NGC System Operator incentive scheme from April 2004

Proposals and statutory licence consultation

February 2004 39/04

Summary

This document sets out Ofgem's proposals for National Grid Company plc's ("NGC") System Operator ("SO") incentives to apply from 1 April 2004 and also includes the accompanying statutory notice of proposals for modifications to NGC's electricity transmission licence[1] necessary to implement them. The proposals presented are intended to maintain, and, where appropriate, improve the incentives on NGC to operate and develop the England and Wales transmission system in an economic, efficient and co-ordinated manner.

NGC's existing SO incentive scheme was introduced on 1 April 2003 and will run until 31 March 2004. A new incentive scheme therefore needs to be put in place from 1 April 2004.

NGC's SO incentive schemes are targeted at reducing the costs of operating NGC's transmission system and the costs of balancing real time supply and demand for electricity. Electricity customers ultimately pay these costs. Previous schemes, put in place by Ofgem, have been very successful in reducing the costs that customers face.

Between 1994 (when the first incentive scheme was introduced) and 2001, NGC has, under the incentives provided by successive schemes, reduced the annual costs of system operation by more than £400 million. Since the introduction of the new electricity trading arrangements ("NETA") three years ago, Ofgem has reduced the target for the external SO incentive scheme by around £70 million (from approximately £485 million).

Initial Consultation

In its December 2003 Initial Consultation[2], Ofgem put forward four options for the new incentive scheme. These options ranged from a further one year incentive scheme based on the current arrangements (Option 1), to a more complicated, longer-term scheme that would have provided additional financial incentives on NGC relating to investment in additional transmission capacity.

[1] Appendix 1 contains a statutory notice in respect of the licence modifications. Appendix 2 provides a marked-up version of the proposed licence modifications.
[2] 'NGC System Operator incentive scheme from April 2004, Initial consultation document', Ofgem, December 2003.

In the document, Ofgem expressed its preference for an intermediate approach (Option 3) that incorporated some additional financial incentives on additional transmission investment. Under Option 3, the elements of the scheme based on existing arrangements would last for two or three years but the investment elements would need to last for longer to have any effect.

Most respondents to the Initial Consultation did not consider that it was possible to implement a scheme other than a further one-year shallow scheme (Option 1). This was primarily due to the uncertainty surrounding the implementation of the British Electricity Trading and Transmission Arrangements ("BETTA"). In April 2005, Ofgem and the DTI plan to extend the arrangements that are in place in England and Wales to the whole of Great Britain. This document assumes that under BETTA, NGC will become responsible for operating the GB transmission system. With the introduction of BETTA, it will be necessary to make changes to NGC's SO incentive schemes to reflect NGC's new role.

Respondents also argued that the case for an enhanced incentive scheme had not been sufficiently justified and they requested that, going forward, any proposals for enhanced incentives should be accompanied by a Regulatory Impact Assessment and/or cost-benefit analysis.

Whilst National Grid Transco ("NGT") [3] was, in principle, in favour of some form of enhanced, longer-term scheme, it considered that it would not be possible to have a full consultation on anything other than a one-year shallow incentive to apply from 1 April 2004. In addition, NGT considered that it would be difficult to develop a longer-term scheme with sufficient flexibility given some uncertainty over the precise details of their role under BETTA.

Open Letter

On 19 December 2003, Ofgem published an Open Letter[4] setting out NGT's projection of its balancing costs for 2004/05. NGC's projection was £439.4 million for 2004/05 against NGC's latest estimate of £385 million for actual costs for this year.

There were seven responses to the Open Letter. The majority of these respondents suggested that NGT's forecast value was too high and considered that a more

[3] NGC is the subsidiary of NGT that holds the transmission licence for England and Wales. In this document, references to NGC are only made in respect of licensed activities.
[4] 'NGC's SO incentive scheme from April 2004 – details of NGC's projected balancing costs', Ofgem, December 2003.

challenging target should be put in place. Respondents also considered that the risks and rewards to which NGC is exposed should be reduced.

NGC's procurement of short-term reserve

NGC buys 'short-term reserve' from generators and large customers as part of its role as SO. NGC buys reserve that it can call upon, often at short notice, to allow it to keep the system balanced when, for example, there are sudden spikes in demand or a sudden loss of a large generator due to mechanical breakdown. The costs incurred by NGC in procuring its reserve requirements form a component of the balancing costs that NGC has incentives to reduce under its SO incentive scheme. NGC also has an obligation under its transmission licence to operate the system in an economic, efficient and co-ordinated manner.

Prior to winter 2003/04, it became apparent that there was a subtle, but important difference in the interpretation of NGC's residual balancer role in relation to the procurement of short-term reserve. In light of this, NGC asked Ofgem for further clarification of Ofgem's interpretation of NGC's obligations and how they related to the way that NGC procures short-term reserve. Ofgem recognises the importance that market participants place on transparency in the way that NGC operates in its role as SO. Ofgem also recognises the need for market participants to understand clearly their role and NGC's role in balancing the system. Ofgem has therefore set out its interpretation of NGC's obligations in further detail in this document. Following this clarification, there has been a subtle change in the methodology used by NGC when procuring reserve this winter which is also explained later in this document.

Given the importance of this issue to market participants, NGC has agreed to provide a forum for further discussion and debate at a forthcoming industry meeting.

Ofgem's proposals

Ofgem has carefully considered the views of respondents, including NGT, in developing its proposals. Ofgem accepts the views of NGT and other respondents that a further "shallow" SO incentive scheme, based on the existing arrangements, should be implemented from 1 April 2004. The proposals in this document, therefore, relate to the appropriate form and duration of a "shallow" SO incentive scheme based on the form and scope of the current arrangements.

Ofgem continues to consider, however, that it would be appropriate to develop the SO incentives along the lines proposed in our previous document in the medium term. Consistent with its new legal duties, Ofgem will conduct an impact assessment prior to implementing any proposals to deepen NGC's SO incentives.

Ofgem's proposals in respect of the shallow SO incentive arrangements from 1 April 2004 are outlined below.

Parameter	**2003/04 scheme**	**2004/05 proposal**
Target	£416 million	£415 million
Upside sharing factor	50%	40%
Downside sharing factor	50%	40%
Cap	£40 million	£40 million
Floor	-£40 million	-£40 million

Ofgem considers that its proposals strike an appropriate balance between providing NGC a reasonable balance of risk and reward whilst protecting customers' interests by agreeing a challenging target. A more detailed explanation of how Ofgem arrived at the proposal and the assumptions underlying it are set out in the document.

Way forward

This document incorporates a statutory notice of Ofgem's intention to modify NGC's licence under section 11 of the Electricity Act 1989 to implement the proposals set out in this document.

The statutory notice under section 11 of the Electricity Act 1989 specifies a period of 28 days during which interested parties can make representations or objections to the proposed licence modification, following which revisions to the proposed licence modification will be made if they are considered appropriate. Responses should be submitted in writing by 24 March 2004.

NGC must consent to the proposed licence modifications before they can be implemented. If NGC consents, Ofgem intends, subject to any representations made during the consultation, to direct the modification of NGC's transmission licence in line with the proposed licence modifications. If NGC does not consent to the proposed licence modifications, Ofgem intends to refer the proposed SO incentive scheme modifications to the Competition Commission for final adjudication.

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1. Introduction

Purpose of this document

1.1. This document sets out Ofgem's proposals for National Grid Company plc's ("NGC") System Operator ("SO") incentives to apply from 1 April 2004 and also includes the accompanying statutory notice of proposals for modifications to NGC's electricity transmission licence[5] necessary to implement them. The proposals presented in this document are intended to maintain, and, where appropriate, improve the existing financial incentives on NGC to operate and develop the England and Wales transmission system in an economic, efficient and co-ordinated manner.

Background

1.2. Under its transmission licence, NGC has two roles: Transmission Asset Owner ("TO") and System Operator ("SO").

TO role

1.3. In its role as TO, NGC is responsible for building and maintaining the electricity transmission grid infrastructure in an economic, efficient and co-ordinated manner. NGC's current TO price control was set to apply from 1 April 2001 to 31 March 2006. However, as outlined later in this chapter, Ofgem intends to extend this period to 31 March 2007. The proposals in this document do not affect the allowed revenues under NGC's TO price control.

SO role

1.4. The new electricity trading arrangements ("NETA") are intended to operate as far as possible like other commodity markets. However, during the design of the arrangements, it was recognised that special provisions were needed to ensure the electricity system remains physically balanced between supply and demand

[5] Appendix 1 contains a statutory notice in respect of the licence modifications. Appendix 2 provides a marked-up version of the proposed licence modifications.

at all times. NGC, as SO, is obliged under its licence to carry out this function and to balance the system in an economic, efficient and coordinated manner[6].

1.5. In its role as SO, NGC is responsible for:

- ensuring that the system remains within safe operating limits and that the pattern of generation and demand is consistent with any transmission system related constraints (system balancing); and
- the residual purchasing and selling of electricity to keep the transmission system in balance in real time (electricity balancing).

1.6. NGC can take balancing actions after Gate Closure[7] in the Balancing Mechanism by accepting Bids and Offers and it can, where it is efficient and economic to do so, contract ahead of Gate Closure for the provision of balancing services. The Balancing Mechanism is a screen based system that allows generators and customers to offer prices to NGC to increase (or decrease) their generation (or demand) within Gate Closure. NGC can also exercise balancing services contracts with generators and customers to achieve the same effect.

System balancing

1.7. NGC is responsible for system balancing and delivers against this responsibility mainly through bilateral contracts and the Balancing Mechanism. Bilateral contracts are often necessary because system balancing services are often location-specific and hence cannot be obtained through standard non-locational traded markets. This responsibility is primarily a consequence of the lack of sufficient information, and related incentives, to enable participants to resolve system balancing issues without a central role being taken by NGC.

[6] Under special condition AA4 of the transmission licence, NGC has an obligation to operate the transmission system in an efficient, economic and co-ordinated manner.

[7] Gate Closure is the last point at which Parties can notify their contractual position to NETA Central Systems and at which Parties can resubmit their Physical Notifications to NGC. After Gate Closure, NGC uses the Balancing Mechanism to enable them, amongst other things, to keep the system in electricity balance close to, and in, real time by adjusting levels of generation and demand in the light of the Bids and Offers submitted. From NETA Go-Live until 2 July 2002, Gate Closure was 3½ hours before real time. On 2 May 2002 the Authority accepted BSC Modification Proposal P12 ("Reduction of Gate Closure From 3.5 Hours To 1 Hour") and this modification was implemented on 2 July 2002.

1.8. In principle, Ofgem would welcome any developments in this area that would enable market participants to participate more actively in balancing the network, further reducing the need for NGC's central actions through contracting for system balancing purposes.

Electricity balancing

1.9. Throughout the process of introducing NETA, there was extensive consultation[8] regarding the role of NGC versus the role of the market in ensuring electricity balancing. At that time it was recognised that the role of NGC was central in ensuring short-term security of supply (which was defined as the period from day ahead to real time[9]). This was characterised as the "residual balancer" role.

1.10. The trading arrangements provide commercial incentives on market participants to balance their contracted and physical positions and therefore ensure that the market as a whole matches generation and demand for each half hour long balancing period. The contracted and physical positions of all BSC Parties are assessed to determine whether their metered output or consumption of electricity matches their contracted position for the half hour balancing period. If it does not then they are 'out of balance' and market participants are exposed to 'imbalance prices' under the arrangements. These imbalance prices are designed to reflect the costs that NGC incurs in matching supply and demand in the relevant balancing period. Suppliers therefore face commercial incentives through exposure to imbalance prices to contract forward to meet the demands of their customers. Generators, through exposure to imbalance prices, also have an incentive to contract forward with suppliers for their output and to hold reserve to hedge the risks of plant failure[10].

1.11. Given these incentives, NGC is not required to contract in advance to ensure that there is sufficient generation capacity to meet peak demand. Therefore, under NETA, market participants are responsible for ensuring that generation

[8] See, for example 'The new electricity trading arrangements: Volume 1: Consultation Document', Ofgem, July 1999; 'NGC System Operator incentives, Transmission Access and Losses under NETA: Consultation Document', Ofgem, December 1999.
[9] See 'The new electricity trading arrangements: Volume 1: Consultation Document', Ofgem, July 1999 section 12.2.
[10] There are Grid Code restrictions on self-balancing after gate closure, but generators can hold reserve to cover their exposure before Gate Closure.

capacity is sufficient to meet peak demand. As such, it would not be efficient or economic for NGC to duplicate this by acting, in effect, as the provider/buyer of last resort.

1.12. However, it is not always possible for market participants to exactly match their physical and contractual positions on a half hourly basis, especially over very short timescales. Furthermore, while the market will seek to balance aggregate generation to demand for the half hour balancing period, demand or generation output can rise or fall within each half hour (for example demand can often increase rapidly for short periods within the half hour during the breaks of popular TV shows). As the commercial incentives are designed to encourage parties to balance over the half hour, it is NGC's responsibility to keep the system in balance within each half hour period.

1.13. NGC therefore has a residual balancing role, as the SO, to ensure that the system remains physically balanced between supply and demand at all times, including intra-half hour balancing. In this role, NGC seeks to balance the system in an economic, efficient and coordinated manner[11].

1.14. NGC's role as residual balancer is primarily defined in terms of what other participants cannot, or cannot at present, efficiently undertake through existing trading and market mechanisms. In its role as residual balancer NGC is responsible for:

- ensuring that demand and supply are balanced on a moment by moment basis – as previously discussed , the existing commercial incentives are based around a balancing period of half an hour and NGC must therefore ensure that the demand and supply remain in balance within the balancing period;

- managing the physical consequences of any plant failures, including commercial failures[12], that occur on the network for the short period (e.g. 3-4 hours) until the market is able to respond to such a failure; and

[11] Special condition AA4 of NGC's transmission licence.
[12] The term "commercial failure" covers the situation where a generation or supply company goes into receivership or administration. For a short period, contractual obligations may mean that generating

- managing the physical consequences of any unexpected increases in demand for a short period until the market is able to respond to such an increase.

1.15. In order to mitigate these risks, NGC holds short-term reserve. NGC seeks to ensure that there is a sufficient short-term reserve margin to deal with events within-day, such as higher than expected levels of demand or unexpected plant loss, and also to correct any potential short-term imbalances that the market does not fully resolve. NGC particularly seeks to mitigate these risks for those periods for which Gate Closure has occurred because market participants are unable to respond to changing circumstances in those balancing periods and NGC is responsible for balancing post-Gate Closure.

1.16. NGC's assessment of its short-term reserve requirements is a dynamic process that is reviewed on an on-going basis to reflect changing information (e.g. wholesale prices, generator availability, etc.). Similarly, the methodology used by NGC when making its assessment is reviewed on an ongoing basis. When assessing the level of reserve requirement, NGC takes account of, inter alia:

- the likely levels of short-term generator availability[13]; and
- the likely levels of demand forecast errors.

1.17. It also considers how the above factors may vary depending on a range of external variables, including:

- time of day and day-type;
- weather conditions;
- plant margin; and
- likelihood of gas interruptions to CCGTs.

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capacity is not available to the market or that demand side services are withdrawn.

[13] This incorporates consideration of the likely levels of generator reliability and information concerning commercial failures.

1.18. NGC has the commercial flexibility to procure its short-term reserve requirements through forward tenders/contracts or options and also via the Balancing Mechanism. NGC's contracting decisions are driven by the requirement to ensure that in most circumstances it has sufficient reserve available to balance the system in an economic, efficient and co-ordinated manner.

1.19. Prior to winter 2003/04, NGC had concerns in relation to forecast plant margin for the winter period. In light of this, NGC asked Ofgem for further clarification of Ofgem's interpretation of NGC's obligations and how they related to the way that NGC procures short-term reserve. Following clarification of Ofgem's interpretation (which is set out below), there has been a subtle change in the methodology used by NGC when procuring reserve for winter 2003/04. This is explained in further detail below.

1.20. In considering when to procure its short-term reserve requirement (i.e. in advance vs. on-the-day), NGC considers the cost of procuring short-term reserve ahead of time versus the expected cost of procurement close to real time. The expected cost close to real time will be affected by the expected availability of plant on the day to provide short-term reserve to meet its requirements and to balance the system. Therefore, there is a trade-off between the degree of certainty that NGC achieves in respect of securing its short-term reserve requirements in view of its wider licence obligations and the balancing costs that it incurs.

1.21. Under the pre-winter 2003/04 approach, NGC was procuring short-term reserve based purely on narrow economic trade-offs, without giving explicit consideration to its wider obligations to balance the system in real time. Under this approach when procuring short-term reserve via the standing reserve tenders, NGC's assessment was based on consideration of the relationship between what NGC terms the 'assessment price'[14] and the 'equivalent price'[15].

[14] The assessment price represents the forecast value of the service to NGC and is the avoided cost of alternative reserve services. It is based on historic price curves with appropriate adjustments for market drivers.
[15] The equivalent price represents NGC's estimate of the actual cost of the service. It is based on the total forecast cost of the tender (which is the sum of the availability cost and the forecast utilisation cost) divided by the capacity.

Based on this assessment, NGC entered into forward contracts for its reserve requirements up until the point where the equivalent price and the assessment price equalled each other, without giving explicit consideration to its wider obligations to balance the system in real time.

1.22. However, following clarification, NGC's current approach to procuring reserve now gives explicit consideration to the trade-off between the degree of certainty that it achieves in respect of securing its short-term reserve requirements in view of its wider licence obligations and the balancing costs that it incurs. For example, if NGC forecasts that there is a significant risk of there being insufficient plant available on the day, it can enter into forward contracts that might not otherwise appear to be economic, based on a narrow assessment such as that undertaken previously, in order to reduce the risk that it would not have sufficient short-term reserve available on the day. Therefore, under this approach, NGC procures short-term reserve over different timescales to balance the system in real-time consistent with its licence obligation to operate the system on an economic and efficient basis. NGC has been operating in accordance with this approach since November 2003 and is expected to continue to do so going forward.

1.23. Under both the existing and previous approaches, NGC's procurement of short-term reserve is largely unaffected. However, the subtle differences between the two become apparent primarily when the forecast margin of available generation over the forecast of peak demand is low. As such these differences first became apparent during such conditions in the early part of winter 2003/04 when, in response to its concerns in relation to plant margin levels and based on an assessment which included consideration of its wider obligations, NGC procured short-term reserve that it would not have procured solely on the basis of the narrow economic trade-offs described above. However, in operating under the clarified approach NGC considered it appropriate, in light of its wider obligations and based on its assessment of the prevailing conditions, to procure this level of short-term reserve to ensure that it would have sufficient reserve available on-the-day to balance the system in an economic, efficient and co-ordinated manner.

1.24. Ofgem recognises that market participants will want to understand NGC's approach to procuring short-term reserve. NGC has agreed that this will be a topic for discussion at a forthcoming Operational Forum. Ofgem has also offered to attend this meeting and to answer any questions that market participants have about this issue and its interpretation of NGC's role.

1.25. NGC's SO incentive scheme provides funding on an ex-ante basis for the costs incurred by NGC in procuring its reserve requirements. However, this funding does not necessarily provide for every potential outcome. The Income Adjusting Event ("IAE")[16] provisions allow for adjustments to be made to NGC's incentivised balancing costs ("IBC") to take account of any costs incurred (or savings made) as a result of an event for which no allowance was made when the SO incentive scheme parameters were set[17]. For example, low probability events with high levels of uncertain costs, such as the effects of a significant commercial failure, may not be included in the costs considered when the incentive scheme target is set. In such circumstances, any efficiently incurred costs may be treated ex-post as an IAE. Conversely, events such as general movements in the underlying level of wholesale prices are considered when developing the distribution of costs that is used to set the incentive target and are unlikely to be treated as an IAE ex-post.

NGC's SO incentives

1.26. In order to allow NGC to carry out its role, the commercial arrangements provide NGC with freedom to develop and use a wide range of tools and options to balance the system in an economic, efficient and coordinated manner. For example, NGC can buy and sell electricity in forward markets and, post Gate Closure, in the Balancing Mechanism. NGC is also free to contract for balancing services[18] from generators, suppliers, traders and large customers. NGC can

[16] An IAE was approved by the Authority in June 2003 in relation to a balancing service which NGC entered into with AES Drax in November 2002. Details can be found in the following documents: 'Income adjusting event under NGC's 2002/03 system operator incentive scheme: A consultation document', Ofgem, May 2003 and 'Income adjusting event under NGC's 2002/03 system operator incentive scheme: A decision document', Ofgem, June 2003.
[17] NGC, or any other BSC Party, can give notice to Ofgem that they consider such an event to have occurred with the result that there is a material deviation in IBC.
[18] The term "balancing services" is used to cover both services purchased in the Balancing Mechanism and services contracted outside the Balancing Mechanism.

then exercise these contracts for balancing purposes, as and when they are required. There are, however, safeguards in place given NGC's role as monopoly SO - NGC is required to procure any balancing services competitively and via transparent processes. In order to fulfil this requirement, NGC is obliged, under special condition AA4 of the transmission licence, to have in place two documents; the Procurement Guidelines and the Balancing Principles Statement (the purpose of these two documents is further outlined in Appendix 6). NGC's procurement of balancing services is also constrained by a prohibition on speculative trading[19].

