February 2002

NGC system operator incentive scheme from April 2002

Final proposals

Summary

This document sets out Ofgem's final proposals for the National Grid Company plc's (NGC) System Operator (SO) incentives to cover the period from 1 April 2002 to 31 March 2003. The SO incentive scheme covers the costs of ensuring that the overall demand and supply of electricity is exactly balanced moment to moment and the costs of transmission losses.

The final proposals set out in this document have been developed in light of respondents' views to Ofgem's December 2001 Initial Proposals[1] and additional operational experience since the publication of those proposals. The final proposals are designed to improve the incentives on NGC to carry out its duty of operating the England & Wales electricity transmission system in an economic, efficient and co-ordinated manner by providing it with an appropriate balance of risk and reward. This should see a reduction in the costs of system operation over time to the benefit of customers, who ultimately pay these costs.

The current incentive scheme

The proposals are built on the current incentives, which were put in place at the start of the New Electricity Trading Arrangements (NETA) in March 2001 and which expire on 31 March 2002.

Under the current incentives, NGC has been given a specific incentive scheme target that represents a reasonable estimate of the balancing costs throughout the duration of the incentive scheme outside a deadband around that target, NGC has financial incentives to operate the system efficiently. If NGC manages to reduce balancing costs below the target, it keeps a proportion (the upside sharing factor) of the reduction in costs as an incentive payment. Conversely, if balancing costs are above the target, NGC is charged a proportion (the downside sharing factor) of the higher costs. NGC's overall gains and losses are limited through the use of a cap on gains and a collar on losses.

However, the current schemes included certain features associated with operating the system during the initial period of NETA, which we indicated at the time would be reconsider in any subsequent scheme. These included:

[1] 'NGC system operator incentive scheme from April 2002, Initial proposals', Ofgem, December 2001.

- **the incentive scheme target in the light of operational experience under NETA**

  - in particular certain allowances were included in the current scheme which were only intended to provide additional protection to NGC to cover uncertainties in the period immediately after Go-Live;

- **the incentive scheme sharing factors and caps and collars**

  - these parameters were set conservatively under the current scheme to take account of the particular uncertainties associated with balancing costs during the initial period of NETA was introduced;

- **allowances to take account of modifications to market rules**

  - some modifications to the balancing and settlement arrangements could affect the level of system operation actions;

- **reference prices within the incentive scheme**

  - it was acknowledged that the reference prices used to calculate the costs of imbalance volumes and transmission losses would need to be adjusted in the light of market developments.

Ofgem's initial proposals

In the initial proposals published in December 2001, Ofgem suggested that the existing SO incentives be rolled-over, substantially in their present form, to run from 1 April 2002 until 31 March 2003 but with adjustments being made to take account of particular factors outlined above.

Ofgem set out two possible options (A and B) for NGC's external cost SO incentive scheme parameters to apply from April 2002. Under both options, Ofgem proposed to remove the deadband and increase NGC's potential exposure (and therefore reduce the risks to customers) if costs exceed the target. Ofgem's initial proposals for NGC's incentive scheme are set out below and compared with the current incentive scheme.

	Initial proposals		Current Scheme
	Option A	**Option B**	
Incentive scheme target	£481m	£460m	-
Deadband	-	-	£481m to £511m
Upside sharing factor	60%	40%	40%
Downside sharing factor	50%	25%	12%
Cap	£60m	£46m	£46m
Collar	£-30m	-£25m	-£15.3m

Under Option A, Ofgem proposed a target level of costs in line with the lower end of the current deadband range, and higher potential gains if NGC beats this target through a significantly higher upside sharing factor and cap. Consistent with this, the initial proposals also increase the downside sharing factor and collar on NGC's exposure if costs exceed the target. Thus, option A would see NGC taking on greater risk in return for greater potential reward.

Under Option B, Ofgem proposed a lower target (below the deadband range of the current incentive scheme), the same upside sharing factor and cap value as in the existing scheme, but greater exposure if NGC's costs exceed the target (i.e. a higher downside sharing factor and collar than under the present scheme). Under option B, NGC takes on less risk than under Option A (but more than under the current scheme) and therefore has lower potential rewards.

Ofgem's proposals did not take into account any increase in system operation costs associated with modifications to the Balancing and Settlement Code (BSC) or the Connection and Use of System Code (CUSC) presently under consideration. We suggested that, if necessary, the incentive scheme could have been loosened to take into account any significant increase in system operation costs associated with respective modifications.

Ofgem proposed that the Net Imbalance Reference Price (NIRP) for imbalance volumes should be more closely linked to published prices in liquid traded markets and that the Transmission Losses Reference Price (TLRP) for transmission losses should take account of falls in wholesale electricity prices during the year.

Respondents' views

Respondents were in favour of the proposal to substantially rollover the existing scheme for a further year from 1 April 2002 to 31 March 2003, but supported the nature of the

adjustments proposed by Ofgem to take into account the particular features of the current scheme associated with the first period of system operation under NETA. However, the majority of respondents suggested that overall the options presented to NGC in relation to targets, sharing factors and caps and collars may be too generous.

All respondents supported the proposal to redefine both NIRP and TLRP in line with developing market prices and forward wholesale prices respectively.

NGC's views

NGC expressed support for a rollover of the current scheme from 1 April 2002 to 31 March 2003. However, NGC did not support complete symmetry of the incentives in relation to sharing factors and caps and collars because it considers that it faces asymmetric risks with a greater chance of its costs.

NGC supported the proposal to redefine both NIRP and TLRP in line with developing market prices and forward wholesale prices respectively.

Final proposals

Ofgem continues to believe that the current scheme should be rolled over for a further year, substantially in its present form, but with the specific adjustments outlined above. We consider this approach is the most appropriate option, given that NGC still faces uncertainties under the initial NETA SO incentive scheme in relation to the costs and operation of the system over the remaining period of peak demand this winter. This creates further uncertainties when forecasting costs for the forthcoming scheme. Therefore, Ofgem is proposing that the current scheme is substantively rolled-over retaining the form and scope of the current scheme subject to adjustments being made to areas highlighted above.

The next table sets out Ofgem's initial proposals (Options A and B) alongside Ofgem's final proposals.

The external SO cost target value in the final proposals takes into account respondents' views that NGC should face the more challenging target which featured in option B, a view supported by the fact that NGC has revised downwards its estimated outturn for the current year to 31 March 2002 reflecting in particular relatively mild weather in January and benign system operating conditions so far this winter.

However, the sharing factors, caps and collars in the final proposals have been increased, compared with those associated with option B in the initial proposals to take into account respondents' views that NGC's incentive scheme should be more challenging.

Unlike the initial proposals, the final proposals also expose NGC to a potential increase in system operation costs associated with BSC or CUSC modifications currently being consulted on by the BSC or CUSC Panels and which may be implemented in the future following a decision by the Authority. The inclusion of this allowance is made without prejudice to the Authority's decision in respect of these modifications. The utilisation of the allowance will be taken into account at the next periodic review of NGC's SO incentives (2003/04).

NIRP and TLRP will be adjusted largely in line with the initial proposals.

	Initial Proposals		**Final Proposals**	**Current Scheme**
	Option A	**Option B**		
Incentive scheme target	£481m	£460m	£460m	-
Deadband	-	-	-	£481m to £511m
Upside sharing factor	60%	40%	60%	40%
Downside sharing factor	50%	25%	50%	12%
Cap	£60m	£46m	£60m	£46m
Collar	£-30m	-£25m	£-45m	-£15.3m
	Possibility of Income Adjusting Events as a result of changes to the BSC or CUSC	Possibility of Income Adjusting Events as a result of changes to the BSC or CUSC	No Income Adjusting Events as a result of live modifications to the BSC or CUSC currently being considered at the date of this document	

Way forward

NGC is being asked to respond to the final proposals set out in this document by 5pm on 7 February 2002. If NGC consents to the final proposals, Ofgem will issue a statutory notice of licence modifications under Section 11 of the Electricity Act 1989 in order to modify NGC's Transmission Licence to take account of the proposed changes to the SO incentive scheme.

If NGC does not accept Ofgem's final proposals the proposed SO incentive scheme will be referred to the Competition Commission for final adjudication.

Table of contents

1. Introduction

Purpose of this document

1.1 This document sets out Ofgem's final proposals for the incentive arrangements for the National Grid Company plc's (NGC) System Operator (SO) function for the period from 1 April 2002. These final proposals have been developed in light of responses to Ofgem's December 2001 initial proposals document[2] and additional operational experience of the New Electricity Trading Arrangements (NETA) since the publication of our initial proposals.

1.2 The proposals are intended to enhance the incentives on NGC to operate the England and Wales transmission system in an economic, efficient and co-ordinated manner. Customers will benefit as they ultimately pay for the costs of system operation.

Background and rationale

1.3 Under NETA, market participants contract bilaterally to meet their needs and contractual commitments. Suppliers contract with customers to supply electricity. They forecast their own customers' demand and contract with generators to meet this demand. Suppliers face strong commercial incentives under the Balancing and Settlement Code (BSC) to balance their customers' demand through their contracts. Generators self-despatch to meet their contracted generation levels. They also face strong incentives under the BSC to balance their actual generation to their notified contractual position.

1.4 Generators and suppliers must notify their contract positions and their intended levels of generation before Gate Closure. Gate Closure is currently set for each half-hour settlement period at three and a half hours ahead of that period. After Gate Closure, no further bilateral trading for the relevant settlement period is possible. The commercial incentives on suppliers and generators are designed to ensure that they deliver their notified contractual volumes.

1.5 NGC in its role as SO is responsible for the residual purchasing and selling of energy to keep the transmission system in electricity balance in real time. The

SO is also responsible for ensuring that the system remains within safe operating limits,[3] and that the pattern of generation and demand is consistent with any system transmission constraints (together these constitute system balancing).

1.6 In balancing the system NGC has wide commercial freedom, within its incentive scheme and licence obligations, and has a range of tools and options available to it. NGC can buy and sell electricity in forward markets and, post Gate Closure, in the Balancing Mechanism[4] for electricity balancing purposes. NGC is also free to contract for balancing services[5] from generators and customers. NGC can then exercise these contracts for system and electricity balancing purposes as and when they are required. In purchasing balancing services, NGC is obliged, under special condition AA4 paragraph 1 of its Transmission Licence, to operate the electricity transmission system in an efficient, economical and co-ordinated manner.

1.7 NGC's SO costs can be divided into internal and external costs. NGC's internal costs include the costs of its control centre, systems and staff. External costs cover the costs of balancing service contracts and electricity purchases and sales for balancing purposes. Under the existing arrangements, NGC's internal and external SO costs are included within a consistent set of incentives. They seek to ensure that NGC aims to reduce the total costs of system operation by focussing on both internal and external costs. NGC is encouraged, for example, to increase expenditure on staff and systems where it believes that this will deliver a reduction in total costs through more than compensating reductions in external costs.

1.8 The December 2000 NGC SO final proposals document[6] set the allowance for NGC's SO internal costs for the period 2001/02 to 2005/06. NGC's internal cost target is fixed until 2005/6 and the allowances are shown in Table 1.1.

---

[2] 'NGC system operator incentive scheme from April 2002, Initial Proposals', Ofgem, December 2001.
[3] As prescribed by The Electricity Supply Regulations, 1988 (amended 1998) and consistent with its statutory duties and licence conditions.
[4] The Balancing Mechanism is a tool available to the SO when balancing energy and the system. The SO can accept offers to sell generation/reduce demand and accept bids to buy generation/increase demand.
[5] The term "balancing services" is used to cover both services purchased in the Balancing Mechanism and services contracted outside the Balancing Mechanism.
[6] 'NGC system operator price control and incentive schemes under NETA, Final Proposals', Ofgem, December 2000.

Table 1.1 - Total SO internal cost recovery[7]

Category	2001/02	2002/03	2003/04	2004/05	2005/06
Total non-incentivised revenue	£25.8m	£20.7m	£19.7m	£18.9m	£18.0m
Total incentivised revenue	£54.0m	£52.0m	£52.7m	£51.5m	£53.2m
Total SO revenue	**£79.8m**	**£72.7m**	**£72.4m**	**£70.4m**	**£71.2m**

1.9 The five-year cost stream outlined in Table 1.1 was agreed between Ofgem and NGC and as such any future consultation on SO internal costs over this timescale only relates to the form of the scheme, not the overall level of allowable costs.

1.10 The form of the current internal SO incentive scheme is set to be the same as that of the external SO incentive scheme. NGC faces a single set of sharing factors across all costs. NGC therefore keeps a proportion of any reduction in internal costs below target and is exposed to a proportion of any internal costs overrun against target. However, the internal SO incentive scheme has no cap or collar in relation to the incentive.

1.11 As the form of the internal scheme is based upon the form of the external SO incentive scheme, the remainder of this document focuses on the external cost element.

1.12 Under the current incentive scheme, NGC is given a specific incentive scheme target that represents a reasonable estimate of the balancing costs throughout the duration of the incentive scheme. If NGC's balancing costs are below the target, it keeps a proportion (the upside sharing factor) of the reduction in costs as an incentive payment. Conversely, if balancing costs are above the target, NGC is charged a proportion (the downside sharing factor) of the costs in excess of the target. A cap on payments and a collar on losses limit NGC's overall gains and losses.

1.13 In framing its proposals, Ofgem has tried to set the parameters of the incentive scheme to provide NGC with a fair balance of risk and reward and to provide a good deal for customers, who ultimately pay for the cost of system operation. The parameters are set given reasonable expectations about the likely level of

[7] The values are in 2000 prices.

balancing costs and the probability that costs may be higher or lower than forecast.

1.14 Ofgem continues to believe that appropriate commercial incentives for the SO are in customers' best interests. Under the incentive scheme, NGC manages the costs of system operation on customers' behalf. This benefits customers in two ways. Firstly, the costs of system operation are likely to be reduced year on year and secondly, some of the risk associated with higher balancing costs is transferred from customers to NGC.

1.15 SO incentive arrangements have delivered substantial benefits to customers over time. Between 1990 and 2000, NGC reduced its own internal costs of system operation by 30 per cent in real terms. Between 1994 (when the first incentive scheme was introduced) and 2001, NGC reduced the external costs of system operation by more than £400m.

Ofgem's initial proposals

1.16 In our initial proposals, Ofgem suggested that the existing SO incentive scheme, which has been in effect from 27 March 2001 (Go-Live), should be rolled over until 31 March 2003. Ofgem believed, and continues to believe, that the existing SO incentive scheme has worked well as the costs of balancing the transmission system have substantially reduced since NETA was introduced. These reductions in costs will ultimately benefit customers.

