Transmission price controls and BETTA

Update

May 2004 107/04

Summary

The purpose of this document is provide an update on the work being carried out to roll forward the price controls for Scottish Hydro-Electric Transmission Ltd. (SHETL) and SP Transmission Ltd (SP Transmission) to 31 March 2007, and to modify the price controls of all three transmission licensees, SHETL, SP Transmission and the National Grid Company plc (NGC) to apply under the British Electricity Trading and Transmission Arrangements (BETTA). The planned go-live date for BETTA is 1 April 2005.

The paper covers the following areas of work:

- The price control framework
- The roll-forward price controls to apply to SP Transmission and SHETL from 1 April 2005 until BETTA go-live, should BETTA be deferred for any reason. The paper sets out the projections of operating expenditure and capital expenditure provided by the licensees, and makes proposals in relation to the financial issues raised by earlier consultations.
- The adjustments to the price controls for BETTA (SP Transmission, SHETL, and NGC's TO and SO internal controls). The paper presents information provided by the licensees on BETTA implementation costs and the adjustments to enduring costs. The paper discusses the overall changes in cost allowances implied by these projections. (Ofgem will be consulting separately on NGC's SO external cost incentives to apply for 2005/6)
- The regulatory value to be applied to the England-Scotland interconnector assets when incorporated into the relevant licensees' price controls under BETTA.

  The England-Scotland interconnector has been developed since Vesting as a commercial venture by the companies within a regulatory framework. There are a number of ways that the opening values for the England-Scotland interconnector assets could be determined. The paper suggests that the assets could be valued at the written down (depreciated) value (at constant prices this is the RAV-based value), but, recognising that the England-Scotland interconnector has been developed since Vesting as a commercial venture by the companies, an adjustment to this

value may be appropriate according to the returns that the assets generate.

Ofgem indicates that its preference is to use market-based valuations as the basis for setting the opening value in the price controls where these valuations are available and robust. It will also be important to recognise the regulatory framework prescribed in view of the service providers monopoly positions. The values obtained using different approaches are discussed.

- Transmission owner incentives under BETTA. The paper reviews the responses to the March consultation paper and sets out Ofgem's proposed way forward.

Table of contents

1. Introduction

1.1. The purpose of this document is provide an update on the work being carried out to roll forward the price controls for SHETL and SP Transmission, and to modify the price controls of all three transmission licensees, SHETL, SP Transmission and NGC to apply under the BETTA. The paper presents information provided by the licensees as part of this process, and also provides conclusions arising from responses received to previous consultations.

1.2. Separate chapters in this paper cover the following areas:

- Chapter 2: The price control framework
- Chapter 3: The roll-forward price controls to apply to SP Transmission and SHETL from 1 April 2005 until BETTA go-live, should BETTA be deferred for any reason
- Chapter 4: The adjustments to the price controls for BETTA. These will apply to SP Transmission and SHETL for the years 2005/6 and 2006/7, and to NGC's TO and SO internal controls for 2005/6
- Chapter 5: The England-Scotland interconnector regulatory assets values, and
- Chapter 6: Transmission owner incentives

1.3. Chapter 7 sets out the timetable Ofgem intends to follow in making final proposals for the price controls.

1.4. Ofgem will be consulting separately on NGC's SO external cost incentives to apply for 2005/6.

1.5. In parallel, Ofgem is consulting on the funding of additional investment in the transmission systems of the three transmission licensees to accommodate connection to the transmission system of new renewable generation. A first

consultation was published in October 2003[1], with a second consultation published in May 2004[2].

1.6. Since the transmission infrastructure related to new renewable generation is likely to be substantial and spans all three transmission licensees the development of adjustments to the price controls to allow for this expenditure is being coordinated separately from the above price control work, and Ofgem's conclusions on this expenditure will be additional to any adjustments for BETTA.

1.7. NGC's current price controls on internal costs are intended to last until 31 March 2006. Ofgem has recently published a paper setting out the process for extending NGC's TO price control and SO internal cost control to 2006/7[3].

Views invited

1.8. Parties are free to raise comments on any of the matters covered in this paper and in particular on the items requested. All responses will normally be published on the Ofgem website and held electronically in Ofgem's Research and Information Centre unless there are good reasons why they must remain confidential. Respondents should try to put any confidential material in appendices to their responses. Ofgem prefers to receive responses in an electronic form so they can easily be placed on the Ofgem website.

1.9. Please e-mail responses to BETTA.consultationresponse@ofgem.gov.uk by **18th June 2004,** marked 'Response to Transmission price controls and BETTA: Update'. Responses may also be sent by post or fax to:

David Halldearn
BETTA Project
Office of Gas and Electricity Markets (Ofgem)
9 Millbank
London SW1P 3GE

[1] Transmission investment and renewable generation. Consultation document, October 2003, Ofgem 129/03.
[2] Transmission investment for renewable generation, Second Consultation, May 2004, Ofgem 98/04
[3] Extending the National Grid Company's Transmission Asset Price Control for 2006/07, Initial Consultation, May 2004, Ofgem 102/04

Fax: 020 7901 7479

1.10. If you wish to discuss any aspect of this document, please contact Graham Jones, e-mail graham.jones@ofgem.gov.uk, telephone 020 7901 7468.

2. Price control framework

2.1. This chapter describes the background to the present proposals, discusses possible output assumptions against which the price control proposals will be developed, and reports respondents' views on Ofgem's proposals for allocating allowed revenues if price controls apply for only a part year should BETTA be deferred for any reason.

2.2. In developing the BETTA proposals, NGC[4] is assumed to be the GB system operator, in addition to owning transmission assets in England and Wales. SP Transmission and SHETL are assumed to be transmission owners. Under BETTA, licensees will have an obligation to comply with the SO-TO code (STC). In April 2004, Ofgem/DTI issued 'near final' legal text for electricity transmission licences under BETTA[5], and further consultation on the content of the STC[6].

Background

2.3. Ofgem's March report[7] set out the background and process for developing the roll forward price control proposals (to apply if BETTA is deferred for any reason) alongside the development of price controls and incentives to apply under BETTA. The planned go-live date for BETTA is 1 April 2005[8].

2.4. The current transmission price controls for SHETL and SP Transmission are intended to last until 31 March 2005. This document reports on the work being carried out to roll forward the existing price controls for SHETL and SP Transmission by two years to 31 March 2007, based on licensees' existing statutory duties and licence obligations; that is in the absence of BETTA.

---

[4] See Hansard 17 December 2002, Official Report Column 45WS
[5] Publication of 'near final' electricity transmission licenses under BETTA, Ofgem/DTI, April 2004, Ofgem 82/04
[6] The SO-TO Code under BETTA: Ofgem/DTI summary of responses and conclusions on the June 2003 document and subsequent mini consultations, and further consultation on the draft legal text; proposals for CUSC changes in relation to limitation of liability; and matters relating to the timescales for processing new connection applications, Ofgem/DTI, April 2004, Ofgem 90/04.
[7] Review of transmission price controls from 2005: SP Transmission Ltd, Scottish Hydro-Electric Transmission Ltd, Initial thoughts, March 2004, Ofgem 52/04
[8] Assuming Royal Assent to the Energy Bill by July 2004.

2.5. Under BETTA, the electricity transmission licensees will have revised statutory duties and new licence obligations. The implications for price controls and incentives were set out in Ofgem's October 2003 report[9]. In March 2004, Ofgem set out in another report its proposals for the form of the incentives to apply between the transmission owners and the GB system operator under BETTA[10].

2.6. The respondents to Ofgem's March reports are listed in Appendix 1.

2.7. In the case of SP Transmission and SHETL, the price controls to apply from BETTA go-live will be derived by making adjustments to the roll forward price control proposals. The intended duration of the SP Transmission and SHETL price controls is as follows:

- if BETTA go-live occurs on 1 April 2005 as scheduled, the rolled forward price controls, adjusted to reflect the changed roles of the licensees under BETTA, will apply from 1 April 2005 for the two year period until 31 March 2007, and

- if BETTA go-live occurs after 1 April 2005, the rolled forward Scottish price controls (based on the existing roles of licensees), will apply from 1 April 2005 until BETTA go-live, at which point the adjustments to reflect the changed roles of the licensees under BETTA will be applied, and the adjusted controls will apply for the remainder of the two year period until 31 March 2007.

2.8. In NGC's case[11], its existing TO and SO internal cost controls[12] are intended to last until 31 March 2006. Therefore NGC's price controls to apply under BETTA will be derived by making adjustments to the revenue restrictions that would otherwise apply in 2005/6.

---

[9] Price controls and incentives under BETTA, An Ofgem/DTI consultation, October 2003, Ofgem 130/03
[10] The form of transmission owner revenue restrictions and consequential effects on NGC's revenue restrictions, An Ofgem consultation document, March 2004, Ofgem 48/04
[11] NGC: The National Grid Company plc
[12] The terms TO and SO used in the context of NGC's price controls are different from the terms SO and TO used the context of the STC under BETTA.

Roll forward price controls and BETTA

2.9. In setting price controls it is important to understand the main assumptions or outputs used in forming the allowed revenues, particularly those underpinning the capital and operating expenditure projections, although it should be noted that price control proposals allow for uncertainty in the projections, recognising that the actual outcome may differ from the assumptions. It can also be beneficial to have a set of assumptions against which to monitor actual expenditure patterns and the reasons for any changes from the price control allowances. In developing the price controls to apply under BETTA, consideration needs to be given to the applicability of these assumptions, and whether they might need to be refined.

2.10. Ofgem's October 2003 report, noted that, under BETTA, changes instigated by the GB system operator may lead to changes in the transmission owner's capital and operating expenditures. The assumptions used in setting price controls[13] will form part of the background against which the efficiency of expenditure incurred by licensees may be evaluated.

2.11. It should be noted that a consultation document related to the roll forward proposals, Ofgem's May 2004 consultation on transmission investment in renewable generation, invited views on whether outputs should be identified to assist in establishing whether licensees have delivered investment.

2.12. Ofgem has recently issued a consultation document on the incentives that may be appropriate to apply between the GB system operator and transmission owners under BETTA[14] and these matters are further discussed in chapter 6. The principal areas of interaction are investment planning, outage planning, transmission switching, providing transmission services, and connections. The process by which these activities are carried out will determine in part the respective responsibilities of each licensee and the financial remuneration

[13] The assumptions relate to the main drivers of expenditure, and under BETTA are likely to involve similar categories to those that would apply in the absence of BETTA (generation/demand scenarios, number of new connection, transmission losses). It should be noted that the level of transmission losses is influenced by both investment decisions and operating decisions.
[14] The form of transmission owner revenue restrictions and consequential effects on NGC's revenue

appropriate to each. It is therefore appropriate to consider how the assumptions for the roll forward period apply under BETTA in relation to these areas of interaction:

- investment planning
  It could be appropriate for the assumptions that form the basis of the allowances in the roll forward price controls to form the basis of the price controls to apply to transmission owners under BETTA[15]. Given that it is intended to develop the BETTA price controls by making adjustments to the roll forward price controls, it will be appropriate to consider whether any changes to the assumptions will be necessary including whether the GB system operator has any requirements related to the additional availability[16] of a transmission network in aggregate or just for certain circuits.

- outage planning
  The roll forward price controls provide for the costs of efficient rescheduling of outages. If, under BETTA, the transmission owner price controls assume a specified (different) level of outage rescheduling, this may be an appropriate assumption to inform price controls

- transmission switching
  The level of transmission switching activity is not a strong driver of transmission owner costs[17]. Assumptions are unlikely to be appropriate in this area for the roll forward period.

---

restrictions, An Ofgem consultation document, March 2004, Ofgem 48/04

[15] SP Transmission has set out its overall generation/demand assumptions in Appendix 2 and SHETL in Appendix 3. The generation and demand scenarios used by SP Transmission and SHETL have not been subject to the investment planning process under BETTA, which includes the involvement of NGC as GB system operator.

[16] The planning and operating standards together with a company's asset management policy imply certain levels of asset availability (which may vary with grid conditions, such as demand levels). The assumption discussed here relates to any additional availability requirements of the GB system operator for commercial reasons.

[17] Transmission switching decisions are made by the GB system operator. The consequences of transmission switching decisions can have a strong impact on the level of losses and on balancing costs, and Ofgem will be considering the appropriate incentives on the GB system operator in these areas.

- providing transmission services
  Under BETTA transmission owners provide transmission services to the GB system operator. Transmission owners' obligations are set out in the STC. Ofgem does not consider that it is necessary to include any assumptions as part of the price control work.

- connections[18]
  It is likely that any assumptions in this area will form part of the investment planning assumptions discussed above.

2.13. The intention is that the output assumptions should form a base for the price control expenditure projections and against which to understand where expenditure patterns subsequently change from the projections and the reasons for any changes. Ofgem will be discussing possible assumptions with companies and report progress in Ofgem's draft proposals.

BETTA go-live after 1 April 2005

2.14. Ofgem's March report raised the issue of what revenues should be allowed for the period before BETTA go-live, if BETTA go-live occurs after 1 April 2005.

2.15. Price controlled allowed revenues normally apply to a given formula year (1 April to 31 March the following year). Ofgem's March report proposed that if the price controls apply for a part of a year, because BETTA go-live were deferred for any reason, then the allowed revenues should be recovered for the period to which they apply based on a constant daily charge through the year. It also suggested, for the part year concerned, using the same charging methodology as in 2004/5.

Respondent's views

2.16. One respondent supported Ofgem's proposals for part year controls as the least complex and one that stays in line with current arrangements. Another agreed that unnecessarily complicated arrangements should be avoided in the event of

[18] The performance of parties in their respective connection roles will subject to specific licence and STC obligations (and CUSC obligations in the case of NGC).

BETTA go-live occurring during a charging year, and said that Ofgem's proposal that allowed revenues should be recovered for the period to which they apply based on a constant daily charging rate appears to be a pragmatic approach.

2.17. A respondent noted that if charges are recovered based on forecast flows/capacities then pre and post BETTA charging rates may not be reflective of the flows and capacities occurring during the pre and post BETTA periods.

2.18. Another said that while Ofgem's proposal may seem sensible in itself, it must also be considered in the wider context of charging-related issues arising from mid-year BETTA implementation, and only addresses part of this picture. Consideration must also be given to the implications for transmission charges in England & Wales pre-BETTA, and over GB post-BETTA, in particular addressing the potential for double counting of transmission costs in setting charges on all users, and double charges on individual users through inappropriate application of peak charges for both parts of the year. This will be a particular risk for users of the Anglo-Scottish interconnector. Also, regardless of whether or not BETTA go-live occurs during a charging year, suitable allowance must be made for a ramp-up or ramp-down of activity in those areas where the roles of the licensees will change.

Ofgem's views

2.19. Ofgem notes the views of respondents and proposes to take this matter forward as part of the transitional arrangements for BETTA.

Views invited

2.20. Views are invited on any of the matters raised in this chapter, however, in particular views are invited on the following:

- The form of any output assumptions to apply to SP Transmission and SHETL for 2005/6 and 2006/7 as part of establishing their price controls.

3. Roll forward price controls

3.1. The current Scottish transmission price controls are intended to last until 31 March 2005. As discussed in chapter 2, roll-forward price controls proposals are being developed for SP Transmission and SHETL for the two year period from 1 April 2005 until 31 March 2007, based on the licensees' existing statutory duties and licence obligations. These price controls will be applied should BETTA go-live be deferred for any reason.

3.2. This chapter discusses the responses to Ofgem's March report[19], the approach to developing the price controls proposed by Ofgem, and presents operating expenditure and capital expenditure projections provided by the companies as the basis for the analysis to support Ofgem's draft and final proposals.

Ofgem's March report

3.3. Ofgem's March report set out its proposals for developing the roll forward price controls for SP Transmission and SHETL (in the absence of BETTA). The proposed work programme involves:

- reviewing the overall efficiencies delivered to date by the respective companies
- projecting a path of controllable operating expenditure taking into account significant factors that may increase or decrease the requirement for operating expenses
- capital expenditure: understanding the drivers for this investment, particularly non-load related replacement expenditure, and ensuring that there is no double counting with proposed investment in the transmission system to accommodate new renewable generation and which is the subject of a separate analysis.

[19] Review of transmission price controls from 2005: SP Transmission Ltd, Scottish Hydro-Electric Transmission Ltd, Initial thoughts, March 2004, Ofgem 52/04

- reviewing the level of excluded services revenues, and
- reviewing financial issues including the impact of Ofgem's proposals on the ability of each company to finance its functions.

3.4. The respondents to Ofgem's March report are listed in Appendix 1.

Duration of price controls

Respondent's views

3.5. Five respondents addressed the proposed alignment of review dates. Four respondents supported Ofgem's proposal to alignment transmission price control review dates. One was concerned that a short extension to the price control for SP Transmission could undermine incentives and significantly increase regulatory risk and uncertainty, and that unless this can be satisfactorily addressed in Ofgem's proposals then a five-year price control may be most appropriate rather than a 2 year extension.

Ofgem's views

3.6. Ofgem's March report proposed a 2 year roll forward of SP Transmission's and SHETL's price controls, in order to deliver the benefits from aligning the price control reviews for electricity and gas transmission. Ofgem's proposals are discussed in Chapter 2.

3.7. Having considered the views of respondents, Ofgem proposes to develop its price control proposals on the basis of a 2 year roll forward. Ofgem recognises the importance of incentives to company performance and further discusses operating and capital expenditure incentives below.

