

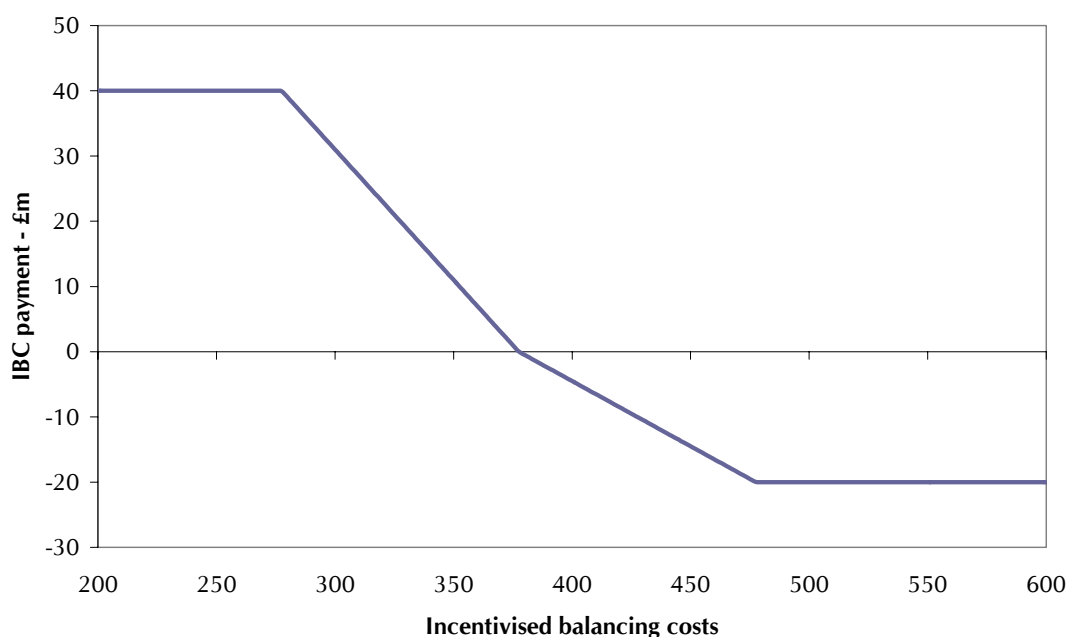
Electricity external balancing- System Operator incentive scheme

Summary of incentive schemes

Under the System Operator (SO) external cost incentive schemes, National Grid Electricity Transmission (NGET) have been able to recover the actual costs of energy balancing, constraint management and system management, adjusted by incentive payments or charges relating to these costs. An annual target was set in relation to so-called incentivised balancing costs (IBC). The IBC represent NGET's actual balancing costs after certain adjustments.¹

Figure A.1 shows the form of the incentive schemes, based on the parameters agreed for 2005/06. If IBC were below the target, NGET kept a proportion, set by a sharing factor (the upside sharing factor), of the reduction in costs. If its costs were above the target, NGET was charged a proportion, set by a sharing factor (the downside sharing factor), of the costs in excess of the target. NGET's overall gains or losses on its balancing costs were limited by applying a cap on the profits and a floor on the losses.

