

**Transco's National Transmission System
Review of System Operator incentives
2002-7**

Proposals Document

February 2004

Summary

Since 1 April 2002, Transco has been subject to a set of incentives that have encouraged it to reduce the costs associated with the day-to-day management of its gas transportation system. These costs include the costs of managing entry and exit capacity constraints on its network and the costs of keeping the pressure in its system within certain pre-defined levels. The incentives cover both the costs of procuring services from users of its system (referred to as external costs) and the costs to Transco of maintaining a system operation function (referred to as internal costs). The incentives generally establish a target level of cost and Transco is rewarded (penalised) for better (worse) performance than the target subject to certain limits (referred to as caps and collars).

When setting the incentives for April 2002, there was a degree of uncertainty with respects to a number of these costs about the likely levels that an efficient operator would incur. Ofgem therefore set a number of the parameters (e.g. target costs, caps and collars) of these schemes for two years on the expectation that experience with the incentives would allow a more accurate determination in the future. As a result, Ofgem is now reviewing the operation of the incentives, with a view to setting the parameters that will apply from 1 April 2004.

This document:

- ◆ outlines each of the separate incentive arrangements under review;
- ◆ reviews Transco's performance under each of the schemes from 1 April 2002 to date;
- ◆ presents Ofgem's views and proposals with regard to setting new incentive parameters to apply from 1 April 2004; and
- ◆ seeks views on both Transco's performance and upon the proposed new incentive parameters.

The publication of this document was delayed due to work being carried out on the Distribution Network sales process. Ofgem, in light of this delay and being mindful of both the benefits of a timetable which delivers implementation on 1 April together and the limited nature of the changes proposed, requests that respondents submit their views

by 20 February 2004. Ofgem intends to consult on Section 23 licence modifications later in February 2004.

Table of contents

1. Introduction.....	1
2. Summary Impact Assessment.....	7
3. Entry capacity buy-back incentive.....	14
4. Residual gas balancing incentive.....	28
5. System balancing incentive schemes.....	37
6. Exit capacity incentive	48
7. Internal cost incentive	55
8. Other areas to be reviewed	59
Appendix 1. Transco's review of Transco's performance.....	68

1. Introduction

Purpose of this document

- 1.1. The purpose of this document is to consult with all interested parties on possible changes to elements of Transco's NTS SO incentive scheme for the period 2004/5 to 2006/7. The document first provides an overview of Transco's performance against a number of elements of its National Transmission System (NTS) System Operator (SO) incentive scheme. These include day-to-day operating incentives (entry capacity buy-back incentive, the two system balancing incentives (gas costs and system reserve) and the residual gas balancing incentive), the exit investment incentive and the internal cost incentive. The document then outlines Ofgem's views and proposals for changes to the SO incentive scheme with effect from 1 April 2004.

Background and rationale

- 1.2. In September 2001, Ofgem published its initial consultation document¹ (September initial consultation document), in which we outlined our initial proposals for Transco's NTS SO incentives to take effect from April 2002. Following an extensive consultation process, and taking into account responses to the September initial consultation document, we published our final proposals in a decision document in December 2001² (the December final proposals document). In April 2002, Ofgem initiated a formal consultation under section 23 of the Gas Act (1986) to amend Transco's Gas Transporter (GT) licence to incorporate the SO incentives as part of its price control for the period 1 April 2002 to 31 March 2007. As part of this consultation, Ofgem issued guidance notes that provided clarification of a number of elements of the incentive regime

¹ *Transco's National Transmission System – System Operator incentives 2002-7, Initial proposals*, Ofgem, September 2001.

² *Transco's National Transmission System System Operator incentives 2002-7, Final proposals*, Ofgem, December 2001. This document contains a full description of these incentive arrangements.

together with an explanation of how the incentive would be delivered in terms of revenue and cost flows³.

- 1.3. Following the completion of a further consultation under section 23 in August 2002, amendments to Transco's GT licence to incorporate the revised NTS SO incentive schemes were implemented on 27 September 2002 with effect from 1 April 2002.
- 1.4. The incentive schemes had two components. The first component was introduced to improve the incentives for timely investment in the NTS by Transco, in response to its customers' needs. The second component was introduced to improve the incentives on Transco to carry out economically and efficiently its role of operating the NTS. The form of the incentives which focus on day-to-day operation of the system generally involve setting Transco a target for undertaking certain system operation functions (e.g. managing capacity constraints). Transco is then rewarded (penalised) for performing better (worse) than the target, subject to certain limits and subject to factors that share the benefits (costs) with users of the system. In the price control formula year 2002/3, Transco's net reward from its NTS SO incentive scheme was £14.8m out of a potential £47.5 million (excluding the entry capacity investment incentive).
- 1.5. A number of the incentives included within Ofgem's September 2002 licence modifications⁴ had parameters that were set for a shorter duration than five years. This was due to uncertainties associated with likely future performance and was, therefore, intended to allow Ofgem to review the parameters after there had been some experience with these incentives. The following elements of the incentive scheme were set for two years from 1 April 2002:
 - ◆ all the parameters (targets, caps and collars and sharing factors) for the entry capacity buy-back incentive;
 - ◆ all the parameters for the residual gas balancing incentive;

³ *Transco price control and NTS SO incentives 2002-7, Explanatory notes to accompany the section 23 notice of proposed modifications to Transco's gas transporter licence, Ofgem, April 2002.*

⁴ *Transco Price Control and NTS SO incentives 2002-7, Licence modifications, Ofgem, September 2002.*

- ◆ initial gas cost parameters under the system balancing scheme (although system balancing volume and the formula for determining the future gas reference prices for such gas were set for the five year period);
- ◆ system reserve parameters (targets, sharing factors and caps and collars);
- ◆ transitional arrangements for the exit capacity incentive scheme pending the introduction of universal firm NTS exit capacity rights; and
- ◆ sharing factors for the NTS SO internal cost incentive scheme.

1.6. On 13 August 2003, Ofgem wrote to the industry to outline our proposals for the scope of the two year review of Transco's NTS SO incentives. Ofgem proposed that, for the components identified above, incentive parameters would be set for the period from 1 April 2004 to 31 March 2007 (i.e. for three price control formula years). Ofgem proposed a number of areas for further consideration in the review:

- ◆ whether the cost of locational balancing actions should be included within the entry capacity buy back target;
- ◆ whether the of the 20% hold back of entry capacity from long-term allocations which is reserved for release in the shorter-term auctions should be retained;
- ◆ the appropriateness of defining gas quality services and of establishing incentives for the efficient provision of these services from 1 April 2004; and
- ◆ the requirement, as set out in Special Condition 17 of Transco's Gas Transporter Licence, for Transco to produce Operational Guidelines given the requirement for Transco to produce a System Management Principles Statement.

1.7. This document provides further clarification to the questions outlined in that letter and poses additional questions within the context of Transco's performance to date against its NTS SO incentives.

The present review in context

NGT's proposed sale of gas distribution network businesses (DNs)

- 1.8. In January 2003, National Grid Transco (NGT) approached Ofgem to indicate that it was considering the feasibility of selling one or more gas distribution network (DN) businesses. Following discussions with NGT, Ofgem published a consultation document⁵ in July 2003 which outlined NGT's proposals and set out the regulatory issues associated with the proposals. The document considered, amongst other things, the issues arising from the sale for the exit and interruptions regime and the gas balancing regime, and outlined a number of options to address these issues.
- 1.9. In December 2003 Ofgem published a next steps consultation document⁶. This document set out the next steps to be taken by Ofgem in its consideration of NGT's proposal with respect to the possible sale of one or more gas distribution networks (DNs). The document outlined the views we have received from respondents to the July 2003 document and set out Ofgem's present position on the proposed sales in the light of these responses.
- 1.10. The document outlined further work that had been undertaken by Ofgem to develop a Regulatory Impact Assessment (RIA) of the proposals. The document also set out a way forward for further work to be undertaken to develop the commercial and regulatory framework that would be required to support any potential sale.

NGT electricity SO incentives review

- 1.11. Ofgem is in the process of reviewing NGC's electricity SO incentive arrangements to apply from April 2004. Ofgem consulted on its initial thoughts in December 2003, the consultation period ended on 5 January. Ofgem expects to publish a proposals document in February 2004.

⁵ *National Grid Transco – Potential sale of network distribution businesses, A consultation document*, Ofgem, July 2003.

⁶ *National Grid Transco – Potential sale of network distribution businesses, Next steps*, Ofgem, December 2003

Outline of this document

- 1.12. This document describes Transco's NTS SO incentive arrangements in more detail, outlines experience with the incentives to date and raises issues for consultation.
- 1.13. Chapter 2 provides a summary impact assessment of the proposed changes to Transco's NTS SO incentive scheme.
- 1.14. Chapters 3 to 7 cover (respectively) Transco's performance under the incentive schemes for NTS entry capacity buy back, residual gas balancing, system balancing, NTS exit capacity investment and internal costs. In addition, these chapters outline Ofgem's proposals for changes to elements of the incentives and invite comments on the proposals made.
- 1.15. Chapter 8 examines a number of other matters including: the reservation of 20% of entry capacity from the Long Term System Entry Capacity (LTSEC) auctions; the removal of the obligation to produce Operational Guidelines (OG) reports; and the definition and creation of an incentive on gas quality.
- 1.16. Appendix 1 contains Transco's report on its performance throughout the first year of the incentive scheme, providing an overview of both the costs incurred and the actions taken by Transco.

Way forward

- 1.17. The timetable for the review of Transco's NTS SO incentives scheme involves:
 - ◆ this consultation document published in January 2004 containing proposals for Transco NTS SO incentives 2004-2007 with responses due by 20th February 2004;
 - ◆ section 23 GT Licence modification consultation due in February 2004 with responses due in March 2004; and
 - ◆ modification to Transco's GT Licence implemented on 1 April 2004.
- 1.18. The publication of this document was delayed due to work being carried out on the Distribution Network sales process. Ofgem, in light of this delay and being

mindful of both the benefits of a timetable which delivers implementation on 1 April together and the limited nature of the changes proposed, has shortened the consultation period to two weeks.

- 1.19. The timetable outlined above assumes that Transco agrees to modifications to its licence as proposed by Ofgem. If Transco, for any reason, does not consent to the proposed licence changes, then the existing schemes will be rolled over while the proposed licence changes are considered by the Competition Commission.

Views invited

- 1.20. Ofgem invites responses to the questions raised in this document. Responses should be submitted by 20th February 2004, and should be addressed to:

Kyran Hanks

Director, Gas Trading Arrangements

Office of Gas and Electricity Markets

9 Millbank

London

SW1P 3GE.

Electronic responses may be sent to: Kyran.hanks@ofgem.gov.uk. Respondents are free to mark their responses as confidential, although we would prefer, as far as possible, to receive open responses that can be placed in the Ofgem library. Note that non-confidential responses will be made available on the Ofgem website. Any questions on this document can be discussed with Sophie Tolley by phone on 020 7901 7262 or by email at sophie.tolley@ofgem.gov.uk.

2. Summary Impact Assessment

Issue

- 2.1. Transco's NTS SO incentive scheme includes a number of incentives on Transco to carry out the day-to-day role of operating the NTS economically and efficiently. It was anticipated that this would lead to a reduction in the cost of system operation over time. A reduction in the costs of system operation should benefit customers who ultimately pay these costs.
- 2.2. A number of the day-to-day incentives included within Ofgem's September 2002 licence modifications⁷ had parameters that were set for a shorter duration than five years. This was due to uncertainties associated with likely future performance and was, therefore, intended to allow Ofgem to review the parameters after there had been some experience with these incentives. We believe that the proposed changes will improve the incentives on Transco to carry out its role economically and efficiently.

Objective

- 2.3. The objective of the NTS SO incentive scheme is to create appropriate commercial incentives for Transco, as SO, to manage the costs of system operation on behalf of system users. The NTS SO incentives are intended to benefit customers in two ways. Firstly, they align the interests of Transco with those of customers and secondly, they transfer some of the risks from customers to Transco. In making changes to the NTS SO incentive scheme, Ofgem wishes to ensure that these objectives continue to be met and that, as far as is practicable, the incentives on Transco are enhanced.

Proposals

Entry Capacity Buy Back incentive

- 2.4. The target, sharing factors and caps and collars for the NTS entry capacity buy-back scheme was set for two years to reflect the degree of uncertainty about the

actual costs Transco would incur in managing NTS entry capacity constraints. At the time, there was limited experience with a number of features of the NTS entry capacity buy-back arrangements and Ofgem believed that another 18 months' experience with the regime would improve the setting of incentive parameters over the longer term. In the light of this experience we are proposing to set the entry capacity buy back incentive target at £18m for 2004/5, 2005/6 and 2006/7 (the target for 2003/4 is £10-20m). We are proposing no changes to the caps, collars and sharing factors.

- 2.5. We are proposing to include the costs of locational actions within the entry capacity buy back target. Ofgem considers that locational gas balancing actions taken on the OCM to remedy locational network constraints may have a similar impact to buying back entry capacity rights – both function as constraint management tools. Due to this substitutability, not including locational gas in the scheme could allow Transco to use such actions to manage capacity constraints without being required to bear any of the costs and this could bias Transco's use of which balancing tool to use. However, if such actions are included in the scheme, then Transco bears the same proportion of cost using either constraint management tool and should be able to make an un-biased decision on which tool will incur the lowest cost. We believe that incentivising Transco to make more efficient decisions when deciding which balancing tool to use would allow Transco to more efficiently incur balancing costs.

Residual Gas Balancing Incentive

- 2.6. Ofgem set the parameters for undertaking residual gas balancing for two years, in recognition of the uncertainty with regard to various factors, including: the operation of the gas regime following the reform to the cash-out arrangements for shippers' in June 2001⁸; the introduction of the linepack incentive in June 2001 (the price incentive had been in place since October 1999); and the

⁷ *Transco Price Control and NTS SO incentives 2002-7, Licence modifications*, Ofgem, September 2002.

⁸ In April 2001, the cash-out regime was changed following the implementation of Modification Proposal 0433. SMP-Buy and SMP-Sell were set at fixed differentials above and below (respectively) SAP. These differentials apply on days when Transco either takes no balancing actions, or the prices of its actions were closer to SAP than SAP plus the relevant fixed differential.

removal of imbalance tolerances in April 2001⁹. We have reviewed the parameters of the residual gas balancing incentive, in the light of over two years' worth of data concerning the operation of the regime becoming available, since the significant changes outlined above.

- 2.7. Ofgem is proposing to deepen Transco's exposure under this incentive by an adjustment to the calculation of the price performance measure. When the incentive was put in place a '1/2' was introduced into the formula used for the calculation of the price performance measure so that Transco's trading performance was measured against half of the spread between Transco's lowest and highest trade. We are now proposing to remove the '1/2' from the formula. The deepening of the incentive will expose Transco to the full spread in prices and should encourage Transco to trade closer to SAP. Overall, this should increase efficiency and reduce imbalance costs.

System Balancing Incentive

Gas Cost

- 2.8. The target costs for own use, unbilled and unaccounted for gas is calculated by a formula set out in the licence and the formula was intended to remain in place for the full five years of the incentive period. This formula uses the target volume of such gas and the associated reference price ('the gas cost reference price', or GCRP) of that gas. The reference price is calculated on the basis of using quoted forward prices for the year in question on the following basis. Average quarterly forward prices are derived as the mean of NBP forward quarterly prices published by a gas price reporting service (e.g. Heren) between 1 March and 20 March of the formula year immediately prior to the year that GCRP will apply. A relatively narrow time window of averaging was chosen on the basis that this would allow Transco the ability to almost completely hedge itself against movements in the gas price if it so desired. The longer the averaging period, the less likely it is that Transco will be able to find a contract priced at a level close to the reference price formula.

⁹ In April 2001, all imbalance tolerances were removed with the exception of the "forecast deviation tolerance". This form of tolerance was subsequently removed on 1 October 2002.

2.9. However, Transco has brought to Ofgem's attention some potential market impacts associated with the relatively short window under which forward prices are averaged. In particular, Transco has suggested that responding to the incentive by sourcing such large volumes in such a small window (in excess of 8TWh) might be expected to have a significant impact on the cost of the gas itself. Transco has suggested that, should such impacts be considered undesirable, an alternative approach would be:

- ◆ retaining the existing licence provisions, or formula year 2004/5, in recognition that much of the preceding formula year (2003/4) has elapsed, and in order to base the reference price on future forward prices against which it is possible to hedge;
- ◆ for formula year 2005/6 it is proposed that the reference price could be based on the average of the quoted relevant forward prices across the period covered by the latest of the first calendar month following the implementation of the Section 23 licence modifications or the 31 March 2005; and
- ◆ for formula year 2006/7 the reference price should be based on the average of the quoted relevant forward prices across the whole of the preceding formula year.

System Reserve

2.10. Ofgem does not propose to make any changes to the sharing factors for system reserve. Ofgem put in place 100% sharing factors for the initial two year period due to the common ownership of the LNG facilities. Ofgem has stated¹⁰ that, should new storage facilities or more flexible demand management arrangements emerge, or NGT propose to restructure the ownership in a way which results in more arms-length, transparent and non-discriminatory arrangements, Ofgem would consider reviewing the 100% sharing factors.