RPI-X

Respondent's views

3.8. Three respondents addressed this issue. One supported the retention the RPI-X form of control, and another noted that the figures presented in the March consultation document indicate that both Scottish companies have performed better than was anticipated under the forecasts set at their last price control, and therefore believed that if their price controls are extended as proposed, X should

be set at a number greater than 0. Another respondent agreed that the RPI-X form of price control should be retained as this form of control is clearly understood and has worked well since privatisation, and that X should remain at zero for the period of any extension to the current price control.

Ofgem's views

3.9. The March report proposed that the current RPI-X form of control should be retained for the roll forward period. No arguments have been made by respondents for adopting a different approach and therefore Ofgem proposes that the RPI-X form of control should be retained. Ofgem will make proposals for the value of X in its draft and final proposals.

RAV

Respondent's views

3.10. One respondent expected Ofgem to review actual and proposed expenditure to adjust the RAV, possibly through a provisional adjustment.

Ofgem's views

3.11. A company's annual allowed revenues are calculated by adding operating expenditure, depreciation, and the allowed cost of capital applied to the company's Regulatory Asset Value (RAV). For each year there is an opening RAV value and a closing RAV value. Generally, the closing RAV value is calculated for each year by taking the opening value and then adding capital expenditure, and deducting depreciation; this value then becomes the opening value for the next year. The estimation of the RAV for each company as at 1 April 2005 is therefore an important issue.

3.12. In order to determine an appropriate return and regulatory depreciation allowances for roll forward period, a view will be required of the Regulated Asset Valuation (RAV) at 1 April 2005. If this were a full price control review, this would require making an assessment of efficiently incurred capital expenditure during the present control period and updating the RAV accordingly. For the purposes of extending the present price control, Ofgem

proposes to carry out a limited review of capital expenditure as part of estimating the RAV at 1 April 2005[20].

3.13. Further work would then be undertaken as part of the full review of transmission price controls to take place for 2007 to allow Ofgem to estimate the RAV from 1 April 2005.

Interconnector

Respondent's views

3.14. A respondent said that will be important to identify as soon as possible the impact of socialisation of the Anglo-Scottish interconnector on the transmission licensees' revenue restrictions, so that the outcome can be incorporated into the development of the GB transmission charging methodologies. Specifically, it will be important that this impact is reflected in the indicative GB TNUoS tariffs published in NGC's consultations on the GB charging methodologies.

3.15. NGC clarified that its interconnectors business makes a combined charge for the interconnector services provided to SP Transmission (and similarly for the services provided to SHETL)[21].

Ofgem's views

3.16. Ofgem has set out initial proposals for including the England-Scotland interconnector into the price controls of the relevant licensees in Chapter 5.

Approach

Respondent's views

3.17. One respondent supported the high level assessment of performance but suggested a robust examination of the TO's capital expenditure plans and future requirements, and supported Ofgem's proposal that capital expenditure for

[20] It should be noted that as a separate exercise as part of developing the BETTA price controls (see chapters 4 and 5), adjustments to the RAV values for each company will be made, for example to include the England-Scotland interconnector into the price controls.
[21] Ofgem has included this clarification in the description of interconnector contracts in Appendix 5 to this document.

renewable generation will be subject to a separate assessment. Another respondent said that Ofgem's approach seems to be a proportionate response and also suggested separate assessment related to new renewable generation capacity.

3.18. A further respondent agreed that there should be proportionate review but it should aim to be based on the assumptions underlying existing controls, with corrections where it is clear that costs need to deviate from these assumptions, and investment to facilitate new renewable generation is an example of an area that merits further consideration. It said it would seem logical that the treatment of capex being developed in gas and electricity distribution by Ofgem should apply in transmission in relation to unforeseen outcomes. It agreed with Ofgem's proposal that if BETTA is significantly delayed consideration should be given to including an allowance in the roll forward price controls for recovery of BETTA implementation costs.

3.19. Another respondent suggested that a thorough and transparent assessment of companies past performance under the present review is carried out. Also that any plans for increased investment are robustly examined in the context of the GB transmission system and market arrangements.

3.20. A further respondent supported the proposal to identify separately the additional investments for renewable generation in Scotland but said that the proposed investment required for this new plant is linked to the current over-capacity in generation capacity in Scotland. It said that if the correct pricing signals are put in place, any uneconomic plant located in Scotland will be removed from the system, allowing resources to become available for renewable generation at a lower investment cost than originally anticipated. It expected Ofgem to set the framework for transmission investment appropriately and ensure rigorous and robust scrutiny of TOs' business plans.

3.21. Another respondent fully supported a proportional approach to the development of proposals for the extension to the current price controls, saying that such an approach should take account of the relative benefits to customers of the various transmission related issues that must be satisfactorily resolved before 1 April 2005. It considered it is neither appropriate, nor an effective use of resources, to carry out a full price review for a two-year extension to the current price control.

It said that Ofgem must have regard to the efficiencies delivered during the current price control period when developing proposals for an extension to the price control, and that it is important to consider the impact on regulatory risk and the potential for undermining incentives. Furthermore there is considerable uncertainty around the impact of BETTA on operating costs. It said that, given these issues, the current level of allowed operating expenditure should continue for the period of the proposed extension to the price control.

3.22. A respondent said that adjustments to excluded services revenues will be needed if recent changes to the boundary in England and Wales between connection and infrastructure are implemented in Scotland post BETTA go-live. Also revenues from telecoms services in the roll forward period may need to be adjusted to be consistent with Ofgem's proposals[22].

3.23. SP Transmission noted that its total capital expenditure over the period 2000/1 to 2002/3 is in excess of the total allowance[23].

Ofgem's views

3.24. Ofgem's March report noted the importance of being satisfied that the interests of consumers are adequately protected and that companies can finance their licensed activities, and that it may not be appropriate to carry out a full review where a price control is being rolled forwards. The reasons for this include:

- proportionality: that is, matching the work load of both companies and Ofgem to the benefits, and
- carrying out a full review for a shorter period than usual (namely 2 years instead of 5 years) could tend to increase the perceptions of uncertainty for providers of finance.

3.25. Ofgem suggested assessing how close performance is to the assumptions underlying the present price control and reviewing in broad terms the likely

[22] Ofgem open letter, 30 October 2001, Energy networks providing telecommunications services – a consultation document.
[23] Referring to Table 2 in Ofgem's March report, paragraph 3.8 in the March report incorrectly said that SP Transmission had incurred lower capital expenditure than assumed in all years (2000/1 to 2002/3). The

level of expenditure over the period of the interim controls (2005/6 and 2006/7). Ofgem has considered the responses to the March report (which in the main are supportive of Ofgem's overall approach), and continues to believe that its proposals are appropriate and proportionate. Ofgem has recently issued separate proposals concerning the funding of transmission investment for renewable generation.

3.26. In response to Ofgem's October 2003 and March 2004 reports on price controls, companies suggested that in addition to establishing profiles for capital and operating expenditure, a number of issues should be investigated as part of the roll forward arrangements. The following issues were raised:

- maintaining incentives for efficient operating and capital expenditure
- treatment of pension costs.
- cost of capital and the treatment of corporation tax.

3.27. In the light of the consultations, Ofgem has made further proposals in relation to these matters.

Incentives

3.28. Ofgem recognises that incentives on companies to drive for efficient operating expenditure and capital expenditure are important within a framework for setting price controls that could be applied across all distribution and transmission activities[24]. As part of the distribution price control review currently in progress (called DPCR4), rolling expenditure incentives for both operating and capital expenditure are being addressed (see Ofgem's March policy document[25]) as an addition to the RPI-X incentives.

3.29. For the 2 year roll forward period in transmission, different considerations may apply:

figures shown in Table 2 of the March report were correct.
[24] Developing network monopoly price controls, Initial conclusions, June 2003, Ofgem 54/03
[25] Electricity Distribution Price Control Review, Policy document, March 2004, Ofgem 62/04

- Operating expenditure incentives.

  Under the RPI-X mechanism, operating costs savings are retained for up to 5 years, depending on the year in which they are first realised, and the extent to which these savings are sustained. Greater benefits accrue to companies from savings made in the earlier years of the price control period compared to later years, since, for example, the savings made in the first 2 years may be retained for a further 3 years and savings made in later years are retained for a shorter period. This may give rise to periodicity in the delivery of efficiency improvements which may not be in the interests of customers.

  A rolling operating expenditure incentive mechanism, possibly involving an eligibility test, is being developed as part of the DPCR4 to seek to remove periodicity from the incentives for efficiency improvements. In electricity transmission, Ofgem will need to consider evidence of periodicity in respect of SP Transmission's and SHETL's performance. Also, under the 2 year roll forward arrangements, Ofgem is not proposing to analyse operating cost projections in the detail that would be appropriate as part of the main review of transmission price controls for 2007. While, in principle, Ofgem is committed to providing balanced incentives for operating expenditure, Ofgem seeks views on the applicability of a rolling incentive mechanism for operating expenditure in the context of the roll forward controls being developed through this document, or whether such a mechanism should be considered as part of the main review.

- Capital expenditure incentives

  Ofgem considers that such arrangements for transmission need to be considered in the light of the incentive arrangements put in place under the distribution price control review. Also, given that Ofgem is developing specific proposals for the funding of renewable generation related expenditure over the roll forward period, it is not clear that providing additional benefits for capital expenditure underspends over the same period would be appropriate. Ofgem therefore proposes to examine the role of specific capital expenditure incentive arrangements as part of the review of transmission price controls for 2007, and subject

to any further representations does not intend to introduce these as part of the roll forward arrangements.

Pension costs

3.30. As part of DPCR4, Ofgem has been looking in detail at the treatment of pension costs in price controls. Ofgem's March policy document set out its further thoughts in the areas of allocation between price-controlled and non-price controlled activities, over or under provision, and early retirement deficiency costs (ERDCs). Ofgem is still considering evidence and arguments presented by companies (DNOs) on these matters.

3.31. Ofgem proposes to examine the applicability and materiality of the outcome of the DPRC4 work on pensions to the allowed revenues of the Scottish transmission companies in 2005/6 and 2006/7, prior to making any proposals in this area. Unless the potential materiality is particularly significant, this issue may best be addressed as part of the full review of transmission price controls to take place for 2007, and not as part of the roll forward considerations.

Cost of capital[26]

3.32. Ofgem's March policy document also sets out an initial range for the cost of capital to apply to DNOs (pre- and post-tax basis), and further work is in progress. Ofgem will consider the applicability of the outcome of the DPCR4 work to the roll forward transmission price controls.

3.33. The existing price controls for SP Transmission and SHETL were set by Ofgem using a pre-tax cost of capital. Ofgem is considering using a post-tax return for the distribution review (DPCR4). Moving to a post-tax approach for the roll forward transmission price controls would involve making an assessment of the expected tax position of each company and this may not be an appropriate or proportionate approach for the roll forward controls[27]. Consideration of moving

[26] The cost of capital is the level of expected return required by the financial markets - both debt and equity - in order to provide capital to a company. It should be considered in a risk-return framework and as part of the overall regulatory framework within which monopoly companies operate.

[27] Determining an appropriate cost of capital also includes making assumptions about the level of gearing, the cost of debt finance and the cost of equity finance.

to a fully developed post-tax approach could be made as part of the full review of transmission price controls to take place for 2007.

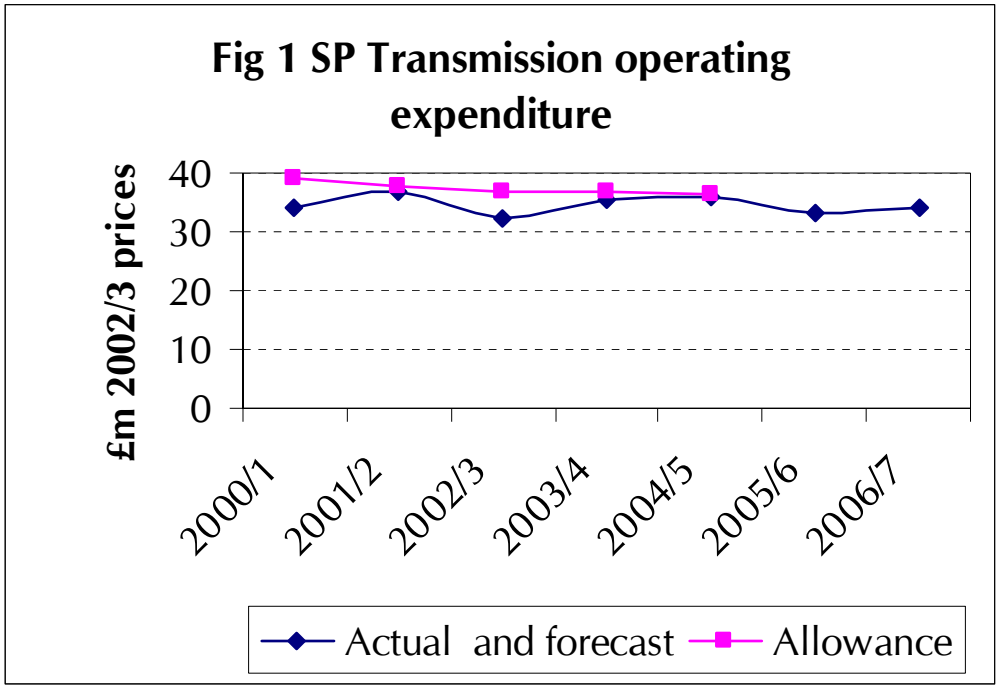
Path of expenditures

3.34. Ofgem's March report set out the financial performance reported by SP Transmission and SHETL respectively for the years 2000/1 to 2002/3, including details of their operating and capital expenditures. The companies have now provided information on their performance in 2003/4 and projections for the years 2004/5 to 2006/7. This data has not yet been reviewed by Ofgem.

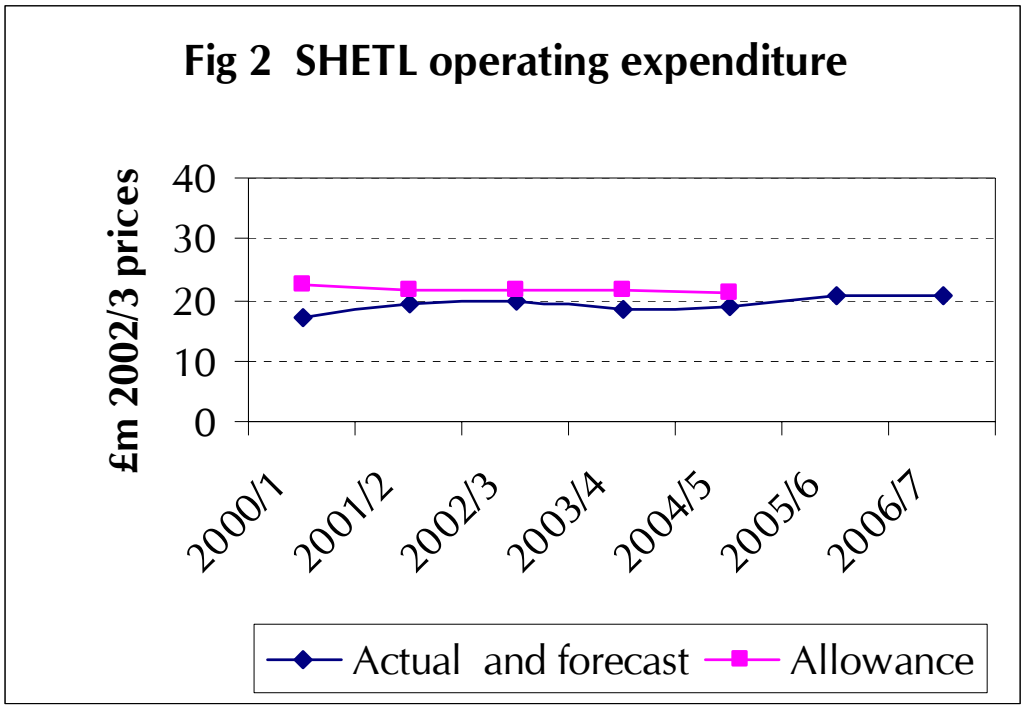
3.35. In order to set the roll forward price controls Ofgem intends to review a path of controllable operating expenditure taking into account, where justified, significant factors that may increase or decrease the requirement for operating expenses. Ofgem also intends to determine a level of capital expenditure for 2005/6 and 2006/7, noting that any proposed investment in the transmission system to accommodate large new renewable generation will be the subject of a separate assessment. Ofgem will also need to review the level of excluded services revenues.

3.36. The information provided by SP Transmission is presented in Appendix 2 and by SHETL in Appendix 3, and is summarised below.

3.37. Fig.1 shows the path of actual/forecast operating expenditure for SP Transmission and the operating cost allowances made at the time of the last price control review. The expenditures projections for 2005/6 and 2006/7 are broadly in line with the path of existing price control allowances.