1.17 In the initial proposals, Ofgem recognised that there are still uncertainties faced by NGC under the initial NETA SO incentive scheme, specifically in relation to the costs and operation of the transmission system over the period of peak demand in the winter. The rollover of the existing scheme is therefore designed to continue to deliver benefits to consumers whilst acknowledging the risks and uncertainties about balancing costs ahead of the first winter of operation under NETA.

1.18 The rollover concept was originally included in one of the options put forward for the initial SO incentives under NETA in December 2000. If this option had been selected, a two-year scheme, running from Go-Live until 31 March 2003,

would have been created. In considering rolling over the existing scheme, Ofgem has applied the same concept.

1.19 However, in substantially rolling over the existing scheme Ofgem proposed a number of adjustments to sharpen and improve the incentives on NGC. Many of these adjustments were highlighted and consulted upon in setting the initial NETA SO incentives under NETA. Other adjustments have been proposed in the light of experience of operating under NETA to date. Our initial proposals document outlined the specific areas in which Ofgem is seeking to make amendments. The adjustments were:

- reviewing the cap, collar and sharing factors of the scheme;
- re-setting the incentive scheme target in light of the operational experience of NETA;
- revising the incentive scheme target to take account of modifications to the BSC and amendments to the Connection Use of System Code (CUSC);
- revising the Net Imbalance Reference Price (NIRP);[8] and
- revising the Transmission Losses Reference Price (TLRP).[9]

1.20 Ofgem's initial proposals consisted of two options for the rolled-over SO incentive parameters. These options (A and B) are presented in Table 1.2 alongside the existing incentive scheme parameters.

[8] NIRP is the reference price attached to the Net Imbalance Volume to limit NGC's exposure to the Net Imbalance Volume. The Net Imbalance Volume is the sum of imbalance volumes over all energy accounts other than energy accounts held by the Transmission Company.
[9] TLRP is the reference price attached to the Transmission Losses volume to create a target cost against which NGC's incentives are set.

Table 1.2 - Ofgem's initial proposals for rolled-over incentive scheme parameters[10]

	Option A	Option B	Current Scheme
Incentive scheme target	£481m	£460m	-
Deadband	-	-	£481m to £511m
Upside sharing factor	60%	40%	40%
Downside sharing factor	50%	25%	12%
Cap	£60m	£46m	£46m
Collar	£-30m	-£25m	-£15.3m

1.21 Under Option A, Ofgem proposed a high target level of costs in line with the lower end of the current deadband range, and higher potential profits if NGC beats this target through a significantly higher sharing factor and higher cap. Consistent with this, the initial proposals also increased the downside sharing factor and collar on NGC's exposure if costs exceed the target. Thus option A would see NGC taking on greater risk in return for greater potential reward.

1.22 Under Option B, Ofgem proposed a lower target (below the deadband range of the current incentive scheme), the same upside sharing factor and cap value as in the existing scheme, but greater exposure where costs exceed the target (i.e. a higher sharing factor and a greater collar than under the present scheme). Under Option B, NGC takes on less risk than under Option A (but more than under the current scheme) and therefore has lower potential rewards.

1.23 Ofgem's proposals did not take into account any increase in system operation costs associated with any modifications presently under consideration. We suggested that if necessary, the incentive scheme could have been loosened to take into account any significant increase in system operation costs associated with respective modifications via the Income Adjusting Event Mechanism.

1.24 Ofgem proposed that NIRP, the reference price for imbalance volumes, should be more closely linked to published prices in liquid traded markets and that TLRP, the reference price for transmission losses, should take account of falls in wholesale electricity prices during the year.

[10] The incentive scheme target, cap and collar under the Ofgem proposal are 2002/03 values.

Respondents' views[11]

1.25 Respondents were in favour of the proposal to substantially rollover the existing scheme for a further year from 1 April 2002 to 31 March 2003, but supported the nature of the adjustments proposed by Ofgem to take into account the particular features of the current scheme associated with the first period of system operation post-NETA. However, the majority of respondents suggested that overall the options presented to NGC in relation to targets, sharing factors and caps and collars may be too generous.

1.26 Respondents also considered that NGC should not enjoy further adjustments to take account of effects of currently anticipated prospective modifications to the BSC or the CUSC.

1.27 All respondents supported the proposal to redefine both NIRP and TLRP in line with developing market prices and forward wholesale prices respectively.

1.28 Respondents' views are discussed in more depth in Chapter 4.

NGC's views

1.29 NGC expressed support for a rollover of the current scheme from 1 April 2002 to 31 March 2003. However, NGC did not support complete symmetry of the incentives in relation to sharing factors and caps and collars because it considers that it faces asymmetric risk with a greater chance of significant costs.

1.30 NGC supported the proposal to redefine both NIRP and TLRP in line with developing market prices and forward wholesale prices respectively.

1.31 NGC's views are discussed in more depth in Chapter 4.

Ofgem's final proposals

1.32 Ofgem has carefully considered the views of respondents and NGC in formulating the final proposals outlined in this document. The additional 2.5 months of data, covering the period from 1 October 2001 to 16 December

[11] The 'Respondents' views' section takes no account of NGC's response as this is handled separately.

2001, in relation to the current incentive scheme have also been taken into account. A summary of the final proposals developed is presented below.

1.33 Ofgem continues to believe that the current scheme should be rolled-over for a further year, substantially in its present form, but with the specific adjustments outlined above. We consider this approach is the most appropriate option, given that NGC still face uncertainties under the initial NETA SO incentive scheme in relation to the costs and operation of the system over the entire period of peak demand this winter. This creates further uncertainties when forecasting costs for the forthcoming scheme. Therefore, Ofgem is proposing that the current scheme is substantively rolled-over retaining the form and scope of the current scheme subject to adjustments being made to areas highlighted above.

1.34 Table 1.3 sets out Ofgem's initial proposals (Options A and B) alongside Ofgem's final proposals and also the existing incentive scheme parameters.

Table 1.3 - Ofgem's final proposals for rolled-over incentive scheme parameters[12]

	Initial Proposals		Final Proposals	Current Scheme
	Option A	**Option B**		
Incentive scheme target	£481m	£460m	£460m	-
Deadband	-	-	-	£481m to £511m
Upside sharing factor	60%	40%	60%	40%
Downside sharing factor	50%	25%	50%	12%
Cap	£60m	£46m	£60m	£46m
Collar	£-30m	-£25m	£-45m	-£15.3m
	Possibility of Income Adjusting Events as a result of changes to the BSC or CUSC	Possibility of Income Adjusting Events as a result of changes to the BSC or CUSC	No Income Adjusting Events as a result of live modifications to the BSC or CUSC currently being considered at the date of this document	

1.35 The target value in the final proposals takes into account respondents' views that NGC should face the more challenging target which featured in Option B, a view supported by the fact that NGC has revised downwards its outturn for the current year to 31 March 2002 reflecting in particular relatively mild weather in January and benign system operating conditions so far this winter.

1.36 However, the sharing factors, caps and collars in the final proposals have been increased, compared with those associated with Option B in the initial proposals to take into account respondents' views that NGC's incentive scheme should be more challenging.

1.37 Unlike the initial proposals, the final proposals also expose NGC to a potential increase in system operation costs associated with BSC or CUSC modifications currently being consulted on by the BSC or CUSC Panels and which may be implemented in the future following a decision by the Authority. The inclusion of this allowance is made without prejudice to the Authority's decision in respect of these modifications. The utilisation of the allowance will be taken into account at the next periodic review of NGC's SO incentives (2003/04).

1.38 NIRP and TLRP will be adjusted largely in line with the initial proposals. The proposals for these are discussed in Chapter 4.

Related consultations

Transco's SO incentives

1.39 Interactions between the electricity and gas transmission networks are becoming more important. Gas-fired power stations now account for one third of the installed generation capacity and are responsible for about 40 per cent of demand on Transco's National Transmission System (NTS). The wholesale gas and electricity markets are increasingly converging as companies arbitrage between the two markets. Companies re-sell gas in the wholesale market on-the-day when it is more profitable than generating electricity. Conversely, those gas-fired generators who have a degree of flexibility increasingly change their generation (and therefore their gas consumption) in response to movements in electricity prices within day.

1.40 These interactions can have a significant impact on both SOs. The need to take balancing actions and the costs associated with those actions are driven, in part, by price movements in both markets. Decisions taken by one SO can also have a significant impact on the other. One obvious example is the interruption of gas-fired power stations by Transco to deal with constraints on the NTS.

[12] The incentive scheme target, cap and collar under the Ofgem proposal are 2002/03 values.

Interruptions of gas-fired generators can lead to corresponding NGC actions for energy balancing or for system balancing purposes (for example to deal with a constraint on its system as a result). Against this background it is increasingly important to have consistent incentives on Transmission Owners (TOs) and SOs in both markets.

1.41 In September 2001, Ofgem published initial proposals for Transco's SO incentives[13] and final proposals for Transco's TO price control.[14]

1.42 Transco has now accepted Ofgem's final proposals for the TO price control. The TO price control is an RPI-X form of control and sets the allowed revenue for the NTS TO and the LDZs for the five year period from April 2002-7. Under the NTS TO control, 'baseline output' measures have been agreed consistent with the price control allowance.

1.43 The proposals for Transco's SO incentive scheme cover four main areas: entry capacity, exit capacity, the costs of day-to-day system operation and Transco's internal costs for its SO function.

1.44 The day-to-day SO incentives and those relating to Transco's internal costs are directly analogous to NGC's SO incentives discussed in this document. Ofgem is proposing a similar form of incentives for Transco as for NGC, with cost or price targets being set and profit sharing through caps, collars and sharing factors.

Transmission access and the treatment of losses under NETA

1.45 In May 2001 Ofgem published a consultation document[15] on the new transmission access and losses arrangements under NETA. In February 2002, Ofgem expects to publish a document on the new transmission access and losses arrangements. This document will set out Ofgem's thinking on these issues in the light of respondents' views and further discussions with the industry and customer groups.

[13] 'Transco's National Transmission System – System Operator incentives 2002-7, Initial proposals', Ofgem, September 2001.
[14] 'Review of Transco's Price Control from 2002, Final proposals', Ofgem, September 2001.
[15] 'Transmission Access and Losses under NETA – A Consultation Document', Ofgem, May 2001.

1.46 Following this consultation document, proposals on reforming the arrangements for transmission access and transmission losses will be taken forward through the CUSC amendment process. The industry will form an integral part of the consultation on the new arrangements via its participation in this process.

1.47 If new arrangements for transmission access are introduced the responsibilities of the SO will become "deeper" and cover a larger range than at present. The September 2001 Initial Proposals document in relation to Transco's SO incentives deepens Transco's role as SO. The proposed scheme places incentives on Transco over a wider range of its activities as SO than included under previous SO incentive schemes.

1.48 The proposals for Transco's SO incentive scheme cover incentives on Transco relating to entry and exit capacity. Therefore, the potential creation of a deeper SO role for NGC following the introduction of new arrangements for transmission access is consistent with the proposed deepening of Transco's role as SO.

1.49 Ofgem will be able to consult on the scope and form of a longer term SO incentive scheme for NGC when new arrangements for the treatment of transmission losses and transmission access are in place.

British Electricity Trading and Transmission Arrangements (BETTA)

1.50 In December 1998, OFFER published a consultation document[16] outlining the need for reform of the trading arrangements in Scotland. OFFER argued that distortions in the electricity prices in Scotland are of particular concern. These distortions are caused by a number of factors, including administered wholesale trading arrangements, the lack of non-discriminatory arrangements for the cashing out of top-up and spill imbalances, the lack of transparent non-discriminatory arrangements for access to the transmission system and the lack of transparent interconnector access and pricing arrangements.

1.51 In August 2000, Ofgem published a consultation document outlining interim proposals for the reform of electricity trading arrangements for Scotland[17].

[16] 'Scottish trading arrangements. Consultation paper', OFFER, December 1998
[17] 'Interim proposals for the reform of Scottish Trading Arrangements: British Electricity Trading and Transmission Arrangements (BETTA)', Ofgem, August 2000

Ofgem suggested that trading arrangements should be developed for the whole of Great Britain (GB) by the creation of a single GB wholesale electricity market. There was strong support for this proposal from respondents.

1.52 Ofgem published a further BETTA document in December 2001 that sets out Ofgem's current thinking and the proposed way forward. Ofgem's has restated its commitment to creating a single GB market by bringing the trading arrangements in Scotland into line with NETA and extending the proposed transmission access and losses arrangements in England and Wales to Scotland. A more competitive trading framework should lead to lower prices that will benefit customers in Scotland as well as England and Wales through the creation of a larger, more liquid traded market.

1.53 BETTA will change the role of the transmission companies in GB, as one of its principal elements is the creation of a GB SO.

1.54 Ofgem's BETTA proposals will require primary legislation to implement. Ofgem's current plan, contingent on legislation being passed, is to introduce the new arrangements from April 2004. Ofgem will consult, as part of the BETTA program, on the development of SO incentive arrangements for the GB SO from the BETTA implementation date.

Outline of this document

1.55 This document describes Ofgem's final proposals for the NGC SO incentives in more detail. Chapter 2 outlines the regulatory and legal framework. Chapter 3 explains NGC's performance under the existing SO incentive scheme. Chapter 4 outlines Ofgem's final proposals. Chapter 5 sets out the way forward.

Way forward

1.56 Prior to 1 April 2002, Ofgem will be looking to implement licence modifications in order to modify NGC's Transmission Licence to take account of the proposed changes to the SO incentive scheme. In order to proceed with the necessary licence modifications, NGC will need to consent to Ofgem's final proposals as set out in this document. NGC has until 5pm 7 February 2002 to decide whether to consent to our final proposals.

1.57 If NGC consents, the rolled-over SO incentive scheme will come into effect on 1 April 2002. In February 2002, Ofgem will issue a statutory notice of licence modifications under Section 11 of the Electricity Act 1989 in order to amend NGC's Transmission Licence to take account of these proposed changes to the SO incentive scheme.

1.58 If NGC does not accept Ofgem's final proposals the proposed SO incentive scheme will be referred to the Competition Commission for final adjudication.

2. The Regulatory and Legal Framework

Introduction

2.1 This chapter outlines the current legal and regulatory framework of the electricity industry after the majority of the remaining provisions of the Utilities Act 2000 came into force on 1 October 2001. This chapter summarises the current legislative, licensing and regulatory regimes and describes the relationship between the Electricity Act 1989, the Utilities Act 2000, licences and industry agreements.

The Electricity Act 1989 (the "Electricity Act")

2.2 The Electricity Act provides the framework for the functions of the Gas and Electricity Markets Authority (the Authority) and sets out the licensing regime in relation to the supply, distribution, generation and transmission of electricity.