¹⁰ 'Transco's National Transmission System system operator incentives 2002-7, Final proposals', Ofgem, December 2001.

- 2.11. Ofgem notes that Transco retains ownership of the LNG facilities and the cost of OM capacity is incurred largely at these facilities. It also notes that no significant new storage facilities have begun operation in the last two years (although a number are in advanced planning) and that demand management arrangements remain largely unchanged.
- 2.12. Ofgem is proposing no changes to the target currently allowed for the purchase of OMs (and the associated special condition 9D prices as set out in Transco's GT licence) as a short term measure. Ofgem also proposes at the same point to initiate a review with a view to further developing incentives on Transco to actively find substitutes for Transco LNG. These incentives will be implemented at a future date.
- 2.13. To reflect the proposed network code modification changing the status of Isle of Grain, we are proposing (should the modification be accepted) to reword the definition of the System Reserve Performance Measure (SRCP) to include the costs of capacity incurred in respect of LNG Importation capacity.

Exit capacity investment incentive

- 2.14. Through Transco's GT licence, Ofgem set out a broad commercial framework which aimed to encourage Transco to undertake the appropriate reform of the arrangements regarding the management of NTS exit capacity. The sharing factors, caps and collars for the transitional exit incentive were set for two years (2002/3 and 2003/4).
- 2.15. It was Ofgem's intention that by 1 April 2004 Transco would have put in place arrangements for the registration of all NTS exit capacity as firm and thus the transitional arrangements would have been replaced by long-term exit arrangements which would incentivise Transco to contract efficiently for interruption with the holders of firm NTS exit capacity. However, provision was made in the licence for the transitional arrangements to be rolled forward should universal firm registration be delayed.
- 2.16. The development of the necessary arrangements for the implementation of universal firm registration has been affected by the reform of the exit arrangements and by NGT's subsequent decision to consider selling one or more

Distribution Networks (DNs). We have taken this into account in considering the most appropriate levels of caps, collars and sharing factors for rolling forward the current structure of the incentive for 2004/5-2006/7. We are proposing to reduce both the cap and the collar that apply to the exit investment incentive scheme to £1 million for each of the three final years of the control (2004/5, 2005/6 and 2006/7). No changes are proposed for the sharing factors.

- 2.17. In light of the DN Sales consultation process and work concerning the reform of the exit arrangements, we are proposing to remove the requirement from the licence for Transco to introduce universal firm NTS exit registration on a reasonable endeavours basis by 1 April 2004 or as soon as reasonably practicable thereafter.

Internal cost incentive

- 2.18. In order to maintain consistency across the NTS SO incentive schemes, Ofgem applied sharing factors to all the NTS SO internal costs equal to the average sharing factors of the day-to-day external cost schemes (excluding the entry capacity buy-back scheme). Currently, Ofgem is not proposing to alter any of the sharing factors concerned with these incentives and, as such, Ofgem is not proposing to make changes to the NTS SO internal cost incentive.

20% of entry capacity reserved for annual auctions

- 2.19. In requiring Transco to reserve 20% of existing Initial NTS SO baseline entry capacity for short-term release, Ofgem was concerned that selling all available entry capacity in the long-term auctions could create a barrier to entry into Great Britain's gas market. Ofgem recognised that, in the long-term, the ability to signal new entry capacity requirements and for Transco to respond with additional investment will reduce these concerns. However, in the short-term, barriers to entry may persist for some time in the absence of a liquid and transparent secondary market in entry capacity.
- 2.20. In the explanatory notes accompanying the proposed changes to Transco's GT licence in April 2002, we stated that the reservation requirement should be removed once a liquid secondary market in entry capacity had developed. A liquid secondary market would provide shippers with an alternative to buying

entry capacity from Transco and would reduce the ability of market participants to foreclose the market against new entrants.

- 2.21. Whilst there has been a noticeable growth in traded volumes in the secondary market in recent years, the ratio of secondary market traded volume to the original product remains small at the most competitive terminal, St Fergus. Ofgem considers that further growth must take place before the secondary market can be a reliable source of entry rights for new entrants to the industry. Ofgem, based upon the information currently available, considers it appropriate to retain the requirement on Transco to reserve 20% of the Initial NTS SO baseline entry capacity for release on a short-term basis.

Operational Guidelines

- 2.22. Transco is required to produce a System Management Principles statement (SMP) in order to provide transparency in its role as system operator. In addition Transco has an ongoing licence obligation to produce Operational Guidelines (OGs). To a large extent, OGs perform a similar information role on a national and localised level. It was Ofgem's original intention that Transco's requirement to produce Procurement Guidelines (PGs) and SMPs would replace Transco's obligations to produce OGs under special condition 17.
- 2.23. However, Ofgem continues to have concerns that the content of the statements are not sufficiently robust and developed to remove Transco's need to produce OGs. We also consider that any reconsideration of special condition 17 would need to address any obligations that may need to be developed in its function as system operator and potentially as distribution network operator. It is Ofgem's initial view that the obligation should stay in place until the issue of the potential sale of Transco's distribution networks is resolved. However we are proposing to remove the requirement to produce separate auditor's statements for OGs and SMPs.

3. Entry capacity buy-back incentive

Introduction

- 3.1. This chapter outlines the current entry capacity buy-back incentive and assesses Transco's performance under the current scheme between April 2002 and December 2003. In the light of the review, Ofgem sets out its proposals for the parameters of the incentives for the next three years. Ofgem also raises questions for consultation with regard to particular elements of the scheme and we would welcome respondents' views on these questions.

Outline of the incentive

- 3.2. Transco allocates entry capacity rights to its National Transmission System (NTS) through a series of long and short-term auctions. Under the price control regime established in Transco's Gas Transporter licence (GT licence), Transco is funded to provide a series of baseline output measures of entry capacity for each system entry point. These baseline output measures are based on the maximum physical capability at each system entry point and are referred to as Transco's transmission asset owner (TO) baseline output measures. Transco is obliged to offer 90 per cent of these output measures for sale as system operator (SO) level entry capacity rights (this is referred to as Initial NTS SO baseline capacity)¹¹. In the event that Transco cannot deliver the entry capacity it has sold and which shippers are intending to use, Transco is required to buy that entry capacity back from shippers at market-determined prices. Transco is currently incentivised to reduce the costs associated with buying back firm entry capacity that it is unable to make available on the day.
- 3.3. The entry capacity "buy-back incentive" is a sliding scale incentive, with a target level of costs, sharing factors and a cap and collar. Table 3.1, below, summarises the current parameters of the buy-back incentive. The performance measure under the scheme is calculated from the costs Transco incurs in buying back entry capacity less the revenue it earns from some types of entry capacity

¹¹ SO baseline capacity volumes for each NTS entry point are specified in Transco's GT licence.

products (on-the-day sales of firm and interruptible NTS entry capacity, sales of non-obligated incremental firm NTS entry capacity) and also revenue from overrun charges.

Table 3.1: Current SO buy-back cost incentive parameters

Targets, Cap and Collar, £m				Sharing factors	
Target 2002/3	Target 2003/4	Cap	Collar	Upside	Downside
35	10-20	30	-12.5	50%	35%

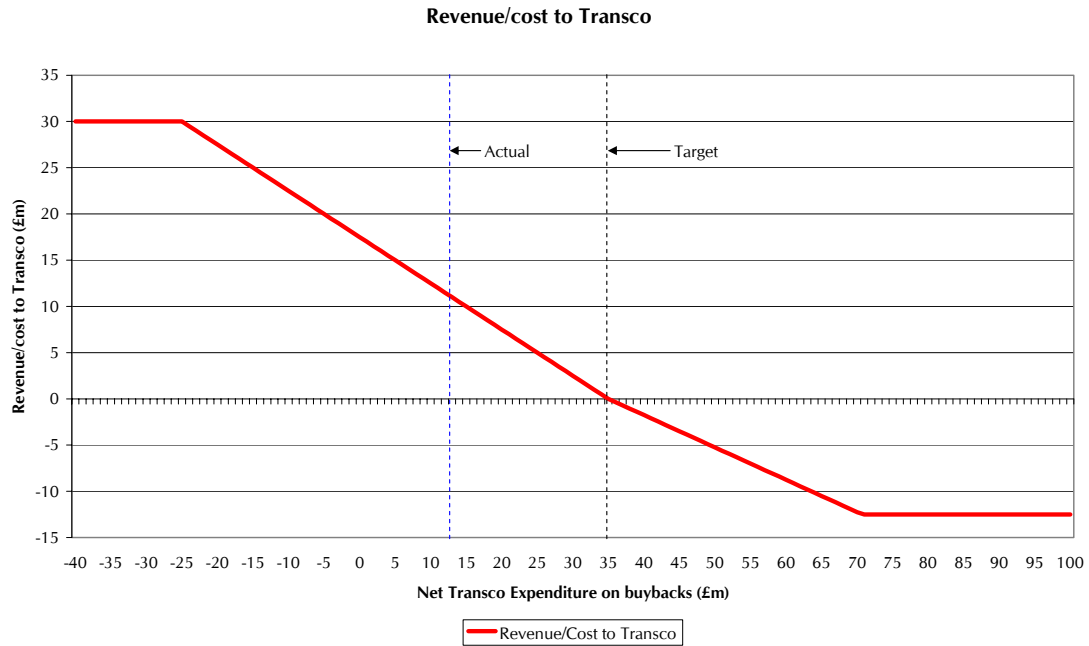
- 3.4. Revenue from sales of within-day firm entry capacity is incorporated because, under its licence, Transco is required to offer this entry capacity (up to the set level of NTS SO baseline entry capacity) for sale in a clearing allocation. Revenue from within-day sales of entry capacity is incorporated as SO revenue as an offset to potential buy back costs. A situation could occur where shippers may require additional entry capacity or, due to unplanned maintenance, less entry capacity than had been sold to shippers is physically available. In this instance, Transco buys back entry capacity but, at the same time, it would be still required to release additional entry capacity (at a zero reserve price) under the terms of its licence. In such a situation, the costs of buying back entry capacity and the revenues received from sales would both be increasing together. It was therefore thought sensible to include the within-day entry capacity revenues in the buy-back incentive, in order to offset the costs incurred.
- 3.5. The other revenues which are currently included in this incentive are from sales of both interruptible and non-obligated incremental entry capacity. Non-obligated incremental entry capacity is entry capacity which Transco has no obligation to release under the terms of its licence but which it may choose to release in response to signals for incremental entry capacity. Including the revenues from the sale of this entry capacity in the performance measure creates an incentive to release these types of entry capacity because it allows Transco to keep a proportion of the revenue.

Transco's performance under the incentive

Review of formula year 2002/3¹²

- 3.6. Net buy-back costs in 2002/3 were £13.23m, for which, under the terms of the incentive, Transco was allowed revenue of £10.89m (as shown by Figure 3.1).

Figure 3.1: Diagrammatic representation of Transco's entry capacity buy-back incentive (2002/3)



- 3.7. Table 3.2, below, breaks down the costs incurred and revenues received during this period.

¹² Formula years cover the period April – March. All annual figures in this document refer to formula years.

Table 3.2: Breakdown of entry capacity buy-back costs and revenues

Cost	Value (£m)
NTS entry capacity buy-back costs	
Within-day buy-backs	8.39
Option contract premium	1.19
Option contract strike costs	1.40
Forward contracts	6.44
Total buy-back costs	17.42
NTS entry capacity revenues (captured under scheme)	
Revenue from the sales of obligated entry capacity	0.21
Revenue from sales of non-obligated incremental entry capacity	0.96
Revenue from sales of interruptible entry capacity	2.15
Revenue from system entry overrun charges	0.87
Total scheme revenues	4.19
Total performance under the scheme (costs - revenues)	13.23

Within-day buy-backs

- 3.8. Prior to the introduction of the SO incentive licence conditions with effect from April 2002, Transco only bought back entry capacity on the day. Since it first started buying back entry capacity, Transco has continued to use buy-backs on the day to manage its provision of entry capacity. However, in the last two years, spot market purchases have been complimented with the use of forward and option contracts for managing the risks of buy-back that Transco faces.
- 3.9. Table 3.3, below, breaks down Transco's within-day buy-back costs, for the incentive year 2002/3, by month and by terminal. As table 3.3 shows, of the four terminals at which buy-backs occurred, the majority of costs were at St Fergus, which accounted for 97% of total buy-back costs.

Table 3.3: Breakdown of within-day buy-back costs 2002/3 (£'000)

Month	Bacton	Barrow	St Fergus	Teesside	Total
Apr-02	-	-	£1,519.6	£1.4	£1,521
May-02	-	-	£1,710.5	£0.2	£1,710.7
Jun-02	-	-	£0.3	-	£0.3
Jul-02	-	-	£0.3	-	£0.3
Aug-02	-	-	£1,020.8	£0.9	£1,021.7
Sep-02	£83.4	-	-	£13.4	£96.8
Oct-02	-	£1.4	£1,268.4	£36.3	£1,306.1
Nov-02	-	£54.6	£1,948.8	£1.9	£2,005.2
Dec-02	-	£1.1	£204.5	£25.6	£231.2
Jan-03	-	-	£252.2	-	£252.2
Feb-03	-	-	-	-	-
Mar-03	-	-	£239.8	£0.2	£240.1
Total	£83.4	£57.1	£8,165	£80	£8,385.5

3.10. Table 3.4, below, gives details of within-day buy-back costs that have been incurred within the formula year 2003/4 to date. The total buy-back cost for the nine month period April to December is £1.17m. Whilst buybacks have occurred at 5 of the 6 major beach terminals, 99.96% occurred at two terminals, namely St Fergus and Teesside. St Fergus has accounted for 81% of the total cost and until August all buy-backs had occurred at this terminal. Total within-day buy-backs have been just under £7m (85%) lower during this period than for the same period in 2002/3.

Table 3.4: Breakdown of within-day buy-back costs April – December 2003 (£'000)

Month	Bacton	Barrow	Easington	St Fergus	Teesside	Theddlethorpe	Total
Apr-03	-	-	-	£15.8	-	-	£15.8
May-03	-	-	-	£6.8	-	-	£6.8
Jun-03	-	-	-	£2.5	-	-	£2.5
Jul-03	-	-	-	£9.4	-	-	£9.35
Aug-03	-	-	-	£2.7	£221.5	-	£224.2
Sep-03	-	-	-	£358.9	-	-	£358.9
Oct-03	-	-	-	£-	-	-	-
Nov-03	£0.1	-	-	£4.1	-	£0.06	£4.3
Dec-03	£0.01	-	£0.3	£548.4	-	-	£548.7
Total	£0.1	-	£0.3	£948.5	£221.5	£0.06	£1,170.5

Forward and option contracts

3.11. Since April 2002¹³, Transco has entered into forward and option contracts for entry capacity buy-backs. Transco in total spent £9.03m on forward contracts, including option contracts, which represented 52% of total buy-back costs in 2002/3. However, from October 2002, Transco did not enter into any further forwards contracts, suggesting that Transco had, through experience, found it more economically efficient to utilise options contracts and spot buy-backs.

3.12. All but one of the accepted forward and option tenders were for contracts at the St Fergus terminal. The exception was in response to option tender 9, where a bid was accepted at the Teesside terminal for the month of January 2003. However, because Transco did not exercise this option, it was only required to pay the contract premium.

Table 3.5: Forward contract costs (£'000)

Month	Option Premium	Option Strike	Forwards	Total
Apr-02	-	-	-	-
May-02	£135.8	£58.8	£323.7	£518.3
Jun-02	£90	-	£1,177.3	£1,267.3
Jul-02	£171	£5.1	£2,018	£2,194.1
Aug-02	£160	£373.4	£2,692.7	£3,226.0
Sep-02	£263.3	-	£226.9	£490.1
Oct-02	-	-	-	-
Nov-02	£52.5	£294.3	-	£346.8
Dec-02	£52.5	£58.9	-	£111.4
Jan-03	£67.5	£90.4	-	£157.9
Feb-03	£46.5	-	-	£46.5
Mar-03	£151.5	£522.1	-	£673.6
Total	£1,190.5	£1,402.9	£6,438.4	£9,031.8

3.13. In 2003/4, Transco has continued to sign option contracts rather than forward contracts to manage its exposure to buy-back risk. Table 3.6 below breaks down, by month, the value of entry capacity management contracts for the year to date. Overall, the total value of capacity contracts has been lower than for the same period in the previous year by a factor of ten. Option contracts totalling

¹³ Network code Modification 0498 'Capacity forward and option entry capacity management' allowed

£0.42m have been signed compared with £0.93m in the same period last year and the value of options struck was £0.5m compared with £0.8m in the same period last year. In particular, Transco has entered into no forward contracts for the year to date. In comparison, over the same period last year, Transco agreed forward contracts of up to £6m. This suggests that Transco may have not considered the use of forward contracts as an economic tool for managing its entry capacity position over this period.