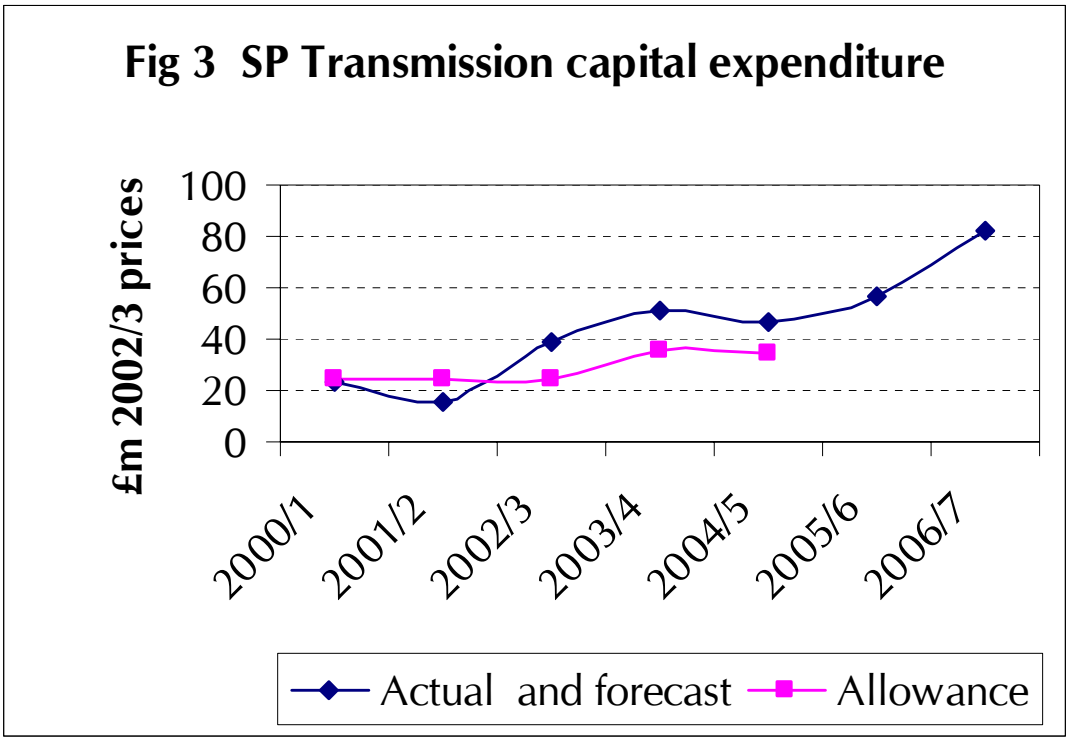


3.38. Fig.2 shows the path of actual/forecast operating expenditure for SHETL and the operating cost allowances made at the time of the last price control review. The expenditures projections for 2005/6 and 2006/7 are lower than the overall level of existing price control allowances whilst including an allowance for an increase in network rating levels.



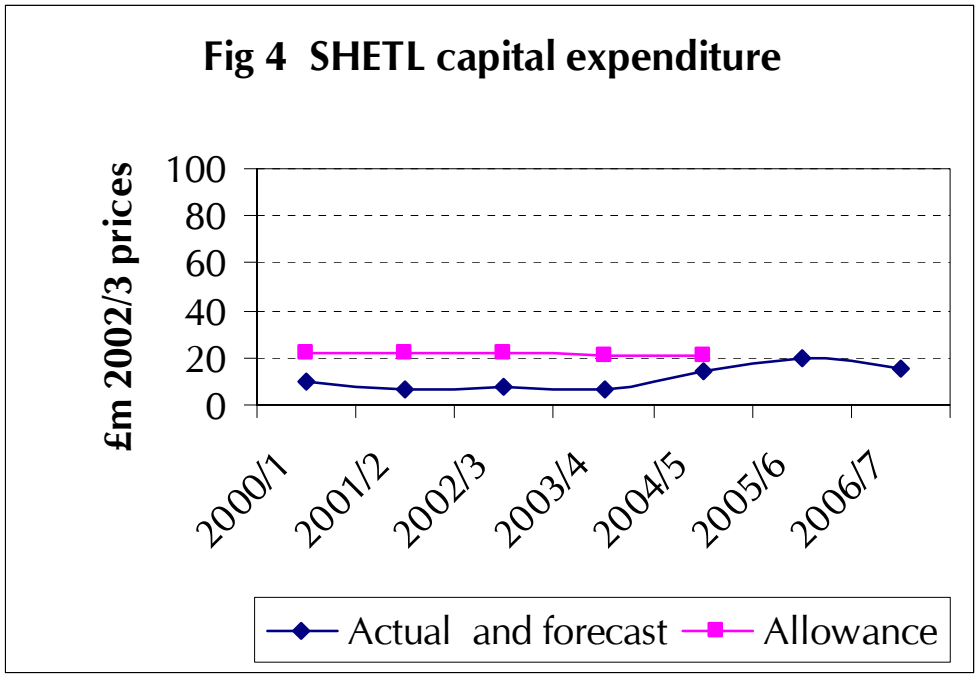
3.39. Figs 1 and 2 show that both companies indicate that they are achieving lower operating costs than assumed in all years of the current price control period. The projections for 2005/6 and 2006/7 are broadly in line with the trend over the existing price control period. The companies' projections show that network rates are of the same order of magnitude as transmission controllable operating costs. Consideration may need to be given to the extent to which network rates are under the control of the licensees and whether these should form a pass-through component of the price controls.

3.40. Fig.3 shows the path of actual/forecast capital expenditure for SP Transmission and the capital expenditure allowances made at the time of the last price control review. The expenditures incurred in 2000/1 and 2001/2 are lower than existing price control allowances, with the expenditures in 2002/3 and later years somewhat above the assumed level in the last price control review. Significant increases in capital expenditure are projected for 2005/6 and 2006/7, in part related to the forecast expenditure to support the growth of distributed generation in SP Distribution's area. This expenditure will need to be reviewed along with the expenditure associated with new renewable generation. The figures also include a rising trend in non-load related expenditure.



3.41. Fig.4 shows the path of actual/forecast capital expenditure for SHETL and the capital expenditure allowances made at the time of the last price control review[28]. It indicates that capital expenditures are below the assumed level in all years of the current price control review period, with an increase in expenditure in 2005/6 in part due to additional load related expenditure to support new generation connections.

[28] SHETL have made adjustments to their capital expenditure figures as quoted in Ofgem's March report, Ofgem 52/04



3.42. Ofgem will be examining these projections provided by the companies to determine the appropriate expenditure profiles to use in setting the roll forward price controls, including ensuring that the allocation of expenditure to the roll forward price controls and to the transmission investment for renewable generation is correct.

Views invited

3.43. Views are invited on Ofgem's proposed approach to setting the roll forward price controls (in the absence of BETTA) for SP Transmission and SHETL for 2005/6 and 2006/7. In particular, views are invited on the appropriate treatment in the roll forward controls of the following:

- incentive mechanisms for operating and capital expenditure
- pension costs
- cost of capital
- estimation of the RAV at 1 April 2005.

4. BETTA price controls

4.1. As discussed in the October 2003 report, the introduction of BETTA will necessitate adjustments to the price controls of NGC, SP Transmission and SHETL from BETTA go-live to reflect changes in cost. Proposal will be made for SP Transmission and SHETL for the years 2005/6 and 2006/7, and for NGC's TO and SO internal controls for 2005/6. As noted in Chapter 1, NGC's current internal cost price controls are intended to last until 31 March 2006, and the price controls to apply to NGC for 2006/7 are being reviewed separately.

4.2. This chapter discusses possible cost changes in the following areas, and gives an initial consideration to the impact on allowed revenues:

- enduring operating cost changes resulting from the allocation of functions between transmission owners and the GB system operator and from the inclusion of the England-Scotland interconnector into the price controls
- BETTA implementation costs
- possible changes in the assets remunerated as connections
- England-Scotland interconnector non-load capex
- TO incentives (the form of these are discussed in detail in chapter 6)

4.3. The cost information presented in this chapter has been provided by the companies and is subject to review by Ofgem. According to the nature of the expenditure, some costs are classified as operating expenditure and others as capital expenditure.

4.4. Under BETTA, the England-Scotland interconnector is to be incorporated into the price controls of the relevant licensees. The continued financing of these assets through the price controls after BETTA go-live is likely to necessitate an upward adjustment to the allowed revenues. The value at which to add the England-Scotland interconnector assets into the transmission licensees' regulatory asset bases is considered in Chapter 5.

4.5. The October 2003 report also discussed the impact on price controls of possible changes to planning and operating standards. At the request of Ofgem/DTI, licensees are carrying out studies to assess the work needed to harmonise operational standards and the associated costs. Any proposals relating to harmonisation of operational standards identified as part of this analysis will be the subject of an industry-wide consultation. It is not intended that the conclusions of this work should lead to additional new investment in transmission. However, if revenue adjustments are necessary Ofgem will include these considerations in its final proposals.

Enduring operating cost changes

4.6. The current price controls and incentives reflect the current sets of activities undertaken by licensees. The split of functions between transmission owners and the GB system operator under BETTA will change the activities, and therefore adjustments to price controls will need to be made to reflect licensees' respective roles under BETTA.

4.7. For example, NGC may incur additional costs to perform its new role as GB system operator, and all three licenses may incur additional internal costs to service the additional interface arrangements between the transmission owners and the GB system operator necessitated by BETTA. There may also be reductions in the operating costs incurred by SP Transmission and SHETL because they will have fewer responsibilities under BETTA.

4.8. In addition, under BETTA, licensees' price controlled revenues will need to take into account the operating costs related to the England-Scotland interconnector assets that are currently outside the price controls.

4.9. The companies have provided Ofgem with the following estimates of the operating costs concerned:

£m 2002/3 prices	2005/6	2006/7	Reference
NGC[29] operations interconnector Total	 5.7 4.3 10.0		Appendix 4, Table 1
SP Transmission Operations Interconnector Total	 Note 1 1.1 1.1	 Note 1 1.1 1.1	Appendix 2, Table 5
SHETL Operations Total	 0.0 0.0	 0.0 0.0	Appendix 3, Table 5

Note 1: Subject to further analysis by SP Transmission

4.10. As regards the interconnector operating expenditure, the information provided by the companies shows that a significant component of operating expenditure is network rates.

BETTA implementation costs

4.11. To deliver BETTA the licensees will need to put in place new procedures, systems and arrangements that provide the necessary interfaces between each other. The associated development costs are additional to those expected at the time of the last price control reviews.

4.12. Ofgem/DTI have issued a conclusions document on the recovery of implementation costs under BETTA[30]. This document set out the criteria that Ofgem will be applying in allowing costs for recovery. The costs incurred by transmission licensees that meet these criteria will need to be reflected in Ofgem's final price control proposals. Some implementation costs may not have been finalised at BETTA go-live and so adjustments to the implementation costs allowed in Ofgem's final proposals may need to be made at subsequent price control reviews.

[29] NGC's operating cost allowance for 2006/7 will be determined as part of the roll forward work.

[30] Recovery of costs under BETTA: An Ofgem/DTI conclusions document, July 2003, Ofgem 66/03. Addendum to Recovery of Costs under BETTA: An Ofgem/DTI conclusions document 66/03, July 2003, Ofgem 75/03

4.13. The companies have provided the following information on the additional non-recurring costs projected to be incurred to implement BETTA (mainly incurred prior to BETTA go-live).

£m 2002/3 prices	Operating costs	Capital costs	Reference
NGC	13.1	17.7	Appendix 4, Table 3
SP Transmission	6.0	2.0	Appendix 2, Table 5 & 7
SHETL	1.1	0.5	Appendix 3, Tables 5, 6 & 7
Total	20.2	20.2	

Note: In Appendices 2, 3 and 4, nominal prices are used for BETTA implementation costs as some contract costs may be fixed price, or otherwise allow for inflation. Adjustments to 2002/3 price levels have been made for NGC, but not for SP Transmission SHETL. The appropriate adjustment for price level will be part of Ofgem's review of these costs

4.14. BETTA implementation capital expenditures are principally for additional IT systems and control room facilities.

4.15. As discussed in Ofgem's October 2003 report, Ofgem considers that the costs that meet the aforementioned criteria should be allowed for recovery from users as a BSUoS charge and therefore allocated under NGC's Part 2 revenue restriction. Any adjustments identified for transmission owners will be expressed as a separate component within their price controls.

4.16. Ofgem is considering the appropriate regulatory treatment for providing companies with revenues in relation to the appropriately incurred BETTA implementation costs. Ofgem will need to take into account the nature of the expenditure and the impact on the path of allowed revenue on user charges.

4.17. Ofgem is presently considering the following approach to cost recovery of appropriately incurred costs:

- Capital expenditure should be added to the companies RAV and depreciated in line with similar asset types[31].
- Operating expenditure incurred prior to BETTA go-live should be recovered over the two year period, 2005/6 and 2006/7.

[31] Depreciation: 40 years for transmission assets. Depreciation life of 7 years assumed here for IT assets.

4.18. Using this approach, the above operating cost components of BETTA implementation costs would be allocated as follows:

Operating costs £m 2002/3 prices	2005/6	2006/7	Total
NGC	6.6	6.5	13.1
SP Transmission	3.0	3.0	6.0
SHETL	0.6	0.5	1.1

4.19. The appropriateness of making adjustments to take into account the phasing of expenditure incurred prior to 1 April 2005 will be considered as part of Ofgem's review of companies' implementation costs.

Treatment of connections

4.20. BETTA will involve the application of common connection charging arrangements to users of the GB transmission system. If, based on the arrangements prevailing in England and Wales, this redefines the boundary between connection assets and system assets in Scotland, there will need to be a reallocation of existing assets between connection and system assets which could require consequential changes to regulatory asset bases, and therefore to allowed revenues. In addition there may be a need to adjust the capital expenditure projections in relation to new connections post BETTA go-live[32].

4.21. Changes of this nature have already been implemented by NGC in England and Wales as a consequence of developments in the connection charging methodology, and the price control implications have been discussed by Ofgem[33]. Similar issues will need to be considered in relation to connectees in Scotland under BETTA.

England-Scotland interconnector capex

[32] where these have been based on the pre-BETTA connection boundary assumption
[33] Potential changes to NGC's transmission licence consequential to possible changes to its transmission charging methodology, A consultation document, Ofgem, October 2003, Ofgem 120/03

4.22. In addition to operating expenditure for maintenance and other ongoing costs (described above), the England-Scotland interconnector assets transferred into the price controls will require non-load capital replacement expenditure from time to time. The following table shows projections provided by the companies for the immediate years post BETTA go-live.

£m 2002/3 prices	2005/6	2006/7	Reference
NGC	1.5		Appendix 4, Table 2
SP Transmission	2.8	0	Appendix 2, Table 6
SHETL	0.6	0.0	Appendix 3, Table 6

4.23. These expenditures will need to be reviewed by Ofgem in conjunction with the work on the transmission investment to support new large renewable generation.

Adjustments related to TO incentives

4.24. Proposals, described in detail in Chapter 6, for arrangements for providing incentives for the efficient interaction between GB system operator and transmission owners include payments by the GB system operator to transmission owners in the event that outages are rearranged at short notice. These payments are intended to recompense transmission owners for any additional costs incurred when outages are rearranged in this manner.

4.25. Even though the activities of the transmission licensees are presently integrated within single companies, each licensee will incur costs whenever it judges that it would be efficient or necessary to rearrange any outage. Given that under BETTA, the transmission owners will receive explicit payments in such circumstances, it would seem appropriate to deduct the present level of such payments in adjusting the revenue restrictions for BETTA.

4.26. Ofgem will need to obtain information about the level of such payments and will consider the case for making such an adjustment in its draft proposals.

Impact on allowed revenues

4.27. The information provided in this chapter is preliminary. It provides an indication of the adjustments for BETTA that may be required to the operating and capital

expenditure allowances within NGC's TO control, NGC's SO internal cost control[34], SP Transmission's price control and SHETL's price control.

NGC's revenue restriction as GB system operator

4.28. As discussed in Ofgem's October 2003 report, it is intended that the form of NGC's revenue restrictions will be retained under BETTA, although as discussed in Chapter 6 some adjustments may be necessary consequential to the introduction of TO incentives. The current form of NGC's revenue restriction is described in Appendix 7.

4.29. Under BETTA it is proposed that NGC's revenue restrictions, which will provide the basis for user charges, will provide for payments under the STC of the allowed revenues of SP Transmission and SHETL. It will therefore be necessary to allocate the allowed revenues of SP Transmission and SHETL to one or more components of NGC's revenue restriction as additions to NGC's allowed revenues in relation to the activities which it controls. Ofgem's October 2003 report discussed allocating allowed revenues on the basis that each component of NGC's revenue restriction remunerates a consistent bundle of activities across all transmission licensees.

4.30. Since NGC's SO internal cost control is much smaller in monetary terms compared to its TO control it may be most straight forward to specify a set of activities which if carried out by transmission owners should be remunerated under the same revenue restriction component as NGC's SO internal cost control, and assume that all other transmission owner activities should be remunerated under the same revenue restriction component as NGC's TO control.

4.31. On this basis, Ofgem has set out in Appendix 8 a set of activities which, if carried out by transmission owners, it considers should be remunerated under the same revenue restriction component as NGC's SO internal cost control (that is the balancing services activity revenue restriction). Other transmission activities carried out by transmission owners (that is the majority of their

[34] Ofgem will be consulting separately on adjustments to NGC's SO external cost incentives.

activities) would then be remunerated under the same revenue restriction component as NGC's TO control (that is the transmission network services revenue restriction). In any such analysis the materiality of the costs needs to be considered, weighing the additional administrative burden against the benefits to users. Ofgem will further consider this approach in the light of cost information requested from transmission owners.

Individual company revenue restrictions

4.32. In developing price controls under BETTA, Ofgem will need to determine if costs should be categorised as operating expenditure or capital expenditure in order to apply the appropriate regulatory treatment to each[35]. As discussed above, Ofgem is considering the appropriate treatment of BETTA implementation costs. Ofgem will also need to determine the purpose of the expenditures to categorise the associated revenues in terms of the different parts of NGC's revenue restriction.

4.33. As explained in Ofgem's March report, allowed revenues are determined by deducting excluded services revenues (excluding revenues from interconnector users) from the efficient level for total revenues. This section sets out preliminary indications for the changes to the excluded service revenues of SP Transmission and SHETL that may arise from BETTA.