2.3 Under section 9(2) of the Electricity Act, holders of Transmission Licences are obliged to develop and maintain an efficient, co-ordinated and economical system of electricity transmission and to facilitate competition in the supply and generation of electricity. NGC owns and operates the national grid, which transports electricity at high voltage from the generators to the local distribution networks and to customers connected directly to the transmission system.

The Utilities Act 2000 (the "Utilities Act")

2.4 The Utilities Act received Royal Assent on 28 July 2000 after which the Authority was created on 20 December 2000. From this date, the functions of the Director General of Electricity Supply and the Director General of Gas Supply were transferred to, and are exercisable by, the Authority.

2.5 The Utilities Act introduced a new principal objective (primary duty) on the Authority as defined in Section 3A of the Electricity Act. Further sections of the Utilities Act were implemented on 1 October 2001 including:

- the introduction of standard licence conditions for each type of electricity licence granted under the Electricity Act; and

- the separation of the licensing of electricity supply and distribution.

2.6 Subsequent changes yet to be enacted include:

- class modification powers; and
- the creation of an additional power to enable the Authority to impose financial penalties on companies found to be in breach of their relevant licence under the Electricity Act.

2.7 Both require secondary legislation before Ofgem can use these powers. This secondary legislation has yet to be made.

The Competition Act 1998 (the "Competition Act")

2.8 The Authority has concurrent powers with the Director General of Fair Trading under the Competition Act (which came into effect on 1 March 2000). Chapter I of the Competition Act prohibits anti-competitive agreements and Chapter II prohibits the abuse of a dominant position. Under the Competition Act, the Authority has powers of investigation, powers to give directions and powers to impose financial penalties of up to 10 per cent of turnover of the undertaking concerned on companies infringing the prohibitions of the Competition Act 1998, up to a maximum of three years for each year the infringement takes place.

Financial Services and Markets Act 2000 (the "FSMA")

2.9 The FSMA replaced the Financial Service Act 1986 (and various other pieces of UK legislation) on 1 December 2001. Under the FSMA the Financial Services Authority (FSA), the regulator of financial services and markets in the UK, has four regulatory objectives:

- maintaining confidence in the financial system;
- promoting public understanding of the financial system;
- securing the appropriate degree of protection for consumers; and
- reducing financial crime.

2.10 The FSMA has introduced a new regime for dealing with behaviour amounting to market abuse that may extend to traded energy markets. All persons, including individuals, partnerships and companies, are subject to the market abuse regime, regardless of whether they are authorised by the FSA. Behaviour will fall within the scope of the market abuse regime if it occurs in relation to certain prescribed investments which are traded on certain prescribed markets located, or electronically accessible, in the UK. The penalties for committing the offence of market abuse range from public censure to unlimited fines.

The Electricity Transmission Licence

2.11 The Secretary of State granted, under section 6(1) of the Electricity Act, an Electricity Transmission Licence to NGC. NGC is the sole possessor of an Electricity Transmission Licence in England and Wales.

2.12 In addition to its obligations under the Electricity Act, NGC has a duty to operate an efficient, co-ordinated and economical system of electricity transmission under special condition AA4 of its Transmission Licence.

2.13 NGC is responsible for the residual purchasing and selling of energy to keep the system in electricity balance. In addition, NGC is responsible for maintaining the system balance by contracting for other balancing services. NGC are permitted to contract ahead of Gate Closure for the provision of balancing services, such as frequency control and voltage support. It is intended that NGC procures any balancing service contracts competitively via transparent processes. Therefore, paragraph 5 of special condition AA4 of NGC's Transmission Licence requires NGC to have in place a statement setting out the principles and criteria by which it will determine, at different times and in different circumstances, which balancing services it will use to assist in the operation of the transmission system, and when it would resort to measures not involving the use of balancing services. To fulfil this requirement, NGC has produced Procurement Guidelines and a Balancing Principles Statement. Both the Procurement Guidelines and the Balancing Principles Statement are reviewed and revised as appropriate on at least an annual basis.

2.14 The Procurement Guidelines set out the types of balancing services that NGC may be interested in purchasing, together with the mechanisms envisaged for

purchasing such balancing services. To increase industry awareness and understanding, NGC have established an industry forum, the Procurement Guidelines Forum,[18] to inform and discuss the Procurement Guidelines and the provision of information regarding the procurement of balancing services. In addition, NGC has established a regular Operational Forum[19] to provide information on how they use balancing services. The Operational Fora are held on a regular basis and focus on operational issues associated with the Balancing Mechanism and they provide an opportunity for reporting by NGC and consequent discussion.

2.15 The Balancing Principles Statement is produced to assist BSC participants in understanding NGC's actions in achieving the efficient, economic and co-ordinated operation of the transmission system. It defines the broad principles and criteria (the Balancing Principles) by which NGC will determine, at different times and in different circumstances, which balancing services will be used to assist in the efficient operation of the transmission system.

2.16 NGC has an additional obligation under paragraph 6 of special condition AA4 of its Transmission Licence, which requires NGC to have in place a Balancing Services Adjustment Data (BSAD)[20] Methodology Statement.[21]

2.17 The BSAD Methodology statement sets out the information on relevant balancing services that will be taken into account under the BSC for the purposes of determining Imbalance Price(s).[22] Specifically, the BSAD Methodology Statement attempts to target back costs of contracts relating to energy balancing through energy imbalance prices.

2.18 Special condition AA5A of the Transmission Licence granted to NGC sets restrictions on the revenues that NGC is allowed to earn. For this purpose, NGC's activities are split between its Transmission Network Services (TNS) and its Balancing Services Activity (BSA).

[18] The Procurement Guidelines Forum is organised by NGC and is open to all interested parties.
[19] For details of the Operational Fora see NGC's website www.nationalgrid.com/uk.
[20] BSAD is used in the calculation of Energy Imbalance Prices (System Buy Price (SBP) and System Sell Price (SSP)).
[21] Details of the Procurement Guidelines, Balancing Principles and the BSAD Methodology Statement can be found at NGC's website www.nationalgrid.com/uk.
[22] The imbalance prices are based on the average prices that NGC has to pay participants in the Balancing Mechanism and through contracts to maintain an overall system balance.

2.19 The TNS activities of NGC are defined as including all its authorised business in the planning, development, construction and maintenance of the transmission system excluding the BSA and excluded services. BSA means the activity as part of the Transmission Business, of procuring and using Balancing Services for the purpose of balancing the licensee's transmission system.

2.20 Part 1 of special condition AA5A outlines the revenue restriction in relation to TNS, while Part 2 outlines revenue restriction in relation to BSA.

2.21 Part 1 of special condition AA5A provides for a price control to be set by the Authority on all revenue obtained from NGC's TNS. The present price control on the TNS expires on 31 March 2006.[23]

2.22 Part 2 of special condition AA5A is broken down into two sections; BSA revenue restriction on external costs and BSA revenue restriction on internal costs each of which has a separate profit sharing scheme. The present scheme was implemented at Go-Live and is due to expire on 31 March 2002.[24]

Industry Codes

The Balancing and Settlement Code (the "BSC")

2.23 The BSC's scope is defined in general terms in the Transmission, Generation and Supply licences. The BSC is a code that sets out the rules for the balancing mechanism and imbalance settlement process under NETA and it is maintained by NGC under standard condition C3 of its Transmission Licence.

2.24 The BSC sets down the arrangements in respect of:

- making, accepting and settling offers and bids to increase or decrease electricity delivered to, or taken off, the total system (NGC's transmission system and the distribution systems) to assist NGC in balancing the system; and

[23] 'The transmission price control review of the National Grid Company from 2001: transmission asset owner, Final proposals', Ofgem, September 2000.
[24] For details see 'NGC system operator price control and incentive schemes under NETA, Final proposals', Ofgem, December 2000.

- ♦ determining and settling imbalances and certain other costs associated with operating and balancing the transmission system.

2.25 A BSC Panel has been charged with overseeing the management, modification and implementation of the BSC rules, as specified in Section B of the BSC. The Panel has twelve representatives made up from industry members, consumer representatives, independent members and NGC. The Authority appoints the Chairman of the Panel.

2.26 The Balancing and Settlement Code Company (ELEXON[25]) supports the BSC Panel. The primary purpose of ELEXON is to provide or procure a range of operational and administrative services, both directly and through contracts with service providers, to implement the provisions of the BSC and modifications to it.

2.27 The details of the modification procedures are contained in Section F of the BSC. The modification procedures are designed to ensure that the process is as efficient as possible whilst ensuring that as many parties as possible can propose modifications and have the opportunity to comment on modification proposals.

The Connection and Use of System Code (the "CUSC")

2.28 The CUSC, whose predecessor was the Master Connection and Use of System Agreement (MCUSA), provides a new contractual framework for connection to and use of NGC's transmission system. The CUSC codifies the MCUSA and will provide for a more effective change process overseen by the Authority. It was designated by the Secretary of State on 25 June 2001 and came into effect on 18 September 2001.

2.29 NGC were required to have designated the CUSC to comply with standard condition C7F, which requires NGC to establish arrangements for connection and use of system. The CUSC is a licence-based code, setting out the principal rights and obligations in relation to connection to and/or use of the Transmission System and relating to the provision of certain balancing services.

[25] The Balancing and Settlement Code Company was named Elexon Limited on 7 June 2000.

2.30 A CUSC Panel has been charged with overseeing the CUSC amendment process as specified in Section 8 of the CUSC. The Panel has representatives made up from industry members, consumer representatives, independent members and NGC. The Chairman of the Panel is appointed by NGC and must be a senior employee of NGC. NGC is responsible for implementing or supervising the implementation of Approved Amendments as outlined in paragraph 8.2.3.3 of the CUSC.

3. NGC's performance under the existing SO incentive scheme

Introduction

3.1 This chapter presents NGC's operational performance under the existing scheme based on the latest available data. The background and details of the existing scheme are described in Appendix 1.

3.2 The first six months of NETA showed that NGC made good progress in substantially reducing the overall level of SO costs since Go-Live. This is likely, at least in part, to reflect NGC's improved understanding of operating the system under NETA and improved performance in response to the incentives. This suggests that the incentives are having their intended effect as NGC is reducing the costs of operating the system under NETA, to the benefit of customers.

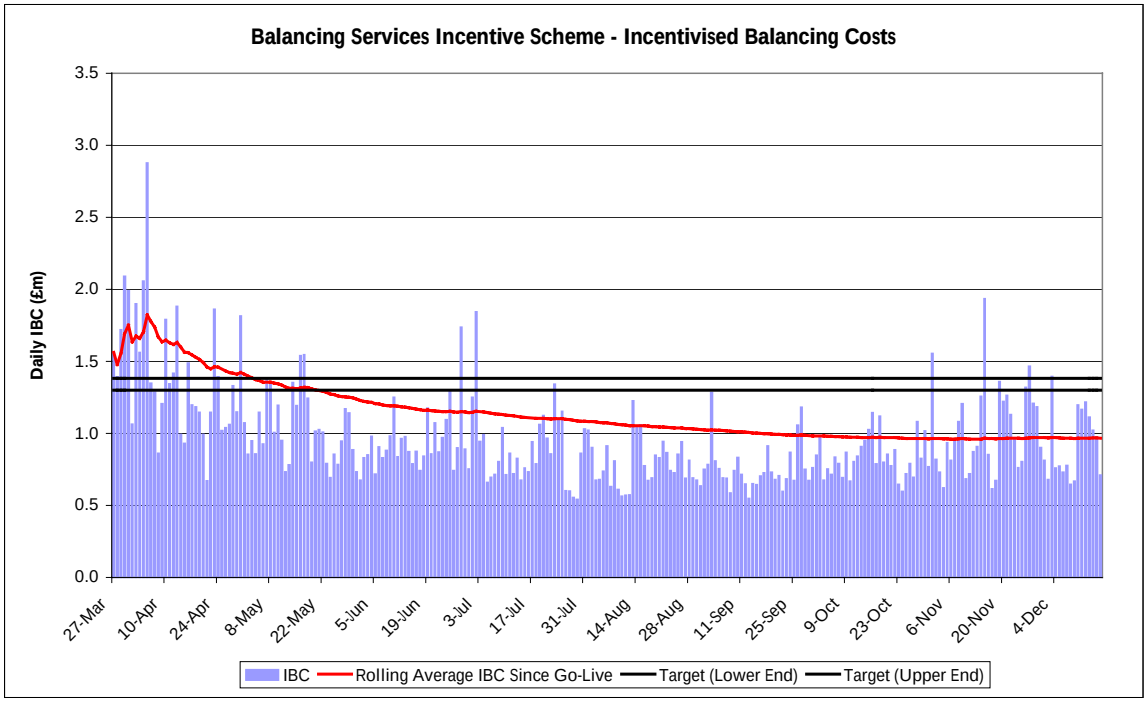
3.3 Since September, costs have risen slightly as was to be expected with the onset of winter. However, they have remained well below the levels seen at the start of NETA.

Incentivised Balancing Costs

3.4 The Incentivised Balancing Costs (IBC) value for the entire incentive period is the crucial determinant in the ultimate incentive payment received by NGC. Daily IBC[26] values from Go-Live up until 16 December 2001 are shown in Figure 3.1.

[26] The IBC data are based on the most recent settlement/reconciliation run.