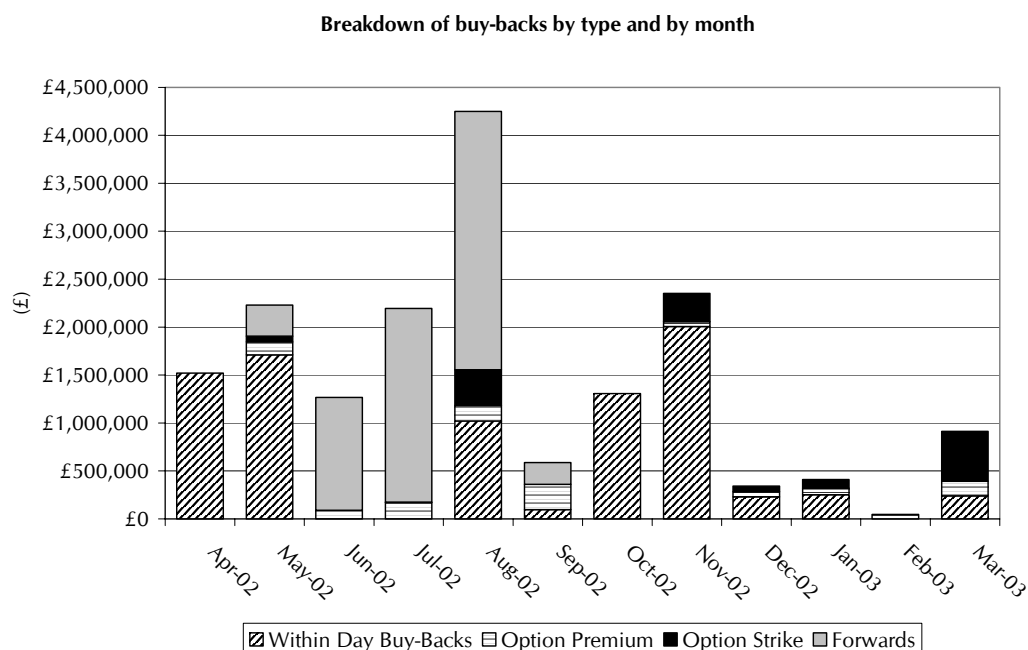
Table 3.6: Forward and option contract buy-back costs to date (£'000)

Month	Option Premium	Option Strike	Forwards	Total
Apr-03	£69	£58	-	£127
May-03	£33	-	-	£33
Jun-03	£45	-	-	£45
Jul-03	£64	£230	-	£294
Aug-03	£88	£0	-	£88
Sep-03	£108	£168	-	£276
Oct-03	£4	-	-	£4
Nov-03	£5	-	-	£5
Dec-03	£5	£48	-	£53
Total	£419	£504	-	£924

3.14. Figure 3.2, below, shows the breakdown of expenditure on each type of buy-back by month.

Transco to also use forward and option contracts to purchase capacity from shippers.

Figure 3.2: Buy-back costs by month 2002/3



3.15. In 2002/3, the total buy-back costs were on average higher in the summer months (April through to August). However, the small amount of spot buy-backs and the large forward buy-backs (and Transco's subsequent move away from forward contracting) possibly distorts the picture of the likely occurrence of buy-backs. Ignoring the impact of the forward costs, the highest level of buy-back costs occurred in the shoulder months of October, November, April and May. These months tend to be the months where temperature (and hence demand) is most volatile and subject to change.

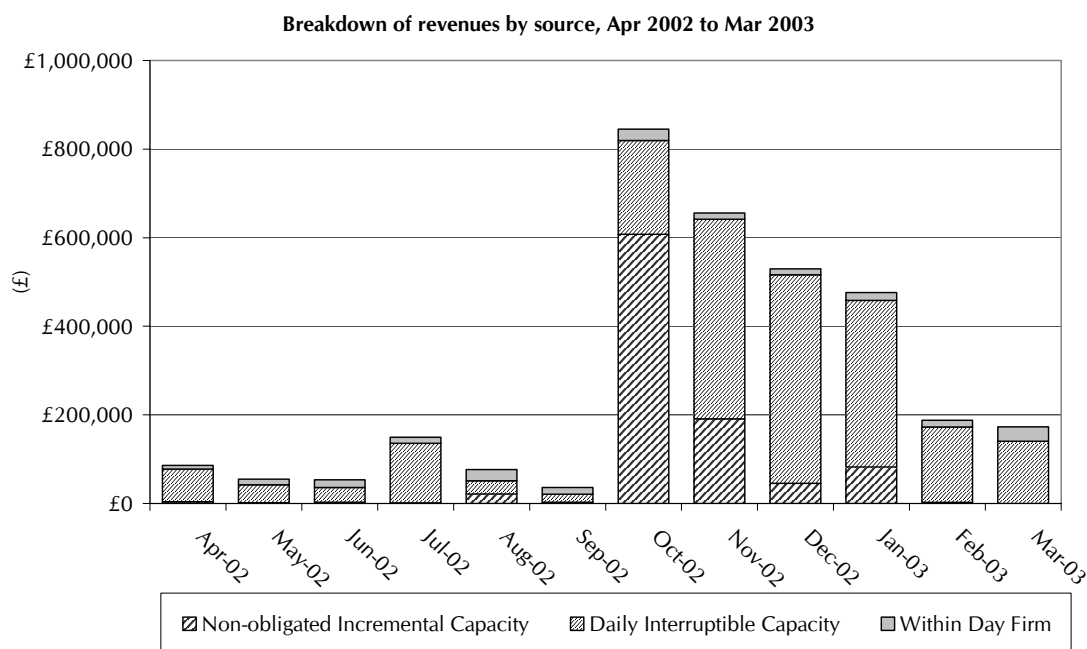
3.16. Nevertheless, the experience to date with Transco under its incentive arrangements has been one of innovation through the use of forward and option contracts with a view to minimising the cost risk of buying back entry capacity that it faces. Transco has also undertaken a number of operational initiatives that have resulted in it scheduling and managing its maintenance programs in such a way as to lower the risks of buying back entry capacity. The level of entry capacity buy-backs are relatively low compared with our expectation of buy-back costs (the target). This would suggest that Transco has successfully reduced the level of buy-back costs to the benefit of shippers and customers.

Entry capacity sales

3.17. As outlined above, revenues from certain types of entry capacity sales are offset against entry buy-back costs when measuring the performance of Transco under this incentive.

3.18. The revenues from entry capacity sales in the first year of the incentive totalled £3.32m (see table 3.2, above). Figure 3.3, below, breaks down revenues from the sale of the different entry capacity products and overruns by month. The highest revenues from entry capacity sales occurred between October 2002 and January 2003. This can possibly be explained by a higher than expected level of gas demand leading to greater fine tuning of entry capacity positions by shippers in the short term entry capacity market. In addition, particular circumstances at a given terminal accounted for a significant amount of the increase in revenues indicated by figure 3.3 during those four months¹⁴.

Figure 3.3: Revenue from SO entry capacity sales by month



3.19. The total revenue from entry capacity sales in the current incentive year to December 2003 is £1.1m, £1.38m lower for the same period in 2002/3, mainly

¹⁴ 80% of the sales (by value) of non-obligated incremental capacity and 35% of the sales (by value) of daily interruptible capacity in the period October 2002 to January 2003 occurred at the Barrow entry terminal.

resulting from lower volumes of capacity sales at Barrow. When revenues from entry capacity sales and capacity overruns (see below) are offset against the cost of buy-backs to date, Transco is currently in a position of having accrued net revenue of £0.71m (until the end of December 2003) under the buy-back incentive. However, it should be noted that because costs such as buy-backs can differ widely from month to month, the net revenue to date cannot be taken as a clear indication of the final incentive cost or revenue.

Capacity overruns

3.20. Another component of revenue used in the calculation of Transco's performance target is revenue derived from entry capacity overrun charges. These charges are levied on a shipper when its total gas flowed at a terminal on a given gas day exceeds its holdings of entry capacity at that terminal on that day. Entry capacity overrun charges are typically set at 8 times the highest price paid for entry capacity in the monthly entry capacity auctions¹⁵.

3.21. Table 3.7 shows the average monthly volumes of entry capacity overruns that have occurred in each of the last three formula years. The table shows that at four of the main beach terminals the volume of overruns has continued to increase year-on-year. The value of entry capacity overruns was £867,454 in formula year 2002/3, and has been £1.7m in the current incentive year to December 2003.

Table 3.7: Monthly average volumes of overruns (GWh/d)

Formula year	Bacton	Barrow	Easington	St. Fergus	Teesside	Theddlethorpe
2001/2	1.7	0	1.6	5.3	4.7	0.2
2002/3	45.5	0.6	2.8	9.8	5.8	13.7
2003/4 (April – November¹⁶)	85.2	0.1	23.9	30.2	3.5	30.5

¹⁵ The rate of overrun charging is calculated from a network code formula, and is related to the price of monthly and daily sales of capacity and also the price of buy-backs.

¹⁶ December 2003 overrun data is not currently available.

- 3.22. Even though the absolute volumes are small in proportion to overall throughput at each terminal (less than 1%), Ofgem notes with concern this increasing trend to overrun and would remind shippers of their licence obligations. Ofgem considers that consistently overrunning would constitute a breach of Condition 3 of the Gas Shippers Licence¹⁷. Ofgem is considering further investigating the behaviour of shippers if such overrunning persists.
- 3.23. Ofgem considers that it is important to include the potential revenue from overruns within the target level for the entry capacity buy-back incentive calculation. This is because a shipper over-running could be putting Transco in a position where it buys back entry capacity (as it is increasing flow at the entry point). As such, the charge that the shipper pays for overrunning should be used to offset the liability that it has caused Transco to incur.

Rationale

- 3.24. Ofgem set the target, sharing factors and caps and collars for two years (2002/3 and 2003/4) for the NTS entry capacity buy-back scheme. Initially, Ofgem wanted to set the buy-back incentive for five years to align this scheme with the NTS entry capacity investment incentive scheme. This alignment would let Transco have greater certainty in trading-off revenues from additional entry capacity sales with the level of expected buy-back costs it would potentially incur. However, the target was set for two years as there was a degree of uncertainty about the actual costs Transco would incur in managing NTS entry capacity constraints given a release of entry capacity consistent with its output measures¹⁸. At the time, there was limited experience with a number of features of the NTS entry capacity buy-back arrangements and Ofgem believed that another 18 months' experience with the regime would allow the setting of incentive parameters over the longer term.

¹⁷ 1. Condition 3 clearly states that the shipper has an obligation not to knowingly or recklessly pursue any course of conduct which would prejudice: the safe and efficient operation, from day to day, by a relevant transporter of its pipeline system; the safe, efficient and efficient balancing by that transporter of its system; or the due functioning of the arrangements provided for in its network code.

¹⁸ As the SO output measures were based on a "top-down" entry capacity release, Transco was required to offer for sale all theoretically available (maximum physical) levels of entry capacity. This was a change from offering for sale entry capacity based on expected load (given normal weather conditions) and significantly increased the level of entry capacity offered for sale by Transco at most terminals, and hence introduced a further degree of uncertainty regarding future cost levels.

- 3.25. Ofgem has now reviewed the incentive with a view to setting targets, sharing factors and caps and collars for the formula years 2004/5, 2005/6 and 2006/7.
- 3.26. In our December decision document, Ofgem noted that there are important interactions between Transco's decision on how much to invest in providing entry capacity to meet additional demand and the level of buy-back costs it will incur in subsequent years. For this reason Ofgem has argued that¹⁹, in the longer term, the incentive on Transco to reduce the costs of buying back entry capacity needs to be considered in the context of the parameters of the entry capacity investment incentive. Ofgem made clear its intention, that when it became appropriate, it would propose an increase to Transco's exposure and sharing factors applied to buy-back costs to ensure that Transco's incentives are well aligned.

Locational gas

- 3.27. In our conclusions document on the summer supply interruptions²⁰ that occurred in June 2003, Ofgem considered that particular locational gas balancing actions taken on the OCM to remedy locational network constraints may have a similar impact to buying back entry capacity rights – both function as constraint management tools. Due to this substitutability, not including locational gas in the scheme could allow Transco to use such actions to manage entry capacity constraints without being required to bear any of the costs and this could bias Transco's use of which balancing tool to use. However, if such actions are included in the scheme, then Transco should bear the same proportion of cost using either constraint management tool and should be able to make an unbiased decision on which tool will incur the lowest cost.
- 3.28. Ofgem reiterated this view - as outlined in our decision letter on Modification Proposal 0592²¹ - that the inclusion of locational actions on the OCM within Transco's buy-back incentive merits further consideration and discussion leading up to the review of Transco's incentive scheme from 1 April 2004 onwards.

¹⁹ *Transco's National Transmission System system operator incentives 2002-7, Final proposals*, Ofgem, December 2001.

²⁰ *Summer Interruptions: 17 and 18 June 2003, Conclusions*, Ofgem, August 2003.

²¹ *'Change to the mechanism for recovering the costs of locational balancing actions'*, November 2002, ref. Net/Cod/Mod/0592.

3.29. Locational balancing actions taken in 2002/3 totalled £2.4m, compared with £0.8m for the previous formula year. As the value of locational gas actions is increasing, it is possible that Transco is using such actions to solve some entry capacity constraints. Had the costs of locational actions been included within Transco's entry capacity buy-back incentive, total costs under the scheme would have been 18% higher at £15.63m, for the period 2002/3.

Ofgem's proposals

3.30. In setting the parameters for the years 2004/5 to 2006/7, Ofgem used an approach that looked at the previous behaviour of the buy-back market as a guide to the future behaviour of the market. To inform our assumptions, we used observed relationships concerning market characteristics such as the volume of entry capacity bought back given the level of entry capacity released and the observed distribution of prices in the entry capacity buy-back market. Using these observed relationships, we used a stochastic (Monte Carlo) modelling process to derive an estimated distribution of expected outcomes of entry capacity buy-back costs. These distributions of expected outcomes provide the basis for our proposals for the target value of expected buy-back costs. For estimating the costs associated with locational gas actions, we also used historic Transco actions with regards to volumes traded and the premium to NBP gas prices paid in the locational gas market.

3.31. Ofgem's proposals for the targets for the years 2004/5 to 2006/7 are outlined in table 3.8.

Table 3.8: Ofgem's proposals for the entry capacity buy-back scheme, 2004/2007

	2004/5	2005/6	2006/7
Buy-back cost target	£18 m	£18 m	£18 m

3.32. In deriving the target values, we estimated the likely outcome of revenues from interruptible and daily firm entry capacity sales, overruns and the costs of

locational actions taken on the OCM from historical data. In table 3.9, we break down the 2004/5 target into its component parts for illustration²².

Table 3.9: The components of the 2004/5 target level

Element of target	2004/5 (£m)
Costs – capacity buy-backs	-£18.34 m
Costs - locational gas	-£2.9 m
Revenue – interruptible capacity	£2.1 m
Revenue – daily firm capacity	£0.5 m
Revenue – over-run charges	£0.8 m

3.33. In considering sharing factors and caps and collars, we believe that there is still a relatively large degree of uncertainty about the likely behaviour of this market in the future and therefore the outcome of buy-back costs. As such, we do not yet consider it appropriate to expose Transco to a greater degree of risk (or reward) under this incentive. As such, we do not propose to alter the caps and collars or the sharing factors under this incentive.

Invitation for comments

3.34. Ofgem is interested in respondents’ views on our initial proposals. In particular, whether:

- ◆ the proposed targets (£18 million for each of the next three years) represent an appropriate expected level of buy-back costs;
- ◆ the caps and collars and/or the upside and downside sharing factors should be modified to expose Transco to a greater annual level of revenues/costs;
- ◆ revenues and potential buy back costs from overruns should be included when setting the target for entry capacity buy-backs;
- ◆ the costs of locational gas purchases should be included in the incentive performance measure and the target.

²² Please note that the numbers against each item represent a deterministic mean point rather than the point on the stochastic distribution that was used to inform the setting of the target. As such, the total of the mean deterministic components is different than the target reported in table 2.8.

4. Residual gas balancing incentive

Introduction

- 4.1. This chapter outlines the residual gas balancing incentives (on price and linepack), assesses Transco's performance against the incentives and outlines Ofgem's high level proposals for changes to the relevant caps, collars and sharing factors. In addition, Ofgem invites respondents' views on key elements of these changes and on further proposals.

Outline of the incentive

- 4.2. In using Transco's NTS, shippers are incentivised to ensure that the volume of gas that they enter onto the system matches the volume of gas that they take off from the system on a daily basis. Shippers are incentivised to maintain this balance of gas on the system by means of the cash-out arrangements²³. In aggregate, however, shippers do not always maintain a balance throughout the day, forcing Transco to buy and sell gas on the OCM to keep the pressures in its system (the 'linepack') within certain limits. This daily buying and selling of gas to keep the system within safe operational limits is referred to as the residual balancing function of the system operator. The cost of undertaking this function is largely borne by customers, thus Transco has been provided with an incentive to encourage it to minimise the costs that it incurs.
- 4.3. Under the residual gas balancing incentive, Transco is exposed to separate incentives with regard to the price at which it takes actions (the price incentive) and with regard to changes in the volume of gas held on the system (the linepack incentive). The parameters of the schemes are summarised in table 4.1 and discussed below.
- 4.4. The price incentive encourages Transco to take balancing actions at prices close to the system average price (SAP), thereby reducing the spread between its buy and sell actions. The price incentive is measured on a daily basis, based on the

²³ For a description of the cash-out regime, please see *The New Gas Trading Arrangements – Reform of the gas balancing regime – Revised proposals*, Ofgem, February 2002.

differential between the prices of Transco's marginal trades on either side of the market. Transco receives an incentive reward, up to a daily cap limit, if its marginal buy price (TMIBP) – marginal sell price (TMISP) is within 10% of 2 times SAP. If the differential is greater, Transco is exposed to a penalty up to its daily collar limits, which occurs when the differential between its marginal buy price and its marginal sell price exceeds 85% of 2 times SAP.