Figure A.1: Incentivised balancing costs – 2005/06



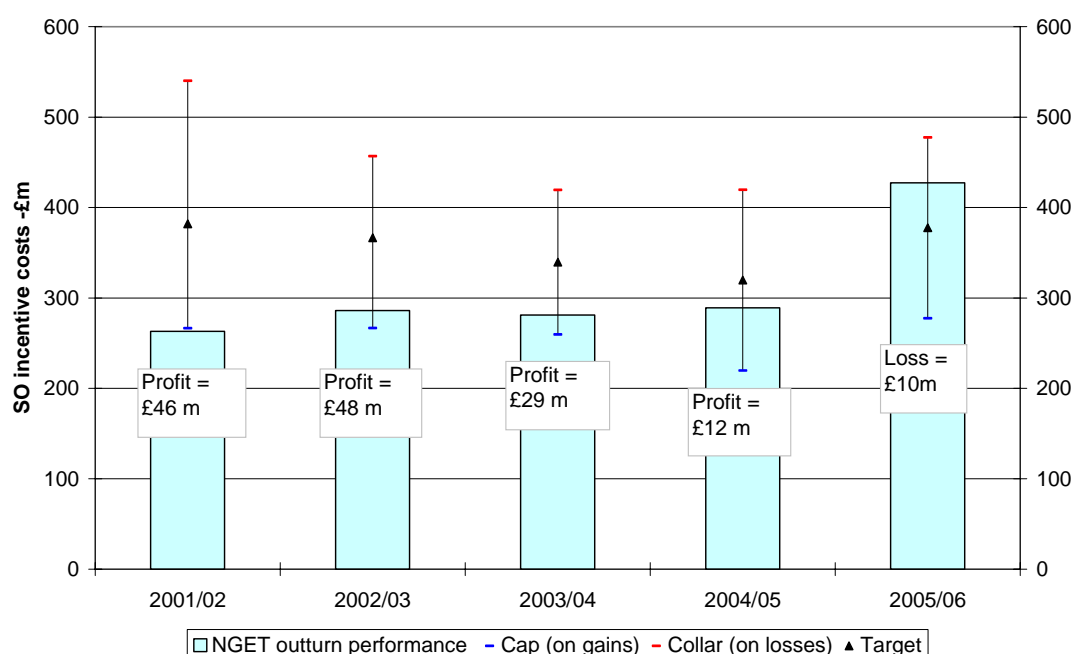
¹ These adjustments are made to take account of increases/decreases in the volume of balancing activity NGET has to undertake (based on a term known as the net imbalance adjustment (NIA)). This reflects the fact that the overall volume of balancing activity is largely outside of NGET's control. The IBC term also incorporates transmission losses adjustment (TLA) terms, so that NGET has incentives to take into account of the impact of particular balancing decision on transmission losses.

To arrive at its final proposals for each incentive scheme, Ofgem has generally adopted the following general methodology. First, it has consulted on the scope and form of the incentive scheme. NGET has then submitted its forecast of IBC for the following year and its projected costs for this year. On the basis of this data, Ofgem has then consulted on an initial set of proposals for the new scheme. In light of responses to this consultation, and any updates that NGET may provide, Ofgem has then produced a final set of proposals.

NGET's overall performance

NGET has faced annual incentive schemes for its external balancing costs since 1994. Figure A.2 below shows the targets; caps and floors under each scheme since the start of NETA. NGET's outturn performance against those incentives, and its associated profit or loss under each incentive scheme, is also shown.

Figure A.2: Incentivised balancing costs since NETA Go-Live²



NGET's costs were lower than the incentive targets for each year for the first four years of NETA, despite the fact that the IBC target was reduced in each of these years. For the first four years, IBC were fairly stable in a range of £260 – 290 million and the declining targets meant that NGET's reward under the incentive scheme fell steadily.

In 2005/06, however, outturn costs were much higher at £427 million. Part of this increase was expected due to a widening of the scope of NGET's role as SO, which was extended to the whole of GB following the introduction of British Electricity Transmission and Trading Arrangements (BETTA) from 1 April 2005. In order to account for this, the IBC target for 2005/06 was nearly £60 million higher than the target for 2004/05.

In the event, NGET's balancing costs in 2005/06 were higher than this increased target. A loss under the incentive schemes should not in itself be particularly surprising. This is because the incentive target should broadly

² Note that balancing costs are net of transmission losses.

capture the expected range of probable outcomes for balancing costs, with the target a central case for balancing costs taking into account upside and downside risks. Consequently, there will always be a possibility that the target is not met. NGET incurred a penalty of around £10 million in 2005/06 under the incentive scheme.

Nevertheless, on 30 June 2006, NGET submitted notices to Ofgem of two proposed income adjusting events (IAEs). NGET has indicated that based on the current reconciliation data, the proposed IAEs would reduce its IBC for 2005/06 to £391.5 million (from £427.2 million), compared to a scheme target IBC of £377.5 million.

The Authority will be consulting separately on this issue before it makes a determination on whether the stated events, or circumstances, constitute IAEs, and whether the income adjustment sought ensures that the financial position and performance of NGET is, insofar as is reasonably practicable, the same as if that IAEs had not taken place, and if not, what allowed income adjustment would secure that effect.

SO incentives from 1 April 2006 onwards

During late 2005 and early 2006 Ofgem consulted on an incentive scheme for 2006/07. Reflecting the increases in balancing costs seen in 2005/06, Ofgem proposed two alternative options for the external incentive scheme based on incentive targets of either £390 or £410 million, summarised in Table A.1 below³.