Figure 3.1 - Daily IBC



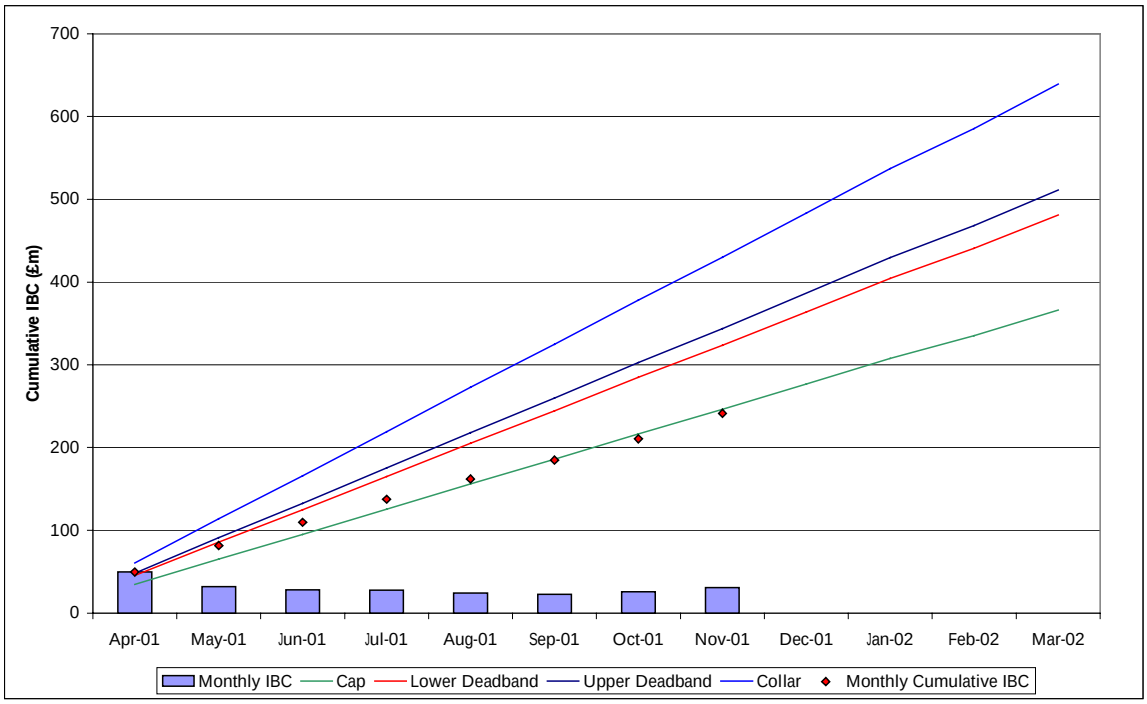
3.5 IBC values have shown an almost continual reduction in the period highlighted. Over the period, the maximum daily value of £2.88m occurred on 5 April 2001. In the period to 16 December 2001, there were only four excursions above £2m, all of which took place in the first fortnight after Go-Live. The lowest daily value over the period was £0.54m on 29 July 2001. The average daily IBC for 265 days of the existing scheme value is approximately £0.97m compared to £0.98m over the first 188 days (as reported in the initial proposals).

3.6 In the initial proposals Ofgem highlighted the possible impact of seasonality on IBC. During the summer months demand is expected to be lower than during the winter months. Over the summer, system balancing costs tend to be lower as does NGC's requirement for response and reserve holdings. Therefore, NGC's balancing costs could be expected to be lower during the summer than over the winter. Ofgem highlighted, in our initial proposals, that IBC may be higher over the winter than seen during the first six months of NETA. As we now hold data up until 16 December 2001, we are able to see the effects of early winter on IBC. Figure 3.1 indicates that the rolling average of IBC has stopped falling and has risen very slightly. The monthly average IBC figures show an increase with values for October and November of £0.83m and

£1.03m respectively compared to £0.76m in September. This upward trend may continue as winter progresses.

3.7 Cumulative IBC up until 16 December 2001 is £256.1m whilst the cumulative IBC figure up until 30 November 2001 was £241.5m. Figure 3.2 shows how these cumulative IBC figures stand within a linear monthly pro-rata version of incentive scheme.

Figure 3.2 - Cumulative IBC against the incentive scheme[27]



3.8 The monthly cap, collar and deadband values presented in Figure 3.2 are calculated based on the annual figures divided by the number of days per month, so no account is given to seasonal profiling. On this basis, it is apparent that the cumulative figure for the last complete month (November) of £241.5m is £4.8m below the corresponding cumulative cap figure of £246.3m. This implies that based on data up until the end of November, NGC will be at the upper end of the reward scale and might receive the cap payment of £46m.

3.9 However, data up until the end of November only incorporates the first two months of winter. A further increase in IBC might be expected over the remainder of the winter period. Historically, balancing costs tend to increase

[27] Data for March 2001 is added to data for April 2001 in this graph.

over the period of peak demand in the winter when system balancing requirements are greater as is NGC's requirement for response and reserve. If this pattern is repeated, then the cumulative IBC may rise above the incentive scheme cap and reduce NGC's rewards.

Forecast costs and incentive payments

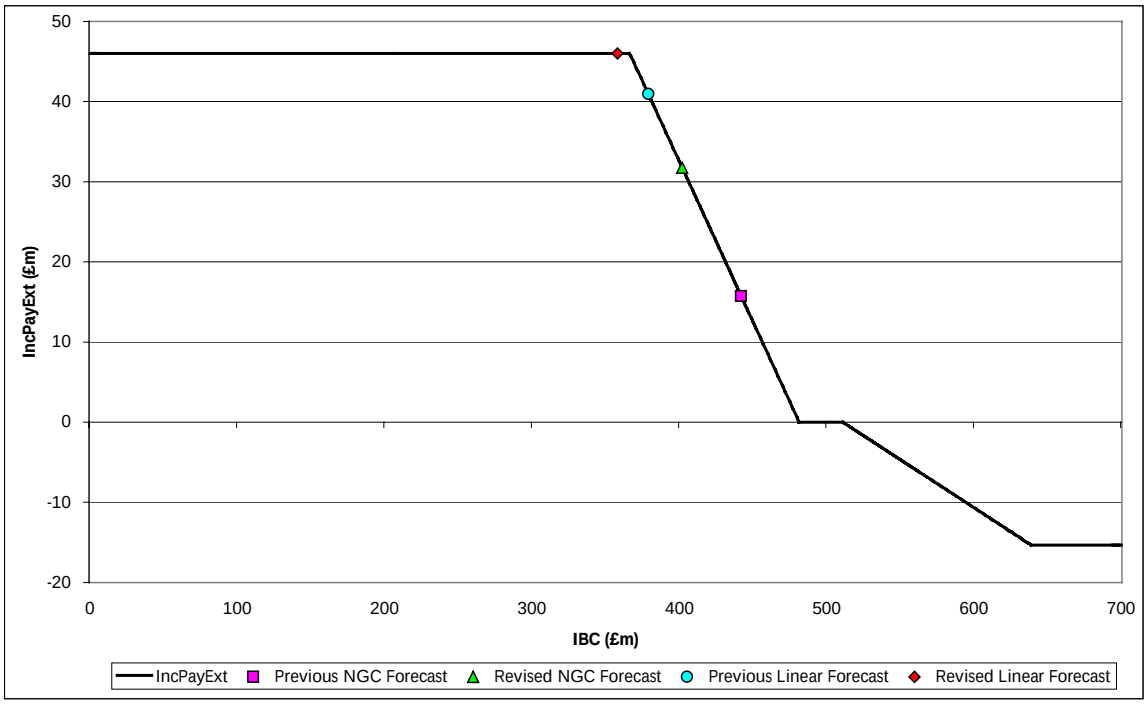
3.10 At the time that our initial proposals document was published, NGC's mean forecast of the scheme costs for the entirety of the current incentive scheme stood at £442m.[28] This forecast was £40m below the deadband lower range and £70m below the deadband upper range. Since the publication of the initial proposals, NGC has revised its mean forecast of costs to £402m, a £40m reduction compared to the previous forecast. In comparison to the current scheme, this forecast is £110m below the deadband upper range and £80m below the deadband lower range.

3.11 NGC links the downward revision of the forecast to lower than anticipated costs over the winter period prior to Christmas. NGC attribute the lower costs to a number of factors. These include NGC's success in controlling balancing costs and also that the tendency for the system to be long resulting in more benign market conditions than expected.

3.12 Figure 3.3 provides a comparison of NGC's revised forecast of IBC, with NGC's previous forecast of IBC, the latest linear forecast IBC outlined above and the previous linear forecast. In addition Figure 3.3 shows how these forecasts would convert into incentive payments.

[28] As the NGC forecast covers the entirety of the scheme, it factors in the impact that the winter months are anticipated to have.

Figure 3.3 - Forecast costs of the incentive scheme



3.13 Figure 3.3 shows the likely incentive payment received by NGC. The revised linear forecast and the revised NGC forecast result in incentive payments of c£46m (capped value) and c£32m respectively.

3.14 Appendix 2 examines the data available relating to the individual components of IBC in more detail.

4. Ofgem's final proposals for NGC's SO incentive scheme

Introduction

4.1 This chapter outlines Ofgem's initial proposals, respondents' views on Ofgem's initial proposals and in light of those responses, sets out our final proposals for NGC's SO incentive scheme.

Ofgem's initial proposals

Form, scope and duration of the SO scheme

Form

4.2 Ofgem proposed rolling over the sliding scale form to all elements of the SO incentive regime. This involved setting:

- a target based on estimates of efficient levels of incurred costs;
- sharing factors that determine NGC's rewards and liabilities where actual costs deviate from the target; and
- limits on the potential upside and downside (caps and collars) for the SO, where appropriate.

4.3 The proposed scheme was intended to continue to provide an effective incentive for NGC to ensure that costs are maintained at an efficient level and, where possible, further reductions are achieved to the benefit of customers.

Scope

4.4 In our initial proposals Ofgem proposed that the scope of the incentive scheme should be rolled-over to ensure that NGC's SO incentives cover all system and electricity balancing costs, whilst recognising the degree of control the SO has over the different elements of costs within the schemes. To this end, Ofgem continued to believe that NGC's exposure to the net imbalance volume should be reduced via a suitable reference price. However, Ofgem proposed that the current reference price, Net Imbalance Reference Price (NIRP), be reviewed.

Duration

4.5 In our initial proposals, Ofgem supported a move towards an incentive scheme of increased duration in the future. A longer duration scheme would give NGC a clear incentive framework to operate under and would enable it to capture some of the benefits of medium/longer term investments that would reduce SO costs over time, to the benefit of customers. Additionally, Ofgem's aim to create a NGC SO incentive scheme of greater duration is consistent with its proposals in relation to Transco's SO incentive scheme.

4.6 However, we did not consider that it was practical to implement such a longer-term duration scheme in April 2002 for a number of reasons. Firstly, uncertainties exist over forecasting costs for the forthcoming year based only on the first 6 months of NETA, without the experience of operating under NETA during winter. Additionally, new access and pricing arrangements for NGC transmission system and associated incentives have yet to be finalised and any changes are likely to impact on NGC's SO costs. Finally, BETTA will change the role of the transmission companies in GB, as one of its principal elements is the creation of a GB SO.

4.7 Ofgem therefore proposed that the rolled-over scheme should run from 1 April 2002 until 31 March 2003.

Areas of rolled-over SO incentive scheme for review

Sharing factors, cap and collar

4.8 Under the initial proposals, NGC was offered higher potential rewards and higher downside risk in order to further strengthen NGC's incentive to reduce balancing costs. Our proposals aimed to increase the symmetry of the scheme through amendments to the sharing factors and the cap and collar values.

RPI indexation

4.9 Ofgem did not believe that it was appropriate to apply RPI indexation to any of the parameters of the incentive scheme. This applies to cap and collar values as well as the incentive scheme target. The initial proposals were therefore set in 2002/03 money.

Operational experience under NETA

4.10 There were a number of areas highlighted in our initial proposals document where we believed that adjustment was required to the existing scheme as a consequence of operational experience of NETA. These included:

- Allowance for reserve holding, where we sought a reduction based on NGC's original intention to reduce this allowance and on operational experience to date;
- Net Imbalance Reference Price (NIRP), where we proposed a re-definition was proposed away from System Buy Price (SBP) and System Sell Price (SSP) to a market based index capped and collared by the SBP and SSP;
- Transmission Losses Reference Price (TLRP), where we proposed that the current forward prices indicated that the current fixed value of £20/MWh was too high and should be revised downwards, based on a suitable forecast for baseload prices for 2002/3; and
- Allowances to take into account relevant modifications to the BSC and the CUSC.

Ofgem's proposed parameters

4.11 In our initial proposals, Ofgem formulated two incentive scheme options for consideration. The parameters proposed for the incentive scheme and the current scheme are presented in Table 4.1.

Table 4.1 - Ofgem's proposed incentive scheme parameters[29]

	Option A	Option B	Current Scheme
Incentive scheme target	£481m	£460m	-
Deadband	-	-	£481m to £511m
Upside sharing factor	60%	40%	40%
Downside sharing factor	50%	25%	12%
Cap	£60m	£46m	£46m
Collar	£-30m	-£25m	-£15.3m

[29] The incentive scheme target, cap and collar under the Ofgem proposal are 2002/03 values.

4.12 Each of the options was developed to create the appropriate combination of incentive scheme target, sharing factors and cap/collar values based on Ofgem's intention to revise certain areas within the rollover.

4.13 Under Option A, Ofgem was proposing a higher target level of costs (the lower end of the current deadband range) and higher potential profits if NGC beats the target through a significantly higher sharing factor and cap on profits. Consistent with this, Ofgem proposed to sharpen significantly the incentives on NGC by decreasing the downside sharing factor and cap on NGC's exposure if costs exceed the target. Option A was designed to encourage NGC to take on additional risk in return for greater potential reward.

4.14 Under Option B, Ofgem proposed a lower target, the same sharing factors as currently in place when NGC beats this target, but greater exposure where the costs exceed the target. The downside sharing factor and cap on NGC's losses is lower under this option than under Option A. Under this Option, NGC would take on less risk than under Option A (but more than the current scheme) and therefore receive lower potential rewards.

Respondents' views[30]

4.15 Ofgem received 10 responses to our initial proposals consultation document. Copies of the non-confidential responses are available on our website (www.ofgem.gov.uk).

4.16 All respondents believed that it was appropriate to rollover the existing SO incentive scheme. These views were based on both the success of the current scheme and recognition of the difficulties involved in developing a new incentive scheme given uncertainties surrounding forecasting balancing costs over the winter period. Respondents additionally recognised further areas of uncertainty created by developments concerning transmission access and BETTA.

[30] The 'Respondents' views' section takes no account of NGC's response as this is handled separately.

Form, scope and duration of the SO scheme

Form

4.17 The majority of respondents who commented on the form of the scheme were supportive of a sliding scale form of incentive along with appropriate target, cap, collar and sharing factors. However, two respondents provided alternative forms. One respondent supported a sliding scale form with appropriate target and sharing factors but did not support the use of caps or collars. A second respondent suggested that rather than an annual target a more appropriate form of incentive would be a daily target similar to the proposed Transco SO balancing incentive. The respondent believed that a daily incentive with more direct market linkage could provide a more effective and responsive incentive scheme in the future.

Scope

4.18 All respondents that commented on the scope of the incentive were in favour of the proposals. Respondents all believed that it is necessary for the scheme to cover all system and electricity balancing costs whilst incorporating a reduction in NGC's exposure to the net imbalance volume. One respondent did, however, express concern that the bundling of system and electricity balancing costs fails to provide transparency.

Duration

4.19 The majority of respondents agreed that it was appropriate for the rolled-over scheme to run from 1 April 2002 to 31 March 2003, and therefore be one year in duration.