- 4.5. The daily linepack incentive is based upon a similar format to the price incentive and was put in place to encourage Transco to minimise day-to-day changes in the level of linepack (e.g. to keep the system balanced on a daily basis). Transco receives its maximum daily revenue under the incentive if there is no difference between opening and closing linepack. It continues to benefit under the incentive regime so long as the difference between opening and closing linepack is less than 2.4 mcm. If the difference is greater than 2.4 mcm, it is penalised under the incentive, up to a daily collar at 20.4 mcm.
- 4.6. In addition to the daily cap and collars for the individual schemes, the total annual levels of reward and penalty are subject to limits (the annual caps and collars). The annual caps and collars on the combined price and linepack incentive are set symmetrically, at £3.5m and -£3.5m. These values represented a strengthening of the incentive, in comparison to the incentive in place prior to April 2002, offering Transco the scope for larger daily and annual upsides and exposing it to higher daily and annual downsides in the event of inferior performance.

Table 4.1: Summary of residual gas balancing incentive parameters

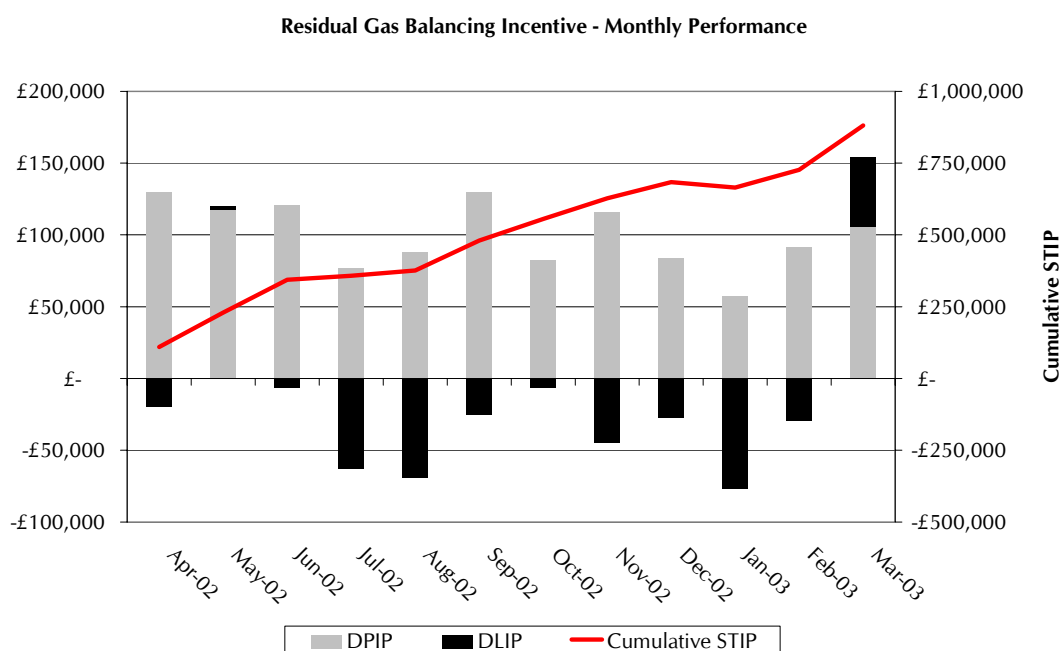
Linepack (incentive on change in linepack)		
Target		2.4 mcm
Cap	Parameter value	0 mcm
	Daily max. gain	£5,000
Collar	Parameter value	20.4 mcm
	Daily max. loss	£30,000
Price (incentive on TMIBP buy – TMISP sell differential from 2 times SAP)		
Target		10%
Cap	Parameter value	0%
	Daily max. gain	£5,000
Collar	Parameter value	85%
	Daily max. loss	£30,000
Overall annual incentive		
	Maximum gain	£3.5 m
	Maximum loss	-£3.5 m

Transco's performance under the incentive

Review of the first year

- 4.7. In 2002/3, Transco was allowed a total revenue of £880,934 under its residual gas balancing incentive. Transco performed well throughout 2002/3 under the price performance element of the residual gas balancing incentive. The sum of the daily price incentive payments (DPIP) made to Transco in 2002/3 was £1,200,820. However, Transco performed less well under the linepack incentive, as the sum of the daily linepack incentive payments (DLIP) over the period was a net cost of -£319,890.
- 4.8. Figure 4.1, below, shows Transco's cumulative position on a monthly basis, in terms of the revenues earned and costs incurred under the daily price and linepack incentives. Transco made a net positive contribution to its revenues under the incentive in every month with the exception of January 2003. In this month, the revenues gained by Transco under the price incentive, £57,791, were exceeded by the costs incurred under the linepack incentive, -£76,950, resulting in a decrease in the cumulative total revenue.

Figure 4.1: Monthly revenues and costs incurred under the residual gas balancing incentive²⁴



4.9. Transco earned revenue in excess of £50,000 per month under the price incentive, and in six of the twelve months earned revenues in excess of £100,000. There was no significant seasonality in the level of revenue accrued by Transco under the price incentive. Transco performed less well under its linepack incentive, earning a negative net revenue in ten of the twelve months reviewed. Additionally, the net revenue received by Transco in the month of May, one of the two months in which a net revenue was earned, was comparatively small (£2,466).

4.10. The difference in Transco’s performance under the two elements of the residual gas balancing incentive is further illustrated by figures 4.2 and 4.3. These figures provide a comparison of Transco’s performance, on each day, against the daily price and linepack performance measures. Whilst Transco either matched or exceeded the price performance target 92% of the time in 2002/3, Transco was only successful in exceeding the linepack performance target on 50% of occasions.

²⁴ STIP = Sum of the Total Daily Incentive Payments – the cumulative total of the daily payments made under the price (DPIP) and linepack incentives.

Figure 4.2: Transco's performance (PPM) against the price incentive target (PIR)

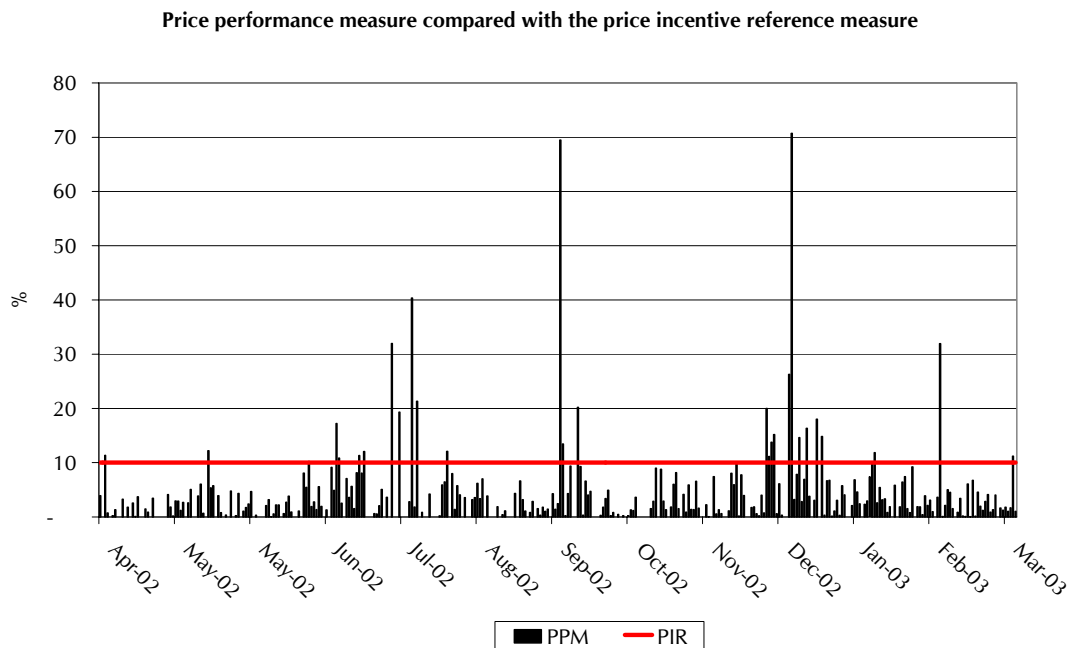
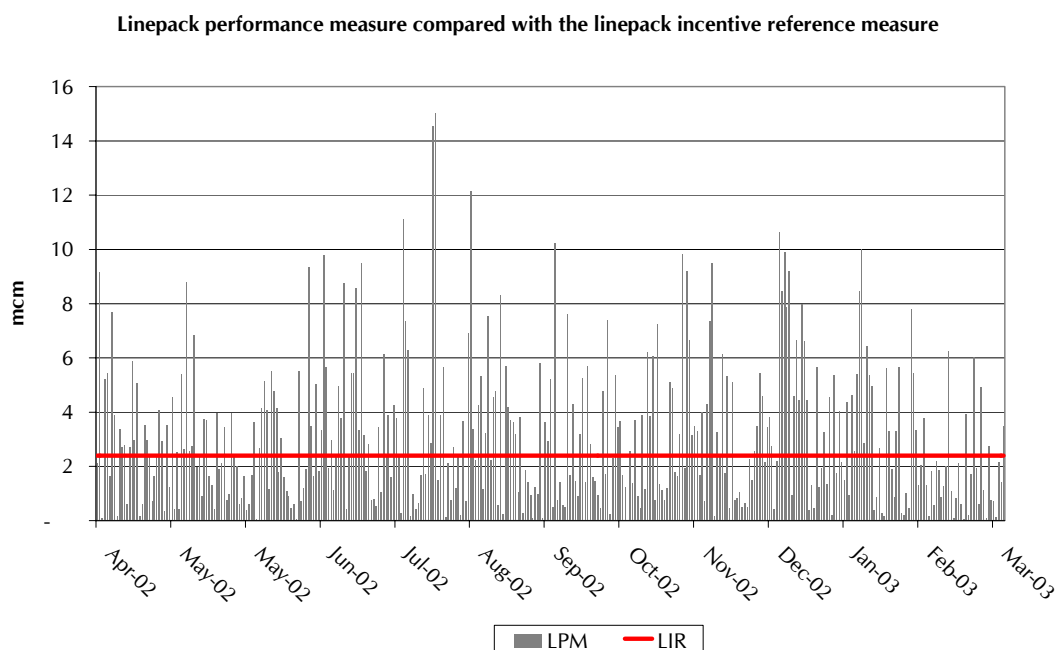


Figure 4.3: Transco's performance (LPM) against the price incentive target (LIR)

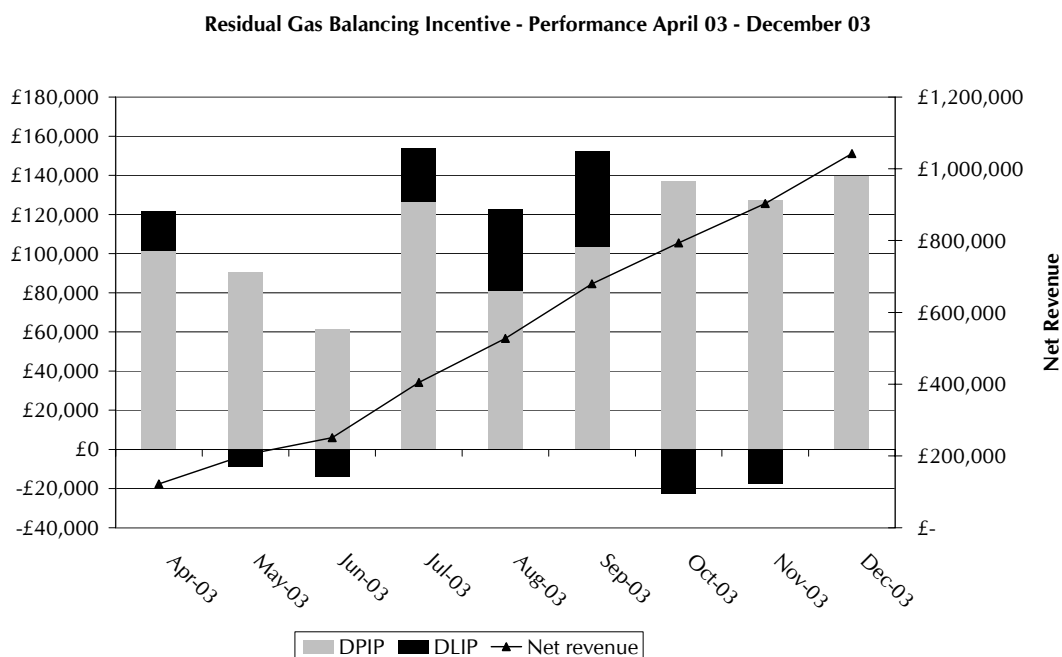


Review of performance between April 2003 and December 2003

4.11. Figure 4.4, below, shows Transco's performance for the current formula year between 1 April 2003 and 31 December 2003. Overall, Transco has performed slightly better against its combined price and linepack incentives over this nine month period, accumulating a net revenue of £1.042m - an increase, year on

year, of £359,000. In particular, Transco has made considerable improvements in terms of its performance against the linepack incentive. Whereas over the same period last year Transco made a net loss of £261,700, this year, Transco has accumulated net revenue of £74,265. Transco has marginally improved, year on year, against its price incentive, with net revenue of £968,261, up £22,846.

Figure 4.4: Transco's price and linepack performance, April 03 to December 03



Rationale

4.12. In its December 2001 decision document, Ofgem set the parameters for undertaking residual gas balancing for two years, in recognition of the uncertainty with regard to various factors, including: the operation of the gas regime following the reform to the cash-out arrangements for shippers' in June 2001²⁵; the introduction of the linepack incentive in June 2001 (the price incentive had been in place since October 1999); and the removal of imbalance tolerances in April 2001²⁶. Ofgem considers it appropriate to review the

²⁵ In April 2001, the cash-out regime was changed following the implementation of Modification Proposal 0433. SMP-Buy and SMP-Sell were set at fixed differentials above and below (respectively) SAP. These differentials apply on days when Transco either takes no balancing actions, or the prices of its actions were closer to SAP than SAP plus the relevant fixed differential.

²⁶ In April 2001, all imbalance tolerances were removed with the exception of the "forecast deviation tolerance". This form of tolerance was subsequently removed on 1 October 2002.

parameters of the residual gas balancing incentive, in the light of over two years' worth of data concerning the operation of the regime becoming available, since the significant changes outlined above. Ofgem is minded to deepen the incentive through increasing Transco's exposure to daily costs and revenues.

- 4.13. In response to both Ofgem's consultation on the reform of the gas balancing arrangements²⁷, and to Ofgem's letter outlining the proposed scope of the two year review, a number of participants expressed concern with the structure of the residual gas balancing incentive. In particular, respondents were concerned that, under the linepack incentive, Transco was discouraged from building up a surplus or deficit of linepack in response to changing demand and supply patterns (e.g. from building up a surplus when Transco expects a large increase in demand or reduction in supply).
- 4.14. Ofgem notes that the linepack incentive was introduced in response to shippers' concerns that, when operating solely under a price incentive, there was a tendency for Transco to allow linepack to drift significantly between gas days. Shippers said that, under such a regime, they had little indication of when Transco was going to take a balancing action and found that when Transco did take an action, it needed to take larger actions than might otherwise have been the case. This, it was argued, had a greater impact on the daily traded market for gas.
- 4.15. In putting in place the linepack incentive, Ofgem considered that by creating an incentive to manage linepack, costs would be more accurately targeted on a daily basis. The linepack incentive should encourage Transco to take a balancing action when the system was going either particularly long or short on the day, rather than postponing the action to a following day to take advantage of its price incentive (under which it receives its daily maximum reward if it takes no balancing action). In this way, the costs of addressing a supply deficit (surplus) would likely be targeted upon those short (long) of gas on the day in which the supply deficit (surplus) occurred. It was expected that such behaviour

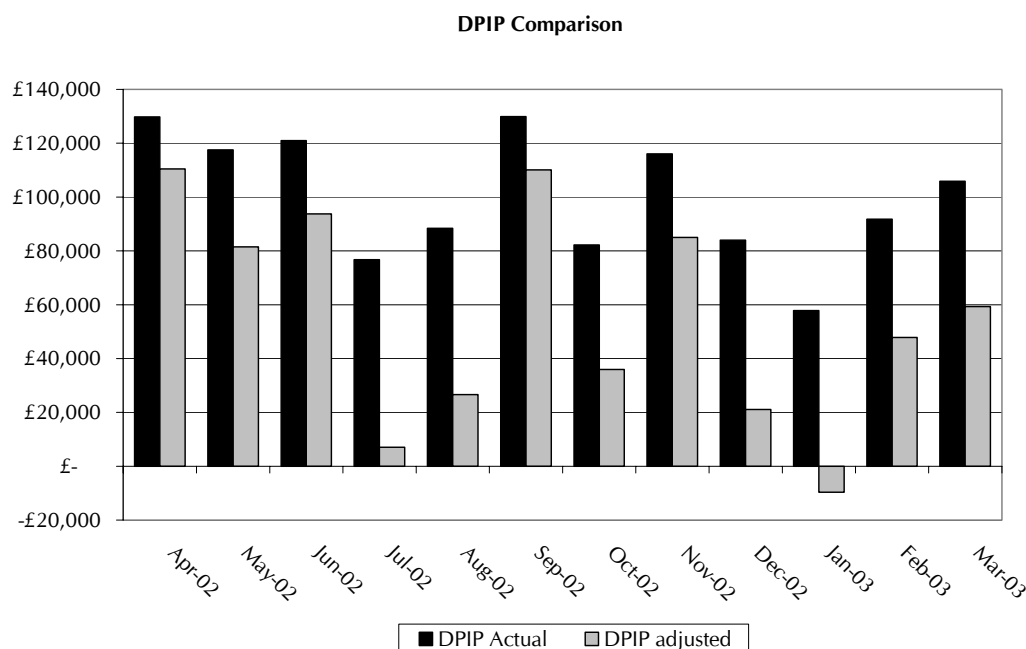
²⁷ *The New Gas Trading Arrangements – Reform of the gas balancing regime – Revised proposals*, Ofgem, February 2002

by Transco should also have a smaller impact on the traded market for gas as it would be taking more frequent but smaller actions.