Table A.1: Ofgem final proposals for SO incentives scheme 2006/07

	Target (£m)	Upside (reward to NGET if costs are below target)		Downside (costs to NGET if costs are above target)	
		Sharing factor	Cap (£m)	Sharing factor	Cap (£m)
Option 1	390	60%	40	-10%	-10
Option 2	410	10%	10	-60%	-40

NGET rejected both of these options pointing to the high costs experienced in 2005/06 and its expectation of an overall loss under the 2005/06 incentive scheme. Following NGET's rejection of the proposed schemes, Ofgem decided to rely on its existing powers to regulate NGET based on its obligations to operate an efficient, economic and coordinated system. Ofgem are therefore currently monitoring NGET's costs against this obligation.

Question A.1: Is the form and scope of the previous incentive schemes still appropriate?

Question A.2: Are there ways in which the process of setting incentive scheme proposals could be improved?

³ National Grid Electricity Transmission's System Operator incentive schemes: Final Proposals, Ofgem, February 2006, 40/06, http://www.ofgem.gov.uk/temp/ofgem/cache/cmsattach/14066_4006.pdf?wtfrom=/ofgem/whats-new/archive.jsp

Figure A.3: Incentivised balancing costs

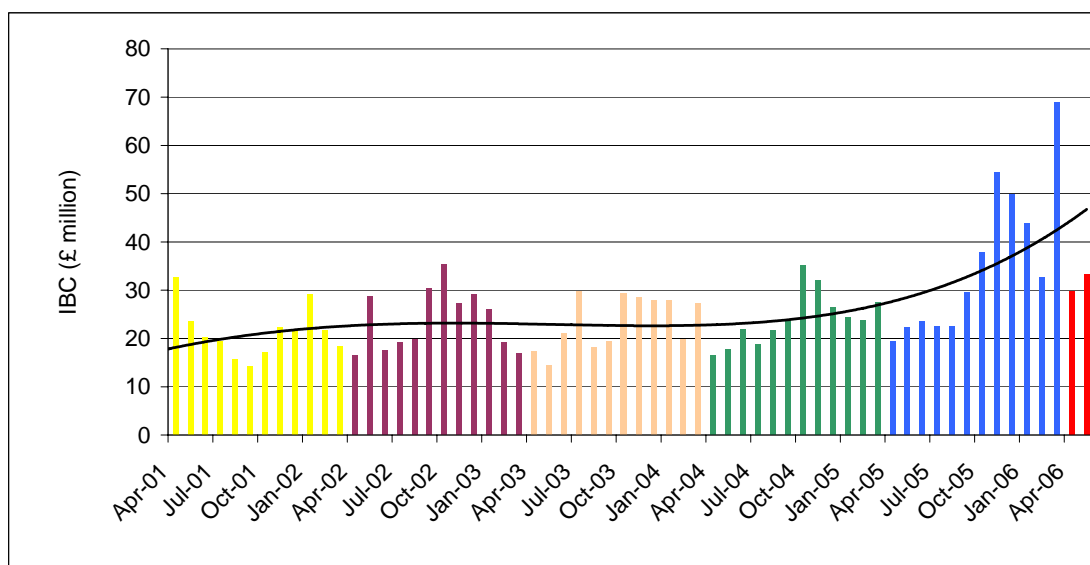


Figure A.3 above shows NGET's monthly IBC over the past three years and the first two months of 2006/07 (under the monitoring scheme).

There is a clear seasonal trend in NGET's balancing costs, with the first half of each year NGET facing lower costs than the latter half of the year. For 2005/06 this trend was particularly marked. As discussed further below, this was driven by some very high balancing mechanism (BM) costs in November, December and March as well as a large increase in balancing services contract costs over the winter.

IBC costs for the first two months of 2006/07 have been around £27 million higher in aggregate than the average for the same period in the past three years. Although the increases are generally consistent with the rise in energy prices, there have also some specific high costs events that have contributed to the increase.