4.20 Five respondents expressed the view that this rollover was only appropriate because there is still less than one year's experience under NETA. These respondents supported a move to a scheme of longer duration after the rolled-over scheme has expired. At this time around 18 months of data will be available, including data for a full winter, providing much more evidence to assess the next scheme. A scheme of longer duration would provide a medium to long-term incentive framework which is more closely aligned to investment timescales. Thus, these respondents supported the intention stated by Ofgem in

the initial proposals to move to a scheme of longer duration in the future. One respondent felt that the incentive scheme duration should always be set at one year.

Areas of rolled-over SO incentive scheme for review

Sharing factors, cap and collar

4.21 The majority of respondents supported Ofgem's proposal to develop a more symmetric scheme in terms of cap, collar and sharing factors. Respondents did not believe that NGC faces an asymmetric risk of a cost overrun. One respondent did however believe that enhanced symmetry was not a prerequisite for the incentive scheme.

4.22 Two respondents expressed concern over the proposed cap and collar mechanism within the scheme. One stated that the use of a cap and collar in future schemes should be debated. The second felt that the cap and collar should be removed because they reduce the incentive for performance improvements outside the incentivised range.

RPI indexation

4.23 The one respondent that commented on the appropriateness of applying RPI indexation to the parameters of the incentive scheme agreed that it was not relevant to costs drivers for many aspects of the SO incentive scheme. However, this respondent did state that for many components of Balancing Services contracts, the costs of providing the service must be fully reimbursed, suggesting that costs linked to RPI indexation must be considered.

Operational experience of NETA

Redefinition of the Net Imbalance Reference Price

4.24 All respondents welcomed the proposal to redefine NIRP to remove the direct linkage to imbalance prices. The majority of respondents favoured the adoption of a replacement index based on a basket of market indices. One respondent suggested that if an appropriate multiple price index could not be found, then

UKPX[31] half-hourly prices would be a suitable index. All respondents who commented on whether the index should be single or dual prices favoured a dual price system.

4.25 The use of fixed price adjustments to create half-hourly dual prices was supported by the majority of respondents although some concerns were raised. One respondent was concerned that the fixed price adjustment values could be arbitrary and not reflect market conditions. Another respondent was concerned that the use of historic price values would not provide an adequate proxy for future price movements. The respondent additionally recommended that any fixed price calculations should exclude 'unrepresentative data' from the early months of NETA. A further respondent suggested a method based on variable adjustments expressed as a percentage differential to the market price index as an alternative. This respondent stated that this solution retains simplicity while allowing NIRP to reflect changing market conditions.

4.26 The final issue raised in the initial proposals document concerned applying a cap and collar to NIRP. Two respondents provided comments on this issue and both were in favour of the cap and collar.

Redefinition of Transmission Losses Reference Price

4.27 All respondents who commented on the fixed component within TLRP agreed that this should be revised downwards.

Ofgem's proposed parameters

Sharing factors, cap and collar

4.28 Several respondents gave a preference for equal sharing factors of 50 per cent, with one stating that the sharing factors should not exceed 50 per cent. One respondent considered that the sharing factors in both options were too high. This respondent stated that lower sharing factors would remove the need for caps and collars. However, another respondent stated that higher sharing factors, and the increased reward or loss involved, enhances the incentivisation of the SO.

[31] UK Power Exchange.

4.29 Respondents who commented on Option A welcomed the increase in the downside sharing factor in Option A from 12 per cent to 50 per cent. However, one respondent does not support the increase in Option A's cap from £46m to £60m because they believed that NGC is likely to be rewarded extremely well under the existing scheme.

Incentive scheme target

4.30 A further measure included in the initial proposals to enhance the symmetry of the scheme was the removal of the deadband and the insertion of a specific incentive scheme target instead. Five respondents supported the removal of the deadband stating that its presence creates a cost range within which the SO is not incentivised to improve its performance. However, one of the five respondents considered that a deadband could be utilised to reduce the downside risk in a scheme with a challenging target.

4.31 Overall, respondents believed that the reductions to the incentive scheme targets were too modest and might present NGC with the opportunity for a windfall gain. Respondents noted that the NGC forecast within the initial proposals was £442m while the targets in the options presented were £20m to £40m higher, and believed that NGC would have little trouble in beating the targets. One respondent endorsed a target of £410.5m.

4.32 Four respondents commented on the proposed reserve holdings allowance reduction. Two respondents supported the proposed £12m reduction to the target. However, the other two respondents believe that a larger reduction should be made to account for reductions to both response and reserve holdings. One of these respondents suggested a reduction of £100m.

NGC's views

4.33 NGC expressed support for the proposal to rollover the current scheme. NGC shared the view that there remains considerable uncertainty surrounding balancing costs given that NETA is yet to complete a full year of operation. In light of these uncertainties and the implications they have on developing a new scheme, NGC agreed that the rollover approach is a sensible framework for the incentive scheme from April 2002.

Form, scope and duration of the SO scheme

4.34 NGC were supportive of an incentive scheme with a sliding scale form and appropriate target, cap, collar and sharing factors. NGC agreed that the incentive scheme should deal with system and electricity balancing costs in a single incentivised pot. NGC also supported the continuation of the provision within the current scheme which limits NGC's exposure to the net imbalance volume.

4.35 NGC agreed that the rollover should run for one year from 1 April 2002 until 31 March 2003. However, NGC argued that an incentive scheme of longer duration is more appropriate, with the most effective option being an incentive scheme of the same duration as the internal costs price control. NGC believed that resetting cost targets annually might compromise NGC's incentive to deliver efficiency gains if the costs involved take longer than one year to recover.

Areas of the rolled-over incentive scheme for review

Sharing factors, cap and collar

4.36 NGC welcomed the fact that both options presented by Ofgem balanced the risk of larger losses by NGC with the potential for increased rewards. NGC believe that the distribution of potential balancing costs is asymmetric and that there is a higher risk of significant costs. NGC considered that this should be reflected in the cap, collar and sharing factors so that the upside sharing factor and cap should be higher than the downside sharing factor and collar. Therefore, NGC opposed complete symmetry, with equal potential rewards and penalties, because this would expose it to a risk that is inconsistent with the assumptions used in setting the cost of capital for the transmission business.

RPI indexation

4.37 NGC did not agree with Ofgem's proposals that RPI indexation should not apply to the parameters of the incentive scheme. In particular, NGC stated that RPI indexation should apply to certain Balancing Services contracts such as, for example, indexation of the costs of mandatory Balancing Services is within CUSC charging principles. NGC believed that the exclusion of RPI indexation

from these Balancing Service contract costs should be preceded by an industry debate under CUSC governance.

Operational experience of NETA

Redefinition of the Net Imbalance Reference Price

4.38 NGC agreed that NIRP should be redefined in order to remove the linkage with imbalance prices. NGC endorsed this primarily to ensure that any BSC Modification Proposals which affect imbalance prices do not also have resultant effects on the incentive scheme. A secondary factor was that the redefinition would eliminate the perception held by many market participants that the linkage to imbalance prices creates perverse incentives for NGC.

4.39 NGC favoured a replacement index based on multiple market prices provided that a half-hourly reference price can be produced. Additionally, all the price indices which contribute to the index must be available on a D + 1 basis for BSUoS (Balancing Services Use of System) charges calculation purposes. NGC recommended the following basket of indices for this purpose:

Table 4.2 - NGC's suggested composition of daily NIRP index

Index component	Contribution to daily NIRP Index
Average daily UKPX price	20%
Average daily APX[32] price	20%
Platts day-ahead price	20%
Petroleum Argus day-ahead index	20%
ASPI[33] day-ahead index	20%

4.40 This produces a daily price on an EFA[34] day basis (from 23:00 to 23:00). NGC suggested that UKPX half-hourly prices over the calendar day are then used to shape the daily price to produce a half-hourly NIRP value.

4.41 NGC agreed that a dual price system should be developed to provide on a half-hourly basis, a price when the system is long and a price when the system is short. NGC recommended the use of fixed price adjustments as included in the initial proposals. As the intent is to rollover the current scheme, NGC stated that the fixed price adjustment should be set in order to ensure that the average effect

[32] Automated Power Exchange.
[33] Andersen Spectron Power Index.

of the NIRP parameter is consistent with the current scheme. NGC believed that the target of the rolled-over scheme should be adjusted accordingly if a definition is settled upon which alters the value of NIRP compared to the current scheme.

4.42 The final area of the proposed redefinition of NIRP discussed in the initial proposals related to capping and collaring NIRP by using SBP and SSP respectively. NGC opposed this measure, because it would re-introduce the linkage between NIRP and imbalance prices. NGC stated that a cap/collar would materially increase incentivised balancing costs because NIRP would always be equal to or more adverse than NIRP in the current scheme. NGC estimated that this would result in a £35m increase in balancing costs should this cap/collar take effect.

4.43 Additionally, NGC argued that the only rationale for ensuring that NIRP lies between SSP and SBP is the theoretical case outlined in the initial proposals. This case highlighted the possibility that if the system was short and NIRP was greater than SBP, NGC would gain if the system became even shorter. NGC stated that it is not in a position to influence the net imbalance volume as this is based on the sum of all imbalance volumes over all energy accounts, other than energy accounts held by the Transmission Company. As the net imbalance volume is determined solely by market participant behaviours and decisions, NGC argued that it is not able to affect this and so cannot game the calculation to its own advantage.

Redefinition of Transmission Losses Reference Price

4.44 In its response, NGC agreed with the move to reduce TLRP in line with forward market prices and the corresponding reduction the incentive scheme target.

Ofgem's final proposals

4.45 The final proposals set out in this document have been developed in light of respondents' views to Ofgem's December 2001 initial proposals and additional operational experience since the publication of those proposals. The final proposals are designed to improve the incentives on NGC to carry out its duty of

[34] Electricity Forward Agreement.

operating the England & Wales electricity transmission system in an economic, efficient and co-ordinated manner by providing it with an appropriate balance of risk and reward. This should see a reduction in the costs of system operation over time to the benefit of customers, who ultimately pay these costs.

Form, scope and duration of the SO scheme

Form

4.46 Ofgem agrees with the majority of respondents and continues to propose a sliding scale format with appropriate target, cap, collar and sharing factors.

Scope

4.47 Ofgem agrees with the majority of respondents and continues to propose that the scope of the incentive scheme should ensure that all NGC's system and electricity balancing costs are covered. Ofgem proposes that the current price reference for net imbalance volumes should be redefined.

Duration

4.48 Ofgem continues to propose that the rolled-over incentive scheme will run from 1 April 2002 to 31 March 2003. Ofgem continues to consider that uncertainties exist over forecasting costs for the forthcoming year based on the first 6 months of NETA, without the experience of operating under NETA during winter. Additionally, new access and pricing arrangements for NGC's transmission system and associated incentives have yet to be finalised and BETTA if implemented will change the role of the transmission companies in GB, as one of its principal elements is the creation of a GB SO.

4.49 Ofgem continues to support the principle of increasing the duration of the NGC SO incentive scheme. In adopting a rollover, the current incentive scheme is effectively being extended to cover a longer timescale thus laying the foundation for incentive schemes with longer timescales in the future. Ofgem believes a longer duration scheme would give NGC a clear incentive framework to operate under and would enable it to capture some of the benefits of medium/longer term investments that would reduce system operator costs over time, to the benefit of customers. Ofgem's aim to create a NGC SO incentive scheme of

greater duration is consistent with its final proposals in relation to Transco's SO incentive scheme.

Areas of rolled-over SO incentive scheme for review

Sharing factors, cap and collar

4.50 Ofgem agrees with the majority of respondents that, in the absence of clear evidence of asymmetric risks of costs, symmetric sharing factors and cap and collar values provide the best deal for customers and an appropriate balance of risk and reward for NGC. The final proposals have taken into consideration respondents' views that NGC's incentive scheme should be more challenging and symmetrical.

RPI indexation

4.51 Ofgem continues to believe that it is not appropriate to apply RPI indexation to any of the parameters of the incentive scheme. This applies to cap and collar values as well as the incentive scheme target. For the avoidance of doubt, the proposals outlined in the final proposals are therefore set in terms of 2002/03 money.

Operational experience of NETA

Redefinition of Net Imbalance Reference Price

4.52 In light of responses to the consultation process Ofgem has prepared final proposals relating to the redefinition of NIRP. The final proposals provide enhanced information in relation to specific aspects of the NIRP redefinition.

4.53 Ofgem proposes that the redefined NIRP should be a dual price system based on multiple market prices. The proposed method is a two-stage process. The first step involves the derivation of a single price half-hourly NIRP index based on a basket of UKPX prices and UK APX EFA Block[35] prices as shown in Table 4.3.

[35] An EFA day contains six EFA blocks each of which covers a 4 hour period. The first EFA block begins at 23:00.

Table 4.3 - Composition of half-hourly NIRP index

Index component	Contribution to half-hourly NIRP Index
Half-hourly UKPX price (UKPX index)	50%
Half-hourly UK APX price (APX index)	50%

4.54 Each component has an equal 50 per cent weighting in the half-hourly NIRP index. Ofgem proposes this index as opposed an index such as that proposed by NGC because it ensures that NIRP is based on solely within-day prices as opposed to a combination of within-day and day-ahead prices. In addition, the index proposed by Ofgem has the advantage of greater simplicity than the NGC proposal. Using solely UKPX and UK APX EFA Block prices has the benefit that these power exchanges have relatively consistent liquidity on business days and non-business days alike.

4.55 The definition of the NIRP index will be open to modification in the future if other suitable market prices become available for inclusion.

4.56 The second step of the process involves creating a dual price index where one price applies when the system is long and another applies when the system is short. Ofgem agrees with the majority of respondents' views that the use of fixed price adjustments would not allow NIRP to reflect market conditions. Instead, Ofgem proposes the use of two variable price adjustments which are applied to the single price to derive NIRP, depending upon whether the system is long or short.

4.57 Ofgem is continuing to analyse what these adjustments should be since we wish to include as much winter data in our analysis as possible. For this reason, the values of the adjustment parameters will be published as part of the licence drafting consultation. For the avoidance of doubt this analysis will not affect any of the parameters within the final proposals of the incentive scheme.

4.58 Ofgem is no longer proposing to use SBP as a cap and SSP as a collar for NIRP. Ofgem recognises the use of SBP and SSP would reintroduce the linkage between NIRP and imbalance prices which the redefinition of the NIRP parameter was intending to remove. In addition, Ofgem recognises that NGC forecast that using SBP as a cap and SSP as a collar would increase incentivised

balancing costs by £35m because NIRP would always be equal to or more adverse than NIRP in the current scheme.

Redefinition of Transmission Losses Reference Price

4.59 Ofgem continues to believe that the best approach for determining the replacement value for the fixed component within TLRP is to set it in line with prevailing forward baseload prices for 2002/03.

4.60 Ofgem proposes that the replacement value should be £18.50/MWh. This revised value is below the £19/MWh figure indicated in the initial proposals.