1.27. In balancing the transmission system NGC, in its role as SO, incurs costs for which market participants, and ultimately customers, pay. NGC's SO costs can be divided into internal and external balancing costs. NGC's internal costs include, for example, the costs of its control centre, systems and staff. External balancing costs cover the costs of balancing services contracts and electricity purchases and sales for balancing purposes. NGC has consistent incentive schemes covering both internal and external balancing costs. The internal costs incentive targets have been agreed until 31 March 2006. There have been three external SO incentive schemes under NETA, details of which are provided in Chapter 3. The current external SO incentive scheme started on 1 April 2003 and will expire on 31 March 2004. Therefore, a new incentive scheme needs to be put in place from 1 April 2004.

1.28. Prior to developing the proposals contained in this document, Ofgem has published both an Initial Consultation[20] and an Open Letter[21] relating to the SO incentive scheme to apply from 1 April 2004.

Initial Consultation

1.29. The Initial Consultation was published in December 2003 and outlined Ofgem's views on appropriate NGC SO incentive arrangements to apply from 1 April 2004. The Initial Consultation considered several wide ranging issues which

[19] Special condition AA3 of NGC's transmission licence.
[20] 'NGC system operator incentive scheme from April 2004, Initial consultation document', Ofgem, December 2003.
[21] 'NGC's SO incentive scheme from April 2004 – details of NGC's projected balancing costs', Ofgem,

needed to be taken into account when developing the new SO incentive arrangements. These included:

- whether to introduce an enhanced, "deeper", SO incentive scheme. NGC is currently subject to a "shallow" incentive scheme that is targeted at reducing the costs associated with operating the transmission system. Ofgem has previously proposed a move to an enhanced, "deeper", incentive scheme that would extend and complement the current scheme by including some aspects of the development of the transmission system. Under an enhanced scheme, NGC would have improved financial incentives to respond in a timely manner to signals from market participants indicating the need for the release of additional transmission capacity. An enhanced scheme would also improve the incentives on NGC to invest efficiently, particularly by strengthening the incentives on NGC to ensure that any investment it undertakes is required[22]; and

- the most appropriate duration for the scheme, in which respect the likely implementation date of the British Electricity Trading and Transmission Arrangements ("BETTA") and the possible extension of NGC's TO price control need to be taken into account. Ofgem has consistently made it clear that it considers that increasing the length of the SO incentive scheme would enhance the incentives on NGC to trade-off investment costs against lower operating costs (and NGC has been supportive of such a development).

1.30. Ofgem presented four options[23] in relation to the scope of NGC's SO incentive arrangements from 1 April 2004:

- **Option1**
  a full review of the external balancing costs that NGC incurs as SO to provide a revised shallow SO incentive scheme lasting for one year; or

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December 2003.

[22] Ofgem has already put in place "deeper" SO incentives for Transco on the gas National Transmission System (NTS) in Great Britain. See 'Transco's National Transmission System system operator incentives 2002-7, Final proposals', Ofgem, December 2001.

- **Option 2**

  a full review of the external balancing costs that NGC incurs as SO to provide a revised and lengthened shallow SO incentive scheme lasting for two or three years (now that Ofgem intends to extend NGC's current price control until March 2007); or

- **Option 3**

  a full review of the scope and parameters of the current shallow SO incentive and the introduction of an interim enhanced SO incentive scheme, potentially with differing levels of sophistication for arrangements for generators at entry and customers and suppliers at exit, whilst reforms to transmission arrangements are ongoing. The shallow elements of the scheme would last for two or three years but the investment elements would need to last for longer to have any effect; or

- **Option 4**

  a full review of the scope and parameters of the current shallow SO incentive and the introduction of an enhanced SO incentive scheme (based on the SO transmission capacity release incentive previously proposed by Ofgem), that will provide an enduring framework for NGC's incentives. The shallow elements of the scheme would last for two or three years but the investment element would be set on a rolling five-year basis.

1.31. Ofgem indicated that it continued to consider that an enhanced, "deeper", external SO incentive scheme would improve the incentives on NGC to operate and develop the transmission system in an efficient, economic and co-ordinated manner. Ofgem also indicated that it considered it appropriate to increase the length of the SO incentive scheme by moving to a scheme of more than one year in duration. Such developments are consistent with those in the gas market where Transco as SO operates under deeper, longer duration incentive arrangements. While these arrangements in the gas market are still relatively new, they are allowing market participants to hedge the risk of future

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[23] Under Options 2, 3 and 4, provision would be made for the incentive to be extended to a GB-wide scope following the implementation of BETTA.

movements in capacity prices and are providing Transco with additional information in respect of future demand based on market participants' willingness to make significant long-term commitments to obtain, and pay for, capacity up to fifteen years ahead.

1.32. Whilst Ofgem considered that an enhanced incentive scheme based around long-term tradable rights (Option 4 above) would provide the strongest incentives and best align the interests of NGC and consumers, it recognised that it might not be practical to introduce such a scheme from 1 April 2004.

1.33. However, Ofgem considered that it should be possible to introduce some form of enhanced incentive from 1 April 2004, potentially with separate transmission entry and exit schemes (Option 3 above), recognising that more progress has been made on developing the transmission arrangements for entry than has been achieved for exit[24]. Ofgem considered that a simple form of enhanced incentive could be introduced from 1 April 2004 and therefore preferred Option 3 as the way forward for NGC's SO incentive scheme from 1 April 2004.

Responses to the Initial Consultation

1.34. Ofgem received thirteen responses to the Initial Consultation, including that of National Grid Transco ("NGT") [25]. A list of those who provided non-confidential responses to the Initial Consultation is provided in Appendix 3. The views of all respondents to the Initial Consultation have been taken into consideration during the development of the proposals presented in this document for NGC's SO incentive scheme from 1 April 2004.

Respondents' views

1.35. Nine respondents considered it inappropriate to implement anything other than an extension of the one year shallow incentive scheme currently in place and favoured Option 1, whilst one favoured Option 2. The respondents who considered a shallow scheme to be desirable were strongly opposed to any changes to the form of the SO incentive now because of the anticipated arrival

[24] This type of approach was adopted in developing "deeper" incentives for Transco as the gas SO.
[25] NGC is the subsidiary of NGT that holds the transmission licence for England and Wales. In this

of BETTA in April 2005. Respondents felt that any consideration of enhanced incentives should be undertaken on a GB basis for BETTA go-live.

1.36. In addition, the majority of respondents considered that the case for implementing an enhanced incentive scheme had not been made sufficiently and requested that, going forward, any proposals for enhanced incentives should be accompanied by a Regulatory Impact Assessment and/or cost-benefit analysis.

NGT's views

1.37. NGT agreed with Ofgem's view that an enhanced SO incentive scheme may be appropriate. NGT proposed a variant of Option 3 as a potential way forward, although it acknowledged that the costs and benefits of the model had not been fully explored. Whilst NGT considered that it should be possible to implement its proposal by 1 April 2004, it did not believe that there would be sufficient time to allow full consideration of a scheme other than one consistent with Option 1 or Option 2.

Open Letter

1.38. On 19 December 2003 Ofgem issued an Open Letter, in which it outlined the assumptions and scenarios underlying NGT's projections of incentivised balancing costs ("IBC") from April 2004. Ofgem highlighted that it was in the process of analysing NGT's projections and invited views from interested parties on the scenarios, projections and assumptions outlined within the letter.

Responses to the Open Letter

1.39. Ofgem received seven responses to its Open Letter. A list of all those who provided responses to the Open Letter is also provided in Appendix 3. The views of all respondents to the Open Letter have also been taken into consideration during the development of these proposals.

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document, references to NGC are only made in respect of licensed activities.

Respondents' views

1.40. Respondents considered that the target value for NGC's SO incentive scheme should provide a reasonable balance of risk and return for NGC and that there should be a realistic chance of the target value being overshot i.e. of NGC making a loss. Several respondents questioned the level of NGT's forecast, considering that a target value £54 million above the projected outturn figure for the current period had not been sufficiently well justified. Consequently, those respondents considered it inappropriate for NGT to propose such a high target value. One respondent considered that a target nearer £400 million would be appropriate while another considered that a target no higher than £400 million should be adopted.

Ofgem's proposals

1.41. Ofgem has carefully considered the views of respondents and NGT in developing these proposals. While Ofgem remains of the view that it is appropriate to enhance NGC's SO incentive arrangements in the future, Ofgem now considers, in light of respondents' views, that a further shallow SO incentive scheme should be implemented from 1 April 2004. The proposals in this document, therefore, relate to the appropriate form and duration of a shallow SO incentive scheme. Ofgem intends to develop and consult upon enhanced incentives to apply on a GB basis from BETTA go-live. As part of this process, Ofgem expects to prepare and consult upon a Regulatory Impact Assessment in relation to these proposals by early summer 2004. Ofgem's proposal in respect of the shallow SO incentive arrangements from 1 April 2004 are outlined in Table 1.1.

Table 1.1 – Ofgem's proposal for the SO incentive scheme from 1 April 2004 (money of the day)

Parameter	2003/04 scheme	2004/05 proposal
Target	£416 million	£415 million
Upside sharing factor	50%	40%
Downside sharing factor	50%	40%
Cap	£40 million	£40 million
Floor	-£40 million	-£40 million

1.42. Ofgem considers that this proposal for the SO external incentive scheme to be implemented from 1 April 2004 offers NGC a reasonable balance of risk and

reward, whilst also being in the best interests of customers. The proposed target value is lower than that in the current incentive scheme, despite allowances having been made for the effects of higher market prices and the wider considerations concerning the procurement of short-term reserve that NGC is now taking into account. The proposed target values would have been around £18 million lower (i.e. below £400 million) had Ofgem not considered it appropriate to increase the reference price for transmission losses to account for the increase in market prices.

Related issues

Transmission investment and renewable generation

1.43. In the Government's Energy White Paper[26], one of the key goals for energy policy is to tackle the threat of climate change by reducing greenhouse gas emissions. As part of this policy, the Government is committed to stimulating growth in renewable energy sources and aims for renewable generation to provide 10 per cent of UK electricity supplies by 2010, with the aspiration of this figure rising to 20 percent by 2020.

1.44. This policy is likely to produce changes in the geographical distribution of generating capacity. The sites for many renewable technologies may be located in remote locations some way from the existing transmission system and/or electricity customers. For increased levels of renewable generation to be delivered to the market, appropriate transmission infrastructure will need to be put in place. This may lead to significant extensions to, and substantial additional investment in, the GB transmission networks, including NGC's.

1.45. Ofgem has recently consulted on the issues surrounding the appropriate regulatory treatment of any expenditure required to accommodate new renewable generation sources[27].

1.46. The development of enhanced GB SO incentives from BETTA go-live could provide a possible funding framework going forward for the transmission

[26] The Energy White Paper can be found at: http://www.dti.gov.uk/energy/whitepaper/ourenergyfuture.pdf
[27] 'Transmission investment and renewable generation, Consultation document', October 2003, Ofgem.

network investment required to accommodate new renewable generation sources. Ofgem is continuing to review the possible measures to address this funding.

Transco's SO incentives

1.47. Transco, the SO for the GB gas network has in place similar incentive schemes to NGC that were put in place in April 2002 to run for a 5 year period. However, several of the parameters were set to apply for a shorter duration and are due for review, with the changes to take effect from 1 April 2004. On 13 August 2003, Ofgem wrote to shippers outlining proposals for the scope of the two year review of Transco's NTS SO incentives, which proposed a number of areas for consideration. On 3 November 2003 Ofgem again wrote[28] to shippers highlighting that it intended to publish a proposals document outlining amendments to the existing scheme. Ofgem published its proposals document[29] on 5 February 2004.

British Electricity Trading and Transmission Arrangements

1.48. Ofgem and the Department of Trade and Industry ("DTI") are committed to working towards the introduction of BETTA in accordance with the timetable announced by the DTI. Whilst Ofgem announced[30] on 18 June 2003 that the target date for go-live would be April 2005, the implementation of BETTA requires primary legislation and legal certainty regarding the BETTA proposals will not be achieved until this legislation has gained Royal Assent. However, the Energy Bill, which will enable the introduction of BETTA, received its second reading on 11 December 2003.[31]

1.49. In a December 2001 consultation[32] Ofgem noted that one of the principal components of BETTA was the introduction of common independent balancing

[28] This letter can be found at: http://www.ofgem.gov.uk/temp/ofgem/cache/cmsattach/4972_Letter_re_SO_incentive_review_3nov03.pdf
[29] 'Transco's National Transmission System Review of System Operator incentives 2002-7, Proposals Document', February 2004, Ofgem.
[30] Ofgem Press Release R50
[31] See Hansard available from http://www.parliament.the-stationeryoffice.co.uk/pa/ld199697/ldhansrd/pdvn/lds03/text/31211-01.htm#31211-01_head0
[32] "The Development of British Electricity Trading and Transmission Arrangements (BETTA)- A Consultation

arrangements across GB, through the creation of a single GB System Operator that is separate[33] from generation and/or supply interests. NGC was the sole applicant for the role of GB System Operator and on 17 December 2002, the then Minister for Energy and Construction, Mr Brian Wilson, stated in a response to a Parliamentary Question that, "Licensing of the GB System Operator cannot take place until the necessary legislation has received Royal Assent. I am minded to accept the recommendation of the GB System Operator Selection Panel that the National Grid Company plc's application for the role of GB System Operator should be accepted."[34]

1.50. This document therefore assumes that NGC will be appointed as GB System Operator. Whilst it is intended that the incentive arrangements applying to NGC in England and Wales will be used as a basis for the incentives to apply to the GB System Operator under BETTA, it is recognised that it may be necessary to consider modifications to these arrangements in order to reflect the scope of responsibilities between the GB System Operator and transmission owners, as defined in the SO-TO Code ("STC")[35], and any financial incentive arrangements that are developed for the TOs. Since Ofgem is now planning to introduce a revised SO incentive scheme in England and Wales that will end on 31 March 2005, the proposals have only been developed on an England and Wales basis.

1.51. Ofgem/DTI have published the proposed process and timetable for developing the price controls and incentives under BETTA[36]. This includes a programme of work to develop the controls that will apply from BETTA go-live, and also a programme for developing price controls to apply from 1 April 2005 until BETTA go-live, should it be later than 1 April 2005.

Paper".

[33] Other than for the purpose of balancing the system under BETTA, the activity of generation or supply in GB, or of trading electricity in GB, or the carrying out of any other relevant activity which may conflict with the carrying out of the activities of the GB system operator in an independent and non-discriminatory manner, should not be undertaken by the party itself nor by any of its affiliates.

[34] See Hansard 17 December 2002, Official Report Column 45WS.

[35] The proposed STC will be a new industry code, having both regulatory and contractual force, which will set out the detailed allocation of certain functions to each transmission licensee under BETTA.

[36] 'Price Controls and Incentives Under BETTA, An Ofgem/DTI Consultation', October 2003.

Harmonisation of price control review dates

1.52. Following a report published in May 2002[37], in which Ofgem/DTI indicated that there may be regulatory advantages in carrying out all of the TO price controls to the same timetable, Ofgem published a document[38] in June 2003 which sought views on the harmonisation of the transmission price control review dates, and in particular on:

- Ofgem's proposal to roll forward the Scottish Transmission price controls to align the timing of the full review with the transmission owner price control review in England and Wales, and
- whether it would be appropriate to increase the level of harmonisation in review dates between electricity transmission and gas transportation, and, if so, how this should be achieved.

1.53. Based on the existing timetables, the current Scottish transmission price controls are due for renewal from 1 April 2005, NGC's TO price control is due for renewal from 1 April 2006 and Transco's TO price control is due for renewal on 1 April 2007. Following consultation and consideration of respondents' views, Ofgem issued an Open Letter[39] to market participants on 17 November 2003 stating that it intends to align the electricity and gas TO price controls so that they all expire on 31 March 2007.

Way forward

Licence modification

1.54. This document incorporates a statutory notice of licence modification under section 11 of the Electricity Act 1989 in order to amend NGC's transmission licence to take account of the proposed changes to the SO incentive scheme for the period 1 April 2004 to 31 March 2005.

[37] 'The Development of British Electricity Trading and Transmission Arrangements (BETTA): Report on consultation and next steps', Ofgem/DTI, May 2002.
[38] 'Developing network monopoly price controls, Initial consultation', Ofgem, June 2003.
[39] This letter can be found at:
http://www.ofgem.gov.uk/temp/ofgem/cache/cmsattach/5115_timetable_reviews_openlet_18nov03.pdf

1.55. The statutory notice under section 11 of the Electricity Act 1989 specifies a period of 28 days during which interested parties can make representations or objections to the proposed licence modification, following which revisions to the proposed licence modification will be made if they are considered appropriate. Responses should be submitted in writing by 24 March 2004.

1.56. Following consideration of any representations received, revisions to the proposed licence modifications will be made if it is considered appropriate. In order for the proposed licence modifications to be made, NGC is required to provide its written consent to the modifications. If this is received, Ofgem will direct the modification of NGC's transmission licence in line with the proposed licence modifications. If NGC does not consent to the proposed licence modifications, Ofgem intends to refer the proposed SO incentive scheme modifications to the Competition Commission for final adjudication.

1.57. If you wish to discuss any aspect of this document, please contact any of the following people who will be pleased to help:

- Simon Bradbury – telephone number: 020 7901 7249, fax number: 020 7901 7452, email: simon.bradbury@ofgem.gov.uk or
- David Hunt – telephone number: 020 7901 7429, fax number: 020 7901 7452, email: david.hunt@ofgem.gov.uk.

Outline of this document

1.58. This document outlines Ofgem's proposals in relation to NGC's SO incentive scheme to apply from 1 April 2004 and is structured as follows. Chapter 2 details the Summary Impact Assessment associated with NGC's SO incentive scheme from 1 April 2004. Chapter 3 provides background information in relation to NGC's SO incentive schemes since the implementation of NETA and NGC's performance under these incentive schemes. Chapter 4 summarises respondents' views to Ofgem's Initial Consultation document. Chapter 5 summarises NGT's projections of incentivised balancing costs from 1 April 2004 and the views received from market participants in relation to NGT's projections. Chapter 6 outlines Ofgem's proposals for NGC's SO incentive scheme from 1 April 2004. Chapter 7 discusses the statutory notice of proposals

for modification to NGC's electricity transmission licence in order to implement the proposals for the SO incentive scheme to apply from 1 April 2004 and until 31 March 2005.

1.59. Appendix 1 contains the statutory notice of the licence modification. Appendix 2 provides a marked-up version of proposed licence modification. Appendix 3 lists non-confidential respondents to the Initial Consultation document and Ofgem's Open Letter. Appendix 4 provides a breakdown of Incentivised Balancing Cost components. Appendix 5 provides the list of BSC Modification Proposals and CUSC Amendment Proposals that Ofgem considers should be exempt from IAE provisions under NGC's SO incentive scheme from 1 April 2004. Appendix 6 summarises the current regulatory framework within which the SO incentives are set.

2. Summary impact assessment

2.1. This chapter contains Ofgem's Summary Impact Assessment of its proposals for a new NGC SO external incentive scheme from 1 April 2004.

2.2. Ofgem has carefully considered the question of whether a full Regulatory Impact Assessment is required in respect of its proposals for the NGC SO external incentive scheme to apply from 1 April 2004. Given that Ofgem's proposals involve rolling over the current structure of the incentive scheme for another year and hence that there should be no costs associated with them either centrally or for participants, Ofgem has concluded that it is sufficient to prepare the Summary Impact Assessment presented in this chapter. However, as discussed further below, when Ofgem proceeds to consider how to enhance the incentive scheme from 1 April 2005, a full Regulatory Impact Assessment will be published.

2.3. Ofgem has also decided that there are no grounds for a GB consultation on these SO incentive scheme proposals. The incentive scheme will only apply to balancing costs in England and Wales and, since it will only last for one year, it will terminate just before the target implementation date for BETTA. Consequently, these proposals only have implications for market participants in the current England and Wales market. To the extent that Scottish companies are exposed to NGC's balancing costs, and thus affected by the SO incentive scheme, this is only as a result of trading in the England and Wales market and, in this capacity, they can respond to this consultation. Ofgem, therefore, is of the view that there are no wider GB considerations that need to be taken into account.

Issue

2.4. NGC's existing SO incentive scheme was introduced on 1 April 2003 and will run until 31 March 2004. Unless a new incentive scheme is implemented from 1 April 2004, there will be no incentive scheme in place and NGC will simply pass through all its balancing costs to market participants and, ultimately, customers without any incentive to manage these costs. Evidence from the period after privatisation but before SO incentives were introduced suggests that

full cost pass-through is likely to lead to higher balancing costs than would be the case if an incentive scheme were in place[40].

Objective

2.5. The purpose of implementing a new incentive scheme from 1 April 2004 is to fulfil Ofgem's principal objective to protect the interests of customers. An incentive scheme should provide financial incentives on NGC to operate the transmission system economically, efficiently and in a co-ordinated manner. Thus, an incentive scheme will reinforce NGC's licence obligations in this respect. More importantly, an incentive scheme should ensure that customers (via market participants) are not exposed to higher balancing costs than an efficient and economic SO would incur.