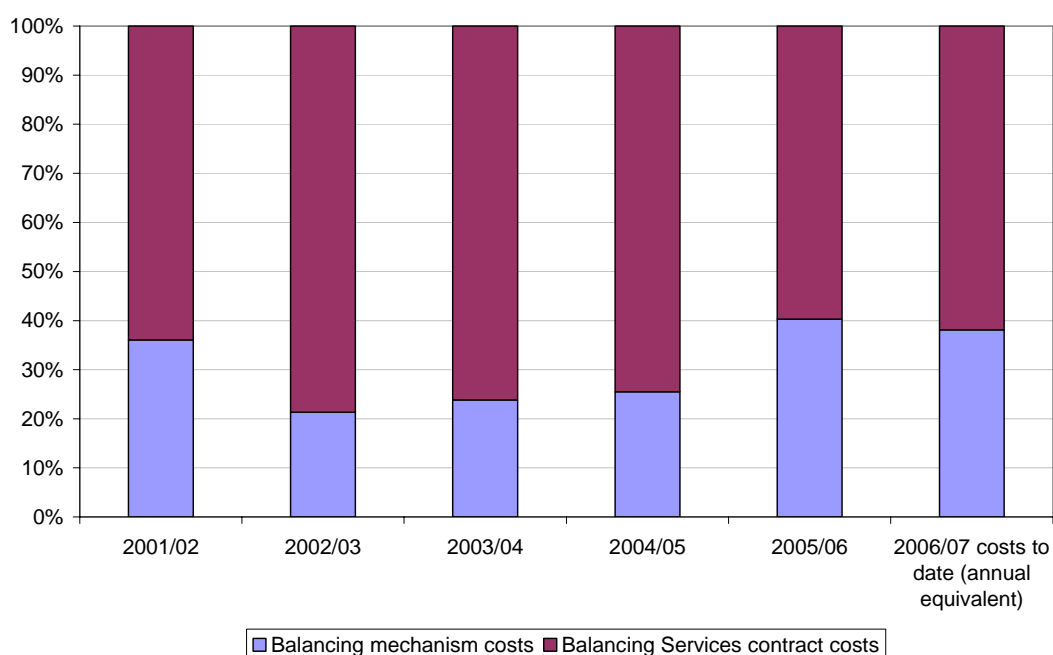
The sections below examine each of the components of IBC in more detail, and highlight particular issues that may warrant further consideration.

External balancing cost components

There are two key components to NGET's external balancing costs:

- **Balancing mechanism (BM) costs:** the costs of short term actions taken in the last hour and a half before real time. These costs primarily relate to NGET's residual role in **energy balancing** but may also include the costs of **system balancing** actions. The impact of system balancing costs has increased recently as **constraint management** costs have risen.
- **Balancing services contract costs:** covering the services that NGET contracts for ahead of balancing mechanism timeframes. NGET procures a number of **ancillary services** to meet its system balancing requirements, but also looks to contract ahead for energy balancing, where this is likely to be cheaper than in the BM.

Figure A.4: Split between external balancing cost components



The data from 2002/03 to 2004/05 suggested that a fairly stable relationship was emerging between BM costs and contract costs. In 2005/06, although contract costs were still the larger component, BM costs accounted for an increased share of the overall IBC. This trend appears to have continued in the first two months of 2006/07.

Balancing mechanism costs

Figure A.5 shows that the increased share of CSOBM in 2005/06 can be mostly explained by the high balancing mechanism costs seen in November and December 2005 and March 2006. At least some of these cost spikes can be linked to tight supply margins in the GB gas market, which drove up the (opportunity) costs associated with operating gas-fired power plants.

Figure A.5: Balancing mechanism costs (CSOBM)