Parameters of the rolled-over incentive scheme

4.61 Ofgem has developed the final proposals in light of comments made by respondents to our initial proposals, additional operational experience to date and the revision to NGC's own forecast of the existing scheme's final costs. Respondents were concerned that the incentive scheme targets were too generous and in addition NGC's own forecast has fallen by £40m to £402m. Ofgem believes that it is prudent to take both of these factors into account when establishing the final proposals.

4.62 The target value in the final proposals takes into account respondents' views that NGC should face the more challenging target which featured in Option B, a view supported by the fact that NGC has revised downwards its outturn for the current year to 31 March 2002 reflecting in particular relatively mild weather in January and benign system operating conditions so far this winter.

4.63 The sharing factors, caps and collars in the final proposals have been increased, compared with those associated with Option B in the initial proposals to take into account respondents' views that NGC's incentive scheme should be more challenging.

4.64 Table 4.4 shows Ofgem's final proposals alongside Ofgem's initial proposals (Options A and B) and also the existing incentive scheme parameters.

Table 4.4 - Ofgem's final proposals for rolled-over incentive scheme parameters[36]

	Initial Proposals		Final Proposals	Current Scheme
	Option A	**Option B**		
Incentive scheme target	£481m	£460m	£460m	-
Deadband	-	-	-	£481m to £511m
Upside sharing factor	60%	40%	60%	40%
Downside sharing factor	50%	25%	50%	12%
Cap	£60m	£46m	£60m	£46m
Collar	£-30m	-£25m	£-45m	-£15.3m
	Possibility of Income Adjusting Events as a result of changes to the BSC or CUSC	Possibility of Income Adjusting Events as a result of changes to the BSC or CUSC	No Income Adjusting Events as a result of live modifications to the BSC or CUSC currently being considered at the date of this document	

Income Adjusting Events

4.65 Unlike the initial proposals, the final proposals also expose NGC to a potential increase in system operation costs associated with BSC modifications or CUSC amendments currently being consulted on by the BSC or CUSC Panels and which may be implemented in the future following a decision by the Authority (see Appendix 3). Therefore, such system operation costs would not be designated as Income Adjusting Events within NGC's Transmission Licence. Income Adjusting Events can lead to a revision of the incentive scheme target as outlined in Appendix 2. However, under the final proposals, this provision would not be available to these proposed modifications (if implemented), as an allowance has been made to reflect the system operation costs associated with the proposed modifications. The inclusion of this allowance is made without prejudice to the Authority's decision in respect of these modifications. The utilisation of the allowance will be taken into account at the next periodic review of NGC's SO incentives (2003/04).

[36] The incentive scheme target, cap and collar under the Ofgem proposal are 2002/03 values.

5. The way forward

5.1 In this document, Ofgem has set out its final proposals for NGC's SO incentive scheme from April 2002 onwards.

5.2 Prior to 1 April 2002, Ofgem shall propose licence modifications in order to modify NGC's Transmission Licence to take account of the proposed changes to the SO incentive scheme. In order to proceed with the necessary licence modifications, NGC will need to consent to Ofgem's final proposals as set out in this document. NGC has until 5pm 7 February 2002 to decide whether to consent to the proposals set out in this document.

5.3 If NGC consents, the rolled-over SO incentive scheme will come into effect on 1 April 2002. In February 2002, Ofgem will issue a statutory notice of licence modifications under Section 11 of the Electricity Act 1989 in order to amend NGC's Transmission Licence to take account of these proposed changes to the SO incentive scheme.

5.4 If NGC does not accept Ofgem's final proposals the proposed SO incentive scheme will be referred to the Competition Commission for final adjudication.

Appendix 1 The existing SO incentive scheme

Background to the existing scheme

December 2000 final proposals

1.1 The December 2000 Final Proposals document outlined four possible options for the external SO incentive. The four options are outlined in Table 1.1.

Table 1.1 - Ofgem's December 2000 final proposals for the existing scheme

	Ofgem Option 1	Ofgem Option 2	Ofgem Option 3	Ofgem Option 4
Incentive scheme target	£471m		£485m	-
Deadband[37]	-	£471m to £517m	-	£471m to £500m
Upside sharing factor	50%	25%	40%	40%
Downside sharing factor	10%	20%	12%	12%
Cap	£60m	£30m	£45m	£45m
Collar	-£12m	-£25m	-£15m	-£15m
Duration[38]	One year with option for rollover of target[39] to second year	One year scheme	One year scheme	One year scheme
Expected return against NGC's distribution	£2.0m	£-3.7m	£1.4m	£0.6m
Expected return against Ofgem's distribution	£12.8m	£3.6m	£11.3m	£9.5m

1.2 If NGC had selected Option 1 Ofgem would have given NGC the opportunity to rollover the proposed incentive scheme target for a second year. However, the scheme in the second year would not be identical to the scheme during the initial year. The proposed rollover would be subject to adjustments for a lower volume of response and reserve holding during the second year of the scheme. Additionally, Ofgem stated that it would wish to reset the incentive scheme sharing factors and cap/collar values to restore symmetry to the scheme, therefore further strengthening NGC's incentives.

[37] The deadband value refers to the Incentivised Balancing Cost (IBC).
[38] The one year schemes were set to run for 370 days from 27 March 2001 to 31 March 2002.
[39] Subject to an adjustment reflecting lower volumes of responses and reserve holding.

1.3 NGC selected Option 4 as its preferred choice for the form of the current incentive for the external costs. When making the selection, NGC believed that there was significant uncertainty in the level of external costs that it would incur under NETA. NGC acknowledged that Options 2 and 4 included a deadband zone which provided some comfort given the level of uncertainty. The presence of a deadband bridged the gap between Ofgem and NGC in terms of costs. Option 4 was selected over Option 2 because the former provided a greater expected return according to both NGC and Ofgem figures, as shown in Table 1.1.

Existing scheme

1.4 Under the terms of special condition AA5A of NGC's Transmission Licence, it is allowed to recover its actual costs of balancing the system plus incentive payments relating to the costs of these actions. The incentive is calculated and paid on an annual basis. The cashflow under the incentive is paid on a daily basis within BSUoS charges.

1.5 Under the current incentive scheme, NGC is given a specific incentive scheme target range (deadband zone) representing a reasonable balance of risk and reward on the basis of the forecast distribution of the balancing costs throughout the duration of the incentive scheme. If NGC's balancing costs are below the target, it keeps a proportion (the upside sharing factor) of the reduction in costs as an incentive payment. Conversely, if balancing costs are above the target, NGC is charged a proportion (the downside sharing factor) of the higher costs. NGC's overall gains and losses are limited through the use of a cap on payments and a collar on losses.

1.6 The current SO incentive scheme began on 27 March 2001 and is due to expire on 31 March 2002. The structure of the current scheme was established after a consultation process that was concluded in December 2000. The final proposal outlined four possible options for the external SO incentive.

1.7 NGC selected Option 4 as its preferred choice for the form of the current incentive scheme for the external costs. When making the selection, NGC continued to believe that there was significant uncertainty in the level of external costs that it would incur under NETA. Option 4 included a deadband which

bridged the gap between Ofgem and NGC in terms of costs and provided some comfort given the level of uncertainty. Option 2 also contained a deadband zone but Option 4 was selected because the latter provided a greater expected return.

1.8 The parameters relating to Option 4 are outlined in Table 1.2.

Table 1.2 - Option 4 parameters

Deadband	£471.0m to £500.0m
Upside sharing factor	40%
Downside sharing factor	12%
Cap	£45.0m
Collar	-£15.0m
Duration	One year scheme

1.9 Table 1.3 shows how the design of Option 4 relates to the components of the payment calculation. The values shown in Table 2.2 are defined in NGC's Transmission Licence in the table in paragraph B1(a) of Part B of Schedule A.

Table 1.3 - Incentive payment parameters

Band	Incentivised Balancing Cost (IBC_t) (£m)	Deadband (MT_t) (£m)	Sharing Factor (SF_t)	Cap/Collar (CB_t) (£m)
A	$IBC_t < 358.5$	0.0	0	45.0
B	$358.5 <= IBC_t < 471.0$	471.0	0.4	0.0
C	$471.0 <= IBC_t < 500.0$	0.0	0	0.0
D	$500.0 <= IBC_t < 625.0$	500.0	0.12	0.0
E	$IBC_t > 625.0$	0.0	0	-15.0

1.10 The incentive scheme parameters outlined within the December 2000 Final Proposals document were based on 2000/2001prices. However, before the scheme was implemented the values were indexed at 2.2 per cent [40] to reflect retail price inflation in order to convert the parameters into 2001/2002 prices. The indexed values for 2001/2002 are shown below in Table 1.4.

[40] The actual value to be used for inflation is defined in NGC's Transmission Licence, and is based on outturn RPI statistics up to March 2002. The value of 2.2 per cent used above is NGC's current forecast of that inflation parameter, but the final value will not be known until the outturn inflation parameter is known in March 2002.

Table 1.4 - Option 4 parameters post-indexation

	Non-indexed Values	Indexed Values
Deadband	£471.0m to £500.0m	£481.0m to £511.0m
Upside sharing factor	40%	40%
Downside sharing factor	12%	12%
Cap	£45.0m	£46.0m
Collar	-£15.0m	-£15.3m
Duration	One year scheme	One year scheme

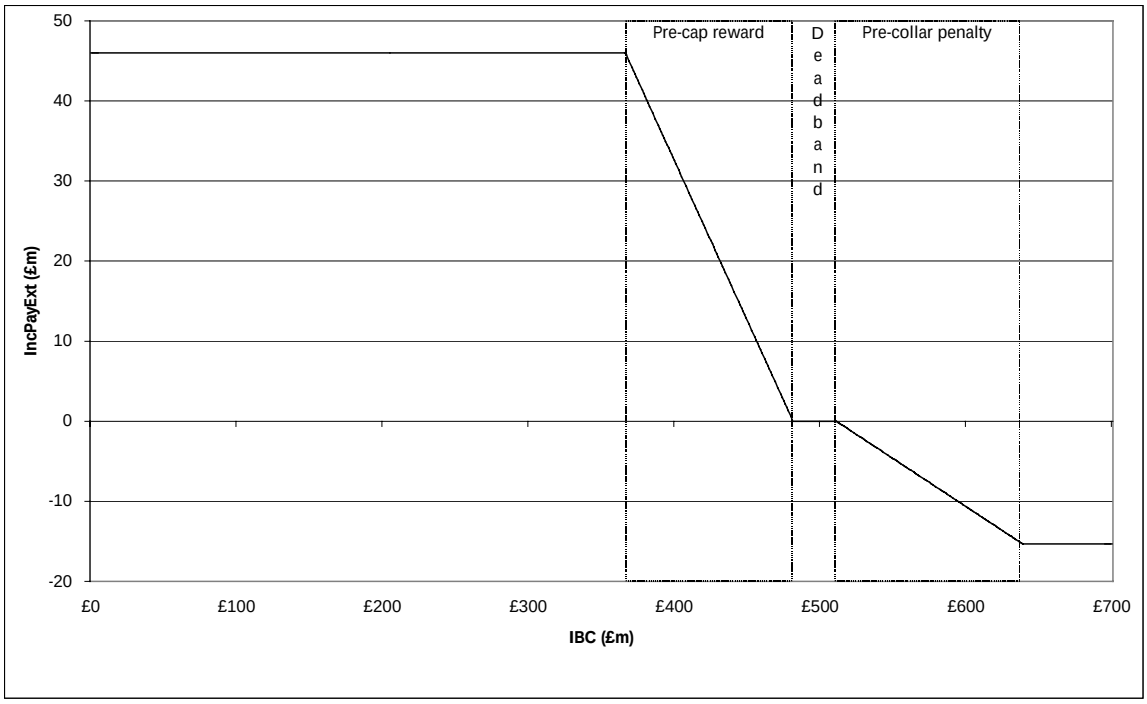
1.11 The indexation of the values consequently modified the components of the incentive scheme. The post-indexation parameters are presented in Table 1.5.

Table 1.5 - Incentive payment parameters post-indexation

Band	Incentivised Balancing Cost (IBC_t) (£m)	Deadband (MT_t) (£m)	Sharing Factor (SF_t)	Cap/Collar (CB_t) (£m)
A	$IBC_t < 366.0$	0.0	0	46.0
B	$366.0 <= IBC_t < 481.0$	481.0	0.4	0.0
C	$481.0 <= IBC_t < 511.0$	0.0	0	0.0
D	$511.0 <= IBC_t < 639.0$	511.0	0.12	0.0
E	$IBC_t > 639.0$	0.0	0	-15.3

1.12 When examining NGC's performance to date under the current incentive scheme, the relevant parameters are the indexed figures as outlined in Table 2.4 above. The structure of the incentive scheme can be displayed graphically as shown in Figure 1.1.

Figure 1.1 - Incentive payment structure



1.13 The key element of the ultimate incentive payment reward/penalty to which NGC is exposed is the Incentivised Balancing Cost (IBC) value at the end of the incentive scheme period. The other parameters and the reward/penalty all depend on the IBC value. The calculation of this figure is the sum of a number of different costs. These are presented in full below:

- the cost of bids and offers in the Balancing Mechanism accepted by the licensee in the relevant period less the total non-delivery charge for that period. This is referred to as Daily System Operator Balancing Mechanism Cashflow (CSOBM).

- the costs of contracts for the availability or use of balancing services, excluding costs within CSOBM (but including charges made by the SO for the provision of balancing services to itself). This component is referred to as Balancing Services Contract Costs (BSCC).

- the volume of Transmission Losses (TL) multiplied by the Transmission Losses Reference Price (TLRP) for each Settlement Period, summed across all Settlement Periods.

- the Total Net Imbalance Volume[41] (TQEI) multiplied by the Net Imbalance Reference Price (NIRP) for each Settlement Period, summed across all Settlement Periods.

1.14 In addition, there are two adjustments made for special provisions within NGC's Transmission Licence for allowed income adjustments and revenue from the provision of balancing services to others.

[41] The total net imbalance volume is the sum of all imbalance volumes over all energy accounts other than energy accounts held by the Transmission Company.