Policy

2.6. As discussed in Ofgem's December 2003 Initial Consultation, there are wide ranging issues to take into account when developing the new SO incentives. Recognising this fact, the Initial Consultation outlined four options in relation to the scope of NGC's SO incentive arrangements from 1 April 2004. The four options[41] presented were:

- **Option1**
  a full review of the external balancing costs that NGC incurs as SO to provide an enhanced shallow SO incentive scheme lasting for one year; or

- **Option 2**
  a full review of the external balancing costs that NGC incurs as SO to provide a revised and lengthened shallow SO incentive scheme lasting

[40] NGC has been subject to incentives to control the costs of balancing the system since 1994. Prior to the introduction of incentives, these costs were passed straight through to consumers and, over the course of the four years since Vesting (1990), these costs had doubled in real terms to £509 million. Between April 1994 (when the first incentive scheme was introduced) and the introduction of NETA, NGC reduced the annual costs of system operation by more than £400 million.
[41] Additional details regarding these options can be found in the Initial Consultation document, which is available on Ofgem's website www.ofgem.gov.uk.

for two or three years (now that Ofgem intends to extend NGC's current price control until 31 March 2007); or

- **Option 3**
  a full review of the scope and parameters of the current shallow SO incentive and the introduction of an interim enhanced SO incentive scheme, potentially with differing levels of sophistication for entry and exit, whilst reforms to transmission arrangements are ongoing. The shallow elements of the scheme would last for two or three years but the investment element would need to last for longer to have any effect; or

- **Option 4**
  a full review of the scope and parameters of the current shallow SO incentive and the introduction of an enhanced SO incentive scheme (based on the SO transmission capacity release incentive previously proposed by Ofgem), that will provide an enduring framework for NGC's incentives. The shallow elements of the scheme would last for two or three years but the investment element would be set on a rolling five-year basis.

2.7. Under Options 2, 3 and 4, provision would need to be made for the incentive to be extended to GB-wide scope following the implementation of BETTA. Ofgem's stated preference was for Option 3, the implementation of an interim enhanced SO incentive scheme together with a full review of NGC's day-to-day balancing costs. Ofgem considered that Option 3 would improve the incentives on NGC to operate the transmission system economically, efficiently and in a co-ordinated manner, as required by its licence. At the same time, Ofgem reiterated its view that a long-term solution based on Option 4 would be desirable but it recognised that it would not be practical to implement this by 1 April 2004.

2.8. Respondents to the Initial Consultation were generally concerned that a scheme lasting more than one year would have to make provisions for the introduction of BETTA and, therefore, favoured Option 1. Respondents were of the view that the BETTA proposals regarding the functions of the GB SO and the TOs were not sufficiently far advanced for it to be possible to make robust provisions for the form of the incentive scheme after BETTA is introduced. Respondents also

argued that any proposals for an enhanced incentive should be developed on a GB basis for implementation after BETTA go-live. In addition, respondents argued that there was a need for a full Regulatory Impact Assessment of any proposals for enhanced incentives.

2.9. Following consideration of the responses to the Initial Consultation, Ofgem now considers that it would be appropriate to adopt a phased approach to introducing enhanced incentives for NGC. Thus, for 1 April 2004 Ofgem proposes to introduce a further one year shallow scheme, the details of which are the subject of this document. Ofgem intends to develop and consult upon enhanced incentives to apply on a GB basis from BETTA go-live, taking into consideration the ongoing BETTA developments. Ofgem expects to prepare and consult on a Regulatory Impact Assessment of its enhanced incentive proposals in early summer 2004 so as to allow adequate time for proposals to be developed and agreed in time for 1 April 2005.

2.10. Ofgem's proposal for the further shallow incentive scheme from 1 April 2004 are shown in Table 2.1.

Table 2.1 – Ofgem's proposal for the SO incentive scheme from 1 April 2004 (money of the day)

Parameter	2003/04 scheme	2004/05 proposal
Target	£416 million	£415 million
Upside sharing factor	50%	40%
Downside sharing factor	50%	40%
Cap	£40 million	£40 million
Floor	-£40 million	-£40 million

2.11. Ofgem considers that this proposal will improve the incentives on NGC, in its role as SO, to reduce the costs of system operation and to operate the transmission system economically, efficiently and in a co-ordinated manner over the period from 1 April 2004. This, in turn, will provide benefits to consumers, who ultimately pay for the costs of system operation.

3. NGC's external SO incentive schemes since the implementation of NETA

Introduction

3.1. This chapter provides an overview of NGC's performance under the various external incentive schemes since the introduction of NETA. A more detailed analysis is provided in Appendix 4.

Background

3.2. Under the external SO incentive schemes that have been in place since NETA was introduced, NGC is allowed to recover the actual costs of electricity balancing and system balancing, adjusted by incentive gains or losses relating to these costs. The value of any incentive gains or losses depends upon NGC's performance in relation to a cost target set by Ofgem in advance.

3.3. If NGC's costs are below the target, it keeps a proportion (set by the upside sharing factor) of the reduction in costs as an incentive payment. Conversely, if its costs are above the target, NGC is charged a proportion (set by the downside sharing factor) of the costs in excess of the target. NGC's overall gains or losses on its balancing costs are limited by applying a cap on payments and a floor on losses. This type of scheme is called a sliding-scale or profit-sharing scheme. In setting incentive scheme targets, sharing factors, caps and floors, Ofgem aims to provide NGC with an appropriate balance of risk and reward in the interests of customers.

3.4. NGC's SO incentive scheme gain or loss is determined by the level of its Incentivised Balancing Costs ("IBC") at the end of the incentive period. IBC are calculated from a number of different components:

- the cost of bids and offers in the Balancing Mechanism accepted 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 covered by CSOBM (but including charges made by the SO for the provision of balancing services to itself), i.e. this component consists of the costs of balancing services not procured through the Balancing Mechanism. This is referred to as Balancing Services Contract Costs ("BSCC");

- the volume of transmission losses multiplied by the Transmission Losses Reference Price ("TLRP") for each Settlement Period, summed across all Settlement Periods. This is referred to as the Transmission Losses Adjustment ("TLA");

- the system imbalance volume multiplied by the Net Imbalance Volume Reference Price ("NIRP") for each Settlement Period, summed across all Settlement Periods. This factor, the Net Imbalance Adjustment ("NIA"), is deducted from CSOBM to reflect the fact that NGC has little control over the extent to which participants choose not to balance their positions;

- the revenue from the provision of balancing services to others ("OM") during the relevant incentive period; and

- the amount of any allowed income adjustment ("RT") during the relevant incentive period.

Details of the external SO incentive schemes under NETA

3.5. There have been three external SO incentive schemes under NETA. The initial incentive scheme ran from 27 March 2001 (the go-live date for NETA) to 31 March 2002 and the second ran from 1 April 2002 to 31 March 2003. The current SO incentive scheme started on 1 April 2003 and will expire on 31 March 2004. The parameters of all three external incentive schemes are outlined in Table 3.1.

Table 3.1 – SO external incentive parameters since Go-Live (money of the day)

Parameter	Initial scheme[42]	Second scheme	Current Scheme
Target	£484.6 million to £514.4 million	£460 million	£416 million
Upside sharing factor	40%	60%	50%
Downside sharing factor	12%	50%	50%
Cap	£46.3 million	£60 million	£40 million
Floor	-£15.4 million	-£45 million	-£40 million

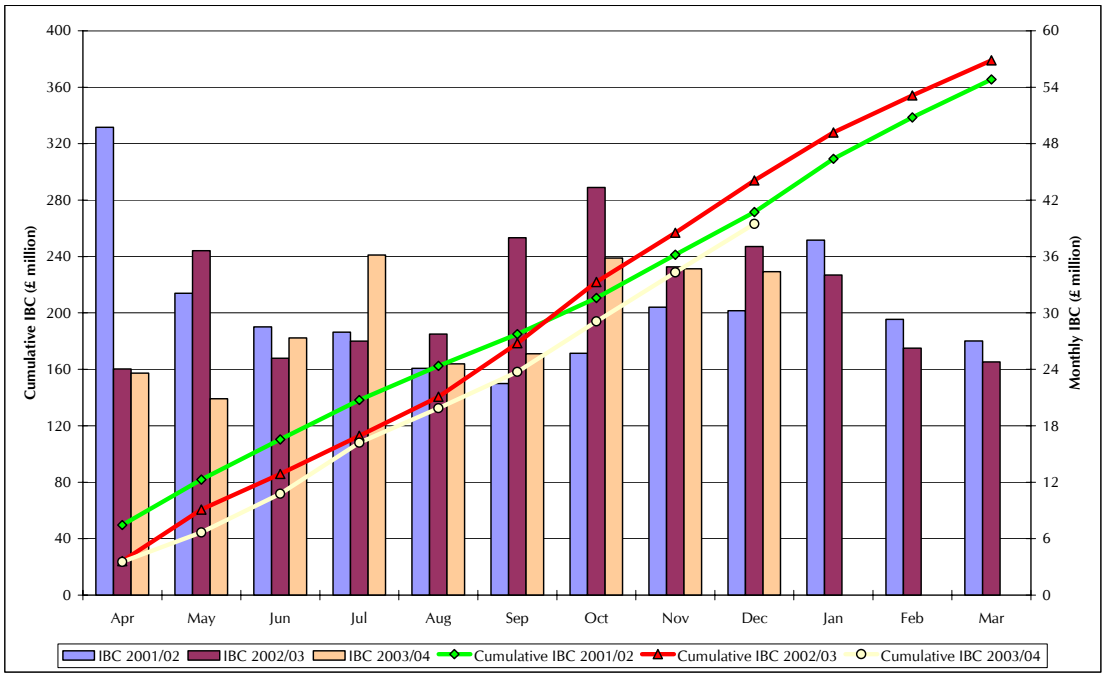
3.6. The lower target for the current incentive scheme (£416 million for 2003/04 compared to £460 million for 2002/03) reflects both NGC's improved management of IBC and its understanding of operating the system under NETA. The current incentive scheme has symmetrical upside and downside sharing factors and symmetrical cap and floor values, to reflect an appropriate balance of risk and reward between the interests of customers and NGC.

NGC's performance under the SO incentive schemes since the implementation of NETA

3.7. NGC's total IBC, on a monthly and cumulative basis, under each incentive scheme are shown in Figure 3.1.

[42] The figures presented in relation to the initial incentive scheme represent the finalised parameters for the scheme following adjustments to reflect that the scheme was 370 days in duration, not 365 days, and inflation indexation at 1.5%.

Figure 3.1 – Monthly and cumulative IBC under each incentive scheme[43]



3.8. In the initial incentive period under NETA, IBC totalled approximately £366 million. As a result, NGC received the maximum (cap) payment of £46.3 million under its SO external incentive.

3.9. In response to the substantial reduction in SO balancing costs, Ofgem was able to set the target for the second SO external incentive around £25 million lower than the original incentive scheme target. In the second incentive period, IBC totalled £384.3 million by year end but this was reduced by £5.3 million to £379 million as a result of an approved Income Adjusting Event ("IAE")[44]. NGC's incentive payment was £48.6 million for the second incentive period, which was just over £11 million below the scheme cap.

3.10. Whilst experiencing some increased costs associated with the high levels of demand during the unseasonably warm summer weather and a reduction in generation availability in 2003/04, NGC has continued to perform well against its SO incentive, and based on current projections, is well placed to outturn below its SO external incentive scheme target.

[43] Data for March 2001 is added to data for April 2001 in this graph.
[44] See 'Income adjusting event under NGC's 2002/03 system operator incentive scheme: A consultation document', Ofgem, May 2003 and 'Income adjusting event under NGC's 2002/03 system operator incentive scheme: A decision document', Ofgem, June 2003.

3.11. NGC's current forecast of outturn IBC by the end of the current incentive scheme period is £385.3 million. Were NGC to meet this forecast, it would earn incentive payments of over £15 million. However, based on actual costs to date[45], a linear projection to the end of the current SO incentive scheme period places IBC nearer to £350.2 million. Should this projection be borne out, NGC would receive an incentive payment of around £33 million, £7 million below the cap value.

Summary

3.12. NGC has made good progress in reducing the overall level of SO costs that customers pay since NETA go-live. There is clear evidence that NGC is responding to the incentives.

3.13. In the first year of NETA, IBC totalled approximately £366 million and NGC received the maximum incentive payment of £46.3 million. The second incentive scheme set a lower target and higher upside sharing factor, with IBC summing to £379 million (after the approved IAE) compared to a target of £460 million. Consequently, NGC received a payment of £48.6 million. NGC continues to face challenging targets in operating the transmission system, such that for the current SO incentive scheme period, NGC is forecasting an outturn of £385.3 million. This is equivalent to a 1.7 per cent increase over the previous year[46].

[45] Most recent data is up to and including December 2003.
[46] This increase is inclusive of the Drax IAE in November 2002.

4. Responses to Ofgem's Initial Consultation

Introduction

4.1. This chapter summarises Ofgem's initial thoughts as presented in the December 2003 Initial Consultation and outlines respondents' views, including those of NGT, in relation to the issues raised within the document. A list of the non-confidential respondents to the Initial Consultation is provided in Appendix 3[47].

Ofgem's initial thoughts

Scope of NGC's SO incentive scheme from 1 April 2004

4.2. Within its Initial Consultation document, Ofgem outlined four options in relation to the scope of NGC's SO incentive arrangements from 1 April 2004. These options were:

- **Option1**
  a full review of the external balancing costs that NGC incurs as SO to provide a revised shallow SO incentive scheme lasting for one year; or

- **Option 2**
  a full review of the external balancing costs that NGC incurs as SO to provide a revised and lengthened shallow SO incentive scheme lasting for two or three years (now that Ofgem intends to extend NGC's current price control until 31 March 2007); or

- **Option 3**
  a full review of the scope and parameters of the current shallow SO incentive and the introduction of an interim enhanced SO incentive scheme, potentially with differing levels of sophistication for arrangements for generators at entry and customers and suppliers at exit, whilst reforms to transmission arrangements are ongoing. The shallow

[47] Copies of the non-confidential responses have been placed in Ofgem's library and are available on the Ofgem website at http://www.ofgem.gov.uk/ofgem/search-

elements of the scheme would last for two or three years but the investment elements would need to last for longer to have any effect; or

- **Option 4**
  a full review of the scope and parameters of the current shallow SO incentive and the introduction of an enhanced SO incentive scheme (based on the SO transmission capacity release incentive previously proposed by Ofgem), that will provide an enduring framework for NGC's incentives. The shallow elements of the scheme would last for two or three years but the investment element would be set on a rolling five-year basis.

4.3. Of these four options, Ofgem's initial view was that Option 3 represented the best way forward, although it would have favoured Option 4 had it been practical to implement this by 1 April 2004.

Duration of NGC's SO incentive scheme from 1 April 2004

4.4. Ofgem has previously outlined that it considers that increasing the length of the SO incentive scheme would enhance the incentives on NGC to trade-off investment costs against lower operating costs. With nearly three years of operational experience available under NETA, Ofgem's initial view was that it would be appropriate to move to an SO incentive scheme lasting more than one year.

4.5. Ofgem acknowledged that any scheme lasting for more than one year would require the development of a framework to enable the SO incentive to expand to cover GB SO costs after BETTA go-live (scheduled for 1 April 2005). Ofgem considered it desirable for there to be the minimum disruption possible to the scheme when extending it to apply GB-wide and proposed an approach (for Options 2, 3 and 4) whereby "adjuster parameters" would be put in place ready for BETTA go-live. These would have zero values until BETTA go-live and decisions on their values once BETTA is implemented could be consulted on in advance of the implementation of BETTA.

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Form of NGC's SO incentive scheme from 1 April 2004

4.6. Ofgem stated that it considered a sliding-scale incentive, with appropriate target, cap, floor and sharing factor values, continued to represent the most appropriate form for NGC's external SO incentive scheme. Furthermore, Ofgem was of the view that, in the absence of clear evidence of asymmetric cost distributions, there should be symmetry between the sharing factors and between the cap and floor values, as this would reflect an appropriate balance between the interests of customers and NGC. Symmetry was introduced for the first time under NETA in the current incentive and Ofgem considered that this should be maintained.

4.7. Ofgem remained of the view that it would be appropriate for the sharing factors of the internal SO incentive to remain the same as those of the external SO incentive[48]. Ofgem explained that it considers setting the same sharing factors for the internal and external SO incentives ensures that NGC's interests are aligned with those of consumers. Alignment ensures that NGC aims to reduce the total costs of system operation rather than arbitraging its position between different incentive schemes.

Respondents' views

4.8. Ofgem received thirteen responses, including NGT's, to its Initial Consultation. With the exception of one confidential submission, all the responses have been published on the Ofgem website[49]. A summary of respondents' views is provided below, followed by a summary of NGT's views.

Scope of NGC's SO incentive scheme from 1 April 2004

4.9. Nine respondents expressed support for Option 1 and considered a further one year long shallow SO incentive scheme to be the most appropriate approach. One respondent supported Option 2, considering that a shallow scheme would

[48] The other parameters of the internal cost incentive (targets, caps and floors) have been set until March 2006.
[49] Copies of the non-confidential responses are available on the Ofgem website at the following location: http://www.ofgem.gov.uk/ofgem/whats-new/archive.jsp?section=whats-new&levelids=,1_5309&upper=2004&lower=2003#top5309 and have been placed in Ofgem's library.

benefit from being longer than one year. One other respondent cautiously supported Option 3, while another did not express a preference.

4.10. The respondent in support of Option 3 considered that it would be appropriate to introduce some form of enhanced incentive from 1 April 2004, provided that any such scheme would be simple to understand, verifiable and transparent to all affected parties. This respondent noted, however, that, given the short timescales, attempting to introduce anything other than the most straight-forward changes to the SO incentive scheme could be over-ambitious. The concerns over the available time in which to implement an enhanced SO incentive scheme were echoed by the nine respondents in favour of Option 1, who were strongly opposed to the introduction of an enhanced incentive scheme.

4.11. These respondents additionally considered that the impending implementation of BETTA meant that changes to transmission access arrangements would be imprudent and would be incompatible with the reforms being developed as part of the BETTA program. Two respondents considered that BETTA would introduce increased volatility and risk to an already vulnerable market and one commented that the introduction of firm, tradable rights would introduce unnecessary uncertainty and complexity to the market. One respondent stated that it did not consider Ofgem to have demonstrated that the current SO incentive arrangements are inadequate.

4.12. Five respondents commented that they did not consider that the case for implementing an enhanced incentive scheme had been made and requested that any proposals for enhanced incentives be accompanied by a Regulatory Impact Assessment and/or cost-benefit analysis.

Duration of NGC's SO incentive scheme from 1 April 2004

4.13. Nine respondents commented on the duration of the incentive scheme. Two expressed support for incentive arrangements of more than one year in duration and seven opposed any lengthening of the incentive arrangements' duration.

4.14. The two respondents in favour of extending the duration of the scheme considered that it would provide certainty to NGC and allow it greater freedom to innovate. Both these respondents considered that the SO incentive scheme

and TO price control periods should be harmonised. This view was echoed by two of the respondents who were opposed to extending the incentive scheme at this time. One respondent also expressed a preference for more closely aligning the incentive schemes between gas and electricity, although another respondent commented that it considered this to be inappropriate.

4.15. The respondents opposed to the extension of the scheme's duration considered the uncertainty created by the transition to BETTA and the relatively short time available to finalise details precluded the implementation of such a scheme. However, three of these respondents recognised the potential benefits of longer-term incentives. Another respondent considered that there was too much volatility within the market for the setting of realistic forecast values for a period any greater than a year to be feasible.

4.16. One respondent considered that, were a longer duration scheme to be introduced, the impact of BETTA could be dealt with via a mechanism similar to the 'adjuster parameter' approach outlined by Ofgem in its Initial Consultation.

Form of NGC's SO incentive scheme from 1 April 2004

4.17. Eight respondents commented on the appropriate parameters of the incentive scheme. All of these considered that the continued use of a sliding-scale scheme using cap and floor values and sharing factors remains appropriate.

4.18. Seven of the respondents expressed dissatisfaction with the apparent ease with which NGC has been able to reach its cap or make significant gains. These respondents urged Ofgem to consider carefully the target value, with one stating that Ofgem needs to demonstrate publicly that it is negotiating hard on behalf of customers and getting good value for money.

4.19. Three respondents suggested that, in order to mitigate the possibility of NGC making high returns whilst incurring little risk of making losses, the sharing factors should be reduced. Two of these respondents considered that the sharing factors should be no higher than 25 per cent. A respondent additionally considered that the cap and floor values should be set to +/-£20 million.

4.20. All the respondents considered that there was no significant evidence that an asymmetric balance of risk and reward existed and agreed that the sharing

factors should be symmetrical. Four respondents additionally commented that aligning the sharing factors of the internal and external SO incentive scheme would negate the possibility for arbitrage and was therefore desirable.

NGT's view

Scope of NGC's SO incentive scheme from 1 April 2004

4.21. NGT considered that the prevailing SO incentive scheme must be consistent with the aims of the current TO price control, the price controls and incentives under BETTA and the network enhancements necessary for accommodating the growth of renewable generation. NGT also considered it important for account to be taken of the network enhancements necessary to accommodate the growth of renewable generation.

4.22. However, NGT did not consider that there was sufficient justification to embark upon an incentive scheme consistent with Option 4. NGT also considered that there was little time to implement even simple changes to the current regime.

4.23. NGT agreed with Ofgem's view that an enhanced SO incentive scheme may be appropriate. NGT proposed a variant of Option 3 as a potential way forward, although it acknowledged that the costs and benefits of the model had not been fully explored. Whilst NGT considered that it should be possible to implement its proposal by 1 April 2004, it did not believe that there would be sufficient time to allow full consideration of a scheme other than one consistent with Option 1 or Option 2. However, NGT considered that, unless there was a better mechanism in place for the purposes of error-correction, there may also be greater risks associated with a longer-term scheme. Consequently, such a scheme would also need to encompass the potential for greater benefits.