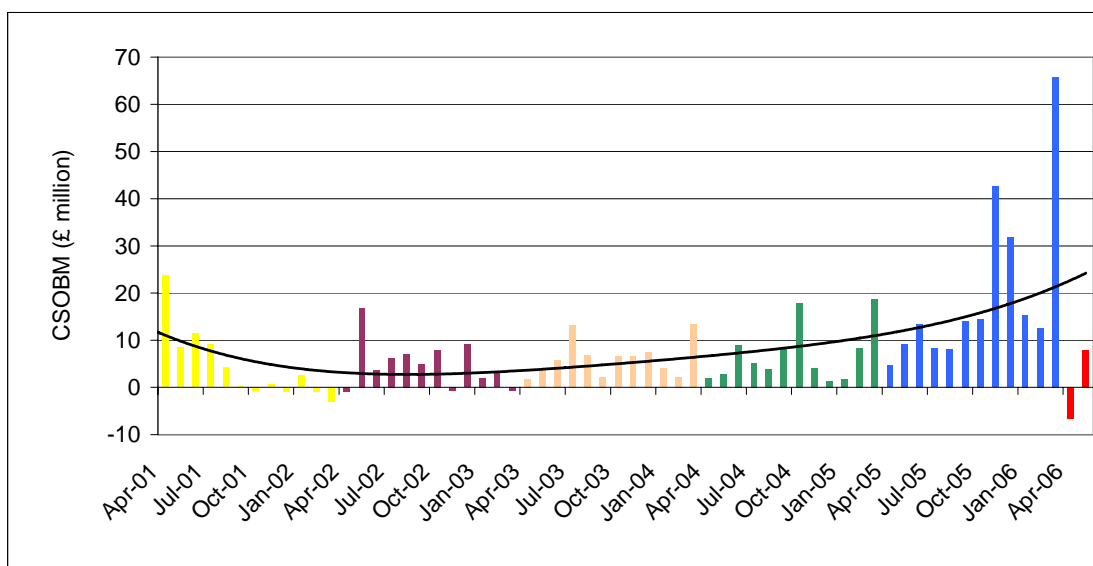


Figure A.6 below shows the distribution of daily BM costs during 2005/06 compared to that for the period 2002/03 to 2004/05 combined.

Figure A.6: Daily balancing mechanism costs⁴

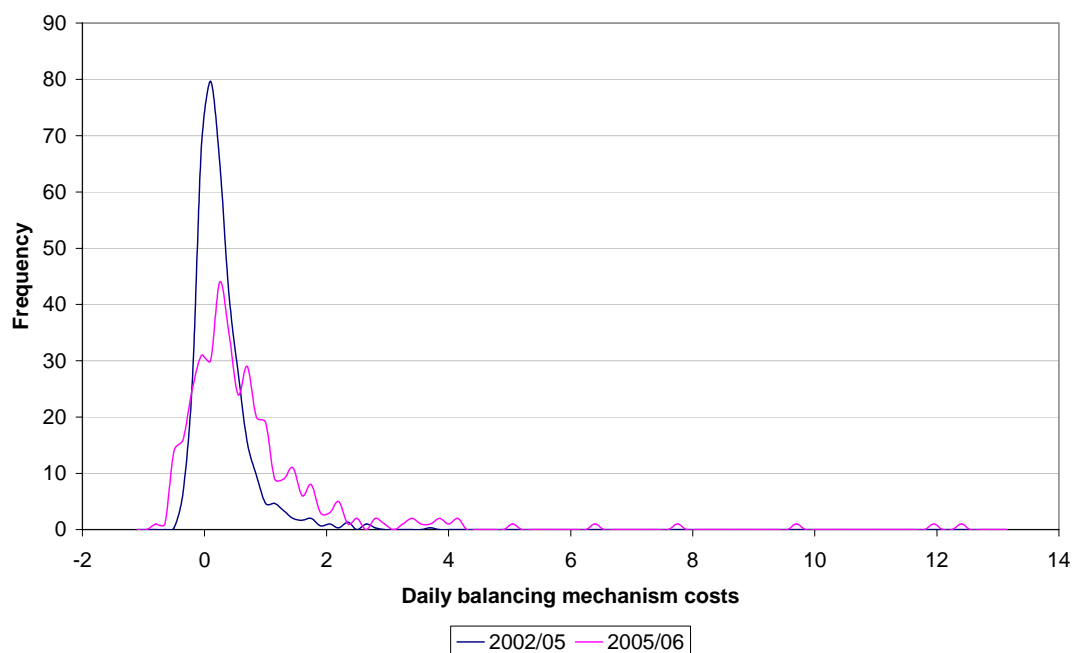


Figure A.6 shows that daily balancing mechanism costs in 2005/06 formed a much broader distribution than in previous years, with some very high cost days occurring. For example, only 5% of daily balancing costs were above £1 million over the previous three years, whereas 20% were above this level in 2005/06. Over a seven day period in March 2006, NGET's BM costs were nearly £50 million (12% of its total IBC for 2005/06).

⁴ Note BM costs for 2001/02 were excluded from the analysis to allow BM costs to stabilise in what was the first year of NETTA.

Constraint management costs

In addition to spikes in gas prices, Scottish constraint management costs have been another factor contributing to some of the very high daily balancing costs. NGET spent approximately £60 million managing Scottish constraints in the BM during 2005/06, with many of these costs being associated with a small number of discrete events. It was always expected that the extension of NGET's SO role to Scotland would increase constraint costs, because of the pinchpoint that the Scotland-England interconnector represents. A large proportion of these costs also related to constraints within the Scottish system, requiring generation on the Scottish network to provide voltage support.

As a result of these constraint costs being higher than provided for in the IBC, NGET has submitted an Income Adjusting Event. Ofgem will be consulting separately on this issue to determine whether NGET should be allowed to recover all or part of these costs under its incentive scheme for 2005/06.