Appendix 2 Incentivised Balancing Cost component breakdown

2.1 The main components of IBC are discussed below in turn.

Balancing Mechanism Costs (CSOBM)

Licence definition

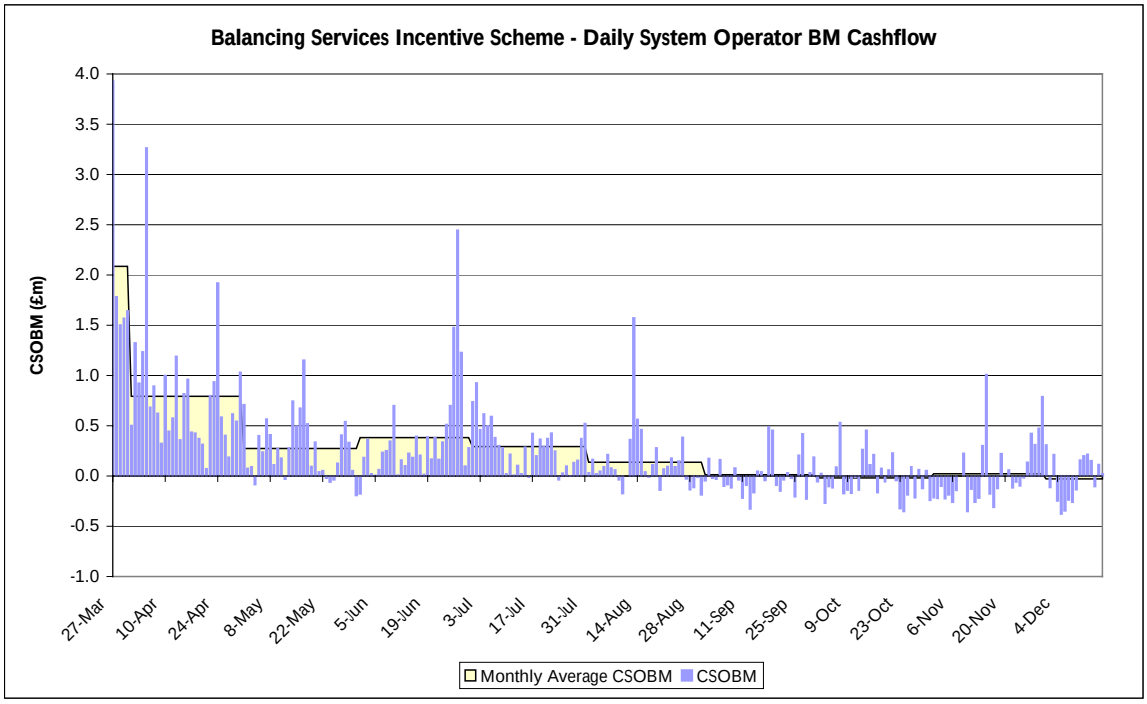
2.2 Under NGC's Transmission Licence $CSOBM_t$ is defined as the cost to the licensee of bids and offers in the balancing mechanism accepted by the licensee in relevant period t less the total non-delivery charge for that period. $CSOBM_t$ is the sum across the relevant period of the values of $CSOBM_j$ (being the Daily System Operator Balancing Mechanism Cashflow as defined in Table X-2 of Section X of the BSC in force immediately prior to 1 April 2001).

2.3 $CSOBM_t$ represents the cost faced by NGC associated with any accepted balancing mechanism excluding costs associated with the non-delivery of accepted bids and offers over the period 27 March 2000 to 31 March 2001.

Performance to date

2.4 As relevant data are only available for the period from Go-Live up until 16 December 2001, it is not possible to analyse $CSOBM_t$. However, daily, monthly and cumulative CSOBM within this period are examined in the following section. Figure 2.1 shows both daily CSOBM and monthly average CSOBM for the period up until 16 December 2001.

Figure 2.1 - Daily CSOBM and monthly average CSOBM



2.5 As was the case with IBC, CSOBM has generally decreased throughout the period. However, upward spikes have occurred on several occasions against the general downward trend. Most notably, CSOBM surpassed £1m on three consecutive days beginning on 26 June 2001 coinciding with a drop in plant margin. The tendency for low CSOBM, as seen in September, has persisted and the continuing the downward trend demonstrated throughout the summer months has resulted in negative values in October and December. More detailed statistics concerning CSOBM are presented in Table 2.1.

Table 2.1 - Monthly CSOBM statistics

Month	Sum (£m)	Daily Av (£m)	Min (£m)	Max (£m)	Std Dev (£m)
Mar-01	10.43	2.09	1.50	3.93	1.04
Apr-01	23.82	0.79	0.07	3.27	0.61
May-01	8.51	0.27	-0.19	1.15	0.30
Jun-01	11.51	0.38	-0.18	2.45	0.52
Jul-01	9.09	0.29	-0.04	0.93	0.24
Aug-01	4.26	0.14	-0.19	1.57	0.32
Sep-01	0.33	0.01	-0.33	0.49	0.20
Oct-01	-0.61	-0.02	-0.35	0.53	0.21
Nov-01	0.75	0.02	-0.35	1.01	0.32
Dec-01[42]	-0.43	-0.03	-0.38	0.31	0.23

[42] All statistics for December 2001 in Appendix 2 cover the period 1 December to 16 December only.

2.6 Monthly average CSOBM has generally decreased in every month, with the exception of June partly in response to events on the days surrounding the tightening of plant margin at the end of the month. The monthly sum of CSOBM has been fluctuating between -£1m and £1m since September. There has been an increased incidence of negative CSOBM particularly in August and this has persisted during the following months. This can be linked to the length of the system. The system is long in the majority of periods and as such NGC is generally not in a position where it has to accept offers to increase generation or decrease demand, for which it pays the offer price. Instead it is more likely to accept bids to reduce generation or increase demand, for which it receives the bid price. Consequently, the cost associated with CSOBM has fallen.

2.7 The monthly standard deviation of CSOBM steadily decreased over the first six months since Go-Live, signifying that there has been less volatility as time has progressed. Standard deviation has remained low over recent months.

2.8 The overall trend suggests that daily CSOBM values have fallen and have continued to fall during the early winter months when negative values have become increasingly common. However, this situation may change during the remainder of winter.

Balancing Services Contract Costs (BSCC)

Licence definition

2.9 Under NGC's Transmission Licence, $BSCC_t$ is defined as the costs to the licensee of contracts for the availability or use of balancing services during the relevant period t, excluding costs within $CSOBM_t$ but including charges made by the licensee for the provision of balancing services to itself in the relevant period t.

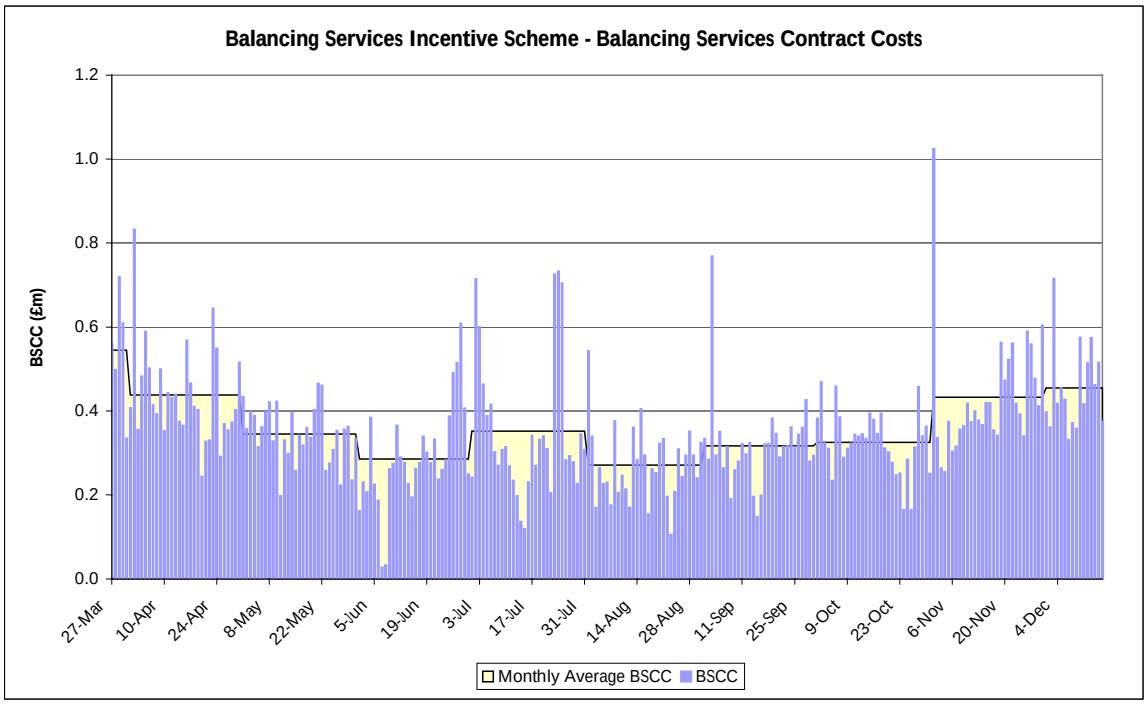
2.10 $BSCC_t$ are the costs of the payments that NGC make to the providers under contract of balancing services excluding any costs paid through the Balancing Mechanism. This includes costs associated with the procurement of energy, reserve, frequency response, transmission constraints, black start, reactive power and transmission losses. All these costs are bundled together as BSCC for the purposes of IBC calculation. Currently, NGC does not provide any balancing

services to itself and consequently this component does not make any contribution to BSCC.

Performance to date

2.11 Similar to $CSOBM_t$, $BSCC_t$ cannot be analysed because the entire period of the current scheme is not complete. Consequently, the following section examines BSCC figures up until the end of 16 December 2001. Figure 2.2 shows both daily BSCC and monthly average BSCC for the period from Go-Live up until 16 December 2001.

Figure 2.2 - Daily BSCC and monthly average BSCC



2.12 In the case of BSCC, although the average costs generally fell over the initial five months, the increase seen in September has continued for the remainder of the period examined. The onset of winter does appear to have led to an increase in BSCC costs, particularly in November and the first half of December. The highest daily BSCC cost of £1.02m occurred on 1 November 2001 and this is the first time that the £1m mark has been surpassed. From this point, daily BSCC has averaged around £0.44m as opposed to £0.34m over the period from Go-Live until 31 October 2001. Additional monthly statistics are shown in Table 2.2.

Table 2.2 - Monthly BSCC statistics

Month	Sum (£m)	Daily Av (£m)	Min (£m)	Max (£m)	Std Dev (£m)
Mar-01	2.72	0.54	0.34	0.72	0.14
Apr-01	13.14	0.44	0.24	0.83	0.12
May-01	10.70	0.35	0.20	0.47	0.07
Jun-01	8.59	0.29	0.03	0.61	0.12
Jul-01	10.91	0.35	0.12	0.73	0.17
Aug-01	8.41	0.27	0.11	0.54	0.09
Sep-01	9.51	0.32	0.15	0.77	0.10
Oct-01	10.10	0.33	0.17	0.47	0.07
Nov-01	12.99	0.43	0.26	1.02	0.15
Dec-01	7.27	0.45	0.33	0.72	0.10

2.13 The standard deviation in the months from Go-Live has been relatively low, and has marginally fallen as time has progressed, suggesting that the level of variability from day to day within month is low and is decreasing.

2.14 While over the period from Go-Live until the end of August BSCC generally fell, the trend exhibited from September onwards has been upwards. This could indicate that there may be further increases during winter.

Transmission Losses (TL) and Transmission Losses Reference Price (TLRP)

Licence definition

2.15 Under NGC's Transmission Licence, $\sum_{jt}(TL_j[TLRP_j])$ is defined as the volume of Transmission Losses (TL_j) multiplied by the Transmission Losses Reference Price ($TLRP_j$) for each Settlement Period, summed across all Settlement Periods in the relevant period t.

2.16 NGC's Transmission Licence defines TL_j as the volume of Transmission Losses given by the sum of Balancing Mechanism Unit Metered Volumes (as from time to time defined in the BSC) during the Settlement Period j for all Balancing Mechanism Units (as from time to time defined in the BSC). This is the difference between the quantities of electricity delivered to the licensee's transmission system and the quantity taken from the licensee's transmission system during that Settlement Period, but excluding all generator transformer losses.

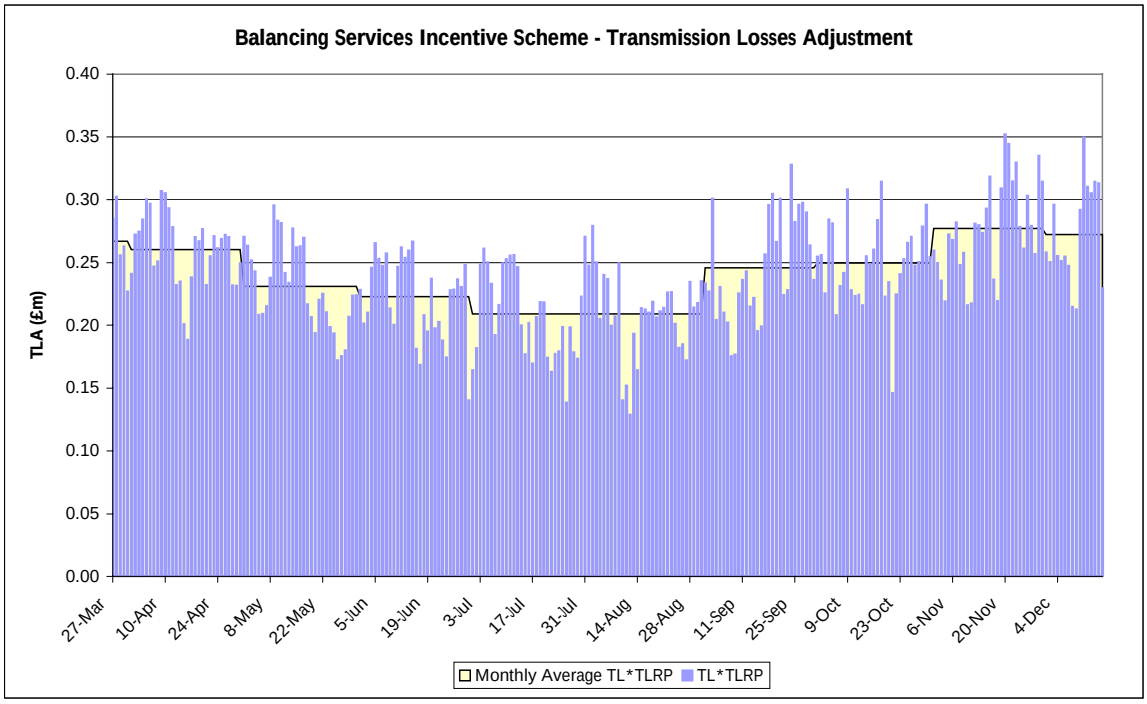
2.17 $TLRP_j$ is defined in NGC's Transmission Licence as the Transmission Losses Reference Price which has the value specified for each Settlement Period set out in paragraph B3 of Part B of Schedule A of NGC's Transmission Licence.