4.24. NGT considered that it was not clear that a deep scheme would necessarily reduce the uncertainty associated with accommodating the growth in renewable generation. NGT further considered that it was not apparent how a deep scheme would provide it with the necessary information to plan investment efficiently, when the majority of renewable generation will be connected outside of the England and Wales transmission system. NGT was also unsure of how the

requirements of licence-exempt generation would be accommodated, since such generators do not have to enter into a bilateral contract with NGT.

4.25. NGT was not supportive of any move to separate constraints from other balancing costs. NGT's view was that there is already an incentive to trade-off investment costs against constraint costs via the TS capex mechanism[50]. NGT considered that it has reduced constraint costs by reinforcing the network using TS capex.

Duration of NGC's SO incentive scheme from 1 April 2004

4.26. NGT considered that it would be desirable for the duration of the SO incentive scheme to be extended and to be consistent with that of NGC's TO price control. NGT considered that this would provide greater certainty, thereby enabling it to embark upon more efficient longer-term business planning and offer greater cash flow and revenue stability. NGT suggested that a further benefit of a longer-duration scheme would be to enable it to enter into longer-term balancing services contracts, thereby reducing SO costs. However, as noted above, NGT considered that there was unlikely to be sufficient time to have a full consultation on a longer-term scheme and its consequences.

4.27. NGT considered that, were the scheme to extend beyond BETTA go-live, it might be difficult for the proposed BETTA adjuster parameters to be sufficiently flexible to accommodate the whole range of possible outcomes from the ongoing development of BETTA. As an additional point, NGT believed that, where the risks faced by the GB SO differ from that faced by NGC as SO for England and Wales, there would need to be consideration of different cap and floor values and sharing factors.

[50] TS capex is incremental to NGC's TO transmission investment and if efficiently incurred it will be added to the TO regulatory asset base at the start of the next price control period. The investment and depreciation costs incurred through TS capex are part of NGC's internal SO costs. In the current internal SO incentive scheme, the TS capex baseline allowance was set at £23.7 million for the five year period from 1 April 2001 to 31 March 2006.

Form of NGC's SO incentive scheme from 1 April 2004

4.28. NGT did not offer any comments in relation to the form of NGC's SO incentive scheme from 1 April 2004.

Summary

Respondents' views

4.29. Nine respondents considered it inappropriate to implement anything other than an extension of the one year shallow incentive scheme currently in place and favoured Option 1, whilst one favoured Option 2. The respondents who considered a shallow scheme to be desirable were strongly opposed to any changes to the form of the SO incentive now because of the anticipated arrival of BETTA in April 2005. Respondents felt that consideration of enhanced incentives should be undertaken on a GB basis for BETTA go-live.

4.30. In addition, the majority of respondents considered that the case for implementing an enhanced incentive scheme had not been sufficiently made and requested that going forward any proposals for enhanced incentives should be accompanied by a Regulatory Impact Assessment and/or cost-benefit analysis.

NGT's views

4.31. NGT agreed with Ofgem's view that an enhanced SO incentive scheme may be appropriate. NGT proposed a variant of Option 3 as a potential way forward, although it acknowledged that the costs and benefits of the model had not been fully explored. Whilst NGT considered that it should be possible to implement its proposal by 1 April 2004, it did not believe that there would be sufficient time to allow full consideration of a scheme other than one consistent with Option 1 or Option 2.

5. NGT's projections of 2004/05 balancing costs

Introduction

5.1. This chapter provides information in relation to NGT's projections of incentivised balancing costs ("IBC") from 1 April 2004, as well as the views of market participants and Ofgem in relation to these projections.

NGT's forecast costs for 2004/05

5.2. NGT's approach to projecting its IBC remains broadly the same as it was last year. It starts from a breakdown of its historic balancing costs, in this instance based on the period September 2002 to August 2003, and then considers how these costs might change in the future – that is, it extrapolates future cost scenarios from past costs.

5.3. NGT has created six scenarios for the costs of Balancing Mechanism actions and balancing services and used these as the basis for its projections for the financial year from 1 April 2004 to 31 March 2005. NGT then used a Monte Carlo-type simulation approach[51] in conjunction with these scenarios to create a distribution of possible costs. These scenarios are based on six main drivers:

- forward prices;
- Balancing Mechanism prices;
- net imbalance volume (this represents all energy and system balancing actions, netted off to give the energy imbalance for the whole system);
- free headroom (the volume of part-loaded plant that is able to respond within Balancing Mechanism timescales);

[51] Monte Carlo simulation involves taking a random value from each of the series of probability distributions for the input variables that determine the parameter being modelled (in this case NGC's balancing costs) and calculating the resulting parameter value. By repeating this process a large number of times (10,000 samples were used), a distribution for the output parameter can be created.

- plant margin (the difference between installed capacity (excluding mothballed plant) and forecast ACS winter peak demand expressed as a percentage of the installed capacity); and

- net flows across the French Interconnector. This last driver has been introduced for the first time this year by NGT in order to reflect the greater variability in flows across the French Interconnector that has emerged since capacity on the Interconnector has been auctioned.

5.4. Broadly speaking, NGT's scenarios project IBC to increase for the following reasons: higher forward prices, higher Balancing Mechanism offer prices and lower Balancing Mechanism bid prices, a lower plant margin, a shorter market (a less negative net imbalance volume), less free headroom, a lower plant margin and more exports to France across the French Interconnector. The main features of each scenario are summarised in Table 5.1, together with the probabilities that NGT has associated with each scenario for 2004/05. It is important to note that in all these scenarios NGT has assumed that:

- the Balancing and Settlement Code ("BSC") will be modified so that Energy Imbalance Prices are set on a marginal basis rather than the current volume-weighted average basis, although NGT considers that this assumption has not had a material impact on the IBC that it has forecast[52];

- the Connection and Use of System Code ("CUSC") will not be amended to introduce CUSC Amendment Proposal CAP047[53], but NGT has noted that it considers that IBC for 2004/05 would increase by around £15 million if it were implemented from October 2004; and

- NGC would only be procuring reserve based on a narrow economic trade-off rather than operating in accordance with the approach which it has adopted since November 2003, under which it also considers its

[52] NGT estimates that its forecast of IBC would be less than £1 million higher if Energy Imbalance Prices were to continue to be volume-weighted averages.
[53] CUSC Amendment Proposal CAP047: "Introduction of a competitive process for the provision of Mandatory Frequency Response".

wider obligations as well, as discussed in paragraphs 1.18 to 1.23 of this document.

Table 5.1 – NGT's scenarios

Parameter	Historic analysis[1]	Mean	Scenario					
			1	2	3	4	5	6
Scenario probability			10%	20%	30%	20%	10%	10%
Forward prices (£/MWh)	17	20.2	17	21	18	22	22	23
BM offer prices (£/MWh)	50	53.2	46	54	50	55	57.5	60
BM bid prices (£/MWh)	8.9	8.5	10	8.9	8.9	8	7.5	7
Free headroom (MW)[2]	2700	2520	3000	2300	2700	2400	2500	2200
Plant margin (%)[3]	21%	17%	19%	17%	18%	16%	20%	15%
Net imbalance volume (MW)								
May-Sep	-640	-622	-770	-640	-640	-450	-700	-650
Mar, Apr, Oct	-1050	-826	-1000	-840	-950	-590	-800	-750
Nov-Feb	-1110	-786	-940	-780	-890	-620	-750	-700
Flows from France (MW)[4]								
May-Sep	-680	-816	-857	-620	-783	-439	-500	-343
Mar, Apr, Oct	-400	-266	-571	-124	-429	197	-100	356
Nov-Feb	760	-146	-673	-298	-555	-21	200	121

1. Historic analysis based on data from September 2002 to August 2003.
2. Free headroom indicates the volume of part-loaded plant that is able to respond within Balancing Mechanism timescales. Figures are for daytime.
3. Plant margin is the difference between installed capacity (excluding mothballed plant) and forecast ACS winter peak demand expressed as a percentage of ACS winter peak demand.
4. Flows across French Interconnector are average net flows for weekday day time.

5.5. NGT considers that there have been developments in the electricity market over the course of the current financial year that, all other things being equal, are likely to increase its IBC for the next financial year. NGT considers that the main developments are as follows:

- the change in the methodology for calculating Energy Imbalance Prices following the implementation of Approved Modification P78[54]. Based on its analysis of imbalance prices and market length after the implementation of Approved Modification P78, NGT considers that, due to a reduction in the difference between the System Buy Price ("SBP") and the System Sell Price ("SSP"), there has been a reduction in the incentives on market participants to over-contract with the result that the net imbalance volume has significantly reduced and hence its balancing costs have increased; and

[54] Approved Modification P78: "Revised Definitions of System Buy Price and System Sell Price".

- the sharp rise in forward prices that has occurred over the past six months, in part due to expectations of low plant margins and high gas prices. NGT is of the view that high forward prices, without an equivalent increase in Balancing Mechanism prices, will also reduce the incentives on market participants (particularly suppliers) to over-contract and so it expects the net imbalance volume to fall further if the current level of forward prices is maintained.

5.6. In reaching both the numbers and associated probabilities of each of its six scenarios, NGT has assumed a range of market conditions as detailed below:

- Scenario One assumes that there is no effective market consolidation and participants aggressively target market share. This pushes offer prices (market and Balancing Mechanism) down and increases free headroom.

- Scenario Two assumes some degree of market self-restraint, with some plant mothballing pushing down the margin and maintaining recent price levels. Higher forward prices reduce market length overall and better despatch and risk management also means that the free headroom falls.

- Scenario Three effectively assumes that the market continues to behave in much the same way as during the "As Was" period between September 2002 and August 2003.

- Scenario Four assumes that there is further gradual market consolidation and this leads to more mothballing, reducing the margin to 16 per cent and increasing prices. As in Scenario Two, higher forward prices reduce market length overall and better despatch and risk management also means that the free headroom falls. In addition, consolidation, coupled with higher forward prices, encourages modest increases in Balancing Mechanism offer prices and decreases in Balancing Mechanism bid prices.

- Scenario Five assumes that the current situation of a relatively high margin and high prices is maintained but that generators are more

selective in their Balancing Mechanism approach and are only willing to make plant available at high prices.

- Scenario Six assumes that recent experience of over-supply and low margins leads to rapid consolidation, accompanied by significant mothballing. This results in high forward and Balancing Mechanism offer prices and low Balancing Mechanism bid prices so that market length does not change significantly, although free headroom drops off due to improved despatch and risk management.

5.7. To each of these scenarios, NGT has attached what it considers to be a plausible probability figure based on increments of 10 per cent, although there is no detailed analysis to support these figures. NGT has stated that these probabilities were arrived at by extensive discussion between experts within NGT.

5.8. In previous incentive schemes, NGT has identified its ability to innovate in certain areas of the market as absolutely key to it out-performing its IBC targets. However, for the forthcoming incentive scheme, NGT considers that it will be difficult to find further innovations (in ancillary service contracts or modes of operating the system) that will reduce its costs since it has already targeted most of the obvious areas for improvement.

5.9. To translate the scenarios into cost projections, NGT has started from a detailed breakdown of its outturn costs between 1 September 2002 and 31 August 2003. It has then applied scenario-specific scaling factors for both volumes and prices to calculate cost estimates. Table 5.2 shows NGT's projections for 2004/05 by scenario, the probability-weighted mean of the scenario values and NGC's estimates of its IBC for 2003/04 by component.

Table 5.2 – NGT's estimates for 2004/05 by scenario (£ million, money of the day)

Cost element	2003/04 forecast[1]	Scenario						Mean
		1	2	3	4	5	6	
IBMC less constraint costs	88.6	82.6	105.9	94.4	99.9	112.7	125.2	101.5
Trading costs	4.2	-7.7	2.6	-3.1	16.9	-6.4	5.1	2.1
Ancillary service costs less constraints[2]	183.4	196.8	209.8	203.3	216.3	201.3	219.8	208.1
Transmission losses	76.1	77.2	77.0	77.2	76.8	76.8	76.7	77.0
Constraint costs	33.0	50.5	51.0	53.0	50.0	43.5	52.0	50.7
Total	**385.3**	**399.5**	**446.2**	**424.8**	**459.9**	**427.9**	**478.8**	**439.4**

1. 2003/04 forecast excludes the costs associated with the Supplementary Standing Reserve Tender.
2. The ancillary service costs for the individual scenarios, and thus the scenario totals, are different to those published in the Open Letter as NGT has found an error in its methodology. However, in the calculation of the mean, the errors net out to zero.

5.10. The probability-weighted mean of NGT's projections of IBC for 2004/05 is £439.4 million. This projection is around £23 million higher than the target for the current incentive scheme (£416 million) and is over £50 million above NGT's estimate of outturn IBC for 2003/04, which is £385.3 million[55]. NGC further considers that if it were to procure reserve in accordance with the approach it has adopted since November 2003, there would be substantial additional costs incurred. This is on the basis that its probability-weighted mean forecast of £439.4 million was modelled in accordance with its reserve procurement strategy prior to November 2003.

Ofgem's Open Letter on NGT's forecast costs for 2004/05

5.11. On 19 December 2003 Ofgem published an Open Letter outlining the scenarios used in, and assumptions underpinning, NGT's projections of IBC from 1 April 2004. Ofgem received seven responses to the Open Letter on NGT's forecast as summarised below. A list of the respondents to the Open Letter is provided in Appendix 3[56].

[55] NGT's forecast IBC outturn for 2003/04 is an estimate and may be subject to change.
[56] Copies of the non-confidential responses have been placed in Ofgem's library and are available on the Ofgem website at http://www.ofgem.gov.uk/ofgem/whats-new/archive.jsp?section=whats-new&levelids=,1_5500&upper=2004&lower=2003#top5500

Responses to Ofgem's Open Letter on NGT's forecast costs for 2004/05

5.12. All the respondents' criticised NGT's decision to base its forecast assumptions on the premise that marginal pricing would be introduced. They felt that the submission should have been based around the market rules currently in place and that the scenarios provided were distorted by the fact that they were not created on this basis. One respondent suggested that the forecast rise in IBC predicted by NGT provided a compelling argument for maintaining the current average pricing methodology and another levelled criticism at the quality of data provided, considering that insufficient data had been given to enable historical comparison.

5.13. Three respondents questioned the level of NGT's forecast, considering that there was insufficient justification for a projected target value for 2004/05 that is £54 million above the projected outturn figure for the current period. Respondents noted that NGT's outturn costs have consistently been between £365 million and £385 million and that it has managed to achieve returns close to the cap value within each SO incentive scheme since NETA go-live. Consequently, most respondents considered it inappropriate for NGT to propose such a high value and stressed the importance of setting a suitably challenging target. One respondent considered that a target nearer £400 million would be appropriate while another considered that a target no higher than £400 million should be adopted. However, one respondent considered that NGT's scenarios were unduly optimistic.

5.14. Respondents also considered that the target value for NGC's SO incentive scheme should provide a reasonable balance of risk and return for NGC and that there should be a realistic chance of the target value being exceeded. Respondents urged Ofgem to challenge vigorously the forecast value and demonstrate that it is achieving tangible benefits for customers.

5.15. A number of respondents made comments on the appropriateness of NGT's forecast scenarios. In particular, they questioned how the scenario probabilities had been derived.

5.16. Two respondents noted NGT's comment that it is becoming increasingly difficult to develop innovative methods of reducing IBC. These respondents considered that, in light of this fact, the size of the potential risks and rewards within the incentive scheme should be decreased by reducing the sharing factors and cap and floor values. Another respondent considered that sharing factors should be reduced because of the greater role being played by the market in the reduction of balancing costs. A further respondent considered that NGT should have to demonstrate that any decrease in IBC could be attributed to actions taken by it.

5.17. Two respondents questioned whether it was appropriate for NGT to have incentives to reduce costs associated with factors which it was unable to control. The French Interconnector was cited as an example of such a factor.

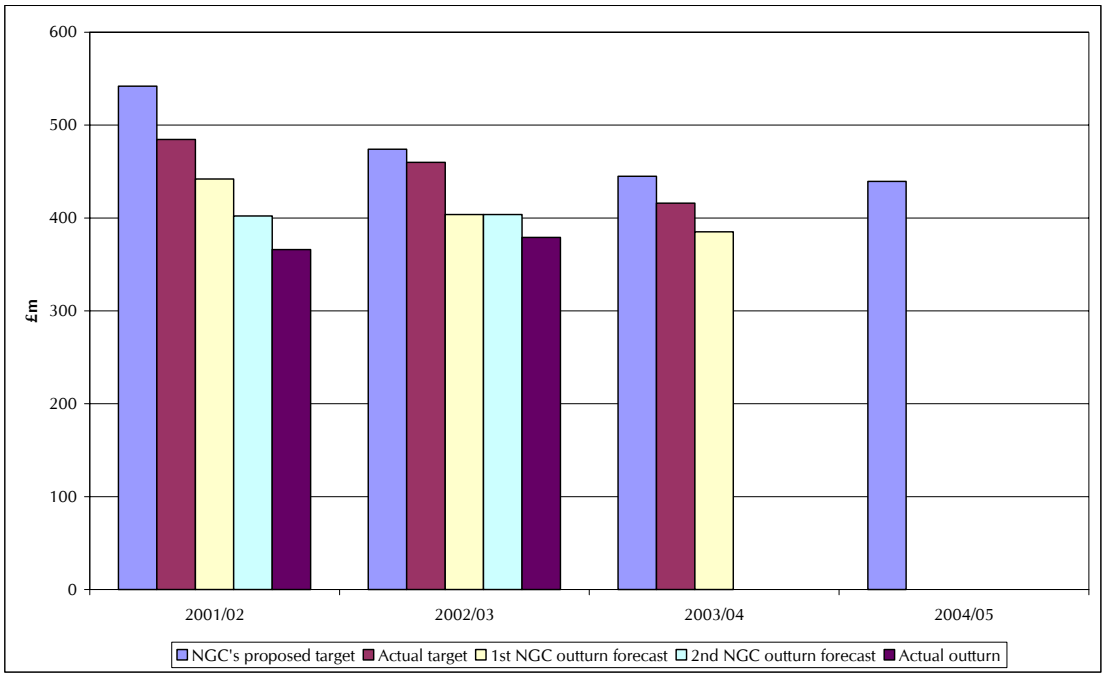
5.18. One respondent considered that Ofgem should reassert the need for progress in the eight areas identified as requiring development and changes to the Charging Methodologies in Ofgem's consultation document on the SO incentive scheme to apply from 1 April 2003. It considered that these changes would facilitate a move towards a deeper incentive scheme.

Ofgem's views of NGT's forecast costs for 2004/05

5.19. At the highest level, Ofgem has concerns about the overall level of NGT's forecast, in the light of NGT's past forecasting performance and given that its forecast for IBC is 14 per cent higher than NGT's estimate of IBC outturn for this year (2003/04). For the three incentive schemes since NETA began, NGT's forecasts have been consistently higher than the final target agreed and these in turn have been significantly higher than outturn costs, see Figure 5.1. For example, in all three years NGT's initial target forecast has been between 16 per cent (2003/04) and 23 per cent (2001/02) higher than the estimate of outturn IBC it subsequently has made during the autumn of the incentive scheme period[57]. Moreover, the autumn estimates have also consistently turned out to be too high, by at least 7 per cent. Thus, for the first two incentive schemes, NGT's forecasts have turned out to be higher than outturn costs by 48 per cent and 25 per cent respectively.

[57] For example, the forecast for 2002/03 and the estimate for 2002/03 made in autumn 2002.

Figure 5.1 – Comparisons of NGT forecasts with outturn IBC costs



5.20. For the past two incentive schemes, NGT has used essentially the same methodology to produce its forecast and, consequently, Ofgem considers that there is at least some evidence to suggest that the methodology is biased and therefore produces a biased forecast of the distribution of IBC cost. If the forecast distribution is biased, then NGC's proposed target, based on the average (mean) of that distribution will also be biased. Ofgem considers that there is some evidence that NGC's methodology consistently overestimates the mean of the distribution of costs. If NGT's forecast for 2004/05 was to incorporate the same bias as 2003/04, then a more accurate indication of outturn IBC would be around £350 million. Even if NGT's forecast only over-estimates costs by half this amount i.e. by 12.5 per cent, then this would suggest that outturn IBC would only be around £390 million.

5.21. Ofgem also has specific reasons for considering that NGT's forecast may be an over-estimate. By way of illustration, the following paragraphs highlight Ofgem's concerns regarding NGT's forecasts of constraint costs, Balancing Mechanism bid and offer prices and ancillary services costs.

5.22. NGT's mean forecast for constraint costs (£50.7 million) is 54 per cent higher than its estimate for outturn constraint costs for 2003/04 (£33 million). In part this is due to an expected increase in constraints as a result of (1) greater flows

from Scotland following the commissioning of the North Yorkshire line and (2) higher exports to France and increasing switching of the direction of flows across the French Interconnector. However, this forecast is £10 million higher than NGT expects constraint costs to be because it is based on an estimate of what they would be if it had not undertaken constraint-related capital expenditure in excess of the allowance included in the SO internal costs incentive (for "TS capex").

5.23. NGT forecasts that by the end of the current internal SO incentive scheme (31 March 2006) it will have made an incremental investment above the TS capex allowance of £23.7 million. NGT considers that it is appropriate for it to trade-off the financing and depreciation costs of TS capex against the expected benefit to be derived from the external SO incentive scheme and, therefore, that its projection of constraint costs should exclude the effect of the TS capex incremental investment upon constraint costs. NGT considers the value of the incremental investment to be £10 million in terms of constraint cost reductions. Therefore, NGT's projection of constraint costs inclusive of this value is £50 million, although actual constraint costs, which include the benefits of TS capex investment, are likely to be around £40 million.