It is not appropriate to comment further on these costs, pending this consultation and the Authority's consideration of those costs for 2005/06. Going forward, however, constraint management costs are likely to persist (at least to some extent), and given the magnitude of the outturn constraint costs in 2005/06, it may be worth considering whether NGET should be subject to a separate constraint incentive, as is the case for the GB gas transportation system.

Question A.3: Has there been a permanent change in the distribution of BM costs or is the apparent change in 2005/06 likely to have been due to one-off factors?

Question A.4: Is a bundled incentive scheme still appropriate, or would there be merit in separating constraint costs into a separate incentive?

BSCC costs for the first two months of 2006/07 have been much higher than in previous years as shown in Figure A.7. Contract costs associated with management of transmission constraints account for a significant proportion of this cost increase with the remainder being attributable to the increases in energy prices seen over this period.

BSCC mainly relate to ancillary services costs and Figure A.8 shows the breakdown of some of the key ancillary services NGET procures.

Figure A.7: Balancing services contract costs (BSCC)

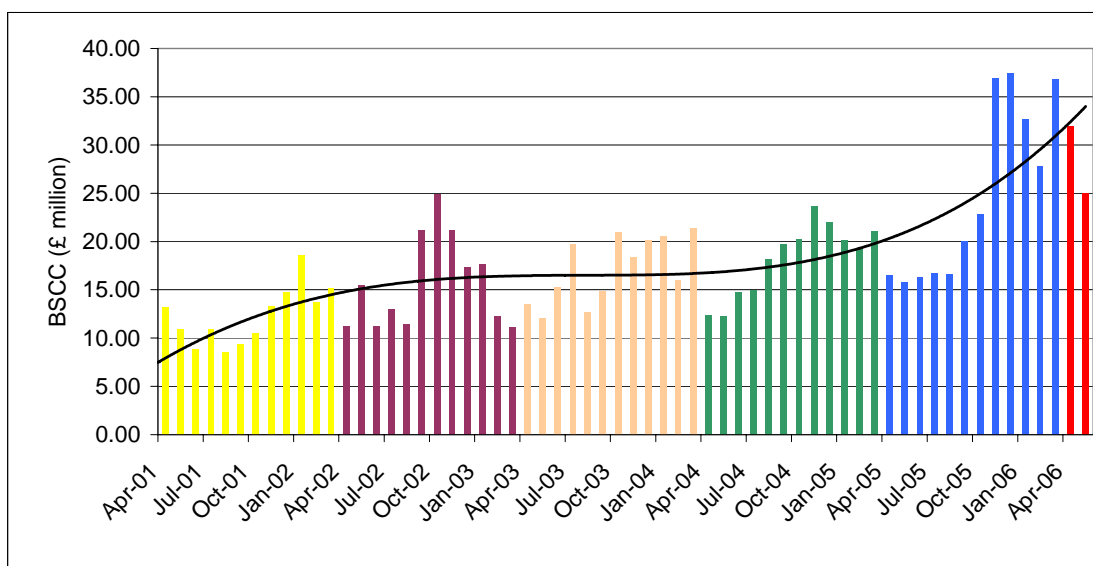
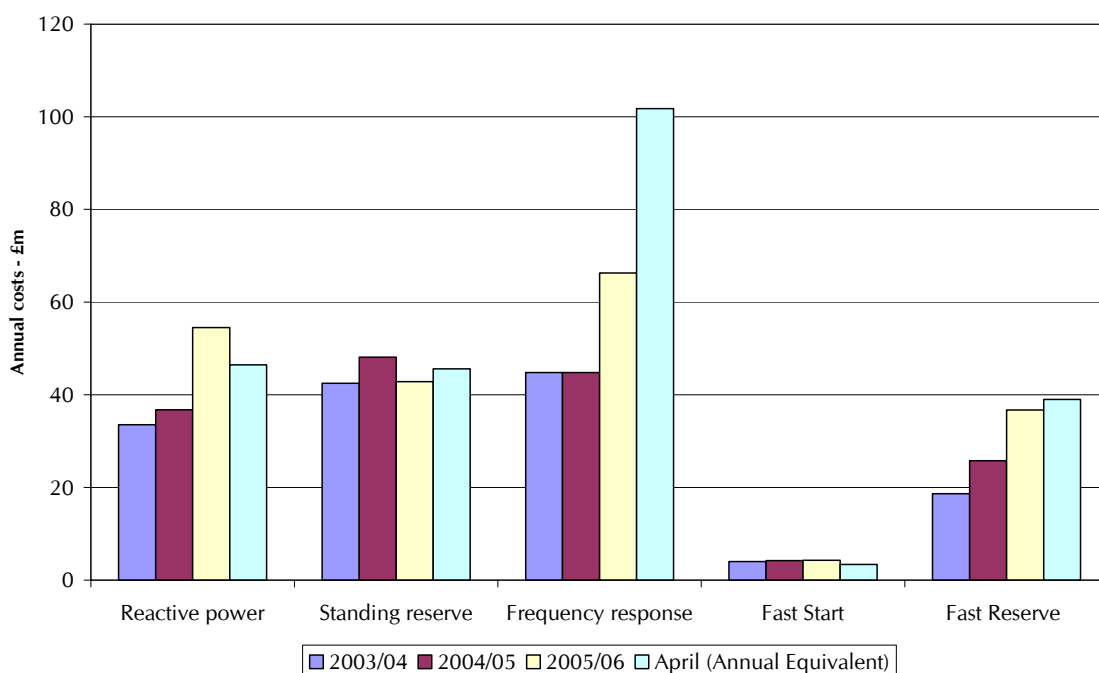