Ofgem's proposals

- 4.16. A factor of '1/2' was introduced into the formula used for the calculation of the price performance measure at the time of the introduction of the linepack component of the incentive, so that Transco's trading performance was measured against half of the spread between Transco's lowest and highest trade.
- 4.17. Ofgem now considers that Transco has had substantial experience operating under the two components of the incentive and that it is appropriate to review the calculation of the price performance measure. Ofgem is proposing to deepen Transco's exposure under this incentive by an adjustment to the calculation of the price performance measure. We are proposing to remove the factor of '1/2' from the formula used to calculate the price performance measure.
- 4.18. The deepening of the incentive will expose Transco to the full spread in prices which should further encourage Transco to trade closer to SAP. Overall, this should increase efficiency and reduce imbalance costs.
- 4.19. Figure 4.5, below, compares the level of revenue that would have accrued to Transco had Transco been exposed to the impact of all of the spread, with the actual revenues accrued for 2002/3. Ofgem considers that exposing Transco to the full spread of prices would create a better balance in the incentive, while still providing Transco with appropriate reward for out-performance.

Figure 4.5: Comparison of Transco's revenue with SAP rather than the 2*SAP currently included within the price performance measure



Invitation for comments

Ofgem is interested in views on;

- ◆ the appropriateness of changing the price performance measure formula to increase Transco's exposure to the spread between its highest and lowest priced trade against SAP (it is currently only exposed to half of the difference); and
- ◆ whether respondents believe Ofgem's proposal constitutes an appropriate deepening of Transco's residual gas balancing incentive.

5. System balancing incentive schemes

Introduction

- 5.1. This chapter outlines the current system balancing incentive schemes, assesses Transco's performance against the incentives and outlines the issues with regard to setting the incentive parameters and targets. Ofgem invites respondents' views on key elements of the proposed changes.

Outline of the incentive schemes

- 5.2. In ensuring the daily operation of the NTS, Transco uses compressors to ensure that gas is transported to the points on its system where customers are using gas. It also secures gas in store to ensure that the supply of gas is maintained in the event of a network emergency. The use of compressors and gas storage capacity to meet demand requirements is referred to by Ofgem as system balancing. As the costs of undertaking system balancing are born largely by shippers and customers, an incentive was placed on Transco to encourage it to minimise these costs.
- 5.3. Transco's system balancing incentive consists of two components relating to system balancing costs:
- ◆ NTS SO gas costs (shrinkage); and
 - ◆ system reserve (operating margins).

Each of these components is discussed in greater detail below.

NTS SO Gas Costs

- 5.4. NTS SO gas costs relate to the costs of:
- ◆ energy used as compressor fuel;
 - ◆ unaccounted for gas, which arises from meter inaccuracies and discrepancies between measured flows and actual physical flows leading

to differences in measured energy between NTS entry and exit points;
and

- ◆ unbilled energy, which is results from differences between the actual calorific value of gas delivered into the distribution networks and the value used for billing purposes.

- 5.5. All of these costs can be influenced by Transco's actions as NTS SO to some degree. For instance, although to some degree the use of compression can increase as transportation of gas across the system grows, the actual levels of compression used will be influenced, in part, by Transco's management of the system. The level of unaccounted for gas and unbilled energy will be influenced by Transco's billing and metering methodologies.
- 5.6. The target levels of NTS SO gas costs were set for 2002/3 and 2003/4 using forecast volumes of gas required for these purposes. Ofgem multiplied these forecast volumes by an assumed price of gas that was derived using current forward prices for NBP gas at that time. The target costs for 2002/3 and 2003/4 are £59 and £62 million respectively.
- 5.7. The target volumes of gas under this incentive were specified for five years and a formula was set in place (based on using the forward price curve at specified times using specified sources) that derived the price at which these volumes were to be multiplied in setting targets for future years. Ofgem then selected appropriate caps, collars and sharing factors to ensure that Transco was incentivised to manage effectively the volume and price of shrinkage gas.
- 5.8. Table 5.1, below, summarises the current parameters of the NTS SO gas cost incentive.

Table 5.1: NTS SO gas cost parameters

Target (£m)		Existing Cap and Collar (£m)		Existing Sharing Factors (£m)	
2002/3	2003/4	Cap	Collar	Upside	Downside
58.5	61.9	4	-3	25%	20%

System reserve

- 5.9. The SO system reserve function embraces two elements: Operating Margins (OMs) and storage top-up. At the time of setting the initial incentive arrangements, Ofgem considered it appropriate that the arrangements in relation to storage top-up should remain in Transco's network code. As such, the initial system reserve incentive scheme relates solely to the costs of OMs.

Operating Margins

- 5.10. Transco is required, under the terms of its safety case²⁸, to access gas reserves, typically as gas in storage to deal with changes in supply or demand forecasts, offshore supply failures, transportation plant failures, and to cover the orderly rundown of the transmission system in the event of a network emergency. In each case, the requirement is driven by the need to provide within-day support to maintain pressures within safe tolerance levels while other action is taken to address the specific problem. The securing of gas in storage, which allows Transco to ensure the supply of gas is maintained in the event of a network emergency, is referred to as OM gas.
- 5.11. Transco's allowed revenue under the current SO price control includes the costs of storage capacity. The costs of purchasing and selling gas in storage are not funded under the current SO price control, but are instead dealt with through network code arrangements (the so-called "neutrality" arrangements). Initially Ofgem considered that these costs should continue to be recovered in this manner for the two-year duration of the initial incentive scheme. Consequently, the OM allowance in the system reserve target related only to storage costs. The target costs for 2002/3 and 2003/4 were set at £16.8m and £16.6m respectively.
- 5.12. In proposing caps and collars and sharing factors, Ofgem recognised that Transco procures a large part (by cost) of its system reserve storage requirements from Transco LNG storage, a business unit within Transco. As Transco has indicated that it is likely to continue to rely on LNG and that the potential to use other service providers or the demand side is limited, at least in the short-term,

²⁸ Transco's operations are covered by a Safety Case which has been agreed with the Health and Safety Executive (HSE). The HSE must approve any material changes to the safety case.

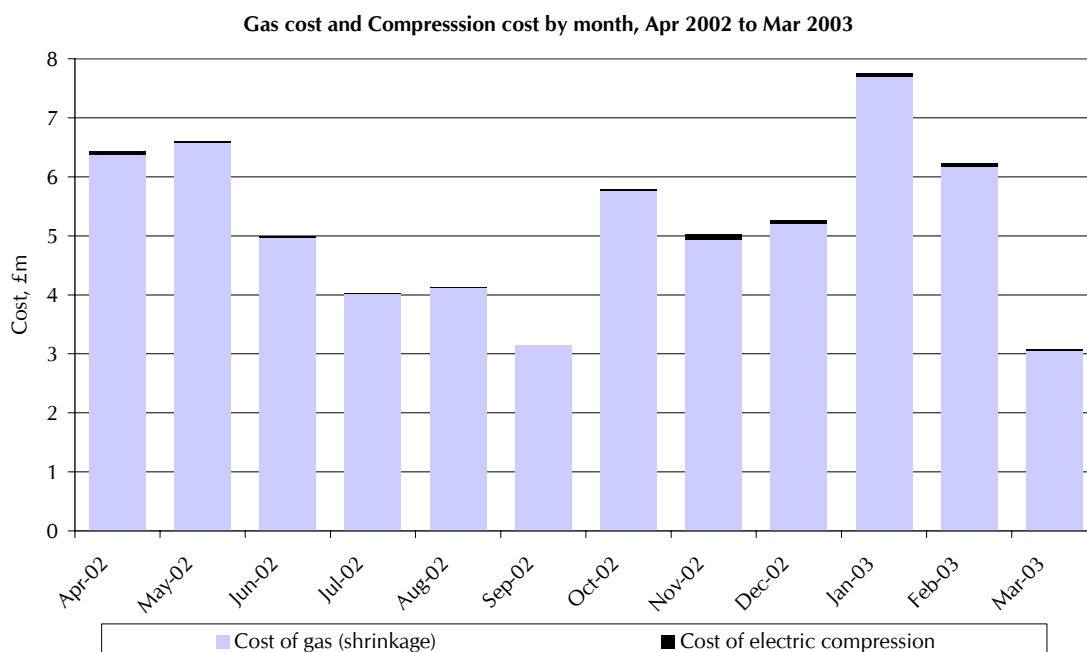
Ofgem considered that it would be inappropriate to apply either caps and collars or sharing factors of less than 100% to these costs. If these were to be applied, Transco could have an incentive to increase the costs it incurs for booking such system reserve, as it would earn all of the revenue (through its LNG subsidiary) but incur only a proportion of the costs through the SO incentive. It was therefore considered appropriate for Transco to be exposed to 100% of the variation in system reserve costs away from the incentive target.

Transco's performance under the incentives

Gas cost

- 5.13. Figure 5.1 below, shows the cost of gas for shrinkage and the cost of electricity for the running of compressors incurred in each month between April 2002 and March 2003. As figure 5.1 shows, monthly costs ranged between £3.1m and £7.7m with the total for the twelve months being £62.4m. Electric compression costs represented a small proportion of total gas costs at £0.4m for the year. Overall, Transco slightly under performed against the incentive - its total annual costs were £62.4m, compared with a target cost of £58.5m. With application of the 20% sharing factor, this meant Transco bore a loss of £0.77m.
- 5.14. In the current formula year, total gas costs for the eight months to November 2003 were £25.8m, 25% lower than for the equivalent period in the previous formula year. Transco is currently forecasting an over performance against this incentive, with predicted costs of £57.8m against a target of £61.9m. This would result in a net revenue to Transco of £1.025m.

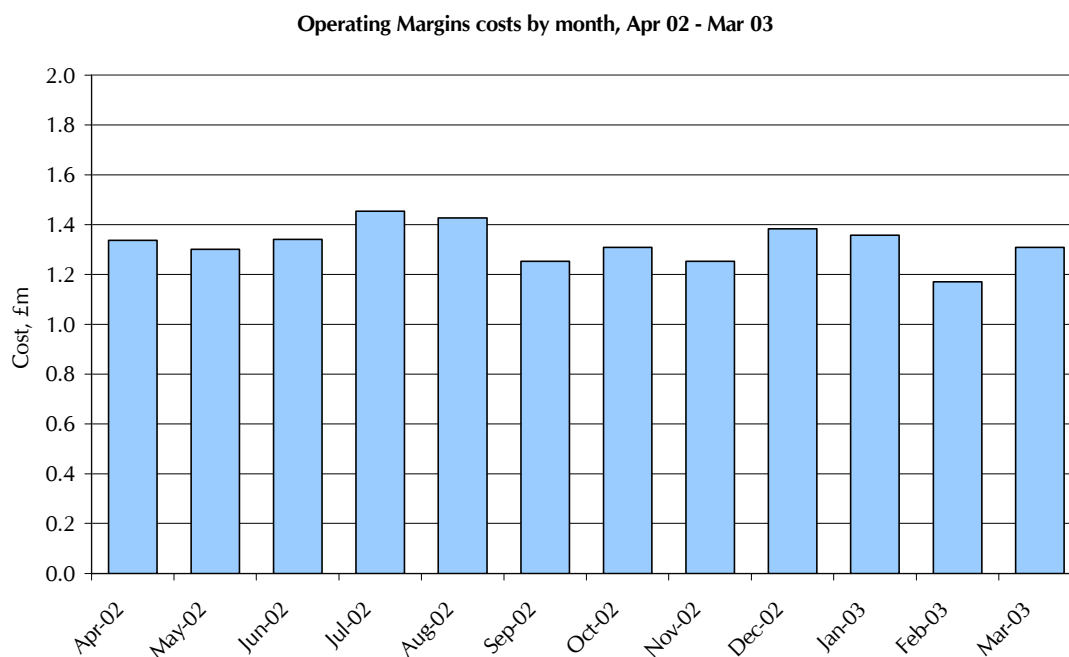
Figure 5.1: Gas costs and electric compression costs, Apr 2002 to Mar 2003



System reserve

- 5.15. Figure 5.2, below, shows the Operating Margins storage capacity costs incurred in each month between April 2002 and March 2003. As Figure 5.2 shows, these costs ranged between £1.17m and £1.45m, with a total for the twelve months of £15.89m. This is slightly lower than the target cost for the period of £16.8m and meant that Transco received £0.91m under this component of its incentive.
- 5.16. In the current formula year, total Operating Margins storage capacity costs for the eight months to November 2003 were £11.91m, 12% higher than the previous year. Transco is currently forecasting an under performance against this incentive, with predicted costs of £18.34m against a target of £16.6m. This would result in a net loss to Transco of £1.74m.

Figure 5.2: Operating Margins costs by month, April 2002 to March 2003



Gas Cost Incentive

Rationale

- 5.17. The costs of own use, unbilled and unaccounted for gas is itself calculated by a formula set out in the licence and the formula was intended to remain in place for the full five years of the incentive period. The targets, caps and collars were set for two years with the ability to roll them forward for the remaining years of the formula period.
- 5.18. This formula uses the target volume of such gas and the associated reference price ('the gas cost reference price', or GCRP) of that gas. The target volumes of gas were set for the full five year price control period in the licence.²⁹ The reference price used is calculated on the basis of using quoted forward prices for the year in question on the following basis. Average quarterly forward prices are derived as the mean of NBP forward quarterly prices published by a gas price reporting service (e.g. Heren) between 1 March and 20 March of the formula year immediately prior to the year that GCRP will apply to. An annual gas cost reference price is then derived as a weighted-average (weighted by NTS

throughput of the previous formula year, i.e. formula year t-2) of the quarterly prices across the formula year, plus a fixed add-on to allow some flexibility to be built into the contract structure. A relatively narrow time window of averaging was chosen on the basis that this would allow Transco the ability to almost completely hedge itself against movements in the gas price if it so desired. The longer the averaging period, the less likely it is that Transco will be able to find a contract which is priced at a level close to the reference price formula.

- 5.19. However, Transco has brought to Ofgem's attention some potential market impacts associated with the relatively short window under which forward prices are averaged. In particular, Transco has suggested that responding to the incentive by sourcing such large volumes in such a small window (in excess of 8TWh) might be expected to have a significant impact on the cost of the gas itself.

Proposed changes to the Gas Cost Reference Price

- 5.20. Transco has suggested that it would be beneficial to extend the time period over which the GCRP is set. It proposed that:
- ◆ retaining the existing licence provisions, or formula year 2004/5, in recognition that much of the preceding formula year (2003/4) has elapsed, and in order to base the reference price on future forward prices against which it is possible to hedge;
 - ◆ for formula year 2005/6, it is proposed that the reference price could be based on the average of the quoted relevant forward prices across the period covered by the latest of the first calendar month following implementation of appropriate section 23 licence modifications and 31 March 2005; and
 - ◆ for formula year 2006/7, the reference price could be based on the average of the quoted relevant forward prices across the whole of the preceding formula year.

²⁹ For the coming formula years, the specified gas volumes are: 8,929GWh in 2004/5, 8,976GWh in 2005/6 and 9,161GWh in 2006/7.

Ofgem's views

- 5.21. Ofgem is proposing to accept Transco's suggestion for changes to the reference period over which the gas cost reference price is calculated. Ofgem would welcome comments on the appropriateness of the proposal, in particular whether the proposal represents an improvement on the current method of calculating the reference price.
- 5.22. Ofgem is proposing no changes to the target volumes of gas and to the electric compression cost targets which were set for the full five year price control period in the licence.
- 5.23. Ofgem is proposing no changes to the current caps, collars and sharing factors for the remaining three years of the scheme.