5.24. Ofgem accepts that NGT has undertaken additional investment to control constraint costs and that this has reduced the likely level of future constraint costs. While Ofgem has been advocating a move towards enhanced incentives to encourage this type of trade-off, Ofgem has concerns in relation to the approach adopted by NGT in its forecasts given the shallow, short-term nature of the current SO incentive scheme. In developing SO incentive schemes going forward, Ofgem will consider how such trade-offs could be appropriately incorporated.

5.25. Ofgem has further concerns regarding NGT's assumptions on Balancing Mechanism bid and offer prices relates to the base prices (the "As Was" prices) which were scaled to create the scenario values. In using the period 1 September 2002 to 31 August 2003, NGT has included a period (July and August 2003) which NGT has elsewhere characterised as exceptional. If the data for these months are excluded from the calculations, the base Balancing Mechanism offer price drops to £46.28/MWh, an 8 per cent decline over the "As

Was" case[58]. If this price is used as the base from which the scenario values are scaled, rather than the value of £50/MWh used by NGT, then the mean forecast of IBC costs falls by over £12 million. This example serves to illustrate the potential bias that can be incorporated using NGT's methodology if the base period contains unrepresentative data.

5.26. For ancillary services, NGT has produced separate forecasts for each of the main services: reactive power, standing reserve, warming contracts and black start. NGT's forecast for these services, together with a "catch-all" category of "other services", has a mean value of £208 million, 13 per cent higher than its estimate of ancillary services costs for 2003/04. Some of this increase, for example in relation to reactive power costs, falls directly out of the assumptions that NGT has made on inflation and market prices. However, in relation to some of the other services - particularly warming, black start and other – NGT has made assumptions which either do not seem to be supported by the evidence produced or else appear unduly pessimistic. With a less conservative set of assumptions, these costs could be up to £10 million lower. Finally, Ofgem notes that NGT's forecast of standing reserve costs is heavily dependent on its assumptions regarding the plant margin. NGT's forecast of reserve costs would fall by £5 million if a margin of 19 per cent is assumed rather than the 17 per cent that NGT uses.

5.27. In summary, Ofgem considers that there is evidence that NGT's forecast of the distribution of costs is biased and systematically over-estimates the average of forecast balancing costs. Ofgem's proposals for NGC's external SO incentive scheme from 1 April 2004 are outlined in the next chapter.

[58] The "As Was" case has been independently re-calculated by Ofgem using the latest run types to give an offer price of £50.44/MWh between September 2002 and August 2003. The decrease of 8% mentioned in this sentence is based on the decrease over this figure and not the £50/MWh NGC originally stated would form its "As Was" case.

6. Ofgem's proposals for NGC's SO incentive scheme from 1 April 2004

Introduction

6.1. This chapter outlines Ofgem's proposals in relation to NGC's external SO incentive scheme from 1 April 2004. As outlined in the Summary Impact Assessment, the proposals are intended to maintain and, where appropriate, improve the incentives on NGC to operate and develop the England and Wales transmission system in an economic, efficient and co-ordinated manner, which is in the interest of consumers, who ultimately pay for the costs of system operation.

6.2. These proposals have been developed in light of NGT's operational experience under NETA, respondents' views on the Initial Consultation and the Open Letter, and Ofgem's own views of NGT's forecast of IBC.

Scope of NGC's SO incentive scheme from 1 April 2004

6.3. Ofgem recognises that the majority of respondents to the Initial Consultation favoured a further shallow SO incentive scheme and that there was only limited support for any enhancements to the SO incentive arrangements at this stage. While Ofgem continues to consider that it will be appropriate to enhance NGC's SO incentive arrangements in the future, Ofgem now considers, in light of respondents' views, that a further shallow SO incentive scheme should be implemented from 1 April 2004. Therefore, Ofgem is proposing to implement a revised shallow SO incentive scheme to begin on 1 April 2004.

6.4. Going forward, Ofgem intends to develop and consult upon potential enhancements in the context of a GB SO incentive scheme. Ofgem notes that several respondents considered that the case for enhancing NGC's SO incentive arrangements had not been sufficiently justified. Therefore, as part of the development of enhanced incentives going forward, Ofgem expects to prepare

and consult upon a Regulatory Impact Assessment of these proposals by early summer 2004, outlining and quantifying the benefits that it considers will accrue from enhancing NGC's SO Incentives. Ofgem intends to consider the views of respondents to this Regulatory Impact Assessment and use it as a basis for developing a number of proposals for enhanced incentive schemes. Ofgem then expects to issue proposals documents with a view to implementing some form of enhanced incentive from BETTA go-live.

Duration of NGC's SO incentive scheme from 1 April 2004

6.5. Ofgem continues to consider that increasing the length of the SO incentive scheme would enhance the incentives on NGC to trade-off investment costs against lower operating costs. Ofgem agrees with those respondents, including NGT, who considered that extending the duration of the scheme would provide increased certainty for NGC and allow it greater freedom to innovate. Indeed, the issue of trading off TS capex against constraint costs highlighted by NGT in its forecasts serves to re-emphasise the benefits of a longer scheme.

6.6. However, Ofgem notes that the majority of respondents were opposed to any lengthening of the incentive arrangements at this time, largely due to the anticipated implementation of BETTA on 1 April 2005. In light of respondents' views on this issue, Ofgem is proposing that a one year incentive scheme be implemented from 1 April 2004. However, Ofgem is of the view that a longer-term incentive scheme should again be considered when developing GB SO incentive arrangements to apply post-BETTA go-live and will include this option in the Regulatory Impact Assessment mentioned above.

Form of NGC's SO incentive scheme from 1 April 2004

6.7. NGC's current SO incentive scheme is a sliding-scale or profit-sharing scheme defined by a target, cap, floor and sharing factors. This form of incentive has been successfully employed since 1994/95 for NGC's SO incentives schemes. Ofgem notes that the majority of respondents concurred that the use of a sliding-

scale scheme continues to be appropriate. Therefore, Ofgem is proposing that the new incentive scheme continues to be of a sliding-scale form, with appropriate target, cap, floor and sharing factor values. The proposed parameters within this incentive scheme structure are outlined below.

Incentive scheme parameters

Target

6.8. Ofgem has developed its proposal for the SO external incentive scheme to be implemented from 1 April 2004 (presented in Table 6.1) which it considers to offer NGC a reasonable balance of risk and reward, whilst also being in the best interests of customers. In developing its proposal, Ofgem has taken into account respondents' views that NGC should face a more challenging target as well as issues in respect of NGT's forecast outlined in the previous chapter.

Table 6.1 – Ofgem's proposal for the target value for 2004/05 (money of the day)

Parameter	2003/04 scheme	2004/05 proposal
Target	£416 million	£415 million

6.9. The proposed target value is lower than that in the current incentive scheme, despite allowances having been made for the effects of higher market prices and the wider considerations concerning the procurement of short-term reserve that NGC is now taking into account. The proposed target values would have been around £18 million lower (i.e. below £400 million) had Ofgem not considered it appropriate to increase the reference price for transmission losses to account for the increase in market prices.

Sharing factors, cap and floor

6.10. Ofgem continues to consider that, in the absence of clear evidence of asymmetric cost distributions, there should be symmetry between the sharing factors and between cap and floor values as this reflects an appropriate balance between the interests of customers and NGC. In support of this, the distribution of NGT's IBC cost projections for 2004/05 is essentially symmetric. Symmetry was introduced for the first time under NETA in the current incentive and Ofgem considers that this should be maintained.

6.11. Additionally, Ofgem has previously stated that, in order to ensure consistency between NGC's internal and external SO incentive schemes, both schemes should have the same sharing factors[59]. Ofgem considers that setting the same sharing factors for the internal and external SO incentives ensures that NGC's interests are aligned with those of consumers by giving NGC incentives to reduce the total costs of system operation rather than arbitraging its position between the different incentive schemes. Therefore, Ofgem proposes that the internal and external sharing factors should continue to be aligned.

6.12. Table 6.2 shows Ofgem's proposal in relation to cap and floor values and sharing factors. This proposal has been developed in light of respondents' views and in order to reflect an appropriate balance between the interests of customers and NGT.

Table 6.2 – Ofgem's proposal for the sharing factors, cap and floor values for 2004/05 (money of the day)

Parameter	2003/04 scheme	2004/05 proposal
Upside sharing factor	50%	40%
Downside sharing factor	50%	40%
Cap	£40 million	£40 million
Floor	-£40 million	-£40 million

Transmission losses reference price

6.13. In its projections, NGT has assumed that the TLRP for 2004/05 will be £17.00/MWh. However, TLRP is intended to reflect market prices in order to ensure that the reference price used to provide incentives for NGT in respect of transmission losses volumes is consistent with market prices for electricity and hence that NGC's incentives to reduce transmission losses are consistent with its balancing incentives. Accordingly, on the basis of the prevailing forward curve, Ofgem considers that the price for next year should be £21.00/MWh. This assumption has been incorporated into the target values presented above.

6.14. In the current SO incentive scheme, a transmission losses volume of 4.50TWh was assumed. NGC's forecast for the transmission losses volume in 2004/05 is 4.53TWh.

[59] The other parameters of the internal cost incentive (targets, caps and floors) have been set until March 2006.

6.15. The impact of increasing TLRP from £17.00/MWh to £21.00/MWh to reflect forward prices and to ensure that NGC has consistent incentives in respect of transmission losses is to increase the IBC target for 2004/05 by £18 million in comparison with the target for 2003/04, all other things being equal.

Modifications to the BSC and the CUSC

6.16. Under the current SO incentive scheme, the Income Adjusting Event ("IAE") provisions[60] cannot be applied in respect of a specified list of Modification Proposals to the BSC and Amendment Proposals to the CUSC that were being progressed at the time the final proposals were developed. This is because an explicit allowance for these costs was included in the incentive target. The inclusion of this allowance in the target, in advance of a final decision on the proposals being reached, was made without prejudice to the Authority's decision in respect of the modifications.

6.17. Ofgem considers that this approach should again be adopted for the 2004/05 SO incentive scheme for the majority of ongoing BSC Modification Proposals and CUSC Amendment Proposals (exceptions to this approach are outlined below). Therefore, the target IBC value will take account of those outstanding BSC Modification Proposals and CUSC Amendment Proposals that are likely to have an impact on the SO incentive arrangements and for these proposals and amendments the IAE provisions will not be available. As in previous years, this allowance will be made without prejudice to the Authority's decision in respect of the modifications. Where appropriate, subsequent modifications will be dealt with via IAE provisions. The list of BSC Modification Proposals and CUSC Amendment Proposals that Ofgem considers should be exempt from IAE provisions is provided in Appendix 5.

[60] The IAE provisions are intended to provide protection for both NGC and customers in the event that an incident results in costs or savings which were not envisaged at the time that the SO incentive parameters were defined. As the event could not be envisaged, no allowance for costs or savings linked to such incidents is made within the SO incentive scheme target. NGC, or any other BSC Party, can give notice to Ofgem that they consider an IAE to have occurred where they consider that the costs and/or expenses caused or saved by the IAE have affected NGC's IBC by more than £2 million. The £2 million threshold does not apply if the IAE is a security period as defined in special condition AA5D of NGC's transmission licence.

6.18. Ofgem does not consider that it would be appropriate for this approach to be taken for CUSC Amendment Proposal CAP047[61], CUSC Amendment Proposal CAP048[62] or BSC Modification Proposal P138[63].

6.19. CUSC Amendment Proposal CAP047 was submitted to Ofgem for decision in September 2003 with a recommended implementation date of 1 October 2004. Ofgem is currently considering its requirement to undertake a Regulatory Impact Assessment in relation to this Amendment Proposal, which has extended the decision-making process. In light of this, NGC has highlighted that, depending upon when a decision is reached, it is possible that implementation may not be possible for 1 October 2004. Given the uncertainty in relation to the implementation of CUSC Amendment Proposal CAP047, Ofgem considers that it is more appropriate for the impact of this Amendment Proposal, if approved, to be dealt with via the IAE provisions.

6.20. CUSC Amendment Proposal CAP048 contains three Alternative Amendments in addition to the original Amendment Proposal. Each presents a different mechanism whereby NGC would provide compensation for losses arising from a planned or forced temporary physical disconnection from the transmission system. The various mechanisms could result in very different levels of compensation payment. Given the uncertainty in relation to the potential impact of CUSC Amendment Proposal CAP048, Ofgem considers that it is more appropriate for the impact of this Amendment Proposal, if approved, to be dealt with via the IAE provisions.

6.21. BSC Modification Proposal P138 is intended to address the situation where market participants are driven into imbalance as a result of demand reduction instructions issued by NGT. Consequently, it relates to events that have a very low probability but a potentially high materiality when they occur. As such, Ofgem considers that it is more appropriate for the impact of this Modification Proposal, if approved, to be dealt with via the IAE provisions.

[61] CUSC Amendment Proposal CAP047: "Introduction of a competitive process for the provision of Mandatory Frequency Response".
[62] CUSC Amendment Proposal CAP048: "Firm Access and Temporary Physical Disconnection".
[63] BSC Modification Proposal PR138: "Contingency arrangements in relation to implementation of Demand Control measures pursuant to Grid Code OC6".

Summary

6.22. In this chapter, Ofgem has outlined its proposals for NGC's SO external incentive scheme, similar to the present scheme, to run for one year from 1 April 2004 to 31 March 2005. Overall, Ofgem considers that the parameter options proposed for the new incentive scheme provide NGC with an appropriate balance of risk and reward which is in the interests of consumers, who ultimately pay for the costs of system operation. Ofgem's proposal is summarised in Table 6.3 below.

Table 6.3 – Ofgem's proposal for the SO incentive scheme from 1 April 2004 (money of the day)

Parameter	2003/04 scheme	2004/05 proposal
Target	£416 million	£415 million
Upside sharing factor	50%	40%
Downside sharing factor	50%	40%
Cap	£40 million	£40 million
Floor	-£40 million	-£40 million

6.23. Additionally, Ofgem is proposing:

- a TLRP value of £21.00/MWh; and
- that the proposed targets take account of outstanding BSC Modification Proposals and CUSC Amendment Proposals, with the exception of CUSC Amendment Proposal CAP047, CUSC Amendment Proposal CAP048 and BSC Modification Proposal P138, and that subsequent modifications will be dealt with via Income Adjusting Events (where appropriate).

7. Licence modification

7.1. Implementation of the proposals for the SO incentive arrangements to apply to NGC from 1 April 2004 requires modification of NGC's transmission licence. In order to amend NGC's transmission licence to take account of the proposed changes to the SO incentive scheme associated with the proposals, a statutory notice of licence modification under section 11 of the Electricity Act 1989 is required. The statutory notice is contained within Appendix 1. Appendix 2 contains a marked-up version of the modification proposals in respect of NGC's transmission licence.

7.2. The statutory notice under section 11 of the Electricity Act 1989 specifies a period of 28 days during which interested parties can make representations or objections to the proposed licence modification, following which revisions to the proposed licence modification will be made if it is considered appropriate. Ofgem invites any representations on or objections to the proposed licence modification. Responses should be submitted in writing by 24 March 2004 addressed to:

Kyran Hanks

Office of Gas and Electricity Markets

9 Millbank

London

SW1P 3GE

7.3. Electronic responses may be sent to: david.hunt@ofgem.gov.uk

7.4. All responses will normally be published on the Ofgem website and held electronically in the Research and Information Centre unless there are good reasons why they must remain confidential. Consultees should try to put any confidential material in appendices to their responses. Ofgem prefers to receive responses in electronic form so they can be placed easily on the Ofgem website.

7.5. Following consideration of any representations received, revisions to the proposed licence modifications will be made if it is considered appropriate. In order for the proposed licence modifications to be made, NGC is required to provide its written consent to the modifications. If this is received, Ofgem will direct the modification of NGC's transmission licence in line with the proposed licence modifications. If NGC does not consent to the proposed licence modifications, Ofgem intends to refer the proposed SO incentive scheme modifications to the Competition Commission for final adjudication.

Appendix 1 Statutory modification notice

1.1 This appendix sets out the statutory notice published under section 11 of the Electricity Act 1989 to make modifications to the electricity transmission licence of NGC in order to implement the proposals for NGC's SO incentive arrangements to apply from 1 April 2004.

NOTICE UNDER SECTION 11(2) OF THE ELECTRICITY ACT 1989

The Gas and Electricity Markets Authority ("the Authority") hereby gives notice pursuant to section 11(2) of the Electricity Act 1989 ("the Act") as follows:

1. The Authority proposes to modify the conditions of the transmission licence treated as granted to National Grid Company plc ("NGC") under section 6(1)(b) of the Act by introducing the following licence conditions and Schedule provisions:

    a. **Special Condition AA5A: Revised Restrictions on Revenue – paragraphs 5 – 12 inclusive of that Special Condition**;

    b. **Special Condition AA5E: Duration of the Transmission Network Revenue Restriction and the Balancing Services Activity Revenue Restriction**; and

    c. **Schedule A Part B: Terms used in the balancing services activity revenue restriction**

    in substitution for the existing special licence conditions and Schedule provisions bearing these numbers and titles which shall be deleted.

2. For the avoidance of doubt, no amendments are being proposed to paragraphs 1 – 4 inclusive and 13 – 16 inclusive of Special Condition AA5A or to Schedule A Part A. As such, nothing in these proposed modifications alters the text of these paragraphs.

3. Subject to the outcome of this statutory consultation and consideration of respondents' views, it is the intention of the Authority that these proposed licence modifications shall be deemed to take effect from 00:00 hours on 1 April 2004.

4. The reasons why the Authority proposes to make the licence modifications appearing in paragraph 1 and their effect are set out by the Authority in the following documents:

    a. "NGC System Operator incentive schemes from April 2004, Initial consultation, Ofgem, December 2003"; and

    b. "NGC System Operator incentive schemes from April 2004, Proposals and statutory licence consultation, Ofgem, February 2004".

5. In summary, the effects of the proposed licence modifications are as follows:

    The proposed amendments seek to revise the relevant sections in order to accommodate the proposals relating to the NGC System Operator ("SO") incentive scheme from 1 April 2004.

    The incentive scheme parameters of the NGC SO incentive scheme intended to run from 1 April 2004 until 31 March 2005 are set out in the table below:

Parameter	**2004/05 values (money of the day)**
Incentive scheme target	£415 million
Upside sharing factor	40%
Downside sharing factor	40%
Cap	£40 million
Floor	-£40 million

    The transmission losses reference price ("TLRP") is to be redefined in line with the proposals. TLRP is to be set at £21.00/MWh. The redefinition of TLRP in included in the proposed licence amendments.

The proposals also expose NGC to a potential increase in system operation costs associated with Balancing and Settlement Code ("BSC") Modification Proposals or Connection and Use of System ("CUSC") Amendment Proposals, as of 20 February 2004, 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 (2005/06).

In addition, the proposed amendments seek to modify the upside and downside sharing factors relating to the incentive payments on internal costs in respect of the relevant years commencing on 1 April 2004 and 1 April 2005. The proposed licence amendments aim to set the internal costs incentive scheme sharing factors for these years equal to the proposed external costs incentive scheme sharing factors for the relevant year commencing on 1 April 2004.

6. The existing incentive scheme set out in Part 2(i) of special condition AA5A and Schedule A Part B will terminate with effect from 31 March 2004 on NGC giving its consent to the proposed modifications and issuing a relevant disapplication request in relation to the existing scheme under the terms of special condition AA5E.

7. A copy of the proposed licence modifications and other documents referred to in this notice are available (free of charge) from the Ofgem library (telephone 020 7901 1600) or on the Ofgem website (www.ofgem.gov.uk).

8. Any representations or objections to the proposed licence modifications may be made in writing before 24 March 2004 to:

Kyran Hanks
Office of Gas and Electricity Markets
9 Millbank
London
SW1P 3GE

or by email to david.hunt@ofgem.gov.uk

Stephen Smith

Duly authorised on behalf of the Authority

25 February 2004

Appendix 2 Proposed licence modification

2.1 This appendix sets out the proposed modification to the licence of NGC in order to implement the proposals for NGC's SO incentive arrangements to apply from 1 April 2004 (the proposed licence modifications are highlighted).

Special Condition AA5A: Revised Restrictions on Revenue

Part 1

No amendments are proposed to paragraphs 1 – 4 inclusive of this Special Condition.

Nothing in this text alters the operation of Part 1 of this Special Condition (paragraphs 1-4 inclusive).

Part 2 (i): Balancing services activity revenue restriction on external costs

5. The licensee shall use its best endeavours to ensure that in the relevant period t the revenue derived from and associated with procuring and using balancing services (being the external costs of the balancing services activity) shall not exceed an amount calculated in accordance with the following formula:

$$BXext_t = CSOBM_t + BSCC_t + ET_t - OM_t + IncPayExt_t$$

where:

$BXext_t$ which represents the maximum allowed revenue derived in relevant period t from and associated with procuring and using balancing services, is the aggregate of the following components:

$CSOBM_t$ which represents 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, is the sum across relevant period t of the values of $CSOBM_j$ (being the daily system operator BM cashflow as defined in Table X-2 of Section X of the BSC in force immediately prior to 1 April 2001);

$BSCC_t$ means 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;

ET_t means the amount of any adjustment to be made during the relevant period t in respect of a previous relevant year as provided in paragraph 6;

OM_t means an amount representing the revenue from the provision of balancing services to others during relevant period t, calculated in accordance with paragraph 7;

$IncPayExt_t$ means an incentive payment for relevant period t calculated in accordance with paragraph 8.