Figure A.8: Key ancillary service contract costs



Standing reserve and fast start costs have remained broadly stable over the past three years, and so far this year, show no signs of increasing significantly. The increases in fast reserve and reactive power in 2005/06 are partly attributable to the move to GB balancing and partly to rising energy prices. Finally, the sharp increase in frequency reserve costs would appear to be related to the introduction of CAP047⁵ in November 2005.

⁵ CAP047 introduced a competitive mechanism into the process of setting holding prices by generators when tendering for mandatory frequency response. The CAP047 reforms took effect on 1 November 2005.

Question A.5: What prospects are there for reducing ancillary services costs?

Question A.6: Has there been any underlying trends in NGET's procurement of ancillary services that merit consideration?

Transmission losses

Transmission losses relate to power lost as a result of transporting electricity across the network. Whilst market participants are responsible for purchasing their own losses, the actions that NGET takes as SO can influence the overall level of losses. Consequently, the SO external balancing incentive scheme included a transmission losses term that rewards NGET if it reduces losses below the annual target volume. This makes sure that NGET, when taking balancing actions, has an incentive to take account of their impact on transmission losses.

Figure A.9: Comparison of actual and target transmission losses

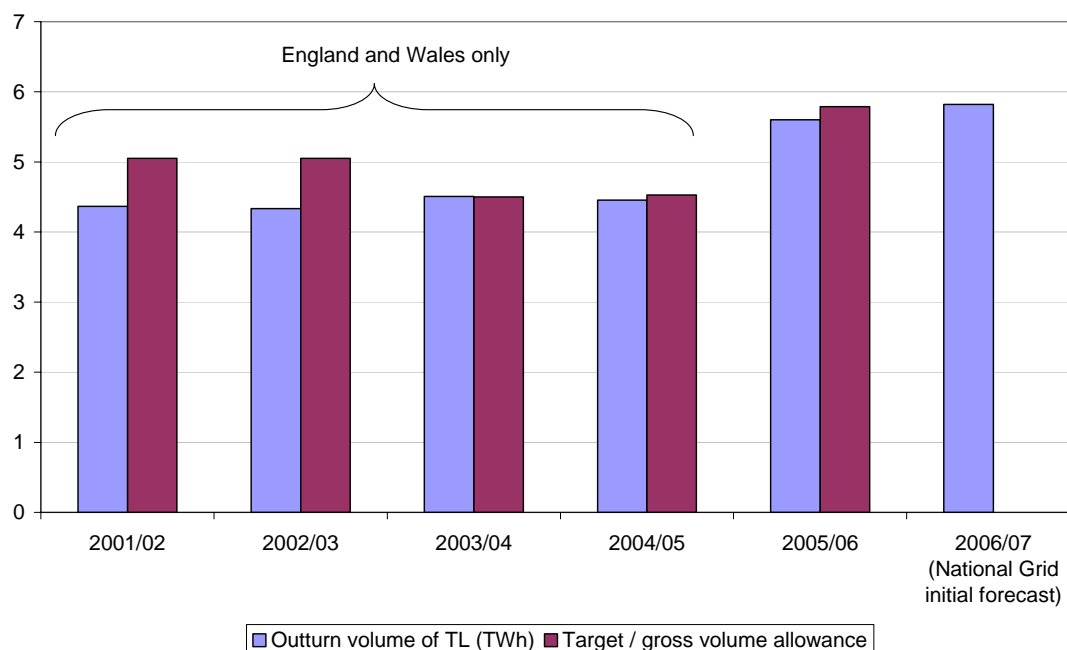
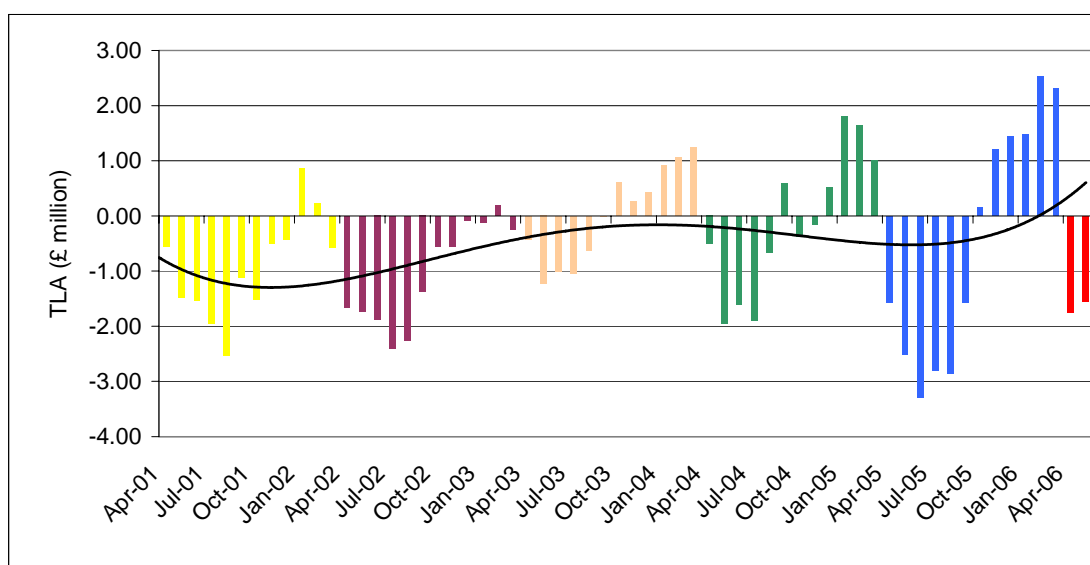