Operating expenditure

4.34. The following table shows for each company the indicative impact of the expenditure changes discussed in this chapter on operating cost allowances within the price controlled revenues[36]. It is assumed that interconnector contract costs will no longer apply under BETTA.

4.35. For the purposes of this table, Ofgem has assumed that interconnector related costs will form an adjustment to NGC's TO control and that other BETTA related costs will form an adjustment to NGC's SO internal cost control[37]. In due

[35] Ofgem proposes to treat these expenditures in the same way as similar cost types are treated in existing price controls
[36] Ofgem's proposed treatment of BETTA implementation costs assumed.
[37] This does not include NGC's external costs. As mentioned in Chapter 1, NGC's SO external costs will be

course[38], Ofgem will need to give consideration to the allocation of costs to the incentivised and non-incentivised components within the SO internal cost control.

Price control adjustments (draft) £m 2002/3 prices	2005/6	2006/7
NGC TO control Operating expense Enduring cost changes – interconnector Total	 4.3 4.3	 * Note 1
NGC SO internal cost control Operating expense Enduring cost changes – operations BETTA implementation costs TO incentives Total	 5.7 6.6 Note 3 12.3	 * 6.5 * Note 1
SP Transmission Operating expense Enduring cost changes – operations interconnector BETTA implementation costs TO incentives Interconnector contract costs Total (Note 4)	 Note 2 1.1 3.0 Note 3 (6.8) Note 5 (2.7)	 Note 2 1.1 3.0 Note 3 (6.8) Note 5 (2.7)
SHETL Operating expense Enduring cost changes – operations BETTA implementation costs TO incentives Interconnector contract costs Total (Note 4)	 0.0 0.6 Note 3 (10.0) Note 6 (9.4)	 0.0 0.5 Note 3 (10.0) Note 6 (9.5)

Note 1. NGC's allowed revenues for 2006/7 will be reviewed as part of the NGC roll forward work.
Note2. Subject to further analysis by SP Transmission
Note 3. Subject to further work by Ofgem and the companies
Note 4. Subject to further adjustments as noted.
Note 5. Appendix 2 Table 1, NGC contract costs
Note 6. Appendix 3, Table 1, NGC contract cost plus SIA contract costs

Capital expenditure

4.36. It should be noted that the inclusion of the England-Scotland interconnector into the price controls (see Chapter 5) may necessitate an upward adjustment to the

the subject of a separate assessment.

allowed revenues to provide for the ongoing financing of these assets. Assuming that the existing interconnector contract costs (currently allowed for in the price controls of SP Transmission and SHETL as an operating expense) will not apply under BETTA, then a downward adjustment to allowed revenues as shown in the above table of operating expenditure adjustments may be expected.

4.37. This chapter has indicated the areas where additional capital expenditure may arise as a result of BETTA, resulting in an upward adjustment to allowed revenues. These areas are allowances for interconnector non-load capital replacement expenditure and for IT systems related to BETTA implementation. A further upward adjustment may arise from the refund of capital contributions to users and from a revision to capital expenditure projections as a result of any change in the connection charge boundary.

Excluded services

4.38. SP Transmission has set out its current projections for excluded service revenues in Appendix 2 and SHETL's projections are presented in Appendix 3.

4.39. Under BETTA these revenues may change for the following reasons:

- the application of common connection charging arrangements to users of the GB transmission system and any associated redefinition of the boundary between connection and system assets may change the level of connection charge revenues[39]
- any payments received by one transmission licensee from another transmission licensee as a result of the proposed TO incentives (see chapter 6)[40]
- if payments under the interconnector contracts cease, SP Transmission will no longer receive a capacity charge or a corridor charge from SHETL[41].
  The capacity and corridor charges would be replaced by an adjustment

[38] Following discussions with NGC
[39] if users decide to make payments on an annual basis rather than on a one-off basis
[40] subject to discussions with licensees on whether this item may better form an adjustment to the respective revenue restrictions.

to SP Transmission's allowed revenues. As regards the corridor charge, the income currently received by SP Transmission for the use of SP Transmission's transmission system by SHETL's interconnector users will, under BETTA, be recovered from transmission users (£4.2m pa, Appendix 2, Table 4) [42]. The capacity charge (£1.2m pa, Appendix 2, Table 4) will need to be allocated to operating expense and asset related components for consideration in SP Transmission's allowed revenues.

Views invited

4.40. Views are invited on

- the proposed adjustments to licensees' operating expenditure and capital expenditure allowances arising from the introduction of BETTA
- the regulatory treatment of BETTA implementation costs in calculating allowed revenues.

[41] The terms capacity charge and corridor charge are explained in the Ofgem's March report.
[42] Approximately £2.5m (within the £4.2m) is currently included in SHETL's price control and recovered from transmission system users.

5. England-Scotland interconnector regulatory asset values

5.1. Ofgem's October 2003 report explained that under BETTA the England-Scotland interconnector assets are to be incorporated into the price controls of the respective transmission licensees. This chapter sets out Ofgem current thinking on the consequential financial adjustments that would be appropriate, including the value to assign to the assets on their incorporation into the regulatory asset base of the respective companies.

Introduction

5.2. Ofgem's March report[43] set out in detail the contractual and regulatory arrangements related to charges for use of the England-Scotland interconnector.

5.3. BETTA requires that the GB transmission network as a whole is available to the GB system operator to operate in an efficient, coordinated and economic manner. This means that in addition to having operational control over the current transmission assets of NGC, SP Transmission and SHETL, the GB system operator will need to be able to operate the England-Scotland interconnector as an integral part of the GB transmission system from 1 April 2005 within a single set of trading and transmission arrangements.

5.4. As discussed in the March report, the England-Scotland interconnector comprises sections located in England & Wales (the NGC interconnector) and sections located in Scotland (the Scottish interconnection). The NGC interconnector is owned by NGC's interconnectors business, but operated and maintained on its behalf by NGC's transmission business. The Scottish interconnection is owned, maintained and operated by SP Transmission, separately from its transmission system. SHETL has certain rights in recognition of the contributions made by SHETL to capital and operating costs.

---

[43] Review of transmission price controls from 2005: SP Transmission Ltd, Scottish Hydro-Electric Transmission Ltd, Initial thoughts, March 2004, Ofgem 52/04

5.5. The March report also explained that pre-Vesting interconnector assets are currently funded through the price controls of SP Transmission and SHETL and that the post-Vesting interconnector assets provided to upgrade the capacity of the interconnector are funded by charges paid by Interconnector Users and treated as excluded services revenues by these licensees.

5.6. Ofgem's October 2003 report, proposed that the relevant interconnector assets should be made part of the respective licensees' transmission systems, and that post BETTA go-live the assets would be financed through adjustments to the price controlled revenues of the relevant companies. This would bring the treatment of the interconnector assets into line with the treatment of other transmission assets of the GB transmission system.

5.7. The following factors need to be considered in bringing the interconnector assets into the respective licensees asset bases:

- the existing contractual arrangements, and
- the financial adjustments to the relevant transmission licensees price controls, including the appropriate valuation for the assets.

5.8. This chapter sets out the issues associated with each of these factors.

Existing contractual arrangements

5.9. Interconnector capacity is procured by Interconnector Users from SP Transmission or SHETL. The agreements between Interconnector Users and SP Transmission and/or SHETL are indefinite in duration but may be terminated on 3 months' notice. SP Transmission and SHETL are also required to have in place Access and Allocation Codes, setting out the arrangements for access by third parties to interconnector capacity. These Codes require approval by Ofgem.

5.10. SP Transmission and SHETL have contractual arrangements in place under the UIA (the Use of Interconnector Agreements (Scotland)) with NGC for the use of the NGC interconnector. This contract terminates in 2034, unless specific termination provisions are utilised. There are also arrangements in place between SP Transmission and SHETL under the SIA (the Scottish Interconnector Agreement) which provides for SHETL's interconnector users to use SP

Transmission's transmission system to access the interconnector (the corridor charge) and for SHETL to make payments to SP Transmission for its share of capital related costs associated with pre-Vesting interconnector assets and for its share of the operating and maintenance costs of the Scottish interconnection (the capacity charge).

5.11. The current contractual arrangements relating to the interconnector are summarised in Appendix 5.

5.12. The set of agreements covering the rights of access to and use of the England-Scotland interconnector need to cease to have effect at BETTA go-live. Ofgem believes that the appropriate way to achieve this, if possible, is by agreement between the parties concerned. It should be noted that Ofgem will have an influence over the outcome of any such negotiations as Ofgem will determine whether any negotiated financial settlement is efficient for the transmission sector as a whole in making adjustments to the price controls.

5.13. Ofgem is therefore setting down proposals for the financial arrangements to take effect when the contracts cease to have effect. If these are accepted by NGC, SP Transmission and SHETL, Ofgem would expect the parties to voluntarily agree arrangements to ensure that the Use of Interconnector Agreement (UIA) and the Scottish Interconnector Agreement (SIA) cease to have effect at BETTA go-live in a manner consistent with Ofgem's proposals.

5.14. In finalising proposals for the financial arrangements to take effect when the contracts cease to have effect, Ofgem will need to satisfy itself that they are consistent with its statutory duties and that, among other things, the proposed arrangements are reasonable in all the circumstances. This will include identifying the extent to which each licensee will be affected, the interests they will retain under BETTA and, in its proposals, balancing these against the public interest.

Adjustments to price controls

5.15. In making proposals to adjust the transmission licensees' price controls for the England-Scotland interconnector at BETTA go-live, Ofgem is assuming that no termination amounts or ongoing liabilities are enforced between the parties to

the UIA and the SIA in relation to these contracts[44]. In order to make an adjustment to the price controls for the relevant interconnector assets, the following values need to be determined for the relevant assets:

- Operating expenditure: adjustments to transmission operating costs to fund the ongoing maintenance costs of the interconnector assets
- Capital replacement expenditure: adjustments to transmission non-load related capital expenditure to fund the ongoing capital replacement of the interconnector assets[45]
- Financing costs. These are determined by:
  - Opening RAB value[46]: The value at which to incorporate the assets into the RAB as at 1 April 2005 for price control purposes
  - Depreciation: The depreciation life or lives appropriate to the interconnector assets from 1 April 2005, and
  - Rate of return: The rate to apply to the value of the interconnector assets in the RAB.

5.16. The operating expenditure and capital replacement expenditure allowances for the interconnector assets are considered in Chapter 4. Since the interconnector assets comprise transmission equipment, Ofgem considers that the depreciation and rate of return assumptions should be no different for interconnector assets, considered as part of the price controls, than for other similar transmission system assets.

5.17. For the interconnector assets currently outside the price controls, an opening RAB value has to be set as at BETTA go-live for each licensee. Applying the depreciation and rate of return assumptions to these opening regulatory asset

[44] If termination or ongoing payments do apply, Ofgem will need to consider why these may be appropriate and whether it needs to review its proposals in relation to the England-Scotland interconnector valuation.
[45] No proposals have been presented to Ofgem for further load related expenditure on the interconnector in the roll forward period (excluding proposals relating to new large renewable generation being considered through a separate process)
[46] RAB: Regulatory Asset Base. This is the set of assets which are subject to an asset valuation for price control purposes. The valuation is carried out at each price control review and the value is called the Regulatory Asset Value (RAV). The regulatory rate of return (a real rate of return) is applied to the RAV. The RAV is updated from year to year by RPI and new capital expenditure is added in the year in which it is incurred. Depreciation is calculated on an agreed basis and is deducted from the RAV each year.

values will yield the appropriate financing costs to be included in the price controlled revenues.

5.18. The remainder of this chapter discusses Ofgem's approach to determining the opening regulatory value of the relevant interconnector assets.

RAV valuation

5.19. There are a number of ways that the opening value for the England-Scotland interconnector assets could be determined on their incorporation into the RABs of the respective licensees.

5.20. The assets could be valued as the written down (depreciated) value (at constant prices this is the RAV-based value) at 1 April 2005. However, recognising that the England-Scotland interconnector has been developed since Vesting as a commercial venture by the companies, Ofgem's preference is to use market based valuations as the basis for setting opening RAB values where these valuations are available and robust[47]. An adjustment to the RAV-based value may therefore be appropriate according to the returns that the assets generate. In this instance it will also be important to recognise the regulatory framework[48] prescribed in view of the service providers monopoly positions. Furthermore, it is important to understand the range of values that could apply in different circumstances and under different assumptions.

5.21. In the context of the interconnector, the value of the contracts currently in place could be expressed in terms of the returns foregone (after 1 April 2005) as a result of the changed treatment of these assets under BETTA. This is because, for the interconnector, a market price for the contracts is not available but a stream of future cash flows generated by the assets is available.

5.22. Such a valuation may be obtained by applying present value techniques to the cashflows. However, it is important that the cashflows incorporate the full range of assumptions that market participants should use in estimating a value for the

[47] Ofgem used a market based approach in setting NGC's RAV in 1996. See Appendix 6.
[48] For example, licence conditions: NGC: Special Conditions AA1, AA1A, AA1B, AA1C. SP Transmission and SHETL: Special Conditions B, C, D, E, F, G.

assets. The calculations should therefore reflect assumptions about the ongoing costs incurred in owning and operating the assets and about future events and uncertainties.

Accounting for risk

5.23. The current contractual arrangements provide NGC, SP Transmission and SHETL with contributions to profits, with the risks associated with the level of these contributions different for NGC and SP Transmission/SHETL.

5.24. Ofgem has summarised the commercial risks that apply under current arrangements in the following table:

Company	Risks to profits
NGC	▪ Volume risk – an asset availability adjustment mechanism to revenues ▪ Price risk – the revenues are linked to RPI. ▪ Cost risk – deriving from responsibility for all operating, maintenance, replacement and upgrade costs on the NGC interconnector and its connections to the NGC transmission system
SP Transmission SHETL Upgrade capacity	▪ Volume risk – Usage levels including an asset availability adjustment mechanism to revenues ▪ Price risk – charges based on reasonable rate of return (currently a 10% real rate of return). The revenues are linked to RPI. ▪ Cost risk – companies responsible financing, for all operating, maintenance and replacement expenditure A fixed component of opex and replacement capex recoverable through interconnector charges; excess costs not recoverable.

5.25. Recognising these commercial risks, the regulatory framework allows licensees to recover no more that a reasonable rate of return on the relevant capital employed.

5.26. When assessing the present value of future cashflows, risks can be accounted for by the appropriate choice of project discount rate. Ofgem will be reviewing the appropriate approach to the assessment of risk, but notes that interconnector charges are currently based on a 10% real rate of return. It should be further noted that, under BETTA the commercial risks change in the following ways:

- cost risks would be similar to those associated with other transmission assets in price controls
- SP Transmission/SHETL's volume risks are removed by incorporating the interconnector into the price controls.

Availability incentive

5.27. The current contractual arrangements (2200MW upgrade agreement) provide a financial incentive on NGC to optimise the availability of the interconnector from a target level of 95% through adjustments to the contractual revenues under the UIA[49]. Under BETTA, consideration needs to be given as to whether the RAV value should take into account any future expectation of availability performance. This consideration will need to take into account that NGC will have incentives under their SO incentive scheme to optimise transmission availability (which will include the interconnector).

5.28. It should be noted that SP Transmission currently also receive financial incentives through revenue adjustments from Interconnector Users where interconnector availability exceeds a base level (for the first upgrade, this is 87%).

RAV-based valuation

5.29. Market based valuations can lead to a wide range of outcomes, depending on the methods and assumptions used. Ofgem therefore considers that the starting point for the calculation of the opening RAB value as at 1 April 2005, is to calculate the value that the assets would have had if they had been in the RAB at the time the investments were made. Evidence of past and expected future usage suggests that the interconnector contracts have enduring value, and the RAV-based value is therefore likely to be the minimum value at which the assets should be included in the RAB[50]. Consideration then needs to be given as to whether a market based valuation (where this is higher) is more appropriate.

[49] Up until 2003, the target level was 91% (1600MW upgrade agreement)
[50] with an asset life as for similar transmission assets already in the RAB.

5.30. As discussed in the March report, the pre-Vesting part of the Scottish interconnection are already included in the transmission RAVs for SP Transmission and SHETL. As regards NGC's pre- and post-Vesting interconnector assets, neither of these are in its transmission RAV.

5.31. The following table summarises information provided by the companies on the estimated RAV values for the interconnector as at 1 April 2005 (see Appendix 6).

2002/3 prices	Pre-Vesting assets	Post-Vesting assets	Estimated addition under BETTA
NGC interconnector	£13m	£23m	£36m
Scottish interconnection			
SP Transmission	£33m	£47m	£47m
SHETL	£14m	£18m	£18m
Total	£47m*	£65m	£65m

* for information, since the Scottish interconnection pre-Vesting assets are already in the price controls

5.32. A RAV-based value for the NGC interconnector was not established at Vesting or at the flotation of NGC in 1995. NGC have calculated the value of its pre-Vesting interconnector assets from the value of its interconnectors business established in 1995 (see Appendix 6).

5.33. Ofgem will be reviewing these calculations as it develops its draft and final proposals.

Possible approaches to deriving the market value of interconnector contracts

5.34. In coming to a view of the market value of the interconnector contracts, the determinants are the revenue streams and the costs associated with servicing the assets that provide the capacity to users. As discussed above, a value can be obtained from the residue obtained by deducting the costs of servicing the assets from the revenues received, with the revenue and cost risks also be taken into account in the calculations.