6. Balancing services activity adjustments

For the purposes of paragraph 5, the term ET_t which relates to prior year adjustments in respect of the relevant period t shall mean:

(a) the costs, whether positive or negative, to the licensee of

- bids and offers in the balancing mechanism accepted by the licensee in any relevant year before relevant period t less the total non-delivery charge for the period; and

- contracts for the availability or use of balancing services during any relevant year before relevant period t, excluding costs within $CSOBM_t$ for any relevant year, but including charges made by the licensee for the provision of balancing services to itself in any relevant year before relevant period t

in each case after deducting such costs to the extent that they have been taken into account in any relevant year in computing the terms $CSOBM_t$ or $BSCC_t$; and

(b) any amount within the term ET_t as defined in this licence in the form it was in on 1 April 2000 whether as then defined or as now defined.

7. Provision of balancing services to others

For the purpose of paragraph 5, OM_t (the amount representing the revenue from the provision of balancing services to others) shall be the sum of:

(a) the total amount (exclusive of interest and value added tax attributable thereto) recovered by the licensee in respect of the relevant period t under any agreements entered into between an electricity supplier (being the holder of a supply licence granted or treated as granted under Section 6(1)(d) of the Act) or network operator (as defined in the grid code) and the licensee pursuant to which the costs of operation or non-operation of generation sets which are required to support the stability of a user system (as defined in the grid code) are charged to such electricity supplier (as defined above) or network operator (as defined in the grid code); and

(b) the total costs (exclusive of interest and value added tax attributable thereto) incurred by the licensee in respect of the relevant period t which arise by reason of the operation or non-operation of generation sets and which result directly or indirectly from works associated with the licensee's transmission system or works thereon being carried out, rescheduled or cancelled by reason of any agreement with, or request of, any third party other than an electricity supplier (as defined in paragraph 7 (a) of this special condition) or network operator (as defined in the grid code).

8. Determination of incentive payments on external costs

For the purposes of paragraph 5, the term $IncPayExt_t$ shall be derived from the following formula:

$$IncPayExt_t = \left[SF_t\left(MT_t - IBC_t\right) + CB_t\right]$$

where:

SF_t which is a balancing services activity sharing factor in respect of relevant period t, has the value specified either against the value of IBC_t for the relevant period t in the column headed SF_t in the table in paragraph B1 (a) of Part B of Schedule A or in paragraph B1 (b) of Part B of Schedule A.

MT_t which is a target for balancing services activity incentivised external costs in respect of relevant period t, has the value specified either against the value IBC_t for relevant period t in the column headed MT_t in the table in paragraph B1 (a) of Part B of Schedule A or in paragraph B1 (b) of Part B of Schedule A.

IBC_t which is the cost of balancing services on which the licensee is incentivised during the relevant period t, is calculated in accordance with the formula given in paragraph 9.

CB_t which is a balancing services sharing factor offset in respect of the relevant period t, has the value either specified against the value of IBC_t for the relevant period t in the column headed CB_t in the table in paragraph B1 (a) of Part B of Schedule A or in paragraph B1 (b) of that Part.

9. For the purposes of paragraph 8, the term IBC_t in respect of relevant period t shall be calculated in accordance with the following formula:

$$IBC_t = CSOBM_t + BSCC_t + \Sigma_{jt}\left(TL_j\left[TLRP_j\right]\right) + \Sigma_{jt}\left(TQEI_j\left[NIRP_j\right]\right) - RT_t - OM_t$$

where:

j — in all cases shall mean a settlement period (being a half an hour) as defined in the BSC.

$\sum_{jt}(TL_j[TLRP_j])$ — is 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.

$\sum_{jt}(TQEI_j[NIRP_j])$ — is the total net imbalance volume ($TQEI_j$) as defined in the BSC in force immediately prior to 1 April 2001 multiplied by the net imbalance volume reference price ($NIRP_j$) for each settlement period, summed across all settlement periods in the relevant period t.

TL_j — which is the volume of transmission losses, is given by the sum of BM unit metered volumes (as from time to time defined in the BSC) during the settlement period j for all BM units (as from time to time defined in the BSC), being 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.

$TLRP_j$ which is the transmission losses reference price, has the value specified for each settlement period set out in paragraph B3 of Part B of Schedule A.

$NIRP_j$ which is the net imbalance volume reference price for each settlement period j, has the values set out in paragraph B4 in Part B Schedule A.

RT_t means the amount of any allowed income adjustments given by paragraph 12 (b) in respect of relevant period t.

10. Income adjusting events under the balancing services activity

(a) An income adjusting event is any of the following:

(i) an event or circumstance constituting force majeure under the BSC;

(ii) an event or circumstance constituting force majeure under the CUSC made between the licensee and others and providing for connection to and use of the licensee's transmission system;

(iii) a security period as defined in special condition AA5D; and

(iv) an event or circumstance which is, in the opinion of the Authority, an income adjusting event and approved by it as such.

(b) For the purpose of relevant year t commencing on 1 April 2004 and ending on 31 March 2005, the following items listed in tables 1 and 2 below shall not qualify as an income adjusting event for the purpose of sub-paragraph (a) above:

Table 1:

Modification No.	Modification Title
P124	Revision of mandatory half-hour metering criteria
P131	Further provisions relating to Trading Disputes
P132	Redefinition of Credit Cover requirements for reconciliation charges
P136	Marginal Definition of the 'main' Energy Imbalance Price
P137	Revised Calculation of System Buy and System Sell Price
P139	Removal of Trading Unit Restriction on Interconnector Users
P140	Revised Credit Cover Methodology for Interconnector BM Units
P142	Allow Level 2 Default Cure Period in Defined Circumstances
P146	New Participation Category to the BSC - Clearing House
P147	Introduction of a Notified Contract Capacity
P150	Targeting costs of PNE appeals to unsuccessful appellants
P151	Housekeeping Modification
P152	Reduction of Credit Cover for a Trading Party in Default
P153	Support Competition in Distribution Networks
P154	Rectification of Inconsistencies in the Change Process
P156	Zonal Allocation of Transmission Losses
P157	Replacement of current Supplier Charges rules

Table 2:

Amendment No.	Amendment Title
CAP049	Alternative Amendments
CAP050	Review Process for implemented Urgent Amendment Proposals
CAP051	Initiation of the Amendment Procedures by the Amendments Panel
CAP052	Removal of Land Charges
CAP053	Revision of Site Specific Maintenance Charges
CAP054	Adoption of Year Round TNUoS Charges
CAP055	Users' Demand Forecasts
CAP056	Incorrect Reference to the Grid Code in Section 11 – Definitions
CAP057	Removal of References to TSUoS Charges
CAP058	Reinstatement of words lost form Legal Text following implementation of CAP043
CAP059	Addition of word "Paragraph" to Paragraph 2.17.9
CAP060	Incorrect spelling of "Judgment" in Paragraph 6.6.4
CAP061	Addition of "CUSC Panel Secretary" to Exhibit F, Note 10
CAP062	Amendment to National Grid address in various exhibits
CAP063	Amendment to National Grid address in various exhibits
CAP064	Minor Reference error in Paragraph 7.2, Schedule 2, Exhibit 3
CAP065	Removal of various paragraphs referring to NETA Go Live
CAP066	Removal of historic transitional provisions that no longer have any application
CAP067	Clarification of Contractual Relationship Required for Embedded Generation (CUSC 6.5.1)
CAP068	Competing Requests for TEC
CAP069	Users' Forecasts Used in the Calculation of TNUoS Charges
CAP070	Short Term Firm Access Service

(c) The Authority's approval of an income adjusting event shall be in writing, shall be copied to the licensee and shall be in the public domain; and the Authority may revoke this approval with the consent of the licensee.

11. (a) Where it appears to the licensee that there have been in respect of relevant period t costs and/or expenses which:

(i) have been caused or saved by an income adjusting event; and

(ii) have, for relevant period t, increased or decreased by more than £2,000,000 the value of IBC_t save that in the case of paragraph 10(a)(iii) only the threshold of £2,000,000 shall not apply

then the licensee shall give notice thereof to the Authority.

(b) Where it appears to any other Party (as defined in the BSC) that there have been in respect of relevant year t costs and/or expenses which:

(i) have been caused or saved by an income adjusting event; and

(ii) have, for the relevant period t, increased or decreased by more than £2,000,000 the value of IBC_t save that in the case of paragraph 10(a)(iii) only the threshold of £2,000,000 shall not apply

then that Party (as defined in the BSC) may give notice thereof to the Authority.

(c) The notice provided for in subparagraphs (a) and (b) shall give particulars of:

(i) the income adjusting event to which the notice relates;

(ii) the amount of any change in costs and/or expenses which appear to the person giving the notice to have been caused or saved by the event and the method of calculating such costs and/or expenses; and

(iii) the amount of any allowed income adjustment proposed as a consequence of that income adjusting event.

(d) A notice of an income adjusting event shall be given as soon as is reasonably practicable after the occurrence of the income adjusting event, and may not be given more than 3 months after the end of the relevant period in which it occurs.

12. (a) The Authority shall determine (after consultation with the licensee and such other persons as it considers desirable):

(i) whether any or all of the costs and/or expenses given in a notice pursuant to paragraph 11 are caused or saved by an income adjusting event;

(ii) whether the amount specified for the purpose of paragraph 11(c)(iii) has increased or decreased the value of IBC_t by more than £2,000,000 save that in the case of paragraph 10(a)(iii) only, the threshold of £2,000,000 shall not apply; and

(iii) if so, whether the amount of the proposed income adjustment ensures that the financial position and performance of the licensee are, insofar as is reasonably practicable, the same as if that income adjusting event had not taken place, and if not, what allowed income adjustment would secure that effect.

(b) In relation to the relevant period t, the allowed income adjustment RT_t shall be

(i) the value determined by the Authority under subparagraph (a);

(ii) if the Authority has not made a determination in accordance with subparagraph (a) within 3 months of the date of the notice under paragraph 11, the respective values given to them in that notice; or

(iii) in any other case, zero.

Part 2 (ii): Balancing services activity revenue restriction on internal costs

No amendments are proposed to paragraphs 13 – 16 inclusive of this Special Condition.

Nothing in this text alters the operation of Part 1 of this Special Condition (paragraphs 13-16 inclusive).

Special Condition AA5E: Duration of the Transmission Network Revenue Restriction and the Balancing Services Activity Revenue Restriction

1. The balancing services activity revenue restriction and the transmission network revenue restriction shall apply so long as this licence continues in force but shall cease to have effect in such circumstances and at such times as are described in paragraphs 2 to 6 below.

2. The transmission network revenue restriction and the balancing services activity revenue restriction (or any of them) shall cease to have effect (in whole or in part, as the case may be) if the licensee delivers to the Authority a disapplication request made in accordance with paragraph 3 or notice is given to the Authority by the licensee in accordance with either paragraph 5 or paragraph 6.

3. A disapplication request shall

   (i) be in writing addressed to the Authority,

   (ii) specify whether it relates to the balancing services activity revenue restriction and/or to the transmission network revenue restriction (or to both or any of them or to any part or parts thereof) and

   (iii) state the date (being not earlier than the date referred to in paragraph 4) from which the licensee wishes the Authority to agree that those conditions shall cease to have effect.

4. No disapplication following delivery of a disapplication request shall have effect until a date being the earlier of not less than 18 months after delivery of the disapplication request or the following date:

(i) in the case of a disapplication request which relates to the transmission network revenue restriction, 31 March 2006;

(ii) in the case of a disapplication request which relates to the balancing services activity revenue restriction set out in Part 2(i) of special condition AA5A, 31 March 2005; and

(iii) in the case of a disapplication request which relates to the balancing services activity revenue restriction set out in Part 2(ii) special condition AA5A, 31 March 2006.

Provided that in the event of a disapplication request being served by the licensee in the absence of agreeing any or all of the transmission network revenue and the balancing services activity revenue restriction the following default position shall apply:-

(A) for the transmission network revenue restriction, the maximum allowable revenue for the relevant year commencing 1 April 2006 shall be defined in accordance with the formula in Part 1 of special condition AA5A where X_g equals zero and $GWref_t$, $Rate_t$ and L_t shall have the same values as those given in paragraphs 3 and 4 of Part 1 of special condition AA5A for the relevant year commencing on 1 April 2005;

(B) for the balancing services activity revenue restriction set out in Part 2(ii) of special condition AA5A, the values set out in Schedule A, Part B for the relevant year commencing on 1 April 2005 shall apply; and

(C) for the balancing services activity revenue restriction set out in Part 2(i) of special condition AA5A, the values set out in Schedule A, Part B shall apply.

5. If the Authority has not made a reference to the Competition Commission under section 12 of the Act relating to the modification of the Conditions or the part of parts thereof specified in the disapplication request before the beginning of the period of 12 months which will end with the disapplication date, the licensee may deliver written notice to the Authority terminating the application of such Conditions (or any part or parts thereof) as are specified in the disapplication request with effect from the disapplication date or a later date.

6. If the Competition Commission makes a report on a reference made by the Authority relating to the modification of the Conditions (or any part or parts thereof) specified in the disapplication request and such report does not include a conclusion that the cessation of those Conditions, in whole or in part, operates or may be expected to operate against the public interest, the licensee may within 30 days after the publication of the report by the Authority in accordance with section 13 of the Act deliver to him written notice terminating the application of those conditions or any part or parts thereof with effect from the disapplication date or later.

SCHEDULE A: SUPPLEMENTARY PROVISIONS OF THE CHARGE RESTRICTION CONDITIONS

PART A

No changes are proposed to Part A of Schedule A.

Nothing in this text alters the operation of Part A of Schedule A to this Special Condition.

PART B

Terms used in the balancing services activity revenue restriction

B1. For the purpose of paragraph 8 of Part 2(i) of special condition AA5A, the terms MT_t, SF_t and CB_t shall be selected against the appropriate value of IBC_t (which shall be determined in accordance with paragraph 9 of special condition AA5A):

(a) in respect of the relevant year t commencing on 1 April 2004, from the following table:

IBC_t (£)	MT_t (£)	SF_t	CB_t (£)
< 315,000,000	0	0	40,000,000
315,000,000 <= IBC_t < 415,000,000	415,000,000	0.40	0
415,000,000 <= IBC_t < 515,000,000	415,000,000	0.40	0
>= 515,000,000	0	0	-40,000,000

(b) in respect of the relevant year t commencing on 1 April 2005 and each relevant year thereafter, the terms MT_t, SF_t and CB_t shall be set to zero.

B2. Not used.

B3. For the purpose of paragraph 9 of Part 2(i) of special condition AA5A, the term $TLRP_j$ in respect of each settlement period during relevant period t shall have the value in £ per megawatt hour of 21.00.

B4. For the purpose of paragraph 9 of Part 2(i) of special condition AA5A, the term $NIRP_j$, which is the net imbalance volume reference price for each settlement period j, during relevant period t, shall be derived as follows:

(a)(i) when $UKPX_j$ and APX_j data are published in respect of the relevant settlement period j then:

$$SPNIRP_j = (0.5 * UKPX_j) + (0.5 * APX_j)$$

(ii) when $UKPX_j$ data are published and APX_j data are not published in respect of the relevant settlement period j then:

$$SPNIRP_j = UKPX_j$$

(iii) where $UKPX_j$ data $_j$ are not published in respect of the relevant settlement period j and APX_j data are published in respect of the relevant settlement period j then:

$$SPNIRP_j = APX_j$$

(iv) where neither $UKPX_j$ data and APX_j data have been published in respect of the relevant settlement period j then:

$$SPNIRP_j = SPNIRP_{j-1}$$

where:

$SPNIRP_j$ means the single price net imbalance volume reference price for each settlement period j.

$_j$ in all cases shall mean a settlement period (being a half an hour) as defined in the BSC.

$_{j-1}$ the settlement period immediately preceding the relevant settlement period j.

$UKPX_j$ means the United Kingdom Power Exchange (UKPX) volume weighted reference price for each settlement period j based on the traded prices of half hourly spot contracts.

EFA block means the six four hourly blocks within the EFA day (being 23.00 hours to 23.00 hours in the immediately following day) set out in the table below:

Block	Time
1	23:00 to 03:00
2	03:00 to 07:00
3	07:00 to 11:00
4	11:00 to 15:00
5	15:00 to 19:00
6	19:00 to 23:00

APX_j means the Automated Power Exchange (UK APX) weighted average price in respect of all half hourly spot market and four (4)

hour block market contracts delivered within the EFA block applying to those settlement periods j. In order to derive the APX $_j$ price in respect of each relevant settlement period j the EFA block containing the relevant j shall be used.

(b) The term $NIRP_j$ shall be derived as follows:

(i) when $TQEI_j < 0$

$$NIRP_j = SPNIRP_j + \left(SPNIRP_j * PA1\right)$$

(ii) when $TQEI_j > 0$

$$NIRP_j = SPNIRP_j - \left(SPNIRP_j * PA2\right)$$

(iii) when $TQEI_j = 0$

$$NIRP_j = 0$$

where in respect of the relevant period t, the terms PA1 and PA2 shall have the value ascribed to those terms in the following table:

PA1	1.5
PA2	0.5

B5. For the purposes of paragraph 15 of Part 2(ii) of special condition AA5A, the term ISF_t shall be selected against the value of $CSOC_t$ (which shall be determined in accordance with paragraph 14 of Part 2(ii) of special condition AA5A):

(a) in respect of the relevant period t commencing on the day on which the effective time occurs, from the following table:

($CSOC_t$) (£)	**ISF_t**
< 56,880,216 (RI_t / Z_t)	0.40
= > 56,880,216 (RI_t / Z_t)	0.12

where RI_t and Z_t shall have the meaning ascribed to them in paragraph B12.

(b) in respect of the relevant year t commencing on 1 April 2002, from the following table:

($CSOC_t$) (£)	**ISF_t**
< 55,869,013 (RI_t / Z_t)	0.60
= > 55,869,013 (RI_t / Z_t)	0.50

where RI_t and Z_t shall have the meaning ascribed to them in paragraph B12.

(c) in respect of the relevant year t commencing on 1 April 2003, from the following table**:**

($CSOC_t$) (£)	**ISF_t**
< 57,753,517 (RI_t / Z_t)	0.50
= > 57,753,517 (RI_t / Z_t)	0.50

where RI_t and Z_t shall have the meaning ascribed to them in paragraph B12.

(d) in respect of the relevant year t commencing on 1 April 2004, from the following table**:**

($CSOC_t$) (£)	**ISF_t**
< 57,567,216 (RI_t / Z_t)	0.40
= > 57,567,216 (RI_t / Z_t)	0.40

where RI_t and Z_t shall have the meaning ascribed to them in paragraph B12.

(e) and in respect of the relevant year t commencing on 1 April 2005, from the following table**:**

($CSOC_t$) (£)	**ISF_t**
< 60,656,843 (RI_t / Z_t)	0.40
= > 60,656,843 (RI_t / Z_t)	0.40

where RI_t and Z_t shall have the meaning ascribed to them in paragraph B12.

B6. For the purposes of paragraph 15 of Part 2(ii) of special condition AA5A, the term IMT_t in respect of the relevant year t shall be derived from the following table:

Relevant Year **Commencing 1 April**	**IMT_t (£)**
2001	56,880,216 (RI_t / Z_t)
2002	55,869,013 (RI_t / Z_t)
2003	57,753,517 (RI_t / Z_t)
2004	57,567,216 (RI_t / Z_t)
2005	60,656,843 (RI_t / Z_t)

where RI_t and Z_t shall have the meaning ascribed to them in paragraph B12.

B7. For the purposes of paragraph 14 of Part 2(ii) of special condition AA5A, the term $NSOC_t$ in respect of the relevant year t shall be derived from the following table:

Relevant Year Commencing 1 April	$NSOC_t$
2001	21,698,749 (RI_t / Z_t)
2002	21,165,761 (RI_t / Z_t)
2003	20,602,773 (RI_t / Z_t)
2004	20,120,580 (RI_t / Z_t)
2005	19,496,842 (RI_t / Z_t)

where RI_t and Z_t shall have the meaning ascribed to them in paragraph B12.

B8. For the purpose of paragraph 14 of Part 2(ii) of special condition AA5A, the term $SOBR_t$ (being an allowance for non-domestic rates incurred by the licensee in operating the licensee's transmission system during relevant year t) shall be given by the following formula:

$$SOBR_t = SORate_t + \left(SORateDiff_t \left(1 + \frac{I_t}{100} \right) \right)$$

where:

$SORate_t$ is given by the table below;

Relevant Year commencing 1 April	2000	2001	2002	2003	2004	2005
$SORate_t$	0	1,000,000	1,000,000	1,000,000	1,000,000	1,100,000

and:

$SORateDiff_t$ is the difference between the non-domestic rates payable by the licensee in operating the licensee's transmission system in respect of year t-1 and $SORate_{t-1}$:

B9. For the purpose of paragraph 14 of Part 2(ii) of special condition AA5A, the term PSC_t (being the costs incurred by the licensee in preparing participants' systems for the introduction of the New Electricity Trading Arrangements to be recovered under the balancing services activity) shall have the value given by the following formula:

$$PSC_t = PSAC_t + \left(PSACDiff_t \left(1 + \frac{I_t}{100} \right) \right)$$

where:

$PSAC_t$ is given by the table below:

Relevant Year commencing on 1 April	2000	2001	2002	2003	2004	2005
$PSAC_t$	0	4,200,000	0	0	0	0

and:

$PSACDiff_t$ is the difference between the participant support costs incurred by the licensee in year t in respect of preparing participants' systems for the introduction of the New Electricity Trading Arrangements and $PSAC_t$.