Figure A.9 shows that NGET has generally beaten its transmission losses volume targets. For 2005/06, this reduced NGET's IBC by £5.5 million.

There is a strong seasonal pattern in the level of prices, as can be seen from Figure A.10. Losses are lower than average in the summer months and higher in the winter months. Including Scottish losses in the incentive scheme in 2005/06, resulted in a 25% increase in the target level of losses but did not alter the seasonal pattern.

Figure A.10: Monthly transmission losses incentive payments



One of the difficulties in setting the transmission losses incentive is determining ex ante the reference price used to transform the difference between actual and target losses volumes into a financial incentive. For this reason, in its proposals for the 2006/07 incentive scheme, Ofgem proposed that a dynamic reference price should be introduced.

Question A.7: Is a transmission losses incentive appropriate?

Question A.8: Should a dynamic reference price be used?

Power Indexation

During the latter stages of the discussions for the 2006/07 incentive scheme, NGET proposed the use of power indexation in order to remove the degree of volatility driven by higher energy prices seen during 2005/06.

NGET stated that the impact of price uncertainty has a large impact on its balancing costs. NGET stated that power price indexation would deal with this uncertainty and remove any potential windfall loss or gain from the incentive that would otherwise result from fluctuations in prices. NGET considered that without indexation the outturn profit or loss would tend to be dominated by the market price. On the other hand, given the SO procurement activity and volume is small in relation to the total market, energy indexation would not create a distortion in market prices.

Ofgem highlighted NGET's proposals in its Final Proposals document for the 2006/07 incentive schemes. However, in that document it was argued that due to timing and process concerns, it would be inappropriate to pursue a price indexation scheme without full industry consultation and without analysing the potential impacts on customers. In particular, Ofgem considered it necessary to ensure that indexation does not create perverse incentives on NGET that result in less efficient outcomes.

The development of initial proposals for a SO incentive scheme for 2007/08 now provides an opportunity to seek industry's views on a price indexation scheme for elements of IBC, and to consider the potential impact on customers.

Question A.9: Does industry believe any price uncertainty should be reflected in the 2007/08 incentive scheme?

Question A.10: Would price indexation be a desirable mechanism to manage these risks, if so can different options for price indexation be identified?

Question A.11: What is the potential impact on NGET's incentives and risks to customers?