e-mail

Do you have any special requirements?

Please send your response by **20 July 2001** to

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