5.35. Initial assessments of the contract values have been made by the companies. Information provided by NGC, SP Transmission and SHETL have indicated values in the following ranges:

- NGC interconnector: £108m to £155m[51]. The lower end of the range represents the present value of the net revenue stream (including availability incentive payments) discounted at 10%pa and the higher end of the range represents the present value of the net revenue stream discounted at 6.25%pa. (2002/3 prices)

- Scottish interconnection upgrade:
  SP Transmission £140m - £190m[52]. The lower end of the range represents the present value of the net revenue stream (including availability incentive payments) discounted at 10%pa and the higher end of the range represents the present value of the net revenue stream discounted at 6.5%pa. (2002/3 prices).

  SHETL: £19-25m. The lower end of the range represents the present value of the net revenue stream discounted at 10%pa and the higher end of the range represents the present value of the net revenue stream discounted at 6.5%pa. (2002/3 prices).

5.36. Ofgem will be examining the above figures in detail to inform its draft and final proposals. Ofgem will need to look (over the project life times) at the returns expected to have been received prior 1 April 2005 (BETTA go-live) and the projected returns after 1 April 2005. Ofgem will also take into account the termination arrangements under each contract and the value that would attach to the contracts if such arrangements were to apply, calculated on an appropriate basis[53].

5.37. When considering market-based valuation methods, Ofgem would not expect the value at which an asset is included in the RAB to significantly exceed the gross MEA values[54]. This is because under BETTA, links between different

---

[51] £111m to £159m (2003/4 prices)
[52] SP Transmission has also estimated the value of the constraint costs avoided by the presence of its share of the interconnector upgrade capacity. This increases the upper end of the range to £390m.
[53] For example, termination at BETTA go-live. The UIA requires termination payments by SP Transmission/SHETL of around £60m subject to certain adjustments. NGC does not have the right to terminate the UIA, except in the case of default by the other parties to the agreement. There are no termination amounts specified in the SIA.
[54] MEA: Modern Equivalent Asset value
Ofgem's initial estimates indicate the MEA values to be around £60m for NGC interconnector, and around

sections of the GB transmission system need to be procured on an economic and efficient basis, and theoretically, if new assets have lower costs, then these should be preferred to existing assets.

Treatment of SHETL's capital contribution

5.38. Under the SIA, SHETL makes capital related payments for its share of access rights to the pre-Vesting assets. The assets are owned by SP Transmission. On BETTA go-live, the SIA and the capital related payments made by SHETL in respect of pre-Vesting capacity will cease, and appropriate adjustments will need to be made to SHETL's and SP Transmission's price controls. Subsequent to Vesting, SHETL has made investments in relation to the pre-Vesting assets which are funded through their existing price controls.

5.39. As regards post-vesting capacity, SHETL has contributed 25% of the capital cost of the upgrades. The investment was effectively a one-off payment for ongoing rights of access to the interconnector since technically the assets are owned by SP Transmission.

5.40. Post BETTA, SHETL could be compensated for its loss of rights in one of the following ways:

- calculating the value for the assets and add to SHETL's RAV in its price control, or
- calculate a value for the assets and require SP Transmission to make a one off or ongoing annual payment to SHETL outside SHETL's price control. SP Transmision's allowed revenues would then be increased to compensate it for the amount of these payments. As SP Transmission own the assets, this approach would align the value of the assets with ownership.

5.41. As regards users, there is no difference between these approaches in that the total allowed revenues for both companies combined is the same in both cases. The latter approach could be more complicated for no clear benefit to users.

£90m for Scottish interconnection (2002/3 prices)

Ofgem's current preference is therefore to calculate the value of the upgrade assets attributable to SHETL and add this to SHETL's RAV.

Views of companies

5.42. Interconnector users currently pay charges which comprise asset related charges (covering the owership and operation of the interconnector assets) and use of system charges which relate to the connected transmission systems.

5.43. The three transmission licensees have jointly proposed that the current asset related charges are added to the price controlled revenues of each licensee. The payments by SP Transmission and SHETL to NGC under the UIA would be added to NGC's price control and the asset related charges currently incurred by SP Transmission and SHETL would be added to their price controls. Use of system charges for use of each others transmission systems would be removed and allowed revenues adjusted accordingly.

5.44. Separately, NGC, SP Transmission and SHETL have provided views on possible approaches that could be used for calculating the values at which the interconnector assets should be included in the price controls. These are set out below.

NGC's views on incorporating the interconnector into the RAV

5.45. NGC suggest that the methodologies that calculate the present value of expected cashflows under the contract are most consistent with previous regulatory decisions, particularly those made in 1995 determining NGC's regulatory value and the focused interconnector business value. Of the sub-options (concerning the appropriate cost of capital) NGC believe a valuation based on a 10% cost-of capital (to take into account the change in the risk profile when the assets are incorporated in RAB) is correct and consistent with Ofgem's earlier decision.

5.46. NGC state that the termination amounts associated with the contract exceed the value that would result from splitting the December 1995 regulatory valuation of interconnectors business and rolling it forward. It says that while both these approaches are not incompatible with the earlier regulatory valuations of NGC and the interconnectors business, they do not reflect the out-performance NGC

would expect to achieve if BETTA did not proceed and, as a result, do not reflect the current value of the contract.

SP Transmission's views on incorporating the interconnector into the RAV

5.47. SP Transmission suggests that the Authority should consider a number of matters in reaching its decision as to how to value the interconnector:

- The Transmission Licensees have invested significantly in the upgrades to the Interconnector. BETTA could not take place without the increase in capacity created by that investment.
- SP Transmission and NGC undertook the upgrades as a commercial venture. BETTA must not adversely affect the Transmission Licensees' existing commercial interests.
- These arrangements were determined and agreed in a commercial environment and were subject to significant commercial scrutiny and negotiation. Any adjustment to the price controls of the Transmission Licensees must take full account of those commercial arrangements.
- A market-derived valuation approach is a standard approach that has been used by the Authority for setting network price controls. Such an approach should be used for setting the Licensees' price controls to cover socialisation of the Interconnector upgrades.
- The value in the Interconnector for SP Transmission and ScottishPower shareholders lies in the revenue streams from current arrangements. These revenue streams represent a value agreed in a commercial environment and, therefore, a market value. Accordingly SP Transmission requires socialisation to preserve the value in that revenue stream. SP Transmission believes that auctions, and/or a payment mechanism based on constraints would yield more than the current revenue streams which can be viewed as sitting at the lower end of a market valuation.
- The current commercial arrangements for these upgrades were based on a market related commercial valuation designed to secure a reasonable

return on the transmission licensees' investments. These arrangements were created with full regard to the regulatory environment and were subject to regulatory oversight. The arrangements reflect the almost identical nature of SP Transmission's and NGC's investments in the Interconnector. NGC's and SP Transmission's investments in the upgrades are indivisible. Neither investment would have made sense without the other. As connected investments, they serve one common purpose to allow increased power transfers between Scotland and England. The treatment of the NGC and SP Transmission revenue streams from the upgrades should therefore be the same.

- Investors in SP Transmission are aware of the terms of the investment in the interconnector. Their interests must be recognised. Socialisation will affect present and future investors and capital market confidence in long-term investment in the GB transmission system. Expectations of future revenue streams are material, on the basis that investors in SP Transmission and NGC have bought a stream of income, and part of that stream of income is derived from the interconnector. Any damage to investor confidence would not be in the consumer interest.

- Utilisation of those revenues as a socialisation value has additional benefits. It recognises the important wider consumer benefits that the Interconnector has brought. These include increased security of supply and greater competition in the generation and supply of electricity. It recognises that the Interconnector will continue to bring those benefits under BETTA. Those benefits are a direct result of the Transmission Licensees' investment.

SHETL's views on incorporating the interconnector into the RAV

5.48. In SHETL's view, to incorporate the SHETL investment into the RAV for SHETL, a sum needs to be added to the RAV, which returns an incremental revenue in the price control equivalent to the £2.3m pa, the sum that SHETL currently receives from interconnector users which is specific to SHETL's capital investment in the upgrades. This is part of the upgrade charge for the interconnector, which is published in the annual statement of charges. The remaining elements of the interconnector upgrade charges are a pass through of charges levied by NGC

and SP Transmission, and as such SHETL would expect these to be included in their respective price controls and not within the SHETL price control.

5.49. Assuming a pre tax cost of capital of 6.5% as currently applied to the SHETL price control, SHETL's calculations show that the RAV as at April 2005 would need to be incremented by £25m on this basis.

Discussion

5.50. This section provides a discussion of issues raised in this chapter.

Maintaining current payment streams between licensees

5.51. The three licensees have suggested that the price control adjustments should effectively maintain the current level of revenues to respective companies. Ofgem does not believe that this necessarily protects the interests of customers, since it believes that incorporating the assets into the price controls reduces the revenue and cost risks to which the companies are currently exposed.

Commercial nature of the interconnector contracts

5.52. Ofgem recognises that the England-Scotland interconnector has been developed since Vesting as a commercial venture by the companies within a regulatory framework. Ofgem agrees that where market values are available, these should be used as the basis for transferring assets between price controls and non-price controlled activities.

5.53. The chapter has discussed the issues associated with determining a market valuation for the interconnector, including choice of discount rate and the change in risk profile when the assets are incorporated into the price controls.

5.54. A factor to consider is that the interconnector contracts do not expose the parties providing the services to full market risks. When marketing interconnector capacity, SP Transmission and SHETL may not be exposed to the full costs of providing the service since the pre-Vesting capacity is funded by transmission users. As a result the current take-up of interconnector capacity may be at a higher level than if the charges were levied based on full commercial terms.

5.55. A further factor to consider is the appropriate treatment of the availability incentives in the contracts. The level of availability out-performance by the companies may be partly related to the performance of the pre-Vesting assets and also the thresholds for outperformance have been at the low end of availability that could be expected of transmission assets. It may not therefore be appropriate to burden transmission users with these outperformance arrangements.

5.56. Ofgem also believes that the contract termination values may be a valid measure of the value of the contracts at a given date. It could be assumed that the values were agreed on a commercial basis between the parties and reflect a genuine ex-ante consensus of the value of the contracts at the date of termination. However, consideration would need to be given to the circumstances under which it was envisaged at the time the contracts were made that the termination provisions might take effect.

Perceptions of shareholders

5.57. Ofgem considers that a fair return to investors in the interconnector needs to take into account that shareholders at privatisation were aware of the potential of the interconnector upgrade to 1600MW and, as regards NGC shareholders in 1996, they would have been aware of the potential of the 2200MW upgrade in the valuation of NGC in 1995.

Other methods of valuation

5.58. Ofgem has set out valuations[55] for the interconnector calculated using a RAV-based methodology, and has considered that in this instance, taking into account the past and future expected usage of the interconnector, such valuations are likely to represent the minimum value at which the interconnector should be incorporated into the price controls.

5.59. Ofgem also believes that a Modern Equivalent Asset Value can be useful in framing the market valuations where these are uncertain.

---

[55] Valuation estimates provided by the companies and subject to review by Ofgem.

5.60. Two other methods of valuation have been considered. The first is a valuation based on the value over a number of years of the constraint costs avoided by the GB system operator (ie the payments avoided by the GB system operator in balancing under the BSC because of the presence of the interconnector). However, the uncertainties associated with this method are very large and, subject to further evidence from the companies on the robustness of this method, Ofgem does not intend to progress this further. The second method is the written down value on a HCA[56] basis. This value depends on the particular accounting parameters used in the past and is not consistent with the approach taken by Ofgem in setting the opening RAV of the companies and in updating the RAV, and it is therefore not proposed to progress this method either.

Summary

5.61. The following table summarises the current valuation estimates provided by companies:

England – Scotland interconnector **£m 2002/3 prices**	RAV-based valuation	Market based valuations provided by companies
NGC (Pre & Post Vesting assets)	£36m	£108m - £155m
SP Transmission (post-Vesting assets)	£47m	£140m - £190m with an upper value of £390m
SHETL (post-Vesting assets)	£18m	£19m - £25m

Note: All data provided by the companies. Data subject to review by Ofgem.

5.62. Ofgem proposes carrying out further work to inform its draft proposals in July in the following areas:

- reviewing the valuation estimates provided by the companies
- determining the appropriate treatment of the revenues received from availability incentives in the contracts, and

[56] Historic cost accounting

- investigating the appropriate choice of discount rate, and treatment of changes in the commercial risk profile from incorporation of the interconnector into the price controls.

Views invited

5.63. Views are invited on the appropriate approach to establishing the regulatory value at which to include the relevant England-Scotland interconnector assets into the respective licensees' price controls, and in particular on:

- the appropriateness of RAV-based and market based valuation methods
- the appropriate method for determining a market based valuation for the interconnector

6. Transmission owner incentives

6.1. In March 2004, Ofgem published a consultation paper on the form of the transmission owner revenue restrictions[57] under BETTA, This paper considered the interactions under BETTA between the three transmission licensees, and made proposals on the form of the revenue restrictions for SP Transmission and SHETL that would reward the transmission licensees for co-operating in developing and maintaining an efficient, co-ordinated and economical system of electricity transmission.

6.2. The paper considered interactions between the licensees in a number of areas:

- investment planning
- outage planning
- transmission switching
- providing transmission services
- new connections

The paper considered the appropriateness of Income Adjusting Events for the transmission owner incentives, as well as a number of possible knock-on effects on NGC's revenue restriction.

6.3. Nine responses were received, and the respondents are listed in Appendix 1.

Investment planning

6.4. In March, Ofgem proposed that any adjustments to the revenues of transmission owners in respect of transmission investment required as a result of circumstances not foreseen at the time of the preceding price control review should be made by the Authority on a case-by-case basis, either at the next review or through an interim adjustment.

6.5. Seven respondents agreed with the proposal. One respondent did not specifically comment on the proposal, whilst one respondent believed that transmission owners should be able to develop long-term investment plans, and that it was difficult to reconcile this with the ability of the GB system operator to dispute incremental investments without consideration of the plan as a whole. Conversely, another respondent considered that the GB system operator should have a major input into the transmission owners' planning process and should be able to veto investment that it believes is not economically efficient.

6.6. Ofgem considers, given that the STC will require the transmission owners to develop investment plans for their respective transmission systems, that the transmission owners will be able to plan and develop their systems as they deem appropriate given the requirements foreseen of them. The GB system operator (or another transmission owner) will only be able to dispute proposals made by the transmission owner, and then only on the grounds that the proposals materially affect its ability of the GB system operator (or the other transmission owner) to meet its obligation to develop and maintain a efficient, co-ordinated and economical system of electricity transmission. Accordingly, Ofgem considers that the differences in the obligations on the transmission owners that relate to investment, as compared to the existing obligations of the transmission licensees, do not warrant any modification to the revenue restrictions. Ofgem thus concludes that the option proposed in the March 2004 consultation paper is the most appropriate.

Outages planning

6.7. In March, Ofgem proposed an arrangement by which transmission owners would be compensated for any reasonable costs incurred in the movement of outages at short notice at the GB system operator's request. Specifically, the GB system operator would develop a "Week 49" outage plan incorporating the transmission owners' outages proposals, as it deemed appropriate, subject to a right to dispute by the transmission owners. For any outage subsequently rearranged by the GB system operator, the GB system operator would

[57] "The form of transmission owner revenue restrictions and consequential effects on NGC's revenue restrictions", Ofgem consultation document, 48/04, March 2004.

compensate the transmission owner an amount declared by the transmission owner, albeit the transmission owner would be under an obligation to declare an amount that represented efficiently-incurred costs. A further obligation would require transmission owners to complete outages according to plan, recognising that any deterioration of performance in this regard would be easily established.

6.8. It was also suggested that, where the movement of an outage was the consequence of accommodating the request by another transmission owner to move one of its outages, it might be appropriate for the transmission owner to be compensated, not by the GB system operator, but by the transmission owner making the request.

6.9. The seven respondents that commented on the proposal, agreed with the proposal. One respondent also agreed with Ofgem's further suggestion that it might be inappropriate for the transmission owner to have to make payments to the GB system operator in the case of changes to the outages plan requested at short notice by a transmission owner, due to the possible perverse incentive on the GB system operator to impose a more expensive (for the transmission owner) Week 49 outages plan, although the transmission owner would have to bear the cost of any consequential rearrangement of its other outages.

6.10. No respondent commented on whether it would be appropriate for one transmission owner to bear the cost in the event that an outage change requested by one transmission owner had a consequential effect on an outage of another transmission owner.

6.11. Having had no views to the contrary, Ofgem concludes that the option proposed in the March 2004 consultation paper is the most appropriate, and represents an appropriate balance of practicality and efficiency.

6.12. As regards one transmission owner compensating another, Ofgem considers that the probability of an outage change requested by one transmission owner requiring a change at short notice to an outage of another transmission owner is likely to be low, and does not warrant the complexity of the tripartite interaction that would be required between the two transmission owners and GB system operator.

Transmission switching and providing transmission services

6.13. The March consultation paper proposed that no specific incentive arrangements would be required for transmission switching or for the provision of transmission services. Strictly, the provision of transmission services by the transmission owner function includes both the making available its transmission assets intended for the conveyance of electricity (and other related services) and the carrying out the directions of the GB system operator as to the configuration of the transmission system (i.e. switching). Providing transmission services also encompasses the provision of information, including declaring the capability of the transmission owner's transmission assets, as well as providing real-time information. It was noted that these functions could be easily codified and compliance easily monitored.

6.14. Seven respondents agreed with the proposal. One of these respondents suggested that the provision of transmission services should be kept under close review. The same respondent also noted that CUSC Amendment Proposal CAP048 has been approved, which will result in compensation being payable to generators in the event of disconnection. The respondent suggested that it was for consideration as to whether such costs should be passed on to a transmission owner in the event of disconnection in the transmission owner's area.