B10. For the purpose of paragraph 13 of Part 2(ii) of special condition AA5A, the term ASO_t shall have the value specified by the following formula:

$$ASO_t = £5{,}600{,}000 \left[\frac{NT}{365}\right]$$

where:

NT is given by the number of days, from and including the day on which the effective time occurred, to and including 31 March 2001, but otherwise have the value of zero.

B11. For the purpose of paragraph 13 of Part 2(ii) of special condition AA5A, the value of the term NPI

(a) in respect of the relevant period t shall be given by the following formula:

$$NPI = \frac{ND}{365} \quad \text{if} \quad ND \langle = 365; \quad \text{or}$$

$$NPI = 1, \quad \text{if} \quad ND \rangle 365;$$

where:

ND is given by the number of days from and including the day on which the effective time occurs to and including 31 March 2002; and

(b) for each relevant year t thereafter shall be 1.

B12. For the purpose of paragraphs B5, B6, B7, B13 and B14 of this Schedule:

Z_t has the value against relevant year t in the following table:

Relevant year t **Commencing 1 April**	**Z_t**
2001	175.17
2002	178.67
2003	182.25
2004	185.89
2005	189.61

and

RI_t shall have the value Z_t until such time as the Retail Price Index for the last month of each relevant year t is known when it shall be the arithmetic average of the Retail Price Indices in respect of each month of each relevant year t.

RM shall, until such time as the Retail Price Index for March 2001 is known, be 171.42 (being the forecast of the Retail Price Index prepared by Business Strategies Limited in December 2000 in respect of the relevant year commencing on 1 April 2000 on the assumption that the Retail Price Index for January 1987 equals 100) after which it shall become the arithmetic average of the Retail Price Indices in respect of each month of the relevant year commencing on 1 April 2000.

B13. For the purpose of paragraph 15 of Part 2(ii) of special condition AA5A, the term CSF_{Mt} shall have the value:

(a) in respect of each month M of the relevant period t commencing at the effective time

(i) $CSF_{Mt} = 0.4$ when $0 \leq 0.4 \quad CP_{Mt} \langle$ £250,000

(ii) $CSF_{Mt} = 0$ otherwise

(b) in respect of each month M of the relevant year t commencing on 1 April 2002 and of each relevant year thereafter

(i)

$$CSF_{Mt} = 0.4 \quad when \quad 0 \leq \left[0.4 \quad CP_{Mt} \right] \langle \left[£250{,}000 \quad \left(\frac{Z_t}{RN} \right) \left(\frac{RI_t}{Z_t} \right) \right]$$

(ii) $CSF_{Mt} = 0$ otherwise

where:

RN shall, until such time as the Retail Price Index for March 2002 is known, be 175.17 (being the forecast of the Retail Price Index prepared by Business Strategies Limited in December 2000 in respect of the relevant year commencing on 1 April 2001 on the assumption that the Retail Price Index for January 1987 equals 100) after which it shall become the arithmetic average of the Retail Price Index in respect of each month of the relevant year commencing on 1 April 2001.

and

RI_t and Z_t shall have the meanings ascribed to them in paragraph B12.

B14. For the purposes of paragraph 15 of Part 2(ii) of special condition AA5A, the term OS_{Mt} shall have the value:

(a) in respect of each month M of the relevant period t commencing at the effective time

(i) $OS_{Mt} = 0$ when $CSF_{Mt} > 0$

(ii) $OS_{Mt} =$ £250,000 when $CSF_{Mt} = 0$

(b) in respect of each month M of the relevant year t commencing on 1 April 2002 and of each relevant year thereafter

(i) $OS_{Mt} = 0$ when $CSF_{Mt} > 0$

(ii) $OS_{Mt} =$ £250,000$\left(\frac{Z_t}{RN}\right)\left(\frac{RI_t}{Z_t}\right)$ when $CSF_{Mt} = 0$

where:

RI_t and Z_t shall have the meanings ascribed to them in paragraph B12 and RN shall have the meaning ascribed to it in paragraph B13.

Appendix 3 Respondents to the Initial Consultation document and the Open Letter

3.1 The following is a list of those who provided non-confidential responses to the December 2003 Initial Consultation document:

- Association of Electricity Producers
- Alcan
- British Energy
- Centrica
- EDF Energy
- National Grid Transco
- Powergen
- Ralph Turvey
- RWE Innogy
- Scottish Power
- Scottish Power Transmission
- Scottish and Southern Energy

3.2 The following is a list of those who responded to the December 2003 Open Letter:

- AES Indian Queens Power Ltd
- Association of Electricity Producers
- British Energy
- Centrica

- Cornwall Consulting
- EDF Energy
- Scottish Power

Appendix 4 Incentivised Balancing Cost component breakdown

Balancing Mechanism Costs (CSOBM)

Licence definition

4.1 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[64] 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).

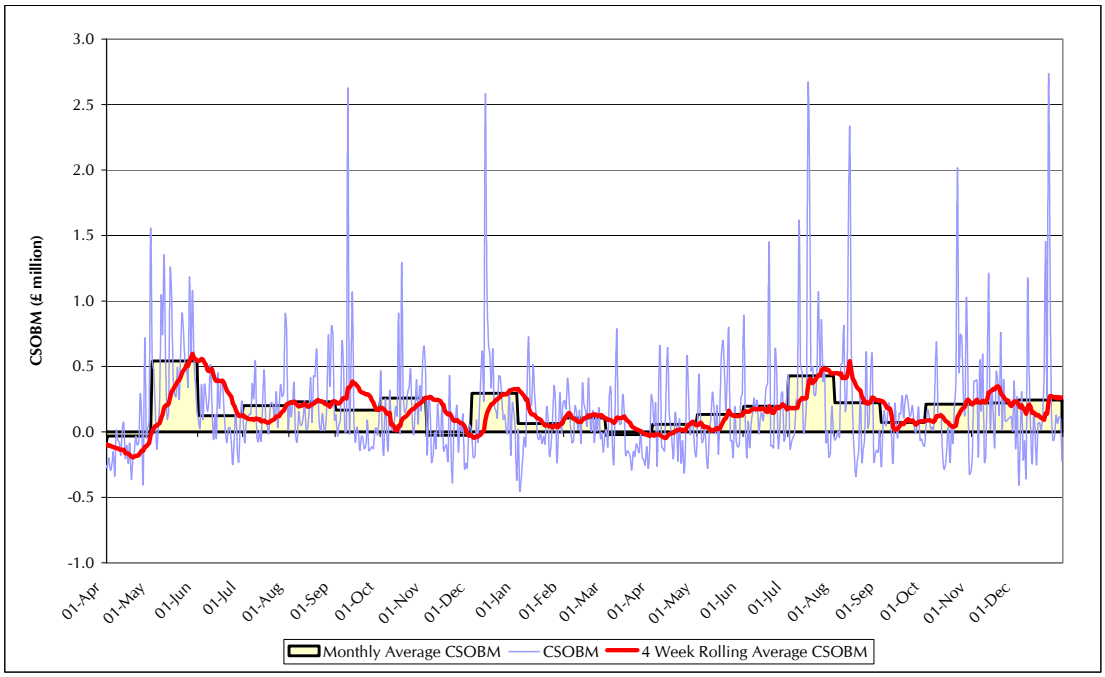
Performance to date[65]

4.2 $CSOBM_t$ over the period from 01 April 2002 until 31 March 2003 totalled £58.51 million. Cumulative daily CSOBM from 1 April 2003 until 31 December 2003 was £54.76 million. Figure A4.1 shows daily CSOBM, monthly average CSOBM and a 4 week rolling average of CSOBM for the period up until 31 December 2003.

[64] The transmission licence defines "relevant period t" as that period for the purposes of which any calculation falls to be made commencing on Go-Live and ending on 31 March 2002 and thereafter shall have the same meaning as "relevant year t" where "relevant year t" means that relevant year for the purposes of which any calculation falls to be made.

[65] Similar analysis and commentary for the period prior to 1 April 2002 can be found in "NGC system operator incentive scheme from 1 April 2003 – 31 March 2004, final proposals and statutory licence conditions", March 2003, Ofgem, at the following address: http://www.ofgem.gov.uk/temp/ofgem/cache/cmsattach/2545_16so_incentives.pdf

Figure A4.1 – CSOBM from 1 April 2002 until 31 December 2003



4.3 During the first year of NETA, CSOBM fell consistently in response to a number of factors, amongst which were NGC's and market participants' growing experience of the new arrangements. CSOBM was much more volatile during the second year of NETA, with the first two months of the financial year totalling -£0.93 million and £16.80 million for April 2002 and May 2002 respectively. Further CSOBM spikes occurred in July 2003, reaching the third highest monthly total since Go-Live at £13.28 million. During this month, daily CSOBM exceeded £1 million on four separate days. Beyond September 2003, there has been a small upward movement in CSOBM, which is likely to reflect a tighter system and more expensive balancing actions; although the most recent month, December 2003, shows only a small increase over costs incurred in August 2003. More detailed statistics concerning CSOBM can be found in Table A4.1.

Table A4.1 – Monthly CSOBM statistics (£ million, money of the day)[66]

Month	Sum	Average	Min	Max	Standard deviation
Apr-02	-0.93	-0.03	-0.39	1.55	0.37
May-02	16.80	0.54	-0.13	1.35	0.38
Jun-02	3.73	0.12	-0.25	0.51	0.20
Jul-02	6.19	0.20	-0.08	0.90	0.23
Aug-02	7.10	0.23	-0.08	0.81	0.24
Sep-02	5.01	0.17	-0.14	2.62	0.54
Oct-02	7.99	0.26	-0.17	1.29	0.31
Nov-02	-0.80	-0.03	-0.39	0.43	0.19
Dec-02	9.12	0.29	-0.37	2.57	0.53
Jan-03	1.98	0.06	-0.45	0.73	0.25
Feb-03	2.95	0.11	-0.15	0.41	0.15
Mar-03	-0.64	-0.02	-0.29	0.79	0.24
Apr-03	1.70	0.06	-0.32	0.65	0.26
May-03	4.12	0.13	-0.27	0.78	0.27
Jun-03	5.87	0.20	-0.20	1.45	0.34
Jul-03	13.28	0.43	-0.19	2.62	0.64
Aug-03	6.90	0.22	-0.34	2.31	0.56
Sep-03	2.18	0.07	-0.27	0.28	0.14
Oct-03	6.56	0.21	-0.32	2.02	0.47
Nov-03	6.61	0.22	-0.23	1.21	0.32
Dec-03	7.54	0.24	-0.40	2.72	0.64

Balancing Services Contract Costs (BSCC)

Licence definition

4.4 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.

4.5 $BSCC_t$ are the costs of the payments that NGC makes under contract to the providers of balancing services excluding any costs paid through the Balancing Mechanism. This includes costs associated with the procurement of energy, reserve, frequency response, some transmission constraints, black start and

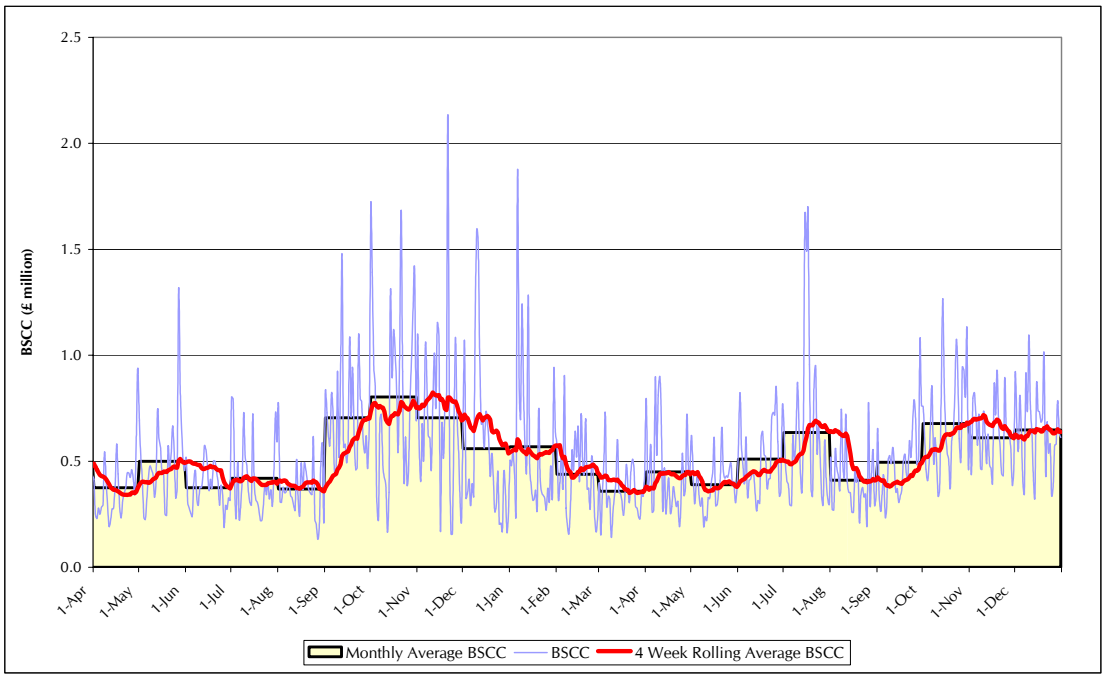
[66] For tables A1.1 to A1.4, each IBC component shows total cashflow for the month, average daily cashflow and minimum, maximum and standard deviation figures over the course of each month.

reactive power. All these costs are bundled together as BSCC for the purposes of the IBC calculation.

Performance to date

4.6 $BSCC_t$ over the period from 1 April 2002 to 31 March 2003 totalled £188.06 million. Cumulative daily BSCC from 1 April 2003 until 31 December 2003 was £147.60 million. Figure A4.2 shows daily BSCC, monthly average BSCC and a 4 week rolling average of BSCC for the period up until 31 December 2003.

Figure A4.2 – BSCC from 1 April 2002 until 31 December 2003



4.7 As was the case for the year from Go-Live, total monthly BSCC fluctuated over the first half of the financial year 2002/03. Between August 2002 and September 2002, total monthly BSCC almost doubled from £11.46 million to £21.17 million. Monthly total BSCC climbed to a peak of £24.88 million in October 2002. BSCC remained high over the winter period before slowly falling to £11.12 million in March 2003. During the first half of financial year 2003/04, BSCC continued to fluctuate before rising again to £19.71 million in July 2003. By August 2003, this figure had fallen by £6.99 million to £12.72 million. Beyond September 2003, however, there has been a consistent rise in BSCC costs, which is, in the main, consistent with the annual trend. These costs have been much more stable between October 2003 and December

2003 compared to the same time last year, indicative of further mild and predictable demand and supply conditions over the winter. More detailed statistics concerning BSCC are presented in Table A4.2.

Table A4.2 – Monthly BSCC statistics (£ million, money of the day)

Month	Sum	Average	Min	Max	Standard deviation
Apr-02	11.25	0.38	0.19	0.94	0.15
May-02	15.49	0.50	0.22	1.31	0.21
Jun-02	11.26	0.38	0.19	0.57	0.10
Jul-02	13.02	0.42	0.22	0.80	0.17
Aug-02	11.46	0.37	0.13	0.77	0.13
Sep-02	21.17	0.71	0.44	1.47	0.24
Oct-02	24.88	0.80	0.17	1.70	0.42
Nov-02	21.17	0.71	0.16	2.13	0.39
Dec-02	17.34	0.56	0.16	1.59	0.37
Jan-03	17.61	0.57	0.25	1.87	0.36
Feb-03	12.29	0.44	0.16	0.90	0.18
Mar-03	11.12	0.36	0.14	0.73	0.12
Apr-03	13.50	0.45	0.19	0.90	0.20
May-03	12.07	0.39	0.19	0.66	0.11
Jun-03	15.30	0.51	0.27	0.85	0.17
Jul-03	19.71	0.64	0.29	1.68	0.38
Aug-03	12.72	0.41	0.21	0.78	0.15
Sep-03	14.87	0.50	0.23	1.08	0.18
Oct-03	21.01	0.68	0.33	1.27	0.24
Nov-03	18.34	0.61	0.39	0.93	0.15
Dec-03	20.09	0.65	0.33	1.09	0.20

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

Licence definition

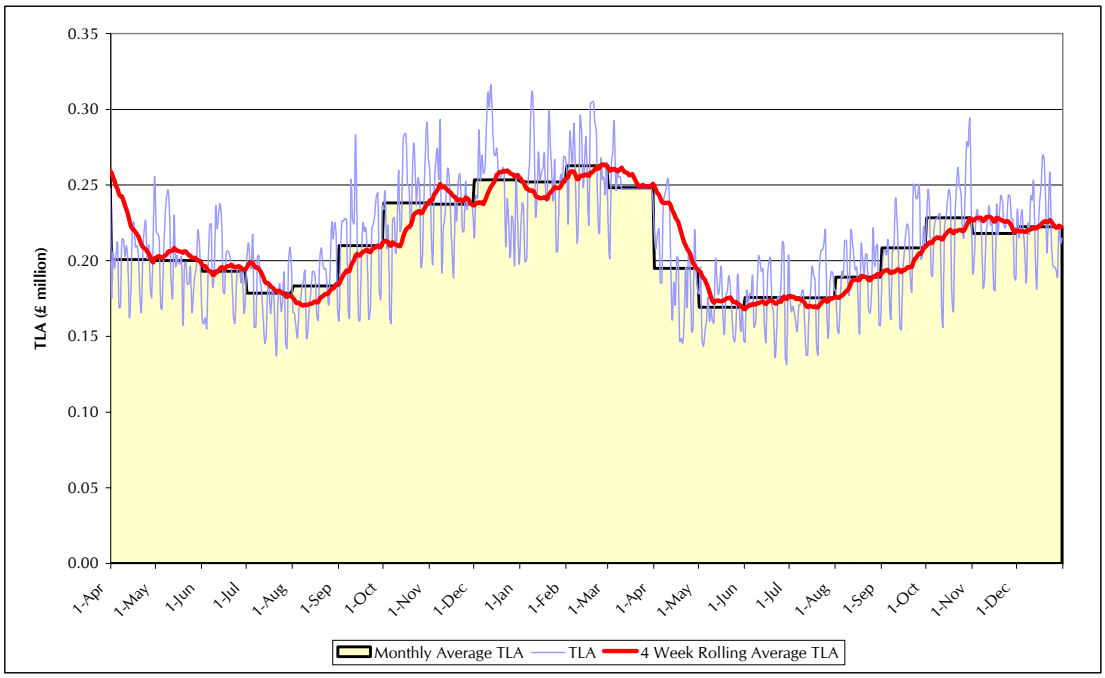
4.8 Under NGC's transmission licence, $\sum_{jt}(TL_j[TLRP_j])$, referred to as the Transmission Losses Adjustment (TLA), is defined as the volume of Transmission Losses (TL_j) multiplied by the Transmission Losses Reference Price ($TLRP_j$) for each Settlement Period, summed across all Settlement Periods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

4.9 NGC has incentives to reduce the overall volume of losses and a reference price (TLRP) is required to allow a cost target to be included in IBC. $TLRP_j$ has the value specified for each Settlement Period set out in paragraph B3 of Part B of Schedule A of NGC's transmission licence. During the period from 27 March 2001 until 31 March 2002, TLRP was fixed at £20.30/MWh (after indexation). It was reduced to £18.50/MWh for the period from 1 April 2002 until 31 March 2003. For the period between 01 April 2003 and 31 March 2004, TLRP was further reduced to £17.00/MWh.

Performance to date

4.10 Over the period from 1 April 2002 until 31 March 2003, TLA_t totalled £80.76 million. Cumulative daily TLA from 1 April 2003 until 31 December 2003 was £54.44 million. Figure A4.3 shows daily TLA, monthly average TLA and a 4 week rolling average of TLA for the period up until 31 December 2003.

Figure A4.3 – TLA from 1 April 2002 until 31 December 2003



4.11 Historically, TLA has been the least volatile of the IBC components because of the annually fixed nature of the transmission losses reference price. Moreover, the value of TLA depends only on the volume of transmission losses in any given period. As the transmission losses volume is a function of the volume of

electricity generated (or demanded), there is a clear correlation between seasonal demand patterns and the value of TLA.

4.12 The value of TLRP itself is constantly under review, and altered on an annual basis to be in line with expected forward prices over the course of the incentive scheme period. As a result of alterations to TLRP, the value of TLA has changed slightly year-on-year. For incentive scheme period 2002/03 the spread between maximum daily TLA and minimum daily TLA was £0.18 million, whilst for the current scheme to end December 2003, this figure has fallen to £0.16 million. More detailed statistics concerning TLA are presented in Table A4.3.