System reserve – Ofgem's views and proposals

- 5.24. Ofgem does not propose to make any changes to the sharing factors for system reserve. Ofgem put in place 100% sharing factors for the initial two year period due to the common ownership of the LNG facilities. Ofgem has stated³⁰ that, should new storage facilities or more flexible demand management arrangements emerge, or NGT's proposals to restructure the ownership result in a more arms-length, transparent and non-discriminatory tender process, Ofgem would consider reviewing the 100% sharing factors.
- 5.25. Ofgem notes that Transco retains ownership of the LNG facilities and still uses these facilities for booking a significant proportion of its OM storage capacity bookings. It also notes that no significant new storage facilities have begun operation in the last two years (although a number are in advanced planning) and that demand management arrangements remain largely unchanged.
- 5.26. Ofgem is proposing no changes to the target currently allowed for the purchase of OMs (and the associated 9D prices) as a short term measure. Ofgem also proposes to initiate a review with a view to further developing incentives on

³⁰ 'Transco's National Transmission System system operator incentives 2002-7, Final proposals', Ofgem, December 2001.

Transco to actively find economic substitutes for Transco LNG. These incentives will be implemented at a future date.

Isle of Grain

- 5.27. In May 2003 NGT put forward to Ofgem a proposal to transfer its Isle of Grain Liquefied Natural Gas (LNG) facility to a non-regulated (i.e. non-licensed), company within the NGT Group and to convert the facility into a LNG import terminal. Ofgem in its July 2003 decision document³¹ approved the transfer.
- 5.28. Transco have proposed modifications (639³² and 647³³) to the network code to change the status of the Isle of Grain from an LNG Storage Facility to an Importation Terminal. Modification 639 proposes that Isle of Grain be removed from the list of Transco LNG Storage Facilities and from the list of Constrained Storage Facilities (as per the network code). This would reflect its change of status from a storage facility to an LNG importation terminal. The proposal would allow the Isle of Grain import terminal to continue to provide system support services to Transco, as reflected in Transco's Safety Case.
- 5.29. Modification 647 seeks to put in place these arrangements for post-January 2005 when Isle of Grain will cease to offer storage services. There will be no carry-over provisions for customers with gas-in-store and mandatory withdrawals would take place in the event that customers did not make alternative arrangements.
- 5.30. Ofgem is still considering its position on the details of both modifications. We are particularly keen to ensure that any arrangements at the import terminal are consistent with those at other terminal, that Transco is purchasing any system support services in a non-discriminatory and economic manner, and that storage customers are not disadvantaged by the truncating of the 2004/5 storage year to 9 months, i.e. to January 2005.

³¹ *National Grid Transco's proposal to transfer its Liquefied Natural Gas facility at Isle of Grain to a separate NGT group company*, A decision document, Ofgem July 2003.

³² Mod 639 - Isle of Grain: Change of Status from LNG Storage Facility to Importation Terminal.

³³ Mod 647 - Transitional Arrangements to facilitate the change of status of the Isle of Grain facility to a LNG Importation Terminal.

- 5.31. Should the modifications be approved, it would be necessary to reword the definition of the System Reserve Performance Measure (SRCP) to include the costs incurred in respect of LNG Importation capacity. This would purely be a change of definition, as no changes to Section 9D prices are proposed.

Glenmavis

- 5.32. The Glenmavis LNG facility is one of the LNG facilities which may be utilised by Transco to provide an OMs service. Additionally, under the terms of its Gas Transporter Licence, Transco is obliged to transport natural gas to the Scottish Independent Networks (SINs). Road tankers are the least cost means of meeting this obligation, creating reliance on a source of LNG. The Glenmavis facility was selected, and developed further, to supply LNG to road tankers because of its geographical position.
- 5.33. Following plant performance experiences Transco LNG initiated a review of the options for maintaining the required level of service provided by the facility. Transco LNG concluded that the most economic and efficient approach involves full replacement of the Glenmavis Phase 2 cold box and associated refrigerating plant.
- 5.34. Ofgem considers that such investment seems warranted and discussions are continuing on an appropriate means of revenue recovery. As such, whilst no changes to Transco's SO system reserve incentive target are proposed in this document, Ofgem may consider it appropriate to review the targets at a future date.

Invitation for comments

- 5.35. Ofgem is interested in views on the appropriateness of:
- ◆ the proposed changes to the gas cost reference price, in particular whether the proposal represents an improvement on the current method of calculating the reference price;

- ◆ retaining the current gas cost incentive caps, collars and sharing factors for the remaining three formula years; and
- ◆ retaining the current system reserve target and incentive parameters for the remaining three formula years.

6. Exit capacity incentive

Introduction

- 6.1. The current SO incentives involve arrangements for two stages of the reform of the exit incentive regime, a transitional stage which was intended to apply for two years from 1 April 2002³⁴ and a long-term stage which was intended to apply from 1 April 2004. The intention of the two stages was to provide it with incentives to efficiently manage constraints at exit and to consider efficiently trading off the costs of pipeline investment against the costs of interruption and the use of constrained LNG.
- 6.2. This chapter outlines the transitional arrangements for the exit capacity investment incentive, assesses Transco's performance against the incentive³⁵ and outlines Ofgem's proposals for changes to the scheme's parameters (caps, collars and sharing factors). In addition, Ofgem invites respondents' views on key elements of the proposed changes.

Outline of the transitional incentive (2002-2004)

- 6.3. In exchange for agreeing to be interrupted by Transco up to 45 days per year, interruptible shippers do not pay NTS exit capacity or LDZ capacity charges. Ofgem refers to those foregone charges as the "interruptible discount". The transitional arrangements specified in the licence allow Transco to retain its existing interruption rights, but provide it with financial incentives to reduce costs and revise the commercial terms by offering customers more flexible contracting arrangements. To provide both current interruptible customers and Transco with a degree of protection in the transition, a transitional incentive has been established that is based upon the revenues forgone by Transco associated with its existing interruption discounts. This arrangement allowed Transco and

³⁴ However, the wording of the licence allows for this incentive to be rolled over into subsequent formula years until the first complete formula year in which Transco achieves universal firm registration of exit capacity rights.

³⁵ The analysis related to the period 1 April 2002 to 31 March 2003, data for the current formula year will not be available until the year has ended,

interruptible customers to maintain their existing rights with the basis upon which interruptible discounts are secured remaining substantially unchanged.

- 6.4. In addition, the transitional arrangements provide Transco with incentives under which it is required to make additional payments in respect of supply points that it interrupts for in excess of 15 days per year. The payments for interruption beyond 15 days apply whether a supply point has been interrupted for NTS or for LDZ purposes.
- 6.5. A further aspect of the exit investment incentive is an element which incentivised Transco to invest efficiently to meet its customer requirements by allowing Transco additional revenues associated with exceeding the baseline output measures. For additional exit capacity provided above the baseline measure, a target cost allowance is set equal to the volume of additional capacity provided multiplied by the exit unit cost multiplier. The exit unit cost multiplier is comprised of the exit capacity unit cost allowance (0.322£m/GWh) multiplied by the exit capacity adjustment factor (0.10772), and adjusted for inflation. If Transco provides less capacity than the baseline measure, the incremental exit capacity target cost allowance is set at zero.

Incentive scheme targets and parameters

- 6.6. Under the transitional arrangements, Transco is set a target cost based on the expectation of the costs it will be deemed to have incurred in procuring interruption from customers – both for interruption up to 15 days in a year and in excess of 15 days in a year. Against this target, a deemed level of incurred costs, and in the event of interruption more than 15 days, an actual level of costs is calculated and compared. Transco earns / bears a proportion of the costs if it over / under performs subject to sharing factors and caps and collars. The sharing factors, caps and collars were initially set for the two years that the transitional arrangements were expected to last and are reported in table 6.1.

Table 6.1: Caps, collars and sharing factors for the exit capacity investment incentive, 2002/3 – 2003/4 (£m)

Cap and Collar		Sharing factors	
Cap	Collar	Upside	Downside
10	-2.5	50%	25%

- 6.7. When developing the arrangements, Ofgem considered that Transco's incentives to make savings under the incentives could be distorted by its ownership of peak shaving (constrained) LNG storage facilities³⁶ that can function as an alternative to interruption. In particular, increases in the price and/or volume of its use of peak shaving LNG over forecast levels, rather than using interruption, would result in increased revenues to Transco LNG. If this element had been included with the other elements of the exit scheme, Transco SO would only bear a proportion of such higher costs – the remainder would be recovered in whole or in part by higher transportation charges levied on shippers.
- 6.8. In order to avoid such a perverse outcome, no cap or collar was specified with regard to the costs of Transco procuring transmission support from the LNG facilities. In addition, Transco faces a 100% exposure to the LNG costs incurred i.e. it has to bear these costs in full.

Transco's performance under the transitional incentive

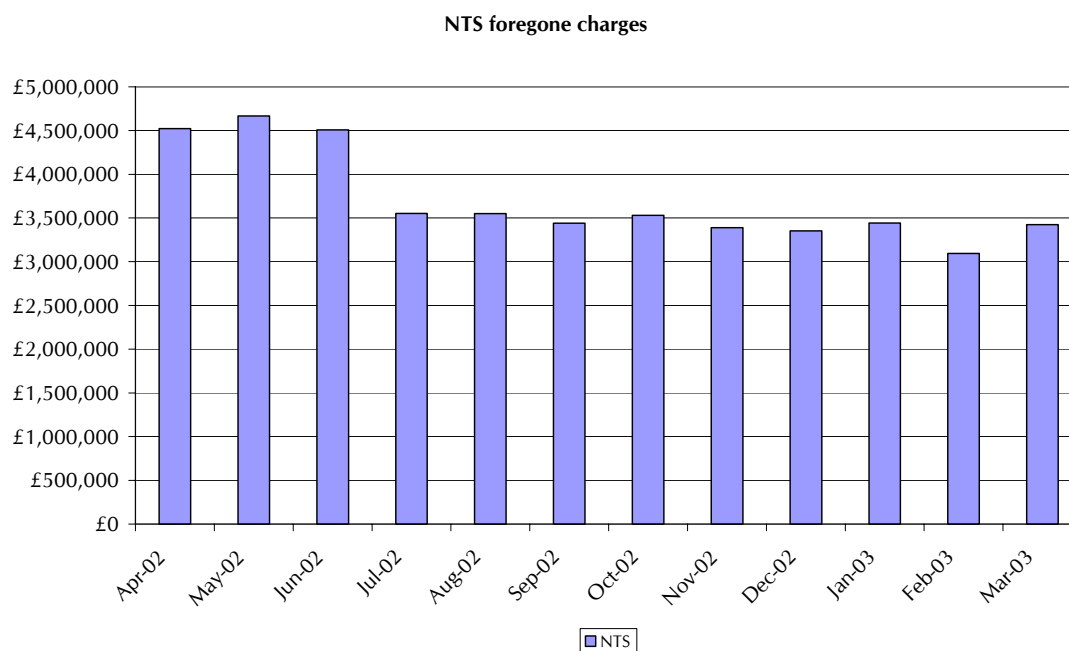
- 6.9. Transco has calculated that its exit incentive performance revenue for the incentive year 2002/3, was £5.35m. Ofgem is in the process of questioning Transco in relation to the basis upon which this level of gains was generated, and the extent to which it raises concerns with respect to the methodologies that Transco has used to calculate exit capacity levels at Connected System Exit points (CSEPs) and Storage Connection points. Ofgem is in the process of considering whether or not to approve the methodologies proposed by Transco for the calculation of exit capacity levels at CSEPs and storage connection points. Transco's performance against individual elements of the exit capacity incentive is outlined in the following sections.

Exit interruption foregone charges

- 6.10. The costs that Transco was deemed to have incurred as charges foregone by customers (the "interruptible discount") on interruptible contracts are shown in figure 6.1, below. Foregone NTS charges vary between £3.1m in February 2003 and £4.67m in May 2002 and were £44.57m in total.

³⁶ Transco currently obtains additional transmission support through the use of Constrained LNG (CLNG).

Figure 6.1: Charges foregone by way of Transco entering into NTS interruptible contracts



Sites interrupted for more than 15 days

6.11. In 2002/3, Transco surpassed the 15 day interruption threshold with respect to some individual sites. In doing so, Transco incurred charges payable to those sites. The total volume of interruption called above the 15 day threshold was 27GWh and applied to sites in two LDZs – although the majority of this interruption occurred in one LDZ. This resulted in Transco incurring NTS interruption costs of £4,244 and LDZ interruption costs of £95,533.

Constrained Storage costs

6.12. Total constrained LNG costs were £6.6m for the incentive year which was slightly above the target incentive allowance of £5.9m. Since constrained Storage costs are subject to 100% sharing factors with no caps or collars, this resulted in a loss to Transco of £0.7m for the incentive year 2002/03 associated with constrained Storage.

When Transco has ‘constrained’ the use of shippers’ capacity at LNG sites it can use these storage holdings as its own in the event that flow at particular points on the network exceeds specified levels.

Rationale for reform

Initial incentive scheme parameters

- 6.13. In the licence, Ofgem set out a broad commercial framework which aimed to encourage Transco to undertake the appropriate reform of the arrangements regarding the management of NTS exit capacity. The sharing factors, caps and collars for the transitional exit incentive were set for two years (2002/3 and 2003/4).
- 6.14. It was Ofgem's intention that by 1 April 2004, Transco would have put in place arrangements for the registration of all NTS exit capacity as firm. As a result, the transitional arrangements would have been replaced by long-term exit arrangements which would provide incentives on Transco to efficiently contract for interruption with the holders of firm NTS exit capacity and to efficiently trade off the costs of interruption with the costs of pipeline investment and the use of constrained LNG. However, provision was made in the licence for the transitional arrangements to be rolled forward should NTS universal firm registration be delayed.

Further developments impacting the exit capacity investment incentive

- 6.15. The development of the necessary arrangements for the implementation of NTS universal firm registration has been affected by the reform of the exit arrangements and by NGT's subsequent decision to sell one or more Distribution Networks (DNs).

Exit reform

- 6.16. In our letter of 8 May 2003 to interested parties³⁷, Ofgem set out that it considered that the scope of the exit reform should be expanded from just considering NTS interruption to include LDZ interruption. Ofgem argued that if the scope of the exit reforms were expanded to include LDZs, then "it would not seem sensible to enforce this requirement (i.e. universal firm registration of exit capacity on the NTS) against Transco for 1 April 2004". Ofgem did note that despite this, Transco retained a reasonable endeavours requirement to ensure

universal firm registration of NTS exit capacity “as soon as is reasonably practicable” after 1 April 2004.

Transco’s proposed Distribution Network (DN) Sale

- 6.17. The development of NTS exit reforms as envisaged in the licence has also been significantly affected by the consideration of NGT’s subsequent plans for the sale of one or more of its Distribution Networks (DNs). In particular, the process for exit reform is now being considered within the wider context of DN sales, given the potential implications that this may have for the basis upon which NTS and DN capacity and interruption services are provided. This has had the effect of redirecting the process of developing exit reforms.
- 6.18. Ofgem wrote an open letter to the industry in May 2003 following NGT’s announcement that it would consider selling one or more DNs. This letter explicitly noted that it did not seem sensible to seek to enforce the licence requirement on Transco to use all reasonable endeavours to introduce universal firm rights for NTS exit capacity by April 1st 2004, given that exit capacity issues were to be taken forward as part of the DN sales consultation process.

Ofgem’s proposals

Incentive scheme parameters

- 6.19. We have taken account of the developments outlined above as well as experience with the workings of the exit incentive to date, in considering the most appropriate levels of caps, collars and sharing factors for rolling forward the current structure of the incentive for 2004/5-2006/7. We are proposing to reduce the cap and the collar that apply to the exit investment incentive scheme to £1/-1 million for each of the three final years of the control (2004/5, 2005/6 and 2006/7). No changes are proposed for the sharing factors.
- 6.20. We propose that further developments to the exit investment incentive arrangements from 2004/5 onwards should be considered as part of the wider

³⁷ Letter entitled “Universal firm registration of NTS exit capacity: update”, Ofgem, 8 May 2003

assessments of exit/interruptions now taking place in the DN sales/Exit reform consultation process.

Obligation to register all exit capacity as firm

6.21. In light of the DN Sales consultation process and work concerning the reform of the exit arrangements, we are proposing to remove the requirement from the licence for Transco to introduce universal firm NTS Universal Firm Registration on a reasonable endeavours basis by the 1 April 2004 or as soon as reasonably practicable thereafter.

Invitation for comments

6.22. Ofgem would welcome views on the appropriateness of:

- ◆ setting Transco's Exit Capacity incentive cap and collar to £1\1m pending the outcome of the DN Sale consultation process/review of the exit capacity arrangements; and
- ◆ the removal of the reasonable endeavours obligation from Transco's licence for the introduction of NTS Universal Firm Registration.

7. Internal cost incentive

Introduction

7.1. In this chapter, Ofgem outlines the current internal cost incentive scheme, assesses Transco's performance against the incentive and outlines the high level proposals for changes to the incentive parameters.

Outline of the incentive

7.2. Transco's internal incentive scheme covers SO internal cost, over which Transco has direct control. These internal costs comprise:

- ◆ operating expenditure;
- ◆ capital expenditure; and
- ◆ a return on the SO regulatory value (RV).

7.3. Transco's NTS SO operating costs are made up of staff costs, non staff costs (the costs of computing and information systems, telemetry and property rental costs), and allocated central costs (costs related to support systems such as HR, finance and company secretary). Table 7.1, below, shows Transco's targets for its NTS internal SO operating costs for 2002/3 to 2006/7.