6.15. The respondents also noted that commercial boundaries between transmission and generators differed at some sites in Scotland to those in England & Wales, so that in some instances generator transformers are part of the transmission rather than part of the user's system. The respondent was concerned that these parts of the transmission system might not meet current security standards, such that additional constraint and/or costs arising from disconnection could be incurred. The respondent argued that the relevant customers should enter into agreement such that these additional costs were not incurred by the GB system operator.

6.16. Two respondents did not specifically comment about the provision of transmission services.

6.17. With no views being expressed to the contrary, Ofgem concludes that no specific incentives are appropriate for the provision of transmission services, and that it will be adequate to relay on the obligations in the licences and STC, together with the opportunity to investigate breaches ex-post.

6.18. Ofgem notes the comment that under CAP048, compensation is payable to generators in the event of disconnection. However, it is not proposed that transmission owners should be liable for constrained-off payments which arise as a result of any denial of access due the lack of transmission system availability. Ofgem believes that it would thus be inconsistent for transmission owners to be liable for compensation under CAP048.

6.19. On 26 January 2004, Ofgem/DTI published a statement on the subject of access to the GB transmission system. In this statement, Ofgem/DTI suggested that any party wishing to have access to the GB transmission system will need to have a contract with NGC, and that such parties are advised to contact NGC to have initial discussions concerning the process to put in place the necessary contract for connection to/use of the transmission system under BETTA. It is anticipated that these discussions will address the issue of commercial boundaries differing from those that typically apply under the CUSC.

New connections

6.20. The March consultation paper noted that the incentives applying currently to the timely completion of new connections, beyond compliance with the relevant licence and contractual obligations, consisted of liquidated damages (LDs) and the delay in the ability to levy charges on relevant Users. Ofgem expressed its understanding that, where LDs are applied, industry standard terms are usually employed both in the agreement between the User and the transmission licensee and in the agreement between the transmission licensee and the contractor. Accordingly, Ofgem believed that it would be appropriate under BETTA for such terms to apply also between the GB system operator and the transmission owner. Ofgem noted, however, that, given that LDs are typically a percentage of the value of the connection assets, the introduction of the 'plugs' connection charging methodology would reduce greatly the asset values to which such LDs applied.

6.21. Ofgem also proposed that, under BETTA, revenues in respect of post-Vesting connection assets would continue to be treated as excluded service revenues both as between connectees and the GB system operator and as between the GB system operator and the transmission owners.

6.22. Six respondents agreed that it was appropriate for LD terms between the GB system operator and users to be reflected in the terms between the GB system operator and transmission owners. One of these respondents noted that a result of 'plugs' would be that LDs would be small compared to the guarantees that might be required from customers. This respondent suggested that arrangements should be reviewed after BETTA implementation, whilst another of these respondents also recommended a review during the next price control review. Another respondent suggested that, where a connection to one licensee's system was contingent on infrastructure on a second licensee's system, it might be appropriate to have LDs applying to the licensee providing the infrastructure as well as the licensee providing the connection works.

6.23. A further respondent suggested that it might be appropriate to introduce some form of incentive on the GB system operator and transmission owners collectively to make new connections on transmission owners' networks as efficient as possible.

6.24. One respondent commented that for LDs between the GB system operator and transmission owners to work, it would have to be clear that Ofgem would not interpret such an arrangement as a "cross-default obligation". NGC's special licence condition AA10 (as well as special licence condition S in SP Transmission's and SHETL's licences) and proposed licence BB9 prohibit cross-default obligations, which means any arrangement whereby the payment of a sum can arise as a result of the default of a party other than the licensee. This respondent also suggested that it is to be decided whether the risks of customer default should also be passed through to the transmission owners or remain with the GB system operator, and that this matter should be resolved by the relevant BETTA Development Group, with a suitable allowance being then included in either the NGC or transmission owner revenue restriction.

6.25. Having had no views to the contrary, Ofgem concludes that it would be appropriate for liquidated damage terms between the GB system operator and

users to be reflected in the terms between the GB system operator and transmission owners, whilst recognising that the scope of these terms are much reduced by the introduction of 'plugs'. Strictly speaking, the terms for LDs are a matter for negotiation between the parties to the relevant agreements. Nevertheless, Ofgem agrees that the methods of calculating LDs could be usefully looked at after BETTA Go-live.

6.26. Ofgem notes the view that, for LDs between the GSO and transmission owners to work such an arrangement would have not to constitute a cross-default obligation. However, the definition of "cross-default obligation" in the proposed transmission licence[58] specifically excludes "any arrangements between transmission licensees under the STC Framework Agreement".

6.27. Ofgem/DTI have previously consulted on the proposal that customer default risk should be carried by the GB system operator and not be passed on to transmission owners. The appropriate regulatory treatment will be decided in subsequent consultations on NGC's revenue restrictions, and in the light of conclusions emerging from Ofgem's consultation on credit arrangements for network operators[59].

6.28. Finally, Ofgem does not consider that specific incentives on the GB system operator and transmission owners collectively need to be developed for connections that involve two or more of the transmission licensees. Instead it is considered that the incentives on the transmission sector as a whole, via the GB system operator, should be designed to apply to the provision of connections generally, and that the arrangements between the licensees, as provided by the STC, should allow connections involving more than one licensee to be progressed efficiently.

---

[58] "Publication of 'near final' transmission licences', Ofgem/DTI open letter, 15 April 2004.
[59] "Arrangements for gas and electricity network operator credit cover. Conclusions and proposals" February 2003 06/03

Effects on NGC incentives

6.29. The purpose of the March 2004 consultation paper was not to consult on the form of NGC's revenue restriction, neither the transmission network revenue restriction nor the balancing services activity revenue restrictions. However, the paper noted that, as well as amending the revenue restrictions in order to fund the costs of procuring transmission services from the transmission owners in addition to NGC's internal activities, there were possible consequential effects of the interface between NGC and transmission owners on the form of NGC's various revenue restrictions that would need to be considered at the time that the form of these restrictions were reviewed.

Sharing Factors

6.30. The March 2004 consultation paper suggested that, whatever the arrangements and safeguards in the STC, NGC could perceive that it had less control over transmission owner activities than it would were those activities undertaken by NGC itself, hence less ability to control external balancing costs, and thus that to maintain the same risk profile as would be the case absent BETTA, the optimal sharing of risk between NGC and users might be lower.

6.31. One respondent proposed that to maintain strong incentives on NGC in the balancing services activity revenue restriction to encourage efficiency improvements, whilst mitigating the perceived additional risk, asymmetric sharing factors should be adopted, at least initially.

6.32. Two other respondents believed that there would be no appreciable effect on the risks faced by the GB system operator as a result of BETTA and hence there should be no effect on the appropriate sharing factor. Two further respondents considered that the sharing factors in the existing incentive arrangements are currently too high and should be reduced anyway.

6.33. Ofgem notes the views expressed and will take these into account in determining future balancing services activity revenue restrictions.

G_t Term

6.34. The current NGC revenue restriction includes a term, known as the G_t term, to reflect the additional costs to NGC for transmission system infrastructure that are likely to result from connections in England & Wales in excess of an anticipated amount. In the March 2004 document, Ofgem suggested that under BETTA, were the Scottish transmission licensees' price controls each to incorporate a feature analogous to the G_t term, then it might be appropriate for NGC's revenue restriction to have different values of the G_t term for connections to each of the relevant transmission systems. This would reflect the effect of a new connection in SP Transmission's area, say, on the infrastructure reinforcement costs both for SP Transmission and for NGC in England & Wales. Five respondents commented.

6.35. One respondent reiterated its view from a previous consultation, that the revenue restrictions of the SP Transmission and SHETL should be consistent with the design of the Transmission Network Revenue Restriction for NGC in having a G_t term adjusting the allowable revenue according to the amount of new connections. This respondent accepted that, as a result, there may be a rationale for having different values of the term relating to the amount of new connections in each of the licensees' areas.

6.36. Another respondent contended that additional allowances for connections in excess of that anticipated at the price control review should be avoided, whilst a third respondent argued that the derivation of the G_t term in NGC's current price control is unclear, and that any extension of the mechanism should be accompanied by greater transparency.

6.37. The fourth respondent supported development of a locational G_t term, applying to contracted generation on the entire GB Transmission System, not just in England & Wales. The respondent suggested that a locational G_t term could be derived in a manner consistent with the derivation of Transmission Network Use of System charges, and that this would result in the charges to other users being unaffected by the amount of new connections. This respondent also argued that the G_t term was only an approximate adjustment, and thus that costs identified at the time of any review of the revenue restrictions should be included as an

explicit allowance in the revenue restriction, rather than relying on the G_t term which would be likely to result in an inaccurate adjustment to the allowable revenue .

6.38. The final respondent said that it did not believe that a G_t term was appropriate under BETTA. It argued that currently infrastructure investment which reduces balancing costs are funded in full by NGC, at least until the next price control review, whereas under BETTA, the transmission owners fund the infrastructure investment. Instead it favoured an approach whereby incremental investments are paid for by NGC from NGC's SO incentive scheme and incorporated into the next price control.

6.39. The case for introducing a G_t term for SP Transmission and SHETL is not clear. As regards England and Wales, currently the calculation of the G_t term for NGC includes increases in capacity across the England-Scotland interconnector, which will cease to exist in its current contractual form under BETTA. In the period up to the main review of transmission price controls in 2007, any increases in capacity requirements between Scotland and England are likely to be driven by the connection of new renewable generation in Scotland. Ofgem's work on transmission investment for renewable generation[60] will include the associated reinforcement.

6.40. Ofgem therefore proposes that consideration of whether a G_t term or similar adjustment mechanism is appropriate for SP Transmission and SHETL will be part of the main review of transmission price controls for 2007. This review will include consideration of whether the G_t term in NGC's current revenue restriction, if still appropriate, will apply to connections to the GB transmission system, rather than to just those in England & Wales. Ofgem further proposes that the G_t term in NGC's licence from BETTA go-live should only apply to new generation or interconnector capacity in England and Wales. Under BETTA this means that the G_t term would not then apply to capacity between Scotland and England.

[60] Transmission investment for renewable generation, Second consultation, May 2004, Ofgem 98/04

Allocation of Costs

6.41. The March 2004 document noted that allowances to fund different costs incurred by NGC are allocated under different parts of NGC's current revenue restriction. It suggested that, under BETTA, the attribution of costs incurred through transmission owners' charges should be allocated in a manner which is consistent with the existing allocation of the equivalent NGC costs in England & Wales.

6.42. Four respondents commented.

6.43. One respondent said that any increase in the allowed revenue of the transmission owners for a change in investment or other provision of transmission services which reduces the costs of balancing services should be added to the costs of other balancing services, whilst another also argued that payments to transmission owners to facilitate increased net work availability should come out of the SO incentive scheme.

6.44. A third respondent commented that the costs incurred in moving transmission outages should be included in the bundle of incentivised balancing costs and hence exposed to the same incentives on balancing costs. This respondent also assumed other changes to transmission owner revenues would result from changes made by Ofgem to reflect developments not anticipated at the previous price control.

6.45. The fourth respondent noted that NGC currently will be willing to absorb the additional costs of changing an outage if these are exceeded by its share of the savings in balancing costs, such that users will see no change in TNUoS charges but a reduction in BSUoS charges. It argued that the same arrangement should apply with transmission owners under BETTA, such that NGC would absorb the cost of outage changes with no adjustment to either the Balancing Services or Transmission network Revenue Restrictions. This respondent also believed that, in the interests of equivalence and transparency, the costs of NGC's changes to its own outage programmes should be reported. The respondent also believed that an adjustment should be made to the transmission owners revenue restriction to recognise that costs of outage changes are currently implicit in the Scottish licensees' revenue restrictions whereas, under BETTA, explicit payments

will be made, only if the same is done for NGC. The respondent additionally argued that it would be appropriate to adjust the revenue restrictions to recognise that explicit revenues would be received when currently the costs incurred in outage rearrangements are implicitly covered within the revenue restriction providing such an adjustment were made for NGC also.

6.46. Ofgem is of the view that the treatment of costs incurred in the procurement of services from transmission owners should be the same as would be the case were the equivalent services provided by NGC itself. Of particular relevance is whether the costs are subject to a sharing factor, such that a proportion of the costs are shared with users. This approach ensures that incentives and charges to Users will not vary according to who is undertaking a given action.

6.47. Ofgem notes comments that the cost of outage rearrangements should be funded out of NGC's SO incentive scheme, and that it should be treated as part of the bundle of incentivised balancing costs. However, within England & Wales, this cost is not part of the incentivised balancing costs that are subject to sharing factors, even though the cost of the balancing services with which, at least to an extent, the cost of outage rearrangement may be traded-off, is a cost that is subject to sharing factors. Accordingly Ofgem concludes that the payments to transmission owners for outage rearrangement should not be included in external (or internal) incentivised balancing costs, so as to ensure that the incentives for rearranging the transmission owners' outages and for rearranging outages in England & Wales are the same.

Revenue Restriction Re-openers

6.48. The March 2004 paper suggested that any adjustment to the transmission owner revenue restriction could arise either as a result of expenditure by the transmission owner that resulted in lower costs for the GB system operator elsewhere, such as lower balancing costs, or as a result of circumstances not foreseen at the time of the previous price control review and which had resulted in higher costs for the transmission sector as a whole.

6.49. Ofgem put forward two alternative mechanisms for making any consequential adjustment to NGC's revenue restriction. The first was for the Authority to propose any amendment to the NGC revenue restriction at the same time as

proposing a change to a transmission owner's revenue restriction. The alternative was that the NGC revenue restriction should allow for the recovery of any change to any transmission owner revenue restriction, with the Authority proposing a change where only partial or no recovery was deemed appropriate.

6.50. One respondent suggested that it would be wrong to assume that costs other than the costs of outage changes would be to the benefit of the GB system operator, and hence that it believed strongly that additional transmission revenues should result in additional GB system operator revenue unless proposed otherwise. Two other respondents commented that there should be no automatic re-opener of NGC's revenue restrictions, and that each circumstance that could lead to a change to NGC's revenue restriction should considered case-by-case.

6.51. On consideration, Ofgem agrees with the view that, whilst the rearrangement of transmission outages is generally likely to be a trade-off with balancing services costs, any other changes to the allowed revenue of a transmission owner, e.g. as a result of changes in capital expenditure on the transmission system are likely to result from changes in the requirements of users.

6.52. Accordingly, Ofgem considers that it would be appropriate that such changes should be reflected automatically in a change in allowable revenue for NGC, and that the Authority would propose a licence change in the event that it considered that the whole or a proportion of the change in transmission owner revenues would result in a saving in NGC's other costs.

6.53. Note, however, that changes in payments by NGC to transmission owners for outage rearrangement do not involve a modification to the transmission owners' revenue restrictions, and hence would not – assuming that, as described in paragraph 6.46 to 6.47, outage rearrangement costs are not included as an incentivised cost - be reflected in any change in the amount of NGC's allowable revenues.

General

6.54. One respondent commented that the arrangements and incentives being proposed would not replicate the operation of an integrated transmission

company, and would introduce some inflexibility and transaction costs. The respondent also commented that conflicts of interest would remain with the transmission licensees that had affiliated generation businesses. A second respondent, however, commented that the division of functions between more than one licensee would not significantly increase costs.

6.55. Ofgem recognises that the arrangements under the STC, together with the incentives created by the revenue restrictions, will fall short of that which could, at least in principle, be achieved in an integrated transmission company. However, the obligations in the licences and STC, together with the incentives created by the revenue restrictions, are intended to ensure that the splitting of functions between licensees, which is the consequence of having a single GB system operator and of the decision not to require divestment of transmission assets, are as efficient as possible.

6.56. Another respondent argued that the process between the GB system operator and transmission owners should be as transparent as possible, in order that market participants can have confidence that cost/benefit tests are being correctly applied. However, Ofgem is mindful that the GB system operator, and to a lesser extent the transmission owners, will possess much information about users, as well as information about the transmission system which is potentially sensitive for users. This information is presently subject to confidentiality provisions and the release of information into the public domain is carefully controlled. These provisions will remain under BETTA, and Ofgem believes that appropriate incentives and obligations will provide a preferable means of ensuring efficient decisions, rather than the release of potentially sensitive information into the public domain that absent BETTA would be treated as confidential. Nevertheless, the licence condition that requires licensees to provide information to the Authority will remain also.

6.57. Other comments received included: that there should be segregation of functions within NGC; that the allocation of functions to NGC should be "shallower"; that contingency provisions should allow a "fit-for-purpose" GB-market, should it be required; and that other stakeholders, apart from the

transmission licensees, should be involved to ensure timely progress. These matters have been addressed in previous consultations[61,62,63,64].

6.58. A further comment was that the governance of the NGC charging methodology should be brought within the scope of CUSC. Such a change would be outside the scope of BETTA, however, and is addressed in the consultation on the GB CUSC[65].

Summary

6.59. Ofgem continues to believe that the proposals in the March 2004 document are appropriate, namely that:

- for investment planning, no special incentive mechanism is introduced as a result of BETTA, and that the transmission owners will continue to plan and develop their transmission systems in accordance with standards, given the form of revenue restriction they would have absent BETTA.