Table A4.3 – Monthly TLA statistics (£ million, money of the day)

Month	Sum	Average	Min	Max	Standard deviation
Apr-02	6.02	0.20	0.16	0.26	0.02
May-02	6.20	0.20	0.16	0.25	0.02
Jun-02	5.79	0.19	0.16	0.24	0.03
Jul-02	5.53	0.18	0.14	0.22	0.02
Aug-02	5.68	0.18	0.15	0.23	0.02
Sep-02	6.30	0.21	0.16	0.28	0.03
Oct-02	7.38	0.24	0.16	0.29	0.03
Nov-02	7.12	0.24	0.19	0.29	0.02
Dec-02	7.86	0.25	0.20	0.32	0.03
Jan-03	7.81	0.25	0.20	0.31	0.03
Feb-03	7.36	0.26	0.21	0.31	0.03
Mar-03	7.70	0.25	0.20	0.29	0.01
Apr-03	5.85	0.19	0.15	0.25	0.03
May-03	5.25	0.17	0.14	0.20	0.02
Jun-03	5.27	0.18	0.13	0.21	0.02
Jul-03	5.44	0.18	0.14	0.22	0.02
Aug-03	5.86	0.19	0.15	0.22	0.02
Sep-03	6.25	0.21	0.15	0.25	0.03
Oct-03	7.08	0.23	0.16	0.29	0.03
Nov-03	6.54	0.22	0.18	0.24	0.02
Dec-03	6.90	0.22	0.18	0.27	0.02

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

Licence definition

4.13 Under NGC's transmission licence, $\sum_{jt}(TQEI_j[NIRP_j])$, referred to as the Net Imbalance Adjustment (NIA), is defined as the Total Net Imbalance Volume[67] ($TQEI_j$), as defined in the BSC in force immediately prior to 1 April 2001, multiplied by the Net Imbalance Volume Reference Price ($NIRP_j$) for each Settlement Period, summed across all Settlement periods in the relevant period t. $\sum_{jt}(TQEI_j[NIRP_j])$.

4.14 $NIRP_j$ has the value specified for each Settlement Period set out in paragraph B4 of Part B of Schedule A of NGC's transmission licence. During the period from 27 March 2001 until 31 March 2002, $NIRP_j$ was based on imbalance prices using the definitions of System Buy Price (SBP) and System Sell Price (SSP) included in the version of the BSC in force immediately prior to 1 April 2001. Whether SBP or SSP applied was dependent upon TQEI. NIRP was set to be equal to SBP when the system was short, i.e. $TQEI < 0$, SSP when the system was long, i.e. $TQEI > 0$, and zero when the system was in balance.

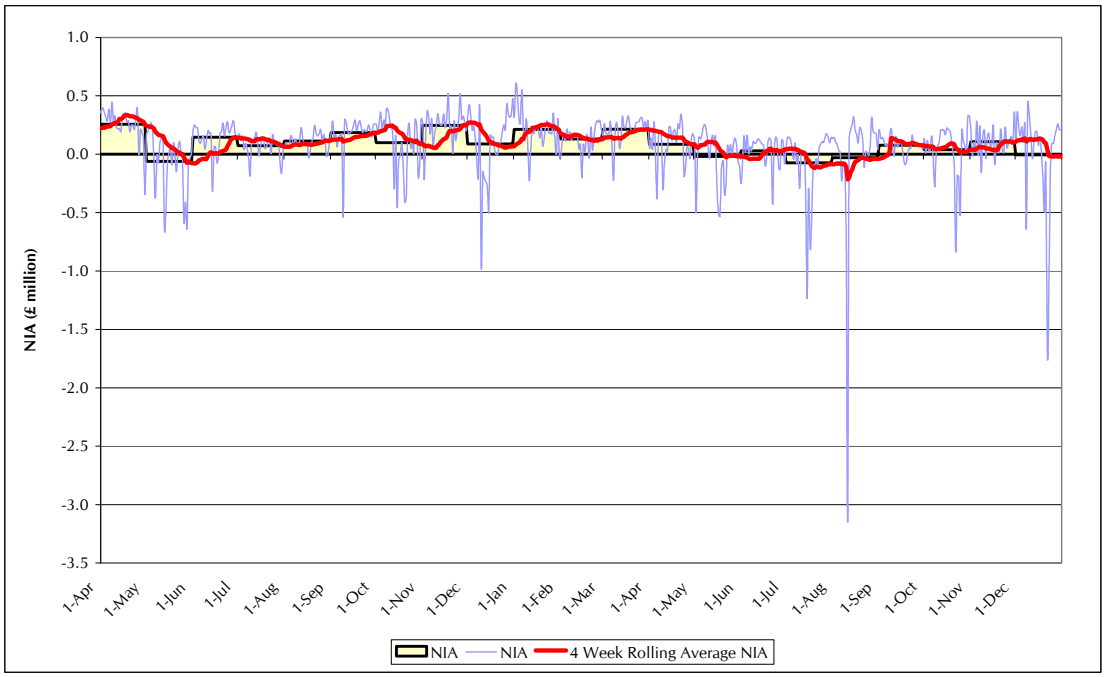
4.15 The definition of NIRP was changed for the 2002/03 incentive scheme and the revised definition has applied hereafter. The first stage in deriving $NIRP_j$ now is to calculate the Single Price Net Imbalance Volume Reference Price for the settlement period ($SPNIRP_j$). This is a market based reference price calculated from a basket of power exchange prices (the United Kingdom Power Exchange and United Kingdom Automated Power Exchange). A variable price adjustment is then applied to $SPNIRP_j$ to give $NIRP_j$. When the system is long $SPNIRP_j$ is multiplied by 0.5 whereas when the system is short it is multiplied by 2.5.

[67] 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.

Performance to date

4.16 NIA_t over the period from 1 April 2002 until 31 March 2003 totalled £51.66 million. Cumulative daily NIA from 1 April 2003 until 31 December 2003 was £6.32 million. Figure A4.4 shows daily NIA, monthly average NIA and a 4 week rolling average of NIA for the period up until 31 December 2003.

Figure A4.4 – NIA from 1 April 2002 until 31 December 2003



4.17 Over the first two incentive scheme periods, NIA has been predominantly positive, reaching a peak of £8.77 million in total for November 2001. Over the last six months of financial year NETA Go-Live to 31 March 2002, NIA summed to £48.32 million. This is just below 42 per cent of total NIA from NETA Go-Live to 31 December 2003 (which sums to £115.87 million).

4.18 For the most part, NIA has been positive because the system has tended to be long. This means that the TQEI element of NIA has been positive and contributes to the magnitude of IBC. Over time, the tendency to be long has lessened, and fell substantially upon implementation of BSC Modification Proposal P78[68] on 11 March 2003. To reflect this, four out of the seven

[68] Information concerning BSC Modification P78 "Revised definitions of system buy price and system sell price" can be found on ELEXON's website at http://www.elexon.co.uk/ta/modifications/mods_docs.html

months where NIA has been negative have occurred since Modification Proposal P78 was implemented.

4.19 For a number of months under each incentive scheme period, average monthly NIA has actually been negative. This does not necessarily mean that the system has been short as the value of NIRP is greater when the system is short than when it is long. With this in mind, NIA has been negative for 26 per cent of all the days during the period (71 days out of 275 days). From NETA Go-Live to 31 March 2003, this figure was just 15 per cent (110 days out of 735 days). More detailed statistics concerning NIA are presented in Table A4.4.

Table A4.4 – Monthly NIA statistics (£ million, money of the day)

Month	Sum	Average	Min	Max	Standard deviation
Apr-02	7.71	0.26	-0.34	0.44	0.15
May-02	-1.87	-0.06	-0.65	0.27	0.25
Jun-02	4.40	0.15	-0.32	0.29	0.12
Jul-02	2.25	0.07	-0.18	0.19	0.09
Aug-02	3.51	0.11	-0.03	0.25	0.07
Sep-02	5.53	0.18	-0.54	0.30	0.15
Oct-02	3.07	0.10	-0.46	0.39	0.24
Nov-02	7.40	0.25	-0.22	0.52	0.14
Dec-02	2.74	0.09	-0.98	0.47	0.31
Jan-03	6.62	0.21	-0.23	0.60	0.16
Feb-03	3.67	0.13	-0.20	0.29	0.11
Mar-03	6.63	0.21	-0.22	0.33	0.11
Apr-03	2.55	0.09	-0.38	0.34	0.17
May-03	-0.57	-0.02	-0.53	0.25	0.22
Jun-03	0.90	0.03	-0.43	0.16	0.13
Jul-03	-2.27	-0.07	-1.23	0.17	0.31
Aug-03	-0.90	-0.03	-3.14	0.32	0.61
Sep-03	2.35	0.08	-0.09	0.22	0.07
Oct-03	1.19	0.04	-0.84	0.33	0.24
Nov-03	3.21	0.11	-0.16	0.36	0.12
Dec-03	-0.14	0.00	-1.73	0.44	0.45

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

Licence definition

4.20 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.

4.21 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

4.22 From the introduction of NETA to date, OM has been zero, whilst RT has been non-zero for one event. RT can only be non-zero if Ofgem agrees to a change to the incentive scheme target as a result of an Income Adjusting Event (IAE). To date, NGC is the only party to have issued a notice to the Authority outlining costs or expenses incurred or saved which it considered to relate to an Income Adjusting Event. In March 2003, NGC gave notice to Ofgem that it considered an IAE had occurred during November 2002. The Authority approved the proposed IAE in June 2003 and RT was assigned a value of £5.34 million (and so reduced IBC by £5.34 million)[69].

Contribution of components to IBC

4.23 In addition to examining the trends of the individual components of IBC, an examination of each component's relative contribution to IBC throughout the period is set out below. Tables A4.5 and A4.6 provide a breakdown of average monthly IBC component totals and their contributions to IBC.

[69] Full details can be found in "Income adjusting event under NGC's 2002/03 system operator incentive scheme, a decision document", June 2003, Ofgem at the following address: http://www.ofgem.gov.uk/temp/ofgem/cache/cmsattach/3775_Drax_IAE_DecisionvFINAL1.pdf

Table A4.5 – Average monthly IBC component totals (£ million, money of the day)[70]

Period	CSOBM	BSCC	TLA	NIA	IBC
Go-Live to Dec-03	5.26	14.30	6.66	3.41	29.64
Go-Live to Mar-02	5.05	11.59	7.03	4.45	28.12
Apr-02 to Mar-03	4.88	15.67	6.73	4.31	31.58
Apr-03 to Dec-03	6.08	16.40	6.05	0.70	29.23

Table A4.6 – Average monthly IBC components as proportion of IBC[71]

Period	CSOBM	BSCC	TLA	NIA
Go-Live to Dec-03	18%	48%	22%	11%
Go-Live to Mar-02	18%	41%	25%	16%
Apr-02 to Mar-03	15%	50%	21%	14%
Apr-03 to Dec-03	21%	56%	21%	2%

4.24 Monthly total CSOBM averaged £4.88 million for the period from 1 April 2002 until 31 March 2003 equating to a contribution of 15 per cent to overall IBC over this period. This has risen to £6.08 million for the current incentive scheme period to 31 December 2003, accounting for 21 per cent of IBC. Over the entire period since Go-Live, CSOBM has accounted for 18 per cent of IBC, averaging £5.26 million each month.

4.25 Monthly total BSCC averaged £15.67 million for the period from 1 April 2002 until 31 March 2003, which is almost £4.1 million higher than average BSCC under the initial incentive scheme post NETA Go-Live. Under the current incentive scheme period to 31 December 2003, average monthly BSCC rose to £16.40 million. In both absolute and relative terms this is an increase, as the share of IBC that this accounts for has risen from 50 per cent for financial year 2002/03 to 56 per cent for financial year 2003/04 to end December 2003. BSCC continues to make the largest contribution to IBC of all its components.

4.26 Monthly total TLA averaged £6.73 million for the period from 1 April 2002 until 31 March 2003, accounting for 21 per cent of IBC. Over the current incentive scheme period to 31 December 2003, monthly total TLA has averaged £6.05 million, representing 21 per cent of IBC. TLA has accounted for around 22 per cent of total IBC costs over the entire period from Go-Live until 31 December 2003.

[70] This table shows monthly sums for each IBC component and averaged for each time period.
[71] This table shows monthly sums for each IBC component, averaged per time period as a proportion of the sum of IBC per month, averaged over each time period.

4.27 Monthly total NIA averaged £4.31 million for the period from 1 April 2002 until 31 March 2003, accounting for 14 per cent of IBC. Total monthly NIA has averaged £0.70 million for the current period, between 1 April 2003 and 31 December 2003. This is equivalent to just 2 per cent of average monthly IBC over this period.

4.28 Additional detail is provided in the tables below. Table A4.7 presents the monthly values of each of the components of IBC, while Table A4.8 shows each component's monthly percentage contribution to IBC.

Table A4.7 – Monthly IBC component totals (£ million, money of the day)

Month	CSOBM	BSCC	TLA	NIA	IBC
Apr-02	-0.93	11.25	6.02	7.71	24.05
May-02	16.80	15.49	6.20	-1.87	36.62
Jun-02	3.73	11.26	5.79	4.40	25.19
Jul-02	6.19	13.02	5.53	2.25	27.00
Aug-02	7.10	11.46	5.68	3.51	27.75
Sep-02	5.01	21.17	6.30	5.53	38.01
Oct-02	7.99	24.88	7.38	3.07	43.33
Nov-02	-0.80	21.17	7.12	7.40	34.90
Dec-02	9.12	17.34	7.86	2.74	37.05
Jan-03	1.98	17.61	7.81	6.62	34.02
Feb-03	2.95	12.29	7.36	3.67	26.27
Mar-03	-0.64	11.12	7.70	6.63	24.80
Apr-03	1.70	13.50	5.85	2.55	23.60
May-03	4.12	12.07	5.25	-0.57	20.87
Jun-03	5.87	15.30	5.27	0.90	27.34
Jul-03	13.28	19.71	5.44	-2.27	36.15
Aug-03	6.90	12.72	5.86	-0.90	24.58
Sep-03	2.18	14.87	6.25	2.35	25.66
Oct-03	6.56	21.01	7.08	1.19	35.84
Nov-03	6.61	18.34	6.54	3.21	34.71
Dec-03	7.54	20.09	6.90	-0.14	34.39

Table A4.8 – Monthly IBC components as proportion of IBC

Month	CSOBM	BSCC	TLA	NIA
Apr-02	-4%	47%	25%	32%
May-02	46%	42%	17%	-5%
Jun-02	15%	45%	23%	17%
Jul-02	23%	48%	20%	8%
Aug-02	26%	41%	20%	13%
Sep-02	13%	56%	17%	15%
Oct-02	18%	57%	17%	7%
Nov-02	-2%	61%	20%	21%
Dec-02	25%	47%	21%	7%
Jan-03	6%	52%	23%	19%
Feb-03	11%	47%	28%	14%
Mar-03	-3%	45%	31%	27%
Apr-03	7%	57%	25%	11%
May-03	20%	58%	25%	-3%
Jun-03	21%	56%	19%	3%
Jul-03	37%	55%	15%	-6%
Aug-03	28%	52%	24%	-4%
Sep-03	8%	58%	24%	9%
Oct-03	18%	59%	20%	3%
Nov-03	19%	53%	19%	9%
Dec-03	22%	58%	20%	0%

Appendix 5 BSC Modification Proposals and CUSC Amendment Proposals

5.1 Tables A5.1 and A5.2 respectively provide a list those BSC Modification Proposals and CUSC Amendment Proposals for which Income Adjusting Event ("IAE") provisions will not be available. The proposals listed are all those that were being consulted on by the BSC or CUSC Panels as of 20 February 2004.

Table A5.1 – BSC Modification Proposals for which IAE provisions are not available

Modification No.	Modification Title
P124	Revision of mandatory half-hour metering criteria
P131	Further provisions relating to Trading Disputes
P132	Redefinition of Credit Cover requirements for reconciliation charges
P136	Marginal Definition of the 'main' Energy Imbalance Price
P137	Revised Calculation of System Buy and System Sell Price
P139	Removal of Trading Unit Restriction on Interconnector Users
P140	Revised Credit Cover Methodology for Interconnector BM Units
P142	Allow Level 2 Default Cure Period in Defined Circumstances
P146	New Participation Category to the BSC - Clearing House
P147	Introduction of a Notified Contract Capacity
P150	Targeting costs of PNE appeals to unsuccessful appellants
P151	Housekeeping Modification
P152	Reduction of Credit Cover for a Trading Party in Default
P153	Support Competition in Distribution Networks
P154	Rectification of Inconsistencies in the Change Process
P156	Zonal Allocation of Transmission Losses
P157	Replacement of current Supplier Charges rules

Table A5.2 – CUSC Amendment Proposals for which IAE provisions are not available

Amendment No.	Amendment Title
CAP049	Alternative Amendments
CAP050	Review Process for implemented Urgent Amendment Proposals
CAP051	Initiation of the Amendment Procedures by the Amendments Panel
CAP052	Removal of Land Charges
CAP053	Revision of Site Specific Maintenance Charges
CAP054	Adoption of Year Round TNUoS Charges
CAP055	Users' Demand Forecasts
CAP056	Incorrect Reference to the Grid Code in Section 11 – Definitions
CAP057	Removal of References to TSUoS Charges
CAP058	Reinstatement of words lost form Legal Text following implementation of CAP043
CAP059	Addition of word "Paragraph" to Paragraph 2.17.9
CAP060	Incorrect spelling of "Judgment" in Paragraph 6.6.4
CAP061	Addition of "CUSC Panel Secretary" to Exhibit F, Note 10
CAP062	Amendment to National Grid address in various exhibits

Amendment No.	Amendment Title
CAP063	Amendment to National Grid address in various exhibits
CAP064	Minor Reference error in Paragraph 7.2, Schedule 2, Exhibit 3
CAP065	Removal of various paragraphs referring to NETA Go Live
CAP066	Removal of historic transitional provisions that no longer have any application
CAP067	Clarification of Contractual Relationship Required for Embedded Generation (CUSC 6.5.1)
CAP068	Competing Requests for TEC
CAP069	Users' Forecasts Used in the Calculation of TNUoS Charges
CAP070	Short Term Firm Access Service

Appendix 6 The regulatory framework

Introduction

6.1 This appendix summarises the current regulatory framework for the electricity industry. It outlines 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")

6.2 The Electricity Act, as amended by the Utilities Act 2000, 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.

6.3 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.

The Utilities Act 2000 (the "Utilities Act")

6.4 The Utilities Act received Royal Assent on 28 July 2000. It introduced a new principal objective for the Authority, as defined in Section 3A of the Electricity Act. The Authority's principal objective is "to protect the interests of consumers in relation to electricity conveyed by distribution systems, wherever appropriate by promoting effective competition between persons engaged in, or in commercial activities connected with, the generation, transmission, distribution or supply of electricity".

NGC's electricity transmission licence

6.5 NGC owns and operates the national grid in England and Wales, which transports electricity at high voltage from the generators to the local distribution networks and to customers connected directly to the transmission system. 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.

Special condition AA4

6.6 NGC's transmission licence contains several provisions relating to information provision and transparency:

- special condition AA4 (1) requires the licensee to operate the licensee's transmission system in an efficient, economic and co-ordinated manner; ands
- special condition AA4 (2) prohibits the licensee from discriminating as between any persons or classes of persons in its procurement or use of balancing services.

6.7 NGC is required to procure any balancing services competitively and via transparent processes. In order to fulfil this requirement, NGC is obliged under special condition AA4 of the transmission licence to have in place two documents[72]:

- the Procurement Guidelines (PGs), which detail the types of balancing services that NGC may be interested in purchasing, together with the mechanisms envisaged for purchasing such balancing services. Table 3 within Part E of the PGs outlines NGC's approach to providing information relating to its procurement of balancing services in order to provide market participants and other interested parties with sufficient information without compromising the commercial position of any contracting party; and
- the Balancing Principles Statement (BPS), which defines the broad principles and criteria by which NGC will determine, at different times and in different circumstances, which balancing services it will use to assist in the operation of the transmission system.

Special condition AA5

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

6.9 The TNS activities are defined as including all NGC's authorised activities relating to the planning, development, construction and maintenance of the transmission system (except for its BSA and excluded services). The BSA covers procuring and using balancing services for the purpose of balancing the licensee's transmission system. As such, the TO carries out the TNS activities whilst the SO carries out the BSA activity.

6.10 Part 1 of special condition AA5A outlines the revenue restriction in relation to NGC's TNS, while Part 2 outlines the revenue restriction in relation to its BSA.

6.11 The TNS revenue restriction is in the form of an RPI-X price control. The current restriction started on 1 April 2001 and is due to finish on 31 March 2006.[73] The BSA revenue restriction consists of a profit-sharing (sliding-scale) incentive scheme, which has separate targets for NGC's internal and external SO costs.

Industry Codes

The Balancing and Settlement Code (the "BSC")

6.12 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 supplementary standard condition C3 of its transmission licence.

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[72] Details of the PGs, BPS and the BSAD Methodology Statement can be found at NGC's website www.nationalgrid.com/uk/indinfo.

[73] Details of the current revenue restriction can be found in 'The transmission price control review of the National Grid Company from 2001: transmission asset owner, Final proposals', Ofgem, September 2000.

6.13 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
- determining and settling imbalances and certain other costs associated with operating and balancing the transmission system.

6.14 A BSC Panel has been created and 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.

6.15 The Balancing and Settlement Code Company (ELEXON[74]) 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) and to implement the provisions of the BSC and modifications to it.

6.16 The details of the modification procedures are contained in Section F of the BSC. They are designed to ensure that the process is as efficient as possible whilst enabling as many parties as possible to propose modifications and have the opportunity to comment on modification proposals. Whilst Ofgem cannot initiate any modifications, it is required to approve or reject all modifications to the BSC, according to defined criteria.

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

6.17 NGC is required under supplementary standard condition C7F of the transmission licence to prepare the CUSC. 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 to the provision of certain balancing

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

services. The CUSC was designated by the Secretary of State on 25 June 2001 and came into effect on 18 September 2001.

6.18 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. As with the BSC, while Ofgem cannot initiate amendments, it is required to approve or reject all amendments to the Code, according to defined criteria.