Table 7.1: Transco's target internal SO operating costs (£m, 2000 prices)

	2002/3	2003/4	2004/5	2005/6	2006/7	Total
Operating costs	24.5	21.3	19.6	18.8	18.8	102.8

7.4. Transco's allowed returns on its SO regulatory value were calculated by rolling forward the RV for the NTS SO at 31 March 2002, adding Transco's projected expenditure and subtracting an appropriate depreciation allowance. Table 7.2, below, gives Transco's NTS SO RV, depreciation and capital expenditure for the period 2002/3 to 2006/7.

Table 7.2: Transco's NTS SO RV, depreciation and capital expenditure (£m, 2000 prices)

	2002/3	2003/4	2004/5	2005/6	2006/7
Opening Value	17.8	21.4	24.2	23.1	16.4
Capex	7.8	8.3	6.0	1.3	1.2
Depreciation	(4.2)	(5.5)	(7.0)	(8.0)	(7.0)
Closing Value	21.4	24.2	23.1	16.4	10.6
Rate of Return	1.4	1.2	1.4	1.2	0.8

7.5. Ofgem applied the same weighted average cost of capital for the SO business as that used for the Transmission Asset Owner (TO) business. The weighted average cost of capital used was 6.25%. On this basis, the overall target values for the SO internal cost incentive are as shown in table 7.3³⁸.

Table 7.3: NTS SO internal cost targets (£m, 2000 prices)

	2002/3	2003/4	2004/5	2005/6	2006/7	Total ³⁹
Operating costs	24.5	21.3	19.6	18.8	18.8	102.8
Depreciation	4.2	5.5	7.0	8.0	7.0	31.7
Rate of Return	1.2	1.4	1.5	1.2	0.8	6.2
Total	29.9	28.2	28.1	28.0	26.6	140.8

7.6. In order to maintain consistency across the NTS SO incentive schemes, Ofgem applied sharing factors to internal operating expenditure equal to the weighted average of the sharing factors of the day-to-day external cost schemes (excluding the entry capacity buy-back scheme). The sharing factors for the first two years of the incentive scheme were set at 40 % for the upside and 35% for the downside.

Transco's performance under the incentive

7.7. Table 7.4, below, shows Transco's performance against the NTS SO internal cost incentive for the period April 2002 to March 2003. The performance under the incentive during this period was an underperformance of £6.99m (adjusted for inflation); after the application of the 35% downside sharing factor resulted in a

³⁸ For each formula year the target values are inflated by an indexation value specified in the licence.

³⁹ For each formula year the target values are inflated by an indexation value specified in the licence.

net cost to Transco of £2.44m. The main driver of the underperformance against the internal cost incentive target were operating costs, which were £8.52m higher than the target operating costs of £25.73m.

Table 7.4: Transco's performance against the NTS SO internal cost incentive

	Target costs (£m, 2000 prices)	Target costs (£m nominal)	Actual costs (£m nominal)	Variation (£m nominal)
Operating costs	24.5	25.73	34.25	8.52
Depreciation	4.2	4.41	2.76	-1.65
Rate of return	1.2	1.26	1.38	0.12
Total	29.9	31.4	38.39	6.99

Proposals for reform of the incentive

7.8. In order to maintain consistency across the NTS SO incentive schemes, Ofgem applied sharing factors to all the NTS SO internal costs equal to the average sharing factors of the day-to-day external cost schemes (excluding the entry capacity buy-back scheme). Any changes to the parameters of the incentives outlined in chapters 3, 4 and 5, would require an adjustment to the internal cost sharing factors to keep them aligned with the proposed external cost incentive sharing factors. Currently, Ofgem is not proposing to alter any of the sharing factors concerned with these incentives and, as such, Ofgem is not proposing to make changes to the NTS SO internal cost incentive.

7.9. Transco has indicated to Ofgem that it believes consideration should be given to the alignment of the internal SO incentive with the internal TO incentives as well as external SO incentives. In particular, Transco suggested that potentially perverse incentives exist within NGT regarding:

- ◆ staffing levels between the gas SO and TO functions as Transco is exposed to 100% of any variation in spending under the TO price control, but only exposed to 35-40% of over-spend on SO incentives. This creates an incentive to focus cost reducing initiatives on TO functions rather than SO, or to identify TO staff as SO staff. wherever there is a potential overlap between the two functions; and

- ◆ between the gas SO and electricity SO functions for similar reasons – with NGT being exposed to a higher percentage of spending under the electricity SO incentives than under the gas SO incentives.

Ofgem's views

- 7.10. Ofgem understands the above concerns. However, the initial reason for aligning the SO internal costs with the “external” SO costs was that this would allow Transco to make efficient trade-offs of spending and increase SO internal costs if this would improve its performance under SO external costs. In addition, by aligning the sharing factors with external costs, this would allow internal costs to be more readily included in an overall single scheme if all of the external costs are unified into a single SO incentive scheme with one target and one set of parameters. Under such a scheme, Transco would have one target under which it would seek to optimise all aspects of its SO function.
- 7.11. However, Ofgem would welcome respondents’ views on the appropriate alignment for the SO internal costs scheme.

8. Other areas to be reviewed

Introduction

- 8.1. This chapter reviews the other proposed changes to the SO incentive regime including: the requirement to reserve 20% of Initial NTS SO baseline NTS entry capacity for release on a short-term basis and the removal of the obligation to produce Operational Guidelines (OG).

20% of entry capacity reserved for annual auctions

Overview

- 8.2. Under the SO incentive arrangements, Transco is obliged to offer for sale a minimum of 90% of the NTS TO baseline entry capacity (known as the Initial NTS SO baseline entry capacity) for sale in at least one 'clearing allocation'⁴⁰. Sales of this NTS SO baseline entry capacity levels are subject to the following allocations:
- ◆ 80% of the initial NTS SO baseline capacity for a year at each terminal can be offered for sale more than one year in advance; and
 - ◆ the remaining 20% of the Initial NTS SO baseline entry capacity must be reserved for sale effectively from the year ahead stage.
- 8.3. In requiring Transco to reserve 20 per cent of existing Initial NTS SO baseline entry capacity for short-term release, Ofgem was concerned that selling all available entry capacity in the long-term auctions could create a barrier to entry into Great Britain's gas infrastructure market. Ofgem recognised that, in the long-term, the ability to signal new entry capacity requirements and have Transco respond with additional investment will reduce these concerns. However, in the short-term, barriers to entry may persist for some time in the absence of a liquid and transparent secondary market in entry capacity.

⁴⁰ Ofgem defines a clearing allocation as an auction that either: results in all capacity that has been offered for sale being sold; or has a reserve price of zero.

8.4. In the explanatory notes accompanying the proposed changes to Transco's GT licence in April 2002, we stated that the reservation requirement should be removed once a liquid secondary market in entry capacity had developed. A liquid secondary market would provide shippers with an alternative to buying entry capacity from Transco and would reduce the ability of market participants to foreclose the market against new entrants. Ofgem intended to review the development of the secondary market after two years, and this section outlines the results of that review.

Development of the secondary market

8.5. The secondary market for entry capacity operates on an over-the-counter basis, whereby shippers agree to trade entry capacity holdings bilaterally. Removing the reservation requirement and relying on the secondary market to provide access to the NTS in the short-term would require liquidity in the secondary market to be sufficient to ensure that entry capacity could be sourced from this market on a regular basis. Ofgem, in its August 2003 review of the first long-term entry capacity auctions⁴¹, summarised the results of its preliminary analysis of current status of the secondary market.

8.6. We concluded that:

- ◆ the secondary market has grown over the past three years, with a clear upward trend in both traded volumes and participation;
- ◆ the ratio of total traded volume⁴² to the original quantity released (which in 2001/2 was 16%) is somewhat smaller than in other markets; and
- ◆ many trades of entry capacity are between two shipper identities which are owned by the same company.

Further analysis

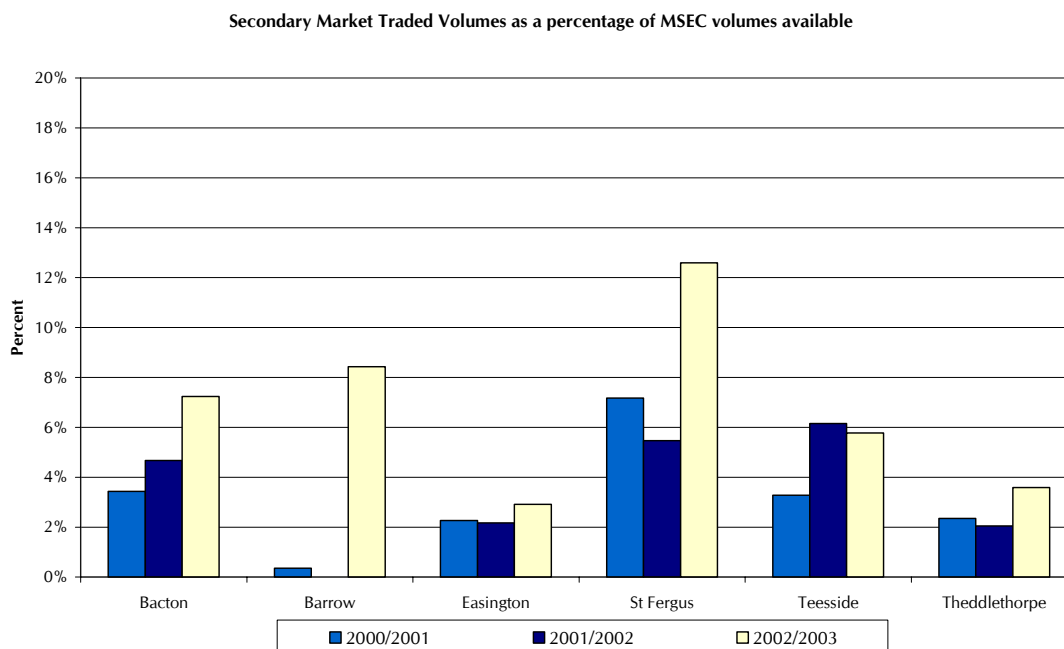
8.7. Ofgem has undertaken further analysis of the status of the secondary market. Figure 8.1, below, shows the total traded volume in each price control formula

⁴¹ *The January 2003 Long-Term System Entry Capacity Auctions: A review document*, Ofgem, August 2003

⁴² Proportion of total traded volume to the original quantity released at all entry terminals.

year as a percentage of the original quantity released in NTS entry capacity auctions. These figures are shown for each of the six main beach terminals.

Figure 8.1: Total traded volumes as a percentage of the original quantity released, Apr 2000 - Mar 2003



8.8. There has been a noticeable growth in traded volumes at most terminals, with the overall total doubling between 2001/2 and 2002/3. However, the total level of trading of capacity remains relatively small on the secondary markets – covering less than 8% in 2002/3 of total capacity released at most terminals. St Fergus has been the terminal with the largest volume of traded capacity, accounting for 42% of all capacity trades in 2002/3.

8.9. In terms of long-term capacity sales, no terminal apart from St. Fergus has seen more than 50% of total SO baseline entry capacity sell in any of the forward quarters. As a result, there remain significant volumes of capacity unsold at these terminals that will be available for sale nearer to the time of use. Such available entry capacity levels reduces the need for establishing a secondary markets as new entrants should be able to secure entry capacity from the primary source close to the time of usage. At St. Fergus, all available capacity sold out in a number of quarters in the long-term auctions. As such, the presence of a secondary market is most important at that terminal.

Activity at St Fergus

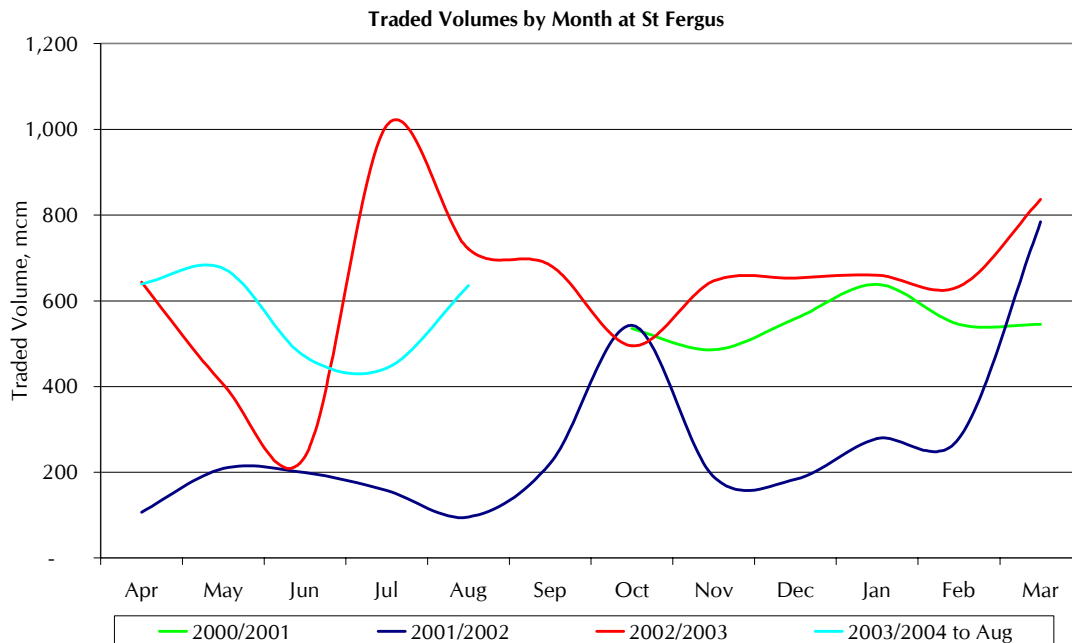
- 8.10. Over the past few years, St Fergus has seen the greatest demand for entry capacity of the six main beach terminals and secondary market activity has been greatest at this terminal.
- 8.11. Table 8.1, below, shows the number of companies trading St Fergus entry capacity in each formula year. The growth in participation is consistent with that of the recent LTSEC and MSEC auctions.

Table 8.1: Number of companies trading St Fergus entry capacity, by formula year

Financial year	2000/01	2001/02	2002/03
No. companies trading St Fergus capacity	18	21	29

- 8.12. Figure 8.2 shows how the monthly traded volumes at St Fergus have changed over the past three formula years. It appears that there is considerable variation in traded volumes from month to month with no clear seasonal pattern in evidence. However, there has been growth in traded volumes between the last two formula years, with a material increase in volumes in ten of the twelve months.

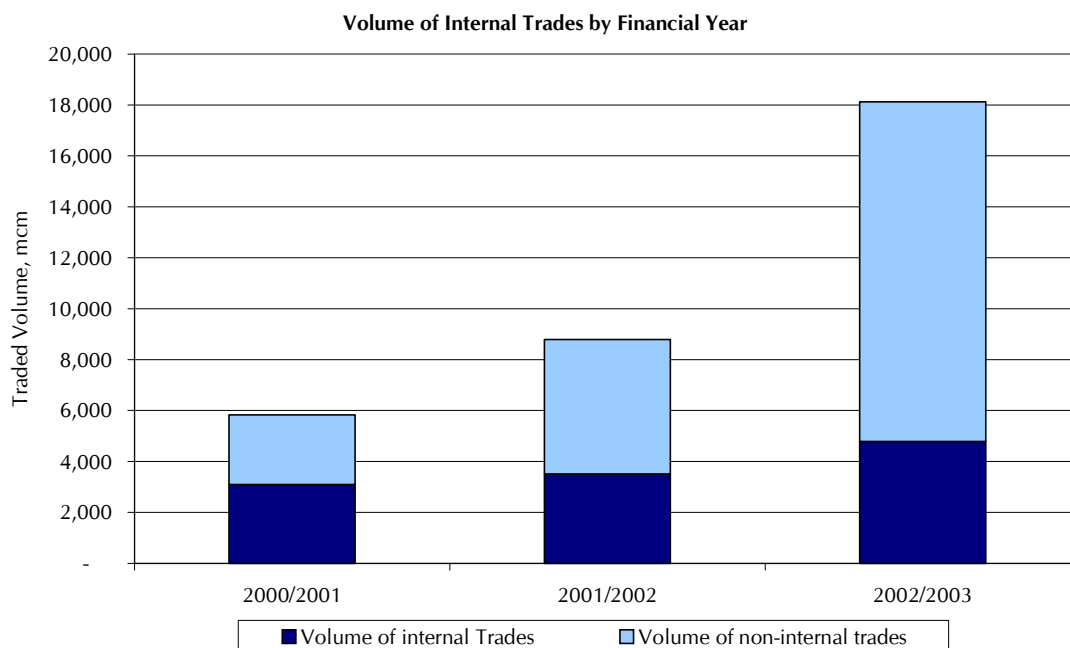
Figure 8.2: Monthly traded volumes at St Fergus, Apr 2000 – Aug 2003



Internal trades

8.13. Consistent features of the secondary market for entry capacity are 'internal trades' between two shippers owned by the same company. Such trades have no real effect upon market liquidity and therefore must be corrected for when analysing the growth in activity. Figure 8.3, below, splits the total traded volume in each financial year into volumes traded internally and externally.

Figure 8.3: Volume of internal trades in each financial year



8.14. Although internal trades are significant, the majority of the growth in secondary market volumes has been due to an increase in external trades. This is a welcome development as it supports an increase in the liquidity of the secondary market.