- for outage planning, transmission owners should be recompensed by the GB system operator for additional costs incurred as declared by the transmission owners resulting from changes to outage plans made by the GB system operator at short notice. Transmission owners will be under an obligation to make declarations that accurately reflect the costs which are reasonable and efficiently-declared. It is proposed that should a change requested by a transmission owner result in other consequential changes to outage plans, the requesting transmission owner would not be liable

---

[61] "The Development of British Electricity Trading and Transmission Arrangements (BETTA). A consultation paper", Ofgem, December 2001.
[62] "The Development of British Electricity Trading and Transmission Arrangements (BETTA). Ofgem/DTI Report on consultation and next steps", Ofgem, May 2002
[63] "Regulatory framework for transmission licensees under BETTA Volume 3: The SO - TO Code and other contractual interfaces between transmission licensees", Ofgem, December 2002
[64] "The SO-TO Code under BETTA. Summary of responses and conclusions on Volumes 3 and 4 of the December 2002 consultation on the regulatory framework for transmission licensees under BETTA, and further consultation on content of the SO-TO Code", Ofgem, June 2003
[65] Transmission charging related licence conditions and the requirement to offer terms: arrangements under BETTA", Ofgem/DTI, March 2003, Ofgem 57/04

- no incentive arrangements will be introduced for transmission switching in view of the ease with which obligations on transmission owners to comply with the GB system operator's directions can be codified and monitored

- no incentive arrangement will be introduced regarding the availability of transmission services

- it will be appropriate that liquidated damages terms between the GB system operator and users be reflected in the terms between the GB system operator and transmission owners, but that no specific incentives are required for connections involving two or more transmission licensees

6.60. Ofgem further proposes that

- consideration of whether a G_t term or similar adjustment mechanism is appropriate for SP Transmission and SHETL will be part of the main review of transmission price controls for 2007. Ofgem further proposes that the G_t term in NGC's licence from BETTA go-live should only apply to new generation or interconnector capacity in England and Wales (excluding capacity between Scotland and England).

- for consistency between England & Wales and the transmission owners, the costs of rearranging outages should not be treated as an incentivised balancing cost

- any changes proposed by the Authority to the transmission owners' revenue restrictions would be reflected in NGC's revenue restriction without the need for a corresponding change being proposed

- no information that would otherwise be confidential should be published in order to provide transparency in the public domain of the interface between the GB system operator and transmission owners.

7. Next steps

7.1. The current transmission price controls (SP Transmission and SHETL) are due for renewal from 1 April 2005, and arrangements need to be in place to continue to protect the interests of consumers from that date. Ofgem is therefore developing proposals for the price controls to apply from 1 April 2005 (if BETTA go-live is deferred), alongside the development of the price controls and incentives to apply under BETTA.

7.2. The timetable for this work, including proposed future consultations, is shown below:

Transmission price controls		
Price controls and incentives under BETTA	**Published**	October 2003
Initial thoughts SP Transmission and SHETL	**Published**	March 2004
Update (Note 1)	**Published**	May 2004
Draft proposals (Note 1)		July 2004
Final proposals (Note 1)		October 2004
Implementation of price controls		From 1 April 2005

Note 1. These papers will cover the following issues:

- The roll-forward price controls to apply to SP Transmission and SHETL from 1 April 2005 until BETTA go-live, should BETTA be deferred for any reason.
- The adjustments to the price controls for BETTA (SP Transmission, SHETL, and NGC's TO and SO internal controls)
- Transmission owner incentives

7.3. NGC's external cost SO incentive (as GBSO) will be developed to a different timetable. An initial consultation paper will be published in June/July 2004, with initial proposals in October/November 2004, and final proposals in January 2005. These papers will need to include separate proposals for England & Wales in case BETTA go-live is deferred from 1 April 2005 for any reason.

Related consultations

7.4. The work to determine the approach for dealing with large renewable energy generation related transmission schemes will need to take in to account the impact of this growth in generation on all transmission licensees' transmission systems, including that of NGC. In October 2003 Ofgem published an initial consultation document on transmission investment and renewable generation[66]. Ofgem has recently published its second consultation on this issue[67], and intends to publish draft proposals in July 2004 and final proposals and any necessary licence modifications in autumn 2004.

7.5. Ofgem has recently published a paper setting out the process for extending NGC's TO price control and SO internal cost control to 2006/7[68].

Views invited

7.6. Views are invited on the proposed processes and timetable for developing the price controls and incentives.

[66] Transmission investment and renewable generation, Consultation document, October 2003, Ofgem 129/03
[67] Transmission investment for renewable generation, Second consultation, May 2004, Ofgem 98/04
[68] Extending the National Grid Company's Transmission Asset Price Control for 2006/07, Initial Consultation, May 2004, Ofgem 102/04

Appendix 1 Respondents to Ofgem's consultation papers

The form of transmission owner revenue restrictions and consequential effects on NGC's revenue restrictions, An Ofgem consultation document, March 2004, Ofgem 48/04

Respondents

British Energy

Centrica

EDF Energy

National Grid Transco

Powergen

RWE Innogy

ScottishPower Energy Management

Scottish and Southern Energy plc

SP Transmission Ltd

Review of transmission price controls from 2005: SP Transmission Ltd, Scottish Hydro-Electric Transmission Ltd, Initial thoughts, March 2004, Ofgem 52/04

Respondents

British Energy

EDF Energy

National Grid Transco

Powergen

RWE Innogy

ScottishPower Energy Management

SP Transmission & Distribution

Appendix 2 Price control questionnaire – Information provided by SP Transmission

The following text and tables have been provided by SP Transmission.

Roll forward price controls (SP Transmission)

Basis: BETTA not implemented. Transmission expenditure related to large new renewable generation addressed separately.

Operating expenditure

Historic and forecast expenditure is consistent with the provision of networks that are sustainable in the long-term. The increase in total costs in 03/04 onwards results mainly from an increase in maintenance activity including switchgear and protection maintenance, plant painting, civil defects and tree clearance. This increased activity arises from the enhanced understanding of the condition of our assets, and the work required to manage the associated risks, that results from the improvements that have been introduced during this price control period in asset risk management, inspection programmes and data handling.

Table 1. Path of controllable operating expenditure (£m, 2002/3 prices)[69]

	2000/1	2001/2	2002/3	2003/4	2004/5	2005/6	2006/7
Transmission	13.2	12.9	9.7	12.4	12.0	9.7	10.4
Grid control	2.5	2.4	2.2	2.4	2.6	2.5	2.4
NGC contract costs (Note 1)	6.7	6.8	6.8	6.5	6.8	6.8	6.8
Pre-Vesting interconnector (Note 2)	0.9	1.0	0.8	1.0	1.0	0.8	0.8
Pre-Vesting interconnector rates	0.6	0.8	0.7	0.7	0.7	0.7	0.7
Network rates	9.2	11.7	11.1	11.6	11.6	11.7	11.7
Licence fees	0.9	1.1	0.9	0.9	1.0	1.0	1.1
Less Exceptional items	0	0	0	0	0	0	0
Total	34.0	36.7	32.2	35.5	35.7	33.2	33.9

Note 1: related to NGC's pre-Vesting interconnector assets.
Note 2: related to SP Transmission's pre-Vesting interconnector assets.

[69] The controllable operating costs for 2000/1 to 2002/3 are different to those presented in Ofgem's March report (Appendix 6). The difference is due to the application of a revised allocation of costs between the post Vesting interconnector (a non-price controlled activity) and the price controlled activities.

Capital expenditure

LOAD RELATED

Historic Expenditure

Main items of historic expenditure include:

Exit expenditure for Railtrack with new track feeder stations at Wishaw and Ecclefechan (2000/01).
Completion of the Moyle interconnector (2000/01 – 2001/02).
Construction of Gretna 275kV substation (2000/01 - ongoing).

Forecast Expenditure 2005/06 – 2006/07

Forecast expenditure for new business reflects ongoing connection works associated with renewable generation.

Forecast expenditure includes investment in 132kV connection assets to SP Distribution to support connection of DG (as submitted in SPD's DGBPQ and as audited by Ofgem's consultants).

NON LOAD RELATED

Historic and forecast expenditure is consistent with the provision of networks that are sustainable in the long-term. Expenditure is based on advanced asset risk management policies and practices and take account of the increased levels of asset replacement required to manage the risks associated with the ageing asset base.

A major driver of the increased investment in 2005/06 and 2006/07 is the transformer, reactor and associated switchgear replacements at Dewar Place substation in Edinburgh.

Historic Expenditure

Main items of historic expenditure include:

Replacement of gas compression cables (8.7km replaced so far in the current price control period).
Switchgear replacement based on condition assessment and asset criticality.
Overhead line refurbishment (300km in period 2000-2003)
Completion of projects at East Kilbride (2000/01 – 2003/04) and Motherwell (2002/03) in line with submission at previous price review.
Completion of Neilston 275kV switchgear replacement (2001/02 – 2003/04)

Forecast Expenditure 2005/06 – 2006/07

Forecast expenditure includes continued investment in:
Switchgear replacement at Neilston 132kV, Cockenzie 275kV and other substations
Overhead line refurbishment based on condition
Replacement of gas compression cables ranked on fault history
Transformer, reactor and associated switchgear replacements at Dewar Place substation

Table 2. Path of capital expenditure (£m, 2002/3 prices)

	2000/1	2001/2	2002/3	2003/4	2004/5	2005/6	2006/7
Load related	30.0	11.8	10.7	15.9	23.7	22.2	23.3
Transmission point connections associated with DG generation						2.6	15.4
Non-load related (Transmission)	14.9	12.9	28.3	37.9	35.5	44.8	55.3
Non-load related (Pre-Vesting i/c)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gross total	45.0	24.8	39.0	53.8	59.2	69.6	94.0
Less capital contributions	-22.1	-9.6	-0.2	-2.6	-12.0	-10.7	-11.3
Net total	22.9	15.2	38.8	51.2	47.2	56.3	82.7
Non-operational capex (included in opex)	0	0	0	0	0	0	0

Notes.
1. Figures for 2000/1 to 2002/3 are actuals
2. Figures for 2003/4 are not yet finalised and may be subject to minor revision
3. Figures for 2004/5 to 2006/7 are forecast.

Table 3. Basis of capital expenditure projections

		2002/3	2003/4	2004/5	2005/6	2006/7
Overall transmission system flows						
Maximum physical generation available	MW	7161	7127	7277	7527	8177
Maximum demand (Note 1)	MW	4310	4266	4269	4253	4277
Interconnections (indicative winter flows)						
SHETL (imports to SP Transmission)	MW	930	930	930	930	930
Moyle (exports from SP Transmission)	MW	450	450	450	450	450
NGC (exports from SP Transmission)	MW	2200	2200	2200	2200	2200
System performance						
System length	km	3956	#	#	#	#
System availability (Note 2)	%	97.0	96.7	#	#	#
System throughput				#	#	#
Units transmitted to connected grid supply points	GWh	23402	23033	#	#	#
Units imported/exported to SP Transmission (Note 3)	GWh	16538	17297	#	#	#
Losses	GWh	815	823	#	#	#
Total units	**GWh**	40755	41153	#	#	#
Of which	GWh					
Units generated in SPTL area		31489	31565			
Imports		9266	9588			
Total units		40755	41153			

Note 1: ACS demand
Note 2: Annual average availability including planned/unplanned maintenance
Note 3: Units imported (-)/exported (+) are net amounts
Figures not forecast by SP Transmission

Excluded services

Table 4 Excluded services revenues

£m pa 2002/3 prices	**2003/4**	**2004/5**	**2005/6**	**2006/7**
Rental charges (telecomms)	0	0	0	0
Connection charges				
Demand (SP Distribution existing)	2.1	2.1	2.1	2.4
Demand additional (Note 1)	0	0	0	0.3
Generation	0	0	0	0
Interconnector related revenues from SHETL				
Corridor charge	3.8	4.2	4.2	4.2
Capacity charge	1.3	1.3	1.2	1.2
Use of Interconnector charge	17.8	21.6	21.6	21.6
Total	25.0	29.2	29.1	29.7

Note 1. The additional demand charge in 2006/7 relates to investment in 132kV connection assets to SP Distribution to support connection of distributed generation (DG).

BETTA price controls (SP Transmission)

Note: SP Transmission is carrying out further work to refine these projections as the detailed arrangements for BETTA are finalised.

Operating expenditure post BETTA go-live

Table 5. Adjustments to internal operating expenditure (£m, 2002/3 prices)

		2005/6	2006/7
1.	Change in grid control costs since NGC is GBSO		
	Additional interface costs with other licensees		
	Less reduction in grid control costs		
	Less External balancing costs		
	Net change in grid control costs	Note 2	Note 2
2.	BETTA implementation costs (see below for implementation costs incurred prior to 1 April 2005) (Note 1)	0.75	0
3.	Post-Vesting England- Scotland interconnector		
	Maintenance & overhead	0.6	0.6
	Rates	0.5	0.5
	Allocation of corporate overhead	(included above)	(included above)
	Total Post-Vesting interconnector	1.1	1.1
4.	Total adjustments (see Note 2)	1.85	1.1

Note 1: A separate adjustment will be made for BETTA implementation cost incurred prior to 1 April 2005.
Note 2: Subject to further analysis by SP Transmission when the BETTA design is at a more advanced stage

Capital expenditure post BETTA go-live

Table 6. Adjustments to capital expenditure (£m, 2002/3 prices)

	£m 2002/3 prices	2005/6	2006/7
1.	Non-load related capital expenditure		
	Post Vesting England-Scotland interconnector (see Note 1)	2.8	0.0
	New IT systems for BETTA implementation (the capex part of implementation costs)	Note 2	Note 2
2.	Non operational capital expenditure	0	0
3.	Total adjustments (Note 2)	2.8	0

Note 1: The value at which the interconnector is incorporated into the price controls is addressed separately.
Note 2: Subject to further analysis by SP Transmission

BETTA implementation costs prior to 1 April 2005

Table 7: BETTA implementation expenditure (£m, nominal prices)

BETTA implementation Costs	2002/3	2003/4	2004/5	**Total to 1 April 2005**
Opex	£0.35m	£0.775m	£4.125m	**£5.25m**
Capex	£0m	£0m	£2.0m	**£2.0m**
Total implementation	**£0.35m**	**£0.775m**	**£6.125m**	**£7.25m**

Appendix 3 Price control questionnaire – Information provided by SHETL

The following text and tables have been provided by SHETL.

Roll forward price controls (SHETL)

Basis: BETTA not implemented. Transmission expenditure related to large new renewable generation addressed separately.

Operating expenditure

Direct operating costs of the transmission business are a small proportion of the overall costs, and are subject to the same upward costs pressures as faced by the company's distribution businesses. Detailed forecasts of the distribution costs were made as part of the distribution review and the same trends have been applied here. In addition the BETTA implementation costs have been included in the forecast. Major cost items relate to the pre vesting interconnector, the costs of which are set out in the contracts and are broadly constant in real terms. The costs for 2003/4 onwards include the BETTA costs which have been specifically identified in tables 5 and 7.

Table 1. Path of controllable operating expenditure (£m, 2002/3 prices)

	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07
Transmission (excl BETTA)	3.0	4.8	4.9	4.1	4.3	4.5	4.6
Grid Control	0.3	0.8	0.9	0.7	0.7	0.7	0.7
NGC Contract Costs (Note 1)	5.9	5.9	5.9	5.9	5.9	5.9	5.9
SIA contract Costs (Note 1)	4.1	4.1	4.2	4.1	4.1	4.1	4.1
Network Rates	3.5	3.5	3.5	3.4	3.4	5.1	5.1
Licence Fees	0.4	0.4	0.3	0.3	0.3	0.3	0.3
Less exceptional items							
Total	17.2	19.5	19.7	18.5	18.7	20.6	20.7

Note 1: related to pre-Vesting interconnector assets.

Capital expenditure

Actual capital expenditure in 2001-2003 as stated in the earlier consultation was the gross transmission figure. It has been adjusted in this table to remove unregulated capital expenditure on the interconnector upgrade and customer contributions in 2000/01. The forecast non-load related expenditure on asset replacement is expected to be around £9m per annum over the next three years compared to an average of £6m since 2000/01. However, there will be a significant increase in the load related expenditure as a result of reinforcements to support new generation connections. This is separate from the RETS expenditure and is a consequence of SHETL's shallow connection policy which has been in place since 2002, under which some of the load

related expenditure is treated as infrastructure rather than being charged directly to generators.

Table 2. Path of capital expenditure (£m, 2002/3 prices)

	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07
Load Related	2.6	2.5	3.6	2.0	6.4	9.2	4.2
Non-Load Related (transmission)	10.8	4.4	4.4	4.8	8.3	11.1	10.9
Non-Load Related (Pre Vesting interconnector)							
Gross Total	13.5	6.9	7.9	6.8	14.7	20.3	15.1
Less Capital Contributions	-4.1	0.0	0.0	0.0	0	0	0
Net Total	9.4	6.9	7.9	6.8	14.7	20.3	15.1
Non-operational capex	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Basis of capital expenditure projections

The key driver of capital expenditure is the growth in generation as shown both in the increase in physical generation available, and the units exported to SP transmission.

Table 3. Basis of capital expenditure projections

	2002/03	2003/04	2004/05	2005/06	2006/07
Overall transmission system flows:					
Maximum physical generation available	2924	2930	3074	3686	3891
Maximum demand (Note 1)	1646	1679	1694	1708	1723
Interconnections (indicative winter flows)					
SP Transmission (exports from SHETL)	900	900	1000	1200	1300
System performance:					
System length	4848	4848	4848	4848	4848
System availability (Note 2)	98%	98%	98%	98%	98%
System throughput:					
Units transmitted to connected grid supply points	8358	8442	8526	8612	8698
Units imported/exported to SP Transmission	1607	1628	2068	3945	4573
Losses	308	311	314	317	320
Total units	10273	10376	10480	10584	10690

Note 1: actual demand
Note 2: Annual average availability including planned & unplanned outages
Units imported (-)/exported (+) are net amounts

Excluded services

There are no significant changes in excluded services income over the period. Interconnector revenue will increase in 2004/05 to reflect increased NGC

costs, and will remain flat in real terms thereafter. Telecomms rental charges are also expected to be broadly constant in real terms.