Performance to date

2.18 For analysis purposes, this section will look at the combined effect of TL and TLRP, which will be referred to as Transmission Losses Adjustment (TLA). The analysis presented below is based on TLA data from Go-Live until 16 December 2001.

2.19 Daily TLA and monthly average TLA values for the period up until 16 December 2001are presented in Figure 2.3.

Figure 2.3 - Daily TLA and monthly average TLA



2.20 TLA dropped during the first three full months of the period, as was the case for CSOBM and BSCC. However, TLA has subsequently increased since September. During November in particular, the daily TLA values have been amongst the highest throughout the entire period. The daily average TLA cost in November was £0.28m compared to a low of £0.21m in July and August.

2.21 If the general increase in TLA over the recent months continues, there will be additional upward pressure on IBC. TLA has increased as winter has set in and the costs linked to TLA could continue to increase over the remainder of the winter.

Total Net Energy Imbalance Volume (TQEI) and the Net Imbalance Reference Price (NIRP)

Licence definition

2.22 Under NGC's Transmission Licence, $\sum_{jt}(TQEI_j[NIRP_j])$ is defined as the Total Net Imbalance Volume[43] ($TQEI_j$) as defined in the BSC in force immediately prior to 1 April 2001 multiplied by the Net Imbalance Reference Price ($NIRP_j$) for each Settlement Period, summed across all Settlement periods in the relevant period t.

2.23 NGC's Transmission Licence defines $NIRP_j$ as the Net Imbalance Reference Price in settlement period j. The $NIRP_j$ value is based on imbalance prices using the definitions of SBP and SSP as in the version of the BSC in force immediately prior to 1 April 2001. Whether SBP or SSP applies is dependent upon TQEI. NIRP is set to be equal to SBP when the system is short, SSP when the system is long and zero when the system is in balance.

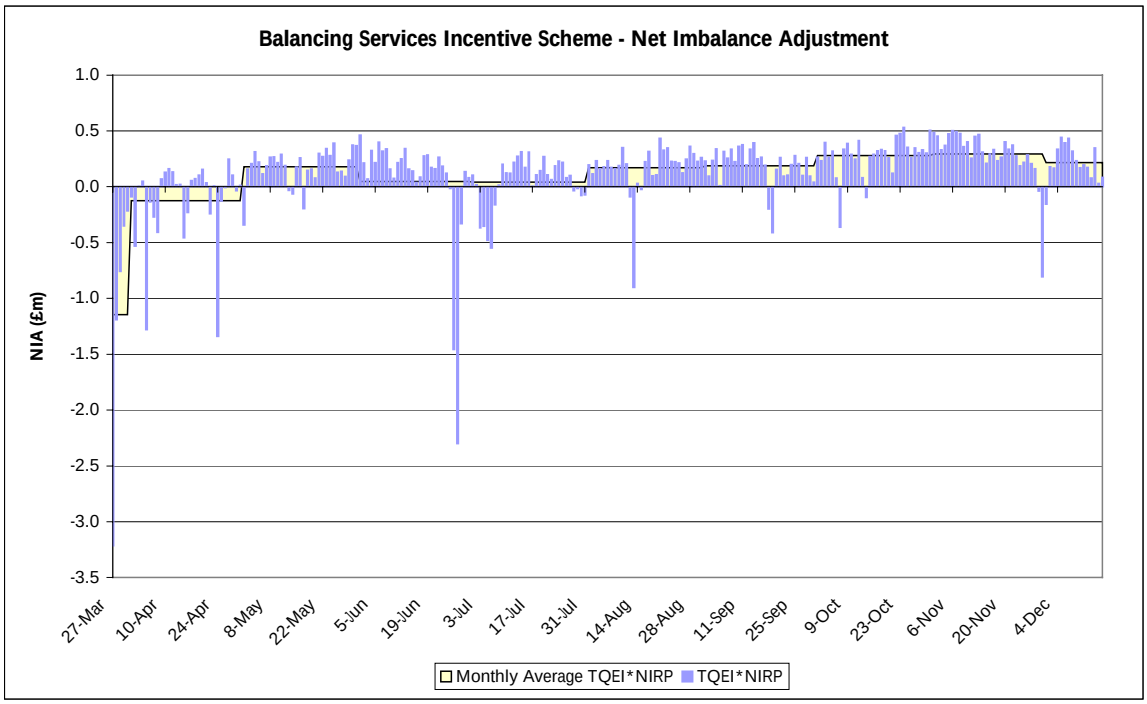
Performance to date

2.24 For analysis purposes, this section will look at the combined effect of TQEI and NIRP, which will be referred to as the Net Imbalance Adjustment (NIA). The data covers the period from Go-Live up until 16 December 2001.

2.25 Daily NIA and monthly average NIA for the period up until 16 December 2001 is presented in Figure 2.4.

[43] The total net imbalance volume is the sum of all imbalance volumes over all energy accounts other than energy accounts held by the Transmission Company.

Figure 2.4 - Daily NIA and monthly average NIA



2.26 Initially daily NIA, on the majority of days, and monthly average NIA were negative up until the end of April. From the beginning of May onwards, daily NIA has had a positive value on the majority of days. The tendency for NIA to be positive can be linked to the general tendency for the system to be long, which means that the TQEI component of NIA is also positive. This has become even more applicable as time has progressed under NETA, as NIA is positive in the majority of cases, the overriding influence of NIA is to increase IBC. NIA has been negative on relatively few occasions with the most obvious spikes seen during June when plant margin was low. At this time NIA reached its lowest value of -£2.3m.

2.27 If the system retains its tendency to go long TQEI will continue to be positive on the majority of occasions, and so whether the value of NIA will be positive or negative will depend the value of SSP as defined prior to 1 April 2001.

2.28 Daily NIA has continued to be positive on the majority of occasions with the daily average NIA falling just short of £0.3m in October and November as opposed to an average of -£0.1m over all previous months

Other Allowed Income (RT) and Balancing Services provided to others (OM)

Licence definition

2.29 Under NGC's Transmission Licence, RT_t is defined as the amount of any allowed income adjustment, given by paragraph 12(b) of special condition AA5A, in respect of relevant period t.

2.30 NGC's Transmission Licence defines OM_t as the amount representing the revenue from the provision of balancing services to others during relevant period t, calculated in accordance with paragraph 7 of special condition AA5A.

Performance to date

2.31 Both these costs are zero year-to-date. NGC advises us that they expect OM to remain zero for the whole of this year. RT will only be non-zero if Ofgem agrees to a change to the incentive scheme target as a result of an Income Adjusting Event. An Income Adjusting Event could most probably occur as a consequence of modifications to the BSC and the CUSC.

Summary

2.32 In addition to examining the overriding trends of the individual components of IBC, an examination of each component's relative contribution to IBC throughout the period is set out below. Table 2.3 presents the monthly values of each of the components of IBC, while Table 2.4 shows each component's percentage contribution to IBC.

Table 2.3 - Monthly IBC component totals

Month	Sum (£m)	Daily Av (£m)	Min (£m)	Max (£m)	Std Dev (£m)
Mar-01	10.43	2.72	1.33	-5.73	8.75
Apr-01	23.82	13.14	7.81	-3.76	41.01
May-01	8.51	10.70	7.16	5.53	31.90
Jun-01	11.51	8.59	6.68	1.39	28.16
Jul-01	9.09	10.91	6.48	1.28	27.76
Aug-01	4.26	8.41	6.48	5.26	24.41
Sep-01	0.33	9.51	7.37	5.62	22.83
Oct-01	-0.61	10.10	7.73	8.64	25.87
Nov-01	0.75	12.99	8.31	8.77	30.81
Dec-01	-0.43	7.27	4.36	3.43	14.64

Table 2.4 - Monthly IBC components as proportion of IBC

Month	CSOBM	BSCC	TLA	NIA
Mar-01	119%	31%	15%	-66%
Apr-01	58%	32%	19%	-9%
May-01	27%	34%	22%	17%
Jun-01	41%	30%	24%	5%
Jul-01	33%	39%	23%	5%
Aug-01	17%	34%	27%	22%
Sep-01	1%	42%	32%	25%
Oct-01	-2%	39%	30%	33%
Nov-01	2%	42%	27%	28%
Dec-01	-3%	50%	30%	23%

2.33 The most obvious observation from Tables 2.3 and 2.4 is that the general reduction in IBC has been accompanied by a distinct decrease in CSOBM, and as a result CSOBM's contribution to IBC. CSOBM has fallen from being just under 60per cent of IBC in April to between –3 per cent and 2 per cent in the most recent months. The fall in CSOBM means that NGC's overall costs associated with accepting Balancing Mechanism actions have decreased.

2.34 As explained above, the system has a tendency to be long, possibly due to participants avoiding exposure to the SBP by over contracting. The resultant length of the system means that NGC is accepting relatively fewer offers to increase generation (for which it pays the Offer price) and whilst accepting relatively more bids to decrease generation (for which it receives the Bid price). Consequently, CSOBM has fallen over the period.

2.35 The reduction in the significance of CSOBM has to some extent been countered by an increase in the proportion of IBC accounted for by NIA and TLA. NIA's contribution has shifted from -9 per cent in April to a positive contribution of c30 per cent in recent months. The contribution of NIA has increased because of the increasing tendency for the system to be long. When the system is long the TQEI value within NIA is positive and NIRP is based on SSP, which has a positive average value based on experience to date. As a result the persistent length of the system in more recent months has caused NIA to increase. Meanwhile TLA's contribution has increased from 19 per cent in April to 27 per cent in November.

2.36 The significance of BSCC in the calculation of IBC remained relatively stable over the first five months, fluctuating around 33 per cent throughout. However,

since September, the contribution of BSCC to IBC has average 43 per cent, reflecting the increased importance of BSCC over the winter months.

Appendix 3 Modifications to the BSC and Amendments to the CUSC

Live BSC Modifications and CUSC Amendments

3.1 Table 3.1 lists all live BSC Modifications on 31 January 2002.

Table 3.1 - Live BSC Modifications

Mod No.	BSC Modification Title (Proposer)
P01	Extension Of The Definition Of ECVAA Systems Failure For Permitting Post Gate Closure Notification (OM London Exchange Ltd)
P04	Dual Energy Contract Notification (Dynegy UK Limited)
P07	Allocation Of Supplier Demand To The Same BM Unit in A GSP Group For All Suppliers In The Same Company Group (PowerGen)
P11	Revision Of Minimum Credit Cover Requirements
P12	Reduction Of Gate Closure From 3.5 Hours To 1 Hour (Damhead Creek Ltd)
P26	Review of Governance and Modification Procedures (Dynegy/Amerada)
P26	Market Driven Trading Neutrality Band (Bizzenergy)
P27	Amendment to the Derivation of Imbalance Prices (Elec Direct)
P28	Review of Governance and Modification Procedures (Dynegy/Amerada)
P34	Transfer of Imbalances Caused by Balancing Services to NGC (NGC)
P35	Qualified ECVNAs (Automated Power Exchange)
P36	The generation of Bid-Offer Acceptances relating to energy delivered as a result of providing Applicable Balancing Services (Innogy)
P37	The Remedy of Past Errors in ECVNs and in MVRNs (London Electricity)
P38	Redefined Definition Of CAD To Allow Prompt Price Reporting (Slough Heat and Power)
P38	Redefined Definition Of C A D To Allow Prompt Price Reporting
P39	Improvements To The Payment Default Process (The Panel /ELEXON)
P40	Calculation of Negative Estimates of Annual Consumption (EAC) (SEEBOARD)
P41	Allocation Of individual NHH MPANs different BM Units (Utility Link Ltd)
P43	Provision of AA and EAC Data (Western Power)
P44	Correction of Notification Errors where Parties are able to satisfy a Reasonable and Prudent Operator test (PowerGen UK Plc)
P45	Price Adjusters for Settlement Days 05/0401 to 24/09/01 (The Panel /ELEXON)
P46	Housekeeping Modification (The Panel /ELEXON)
P47	Termination Process for ECVNA and MVRNA Authorisations (The Panel/ELEXON)
P48	Half Hourly Receipt And Publication Of BSAD Data (NGC)
P49	Timing of Publication Of Indicative P18 Option A Prices On The B.M.R.S. (The Panel/ELEXON)
P50	Distribution Of BM Aggregation Report Data To Non BSC Parties (UK Coal Mining Ltd.)
P52	Non-Party Access to the BMRS via the High Grade Service (Seeboard)
P53	Changes to DC, GC and CALF and the Effect on Energy Indebtedness (The Panel /ELEXON)
P55	Consolidation of Embedded Generation in CVA (SmartestEnergy)
P56	Proposed Modification to the BSC in order to reflect amended references in

Mod No.	BSC Modification Title (Proposer)
	The National Grid Company plc's Transmission Licence (NGC)
P57	Amendment to BSC Failing Supplier Process (British Gas Trading)
P59	The acceptance of Bids and Offers to honour a BM Unit's dynamic parameters beyond the Balancing Mechanism window (Innogy)
P60	Amendment To Obligation To Register Metering Systems In Relation To Trade Sales (British Gas Trading)
P61	Ad Hoc Adjustments to Settlement involving material errors without resorting to Ad Hoc Settlement Runs (Scottish Power)
P62	Changes to Facilitate Competitive Supply On The Networks Of New Licensed Distributors (TXU-Europe)
P63	Change of Contract Management of MPANs for DC, DA & MO (British Gas Trading)
P64	Reduction of GC Values to Zero During a BSC Season (TXU-Europe)
P65	Attendance of Proposer's Representative at Panel Meetings (TXU-Europe)
P66	ECVNAs & MVRNAs to Receive ECVAA Forward Contract Report (TXU-Europe)
P67	Facilitation for Further Consolidation Options (PowerGen Uk PLC)

3.2 Table 3.2 lists all live CUSC Amendments on 31 January 2002.

Table 3.2 - Live CUSC Amendments

Mod No.	CUSC Amendment Title (Proposer)
CAP002	Clause 6.5.1 (NGC)
CAP003	Panel Indemnities (NGC)
CAP004	Cost Benefit Analysis (British Energy)
CAP005	CUSC Panel's Role (British Energy)
CAP006	Non-Discrimination (British Energy)
CAP007	Role of Standing Group (British Energy)
CAP008	Codification Errors (British Energy)
CAP009	Mandatory Frequency Response (First Hydro)
CAP010	Frequency Response Imbalance Exposure (Innogy)
CAP011	Changes to Frequency Response Payments (to reflect potential BSC modification) (NGC)
CAP012	Procedure for Renewal of NGC (Connection) Assets
CAP013	Removal of Redundant Paragraph 6.6.1(b) (NGC)
CAP014	Removal of Redundant Paragraphs in Section 3.12 (NGC)