Ofgem's proposals

8.15. There has been a noticeable growth in traded volumes in the secondary market in recent years. However, the ratio of secondary market traded volume to the original product remains small at St Fergus. Ofgem considers that further growth must take place before the secondary market can be a reliable source of entry rights for new entrants to the industry. Ofgem, based upon the information

currently available, considers it appropriate to retain the requirement on Transco to reserve 20% of the initial NTS SO baseline entry capacity for release on a short-term basis. We will continue to monitor the development of the secondary market and will revisit this consideration during the next review of the incentive arrangements.

- 8.16. Ofgem is interested in receiving views from participants on the extent to which they believe that a liquid secondary market in entry capacity has developed both at St Fergus and at the other main beach entry points.

Requirement to produce Operational Guidelines

Overview

- 8.17. The Operational Guidelines (OGs) are a set of rules that govern Transco's balancing operations and use of balancing tools. The OGs are not part of Transco's network code, but are established by a separate obligation under Transco's licence (special condition 17). Nevertheless, they are required under the licence to be consistent with the network code. The OGs are intended to ensure that Transco takes balancing actions that are consistent with the efficient and economical operation of the system. Only Transco is allowed to propose modifications to the OGs, and these modifications require the consent of the Authority.
- 8.18. The September 2002 licence modifications put in place an obligation upon Transco to produce System Management Principles (SMPs) and Procurement Guidelines (PGs). The PGs provide details of the types of services for which the SO might contract and the frequency of any tenders to procure such services. The SMPs outline the high level principles that the SO adopts in balancing the system and in managing constraints. Ofgem considered that it was necessary to put such statements into place in light of Transco's potential ability to contract using a range of tools, and the necessity for all market participants to be aware of its requirements and hence be able, if they wish to offer their services to Transco.
- 8.19. In September 2002, Transco raised modification proposal OG 26 'Accommodation of introduction of system management principles' in order to

address the overlap between the provisions set out under the OGs and the provisions under the SMPs. Ofgem did not veto the implementation of OG26, which removed a number of specified sections of the OGs and inserted a cross reference to the SMPs. The OGs currently provide balancing measures and operational procedures both on a national and localised level.

- 8.20. Following the implementation of OG26, Transco has requested a review of its obligation to produce separate auditor's statements for the OGs and SMPs.

Ofgem's views

- 8.21. Transco is required to produce SMPs in order to increase transparency of its role as system operator. To a large extent, OGs perform a similar information role on a national and localised level. It was Ofgem's original intention that Transco's requirement to produce PGs and SMPs would replace Transco's obligations to produce OGs under special condition 17.

- 8.22. However, Ofgem continues to have concerns that the content of the SMPs are not sufficiently robust and developed to remove Transco's need to produce OGs. We also consider that any reconsideration of special condition 17 would need to address any obligations that may need to be developed in its function as system operator and potentially as distribution network (DN) operator. It is Ofgem's initial view that the obligation should stay in place until the issue of the potential sale of Transco's DNs is resolved. However we are proposing to remove the requirement to produce separate auditor's statements for OGs and SMPs. This would take effect immediately, hence Transco would not be required to carry produce an audit of the period 1 May 2003 to 30 April 2003. We would welcome comments on this proposal

Proposed gas quality incentive

- 8.23. In our December final proposals document, Ofgem stated its intention to further extend the SO incentives to include gas quality services. For participants wanting to enter gas onto Transco's system, such services could include blending or otherwise changing the quality of gas that falls outside set

specifications (measured by, for example, the Wobbe index⁴³). For participants taking gas off the network, this may include delivering gas within set specifications (rather than within a pre-determined range). Such specifications might refer to the gas calorific value (CV), hydrocarbon dew point, or level of black dust, for example.

- 8.24. Currently, Transco accepts gas outside of the network specification⁴⁴ if it can accommodate the gas without detrimentally affecting the total quality of gas within its network. Ofgem is concerned that, in doing so, Transco could be failing to provide a “gas blending service” in a transparent and non-discriminatory manner.
- 8.25. Ofgem would prefer to see gas quality services offered to all users on a transparent and non-discriminatory basis. For instance, if a shipper wants to enter non-specification gas onto the NTS, it would need to purchase a gas quality service that would allow it to do so. This could be achieved by either:
- ◆ requiring Transco as SO to provide the gas quality services demand by shippers. Under this model, shippers purchase gas quality services only from Transco which, in turn, provides the services in the most economic way (e.g. by investing or contracting with third-parties); or
 - ◆ allowing shippers to contract directly with anyone able to offer gas quality services (including Transco, other shippers and third parties).
- 8.26. Which of these options is more desirable depends on how competitive the provision of such gas quality services might actually be. If Transco’s position as SO gives it such an advantage in the provision of these services that no other providers could enter the market, then they should be regulated activities (the first option). In the event that the first option is chosen, Transco would be incentivised to provide such services through appropriate incentive arrangements. Such incentives could:

⁴³ The Wobbe Index is the parameter used throughout the industry as a measure of the energy load available at the burner tip at one unit of pressure differential.

⁴⁴ This specification would be as set out under the Gas Safety (Management) Regulations (GS(M)R).

- ◆ take the same form as the other day-to-day incentive schemes, involving setting a target cost for procuring gas quality services (either from shippers, third parties or from its own activities) and applying sharing factors and caps and collars to deviations from those targets; or
- ◆ involve establishing gas quality services as regulated activities and providing Transco with a price controlled allowance for procuring these services. This is similar to the first option but involves giving Transco 100% sharing factors (and no caps or collars) on actual performance against allowed revenue for the duration of the control.

Ofgem's views

8.27. The DTI, Ofgem and the HSE recently began a study on gas quality issues in the GB market. In light of this work we are proposing, at this time, not to put in place a gas quality incentive. Ofgem will progress on work which would feed into the development of a gas quality incentive at a later date. This work would include:

- ◆ definition of the problem;
- ◆ identification of gas quality services offered in other markets; and
- ◆ calculating the costs of providing gas quality services.

Invitation for comments

20% entry capacity reservation for annual auctions

8.28. Ofgem is interested in receiving views from participants upon the extent to which they believe that a liquid secondary market in entry capacity has developed both at St Fergus and at the other main beach entry points.

Requirement to produce operational guidelines

8.29. Ofgem is interested in views on:

- ◆ whether participants believe that the System Management Principles statement and Procurement Guidelines are sufficiently well developed to remove the need for Transco to produce OGs;

- ◆ whether the requirement to produce OGs should remain in place in its current form pending the finalisation of Transco's proposed sale of one or more Distribution Network businesses.

Appendix 1 Transco's review of Transco's performance under its NTS SO incentive scheme

1.1. The present NTS SO incentive regime was introduced with effect from April 2002 following the acceptance by Transco of revised GT Licence obligations in September 2002. This appendix provides an overview of Transco's performance against each of the NTS SO Incentive schemes:

- ◆ Entry Capacity Buy-back
- ◆ Exit Capacity Investment
- ◆ System Reserve – Gas Cost
- ◆ System Reserve – Operating Margins
- ◆ Residual Gas Balancing
- ◆ Entry Capacity Investment
- ◆ Internal Costs

Performance to Date

1.2. Transco has been incentivised on its Residual Gas Balancing and Entry Capacity Buy-back activities since October 2001. These arrangements were established by the Network code, but moved into the GT Licence with effect from April 2002. The introduction of more wide ranging incentives in 2002 lead to a number of internal reviews of operating practice and revised procedures have been introduced in a number of areas in an attempt to improve performance under the incentive structure. Table A1.1, below, summarises Transco's SO incentive performance in 2002/3. The background to the incentive performance for each scheme is then detailed in the following sections.

Table A1.1: SO incentive scheme performance in 2002/3

Incentive Scheme	Target Cost	Net Costs	NGT Performance Share	Shipper Performance Share
		£m	£m	
Entry Capacity Buy-back	35.0	13.2	10.9	10.9
Exit Capacity Investment	62.6	51.2	5.4	6.1
System Reserve – Gas Cost	58.5	62.4	-0.8	-3.1
System Reserve – Operating Margins	16.8	15.9	0.9	0.0
Residual Gas Balancing	n/a	n/a	0.9	n/a
Internal Costs	31.4	38.4	-2.4	-4.5
Entry Capacity Investment	n/a	-	-	-
Total			14.8	9.3

Entry Capacity Buy-Back

- 1.3. The introduction of the revised Entry Capacity Buy-back incentive scheme coincided with other changes to the entry capacity regime. The most notable change was the obligation in Transco's GT Licence for it to offer for sale a specified minimum quantity of entry capacity rights throughout the year – the initial NTS SO baseline entry capacity. These changes, introduced around the time of the commencement of the incentive framework, meant that there was little practical experience available of the effect of this level of potential sales when the target buy-back costs were set. Transco therefore faced considerable uncertainty over the potential level of exposure.
- 1.4. This presented a substantial challenge for Transco. To meet this challenge, Transco invested in additional modelling expertise with a view to better understanding the key cost drivers, and subsequently in management action to reduce the risk exposure.
- 1.5. The analysis confirmed Transco's expectation that buy-back costs are potentially unstable, and highly dependent on market conditions. Transco therefore undertook an extensive risk management programme, in the form of forwards and options tenders, to limit its exposure to spot buy-back prices. In addition, operational practices were re-considered with a view to optimising the physical capability of the network to meet demands for entry capacity. A particularly significant review was that of maintenance practices.

- 1.6. The review of maintenance practices highlighted potential areas where changes to working arrangements could reduce or negate the risk of a buy-back occurring. These changes included:
- ◆ Where appropriate, taking a compressor unit or station out of service during the working day, but returning it to be used on the system overnight in order to minimise the impact on gas flows ;
 - ◆ 24 hour working where the reduction in buy-back risk justified the additional costs;
 - ◆ Commencing work closer to the start of the gas day; and
 - ◆ Where a compressor station contains more than one unit, and provided it is safe to do so, only taking one unit out of service, leaving the remaining units available to be run.
- 1.7. Forward and option contracts were used by Transco as a buy-back cost risk management tool for the first time in 2002/3. Transco was mindful that as a new product it was important that the industry was clear as to their structure and purpose. A number of briefings were carried out, for example at the Operational Forum, and comprehensive documentation was issued to all users so that maximum participation could be encouraged.
- 1.8. Transco conducted four forward tenders between April 2002 and June 2002 and 11 option tenders between April 2002 and February 2003. These tenders were based on a standard forward and option product during 2002/3. These activities helped, on days where Transco had to buy back entry capacity, to reduce the amount of capacity which Transco had to buy-back, the number of days on which Transco had to buy-back, and the average price paid, with reduced exposure to spot prices. Transco's operational strategy approach also mitigated against the potential requirement for consecutive days of buy-back.
- 1.9. A requirement to buy-back capacity occurred on 39 days during 2002/3. On these days Transco exercised the procured options where possible and then, if necessary, used the prompt market provided within the RGTA system to fulfil its obligations with regard to the buy-back quantity.

- 1.10. Where Transco had a requirement to use the prompt market, it adopted a strategy with regard to offer acceptance to try to manage the price that it accepted for buy-back. This involved, where possible, not taking significant quantities in any one visit to the market, therefore eliminating high priced offers, and allowing users time to react to each visit in terms of the volumes being made available and prices being offered.
- 1.11. These initiatives combined to deliver an outcome below the target performance and resulted in Transco's out-performance share of £10.9m, with shippers also benefiting to the same extent, which will ultimately be reflected in lower bills than would otherwise be the case.

Exit Capacity Investment

- 1.12. Winter 2002/3 was considerably warmer than normal, being a 1 in 10 warm winter under the standard measurement, resulting in demand levels being below those which would have been expected at seasonal normal conditions. As a result, the level of interruption on both the NTS and LDZ systems was low. In addition, reviews of operating strategy had been undertaken prior to the winter to identify innovative ways of mitigating some of the risks at the likely constraint points should constraints apply.
- 1.13. The cost of payments in respect of sites interrupted on more than fifteen days was £0.1m, below the target level of £2.8m. Table A1.2, below, shows a breakdown of the number of sites interrupted by duration of interruption.

Table A1.2: Number of sites interrupted, by duration of interruption

Transco Initiated	Number of days interrupted in 2002/03			
	0-5	6-10	11-15	>15
NTS sites	3	0	0	0
LDZ sites	71	20	10	4
Shipper Initiated				
	Number of days interrupted in 2002/03			
	0-5	6-10	11-15	>15
NTS sites	2	1	1	1
LDZ sites	3	3	1	22

- 1.14. The table shows that a significant number of sites within the LDZs were close to being interrupted for more than 15 days even in a 1 in 10 warm winter. The

Transco-initiated data relates to interruption required by Transco due to system operation constraints, whereas the shipper-initiated data relates to other interruption initiated by a shipper unrelated to a requirement from Transco.

- 1.15. The cost of payments to shippers in respect of the constraining of LNG services to provide transmission support was £6.6m, in excess of the target of £5.9m. The under-performance on this element of the exit capacity investment incentive was borne wholly by Transco.
- 1.16. The level of exit capacity provided was higher than that set in total by the exit capacity output measures for 2002/3. This was primarily due to the level of interruptible exit capacity booked by Shippers being significantly above the level assumed by Ofgem when the output measures were set. This contributed to out-performance under the exit incentive, with a net cost of £51.2m against a target of £62.6m. Transco's share of the out-performance was £5.4m whereas the benefit for shippers was £6.1m.

System Reserve – Gas Cost

- 1.17. The incentive is made up of four elements for which prospective volumes were identified and are specified in Transco's Licence, with the cost target established by applying a single assumed price:
- ◆ Own Use Gas
 - ◆ Unaccounted For Gas
 - ◆ CV Shrinkage
 - ◆ Electric Compression costs
- 1.18. Cost performance in 2002/3 was £3.9m above the target, with Transco's share of the under-performance being £0.8m. The major element of the inferior performance was related to Own Use Gas, largely compressor fuel. This performance reflects demands placed on the network and the need to use the compressor fleet more extensively than assumed in light of supply/demand patterns. The main driver behind this was the large quantities of gas being

introduced to the system at the northern terminals that had to be transported to the demand centres in the south, including interconnector exports at Bacton.

- 1.19. Given the scale of the north/south transportation issue a number of operational initiatives have been undertaken to ensure performance of plant, specifically compression, is operated as efficiently as practicable. This has included reviewing the operational efficiency envelopes and operating characteristics of specific plant.
- 1.20. In 2002/3 the gas price used was fixed in the GT Licence, based around a forecast of the gas price in the open market, and this represented a target price for Transco to procure its gas requirement. Transco has been able to purchase gas in accordance with its Procurement Guidelines from a range of providers. However, as this element of the incentive is based on a market related price, performance under the incentive is overwhelmingly governed by the volume requirement, which is in turn driven by factors which are largely outside Transco's control.
- 1.21. Various initiatives have been introduced to help manage the volume risk within the incentive, primarily in the controllable area of CV Shrinkage and UAG. These have included training and awareness of the causes of UAG, data quality process improvements and the development of standards on contamination.

System Reserve – Operating Margins

- 1.22. There is relatively little opportunity for Transco to affect the costs of Operating Margins. The vast majority of the service (in terms of cost) is booked at LNG sites at a regulated price set within Transco's Licence. The volume requirements are driven by security considerations based around likely failure rates of plant and equipment and the need to secure the system whilst other balancing tools take effect.
- 1.23. The 2002/3 outturn costs were £15.9m against a target of £16.8m.

Residual Gas Balancing

- 1.24. The 2002/3 outcome for this incentive was a Transco benefit of £0.9m, which consisted of out-performance of £1.2m on the price element and under-performance of £0.3m on the linepack element.
- 1.25. In light of the price incentive, Transco endeavours to take any necessary balancing actions at prices as close as possible to the market price. However, where significant potential imbalances exist on any day then it may be necessary for Transco to trade at relatively high or low prices in order to secure the system.
- 1.26. Similarly Transco attempts to maintain linepack in line with the incentive target, but linepack variation is a key factor which secures continued safe network operation, and daily variations are a function of a wide range of influences. This means that to a significant extent the variation in linepack is a by-product of efficient system operation rather than being driven by the incentive mechanism.

Entry Capacity Investment

- 1.27. The entry capacity investment incentive scheme within Transco's Licence is only triggered in the formula year to which incremental obligated entry capacity rights apply. However, no such capacity rights have been released to date.

Internal Costs

- 1.28. Transco's NTS SO internal costs exceeded the target of £38.4m by £7.0m in 2002/3, despite the cost reductions achieved by Transco. At the time the target was set, Transco argued to Ofgem that their target was insufficient to cover the expected level of costs, and this has proved to be the case.
- 1.29. A proportion of the under-performance was due to the level of severance costs incurred associated with the restructuring of Transco, which reduces the ongoing cost of operating the business and so can be expected to yield benefits in future periods.

Conclusion

1.30. Transco believes that its operation of the system has been economic and efficient during 2002/3, and this is reflected in the positive outcome under the NTS SO incentives schemes. Of the individual schemes, Transco invested in controlling the new risks faced under the entry capacity buy-back incentive, and has succeeded in delivering the benefits which are shared with the industry and, ultimately, customers.