Table 4 Excluded services revenues

£m pa 2002/3 prices	2003/4	2004/5	2005/6	2006/7
Rental charges (telecomms)	0.1	0.1	0.1	0.1
Connection charges				
Demand	0.0	0.0	0.0	0.0
Generation	0.0	0.0	0.0	0.0
Interconnector revenues from Users	10.7	11.2	11.2	11.2
Total	10.8	11.3	11.3	11.3

BETTA price controls (SHETL)

Note: SHETL is carrying out further work to refine these projections as the detailed arrangements for BETTA are finalised.

Operating expenditure post BETTA go-live

Since the switching activities will still be carried out in the existing control room, most of the existing staff will continue to be required under BETTA. The "loading desk" functions will become the responsibility of NGC, but initially there will continue to be a need to shadow NGC's operations to ensure the system is operated securely. Also some of the more complex tasks such as island operation will continue to be the carried out by SHETL. As a result, we can only foresee a reduction of some 25% in the control room costs.

Against this, there will be an increased requirement for data exchange and operational liaison. Consequently we do not foresee any reduction in staffing levels overall, and the control room cost saving is matched by the increase in interface costs.

The BETTA implementation costs are expected to decline from their peak of £0.5m in 2004/05, to £0.3m and £0.1m in 2005/06 and 2006/07 respectively.

Table 5. Adjustments to internal operating expenditure (£m, 2002/3 prices)

	£m 2002/3 prices	2005/6	2006/7
1.	Change in grid control costs since NGC is GBSO		
	Additional interface costs with other licensees	0.2	0.2
	Less reduction in grid control costs	-0.2	-0.2
	Less External balancing costs	0.0	0.0
	Net change in grid control costs	0.0	0.0
2.	BETTA implementation costs (see below for implementation costs incurred prior to 1 April 2005)	0.3	0.1
3.	Post-Vesting England- Scotland interconnector		
	Maintenance	0	0
	Rates	0	0
	Allocation of corporate overhead	0	0
	Total Post-Vesting interconnector	0	0
4.	Total adjustments	0.3	0.1

Capital expenditure post BETTA go-live

SHETL are currently forecasting some £0.6m of capital expenditure on interconnector upgrades in 2005/6. We would expect Scottish Power to carry out any residual work on the interconnector upgrades since the existing agreements will terminate at BETTA go-live. This would need to be confirmed before setting the price controls.

SHETL have forecast some £0.5m of BETTA related IT investment in 2005/6. This includes packages to support investment planning, outage management and data links. It does not include a new accounting package to support site-specific maintenance costs. SHETL are assuming that the information provided by our existing systems will be adequate for the purpose, accepting that this might not have the level of detail in NGT's systems.

Table 6. Adjustments to capital expenditure (£m, 2002/3 prices)

	£m 2002/3 prices	2005/6	2006/7
1.	Non-load related capital expenditure		
	Post Vesting England-Scotland interconnector (see Note 1)	0.6	0.0
	New IT systems for BETTA implementation (the capex part of implementation costs)	0.5	0.0
2.	Non operational capital expenditure	0	0
3.	Total adjustments	1.1	0

Note 1: The value at which the interconnector is incorporated into the price controls is addressed separately.

Table 7. BETTA implementation operating expenditure incurred prior to 1 April 2005 (£m, nominal prices)

£m	2002/3	2003/4	2004/5	Total
BETTA implementation costs	0.0	0.2	0.5	0.7

Appendix 4 Price control questionnaire – Information provided by NGC

The following text and tables have been provided by NGC.

Note: NGC is carrying out further work to refine these projections as the detailed arrangements for BETTA are finalised.

Operating expenditure post BETTA go-live

NGC's operating expenditure post BETTA go-live will need to increase as a result of the extension of its responsibilities in order to fulfil the GBSO role.

The new activities include:

- Transmission despatch in Scotland;
- Outage planning and coordination with Scottish TO's and DNO's;
- Balancing the GB system including the purchase and use of additional balancing services;
- Additional post event analysis arising from GBSO activity;
- Management of industry codes that have increased in scope and number as a result of the incorporation of the operation of Scottish systems. In particular, management and development of the SO TO Code;
- Management and development of GB charging methodologies including specific issues in Scotland such as Hydro-Benefit, charging relief for small 132kV connected generators and reduced charges for renewables in areas of low population density;
- Management and development of billing and charging systems that include users of the Scottish systems;
- Additional activities relating to price control developments that will cover England, Wales and Scotland;
- Increased coordination for investment planning across all networks;
- Management and development of the former Anglo-Scottish interconnector assets.

Table 1 identifies the costs of these additional activities post go live of BETTA. Costs beyond 2005/6 will be assessed as part of a normal price control process.

Table 1. Adjustments to internal operating expenditure (£m)

	£m	2005/6 (2003/4 prices)	2005/6 (2002/3 prices)
1.	Change in system operations costs in role of GBSO		
	Operations and trading	2.9	
	Commercial, legal and network design	1.0	
	Information systems	1.3	
	Other	0.7	
	Total addition in system operations costs	5.9	5.7
2.	England- Scotland interconnector		
	Maintenance	0.8	
	Rates	3.1	
	Allocation of corporate overhead	0.5	
	Total interconnector (Note 2)	4.4	4.3
3.	Total adjustments	10.3	10.0

Note 1: A separate adjustment will be made for BETTA implementation cost incurred prior to 1 April 2005.

Note 2: Constraint costs currently related to the interconnector will be addressed in determining NGC's SO external cost incentive.

Capital Expenditure post BETTA go-live

The majority of capex costs specifically relating to BETTA are related to the requirement for new IT systems. Most of these costs will be incurred before BETTA go-live. Only a small amount of implementation related capital expenditure post BETTA go-live has been identified. This relates to additional metering equipment for ancillary services (£0.1m per annum).

After BETTA go-live, system capex not identified in existing price controls will be required. Reinforcements needed to accommodate additional transfers arising from the connection of new renewable generation in Scotland will be separately addressed by Ofgem's assessment of the adjustments required to extend NGC's price control by one year. However, in the absence of such reinforcements, some refurbishment work to the interconnector circuits, with an estimated capital cost of £1.5m, would be required. The financing costs of this capital investment are currently not included in NGC's price control.

Table 2. Adjustments to capital expenditure (£m)

	£m	2005/6 (2003/4 prices)	2005/6 (2002/3 prices)
1.	Non-load related capital expenditure		
	England-Scotland interconnector (see Note 1)	1.5	1.5
	New IT systems for BETTA implementation (see Table 3)	18.2	17.7
2.	Total adjustments	19.7	19.2

Note 1: The value at which the interconnector is incorporated into the price controls is addressed separately

Expenditure incurred prior to BETTA go-live

Prior to BETTA go live NGC has incurred additional operating costs not previously allowed for in its present price control. These costs relate to the identification, design and implementation of changes to both the England and Wales and Scottish arrangements to enable BETTA to go live This includes the following activities:

Activity	**Scope of Work**
Operations	• Initial Process Design via development groups • Development of SO/TO code (STC) and SO/TO code procedures (STCP) with respect to operational activities • Extend Balancing Mechanism and contracting to GB • Modification of internal operational procedures • Specification and delivery of IS requirements • Recruitment/training of required staff
Codes & Agreements	• Technical and legal drafting of codes to Ofgem's instruction • STC & STCP drafting • Participation in BETTA design • Communication with Industry • Negotiating BETTA Bilateral Agreements • Participation in BETTA Transition planning and execution

Charging & Revenue	• Initial charging methodology and systems development work • Process design through development group • Consultation/approval process • Calculation of indicative and final charges • Develop & implement IS solutions • Development of STC & STCP with respect to charging activities
Investment Planning	• Process Design via development group • Development of STC and STCP with respect to investment planning • Modification of internal procedures • Specification and delivery of IS requirements • Recruitment/training of required staff
Programme management	• High level NGT Programme Management • Control of NGT Programme Plan • Internal co-ordination of work streams • Participation in BETTA design • Advice, guidance and administrative support to Ofgem's planning function • Data exchange solutions
Design Assurance	• Design assurance for industry provided by LogicaCMG on behalf of Ofgem • Ensure good fit of systems and procedures • Manage register of risks/issues arising • Manage changes • Maintain common assumptions log

The implementation costs incurred by NGC represent the incremental costs of establishing BETTA processes and systems given, a) the design of BETTA, b) the practicalities associated with achieving the specified implementation date, and c) the extent that existing processes and systems in England & Wales can be re-used, extended or adapted.

Table 3: BETTA implementation expenditure incurred prior to 1 April 2005 (£m, nominal prices)

BETTA implementation Costs	2002/3	2003/4	2004/5	Post Go Live Implementation	**Total**	**Total 2003/4 prices**
Opex (Additional staff, contractors, training, legal)	£1.0m	£3.7m	£8.9m	£0.1m	**£13.7m**	**£13.4m**
Capex (New IT systems for BETTA)	£0.2m	£5.0m	£13.3m	£0.1m	**£18.5m**	**£18.2m**
Total implementation	**£1.2m**	**£8.7m**	**£22.2m**	**£0.2m**	**£32.2m**	**£31.7m**

BETTA implementation Costs	**Total 2002/3 prices**
Opex (Additional staff, contractors, training, legal)	**£13.1m**
Capex (New IT systems for BETTA)	**£17.7m**
Total implementation	**£30.9m**

Appendix 5 England-Scotland interconnector: Existing contractual arrangements

5.1 The England-Scotland interconnector has two parts:

- The NGC interconnector from Harker to the Scottish border (in the west) and from Stella to the Scottish border (in the east)
- The Scottish interconnection from the Scottish border to Chapelcross and Strathaven (in the west), and from the Scottish border to Eccles (and Torness and Cockenzie) in the east.

5.2 Since Vesting, the NGC interconnector has been outside its price controls. At Vesting, the Scottish interconnection (850MW) was included in the Scottish transmission price controls, but it was agreed that any subsequent upgrades would be outside the price controls. Since Vesting, there have be two upgrades, one upgrade to 1600MW and another upgrade to 2200MW.

5.3 Contracts are currently in place between the transmission licensees related to the charges for and the use of the interconnector. These agreements provide for SP Transmission and SHETL to share the pre-Vesting capacity of the interconnector in the proportions of 54%:46% respectively, and the post-Vesting capacity of the interconnector in the proportions of 75%:25% respectively. The contractual arrangements have been discussed in detail elsewhere[70].

5.4 In summary, there are four main contractual relationships:

a) Under the SIA[71], between SP Transmission and SHETL for access to SP Transmission's transmission system to effect transfers over the Interconnector. The SIA provides for SHETL to pay to SP Transmission an annual corridor charge for the provision of a corridor through SP Transmission's transmission system to the Interconnector. This charge replaces SP Transmission's use of

[70] These arrangements are described in more detail in Review of transmission price controls from 2005: SP Transmission Ltd, Scottish Hydro-Electric Transmission Ltd, Initial thoughts, March 2004, Ofgem 52/04
[71] SIA: Scottish Interconnector Agreement

system charges for SHETL's Interconnector flows. The corridor charge is calculated on the SHETL's total capacity share i.e. including pre-upgrade and upgrade components. The upgrade component forms part of the calculation of Interconnector User charges between SHETL and its Interconnector Users.

b) Under the SIA, between SP Transmission and SHETL for the shared use of the Scottish Interconnection. The SIA provides for SHETL to pay an annual capacity charge to SP Transmission to cover capital related costs for SHETL's pre-upgrade part of the Scottish Interconnection and operation and maintenance costs for the total Scottish Interconnection.

   The SIA does not provide for capital payments by SHETL for upgrade assets in the Scottish Interconnection as SP Transmission and SHETL each provided the funds for the construction of their proportion of the upgrade capacity. These capital related costs form part of the calculation of Interconnector User charges between SP Transmission/SHETL and their respective Interconnector Users.

c) Under the UIA[72], between SHETL and NGC for use of NGC's Interconnector. SHETL is required to pay an annual charge for SHETL's proportion of the capacity of NGC's Interconnector. SHETL allocates this to pre-upgrade and upgrade components. The upgrade component forms part of the calculation of Interconnector User charges between SHETL and its Interconnector Users.

d) Under the UIA, between SP Transmission and NGC for use of NGC's Interconnector, SP Transmission is required to pay an annual charge for SP Transmission's proportion of the capacity of NGC's Interconnector. SP Transmission allocates this to pre-upgrade and upgrade components. As with SHETL, the upgrade component forms part of the calculation of Interconnector User charges between SP Transmission and its Interconnector Users.

5.5 Interconnector Users are parties who have contracted with SP Transmission or SHETL for rights to use their respective interconnector capacities.

5.6 As regards use of system charges arising from interconnector capacity, NGC levies Transmission Network Use of System (TNUoS) charges on NGC's interconnectors business which then levies a combined charge (covering remuneration for the provision of interconnector assets owned by NGC, the Transmission business connection charge, and TNUoS charges) for interconnector services under the UIA. The combined charge is split between SP Transmission and SHETL on an agreed basis. Separate from other interconnector charges, SP Transmission and SHETL pass the TNUoS charges through to their respective Interconnector Users.

5.7 NGC's Balancing Services Use of System Charges are paid by the lead parties of the Interconnector BM units registered by Interconnector Users under the BSC, and are separate from charges levied under the UIA.

[72] UIA: Use of Interconnector Agreements (Scotland).

Appendix 6 England-Scotland interconnector: RAV-based valuation

NGC interconnector

6.1 Currently the NGC interconnector is part of NGC's interconnector's business which comprises both the England-Scotland interconnector and the France interconnector.

6.2 NGC's interconnectors business was valued in 1995, as part of the process of valuing NGC's transmission assets. OFFER's Transmission price control review[73] for NGC, Proposals document (October 1996) shows the calculation of the asset values as follows:

Trading value of NGC -	£4.6 bn[74]	
Less Energis	£0.25 bn	
Less interconnectors	£0.20 bn	
Value of transmission	£4.15 bn	1995/6 prices

6.3 The interconnectors business valuation of £200m was based on its contribution to group profits.

6.4 NGC have proposed that to determine the proportions of the £200m interconnectors business value attributable to the England-Scotland interconnector and the France interconnector, the contribution of each to the interconnectors business profits in 1995/6 should be used as the basis. NGC have indicated that the England-Scotland interconnector contributed approximately 19.7% to the interconnectors business profits, giving a value for the England-Scotland interconnector in 1995/6 of £39.3 m (£47.7m in 2003/4 prices, £46.5m in 2002/3 prices). This value can be used to calculate an implied value of the England-Scotland interconnector at Vesting in 1989 of £52.0m (2003/4 prices).

6.5 However, it should be noted that one year's profits may not reflect the long term value of an asset. Ofgem is therefore investigating the sensitivity of the opening

[73] OFFER: The Office for Electricity Regulation, the regulatory body for electricity regulation prior to Ofgem
[74] based on first day (11 December 1995) average share price of £2.09 ½ per share

valuation to different means of allocating the interconnectors business value to the England-Scotland interconnector and the England-France interconnector, including looking at the contributions to profits in different years.

6.6 The following table shows the estimated value for the NGC interconnector as at 31 March 2005, taking into account investments made since Vesting and depreciation calculated on a RAV basis[75].

NGC interconnector	Pre-Vesting Asset value £m 2003/4 prices	Post-Vesting Asset value £m 2003/4 prices	Total Asset value £m 2003/4 prices
Opening value in 1989	52.0	0	52.0
Additions	0	27.8	27.8
Less: depreciation	-39.0	- 4.2	-43.2
Value as at 31 March 2005 (2003/4 prices)	13.0	23.6	36.6
Value as at 31 March 2005 (£m 2002/3 prices)	12.7	23.0	35.7

Scottish interconnection

6.7 The upgrade investments in the Scottish interconnection have been made since Vesting and therefore the issue of the opening value for the assets does not arise.

6.8 The following table shows the estimated value for the Scottish interconnection (upgrade) as at 31 March 2005, taking into account investments made since Vesting and depreciation calculated on a RAV basis[76].

[75] Assets at Vesting are assumed to have a 20 year depreciation life, and assets installed post-Vesting a 40 year depreciation life.
[76] Assets at Vesting are assumed to have a 20 year depreciation life, and assets installed post-Vesting a 40 year depreciation life.

Scottish interconnection SP Transmission	Pre-Vesting Asset value * £m 2002/3 prices	Post-Vesting Asset value £m 2002/3 prices	Total Asset value £m 2002/3 prices
Opening value in 1990	33.8	0	33.8
Additions	35.0	62.0	97.0
Less: depreciation	-36.3	-14.9	-51.2
Value as at 31 March 2005 (2002/3 prices)	32.5	47.1	79.6

* Since the pre-Vesting assets are already included in the price controls, this data is provided for information only.

Scottish interconnection SHETL	Pre-Vesting Asset value * £m 2002/3 prices	Post-Vesting Asset value £m 2002/3 prices	Total Asset value £m 2002/3 prices
Opening value in 1990	0	0	0
Additions	23.4	24.5	47.9
Less: depreciation	-9.1	-6.8	-15.9
Value as at 31 March 2005 (2002/3 prices)	14.3	17.7	32.0

* Since the pre-Vesting assets are already included in the price controls, this data is provided for information only.

Appendix 7 The form of NGC's current revenue restriction

7.1 NGC's current revenue restriction has two parts as follows:

- Part 1: the transmission network revenue restriction, which applies to the provision of transmission network services
- Part 2: the balancing services activity revenue restriction, which in turn has two components
  - (i): the balancing services activity revenue restriction on external costs which applies to the external costs of the balancing services activity
  - (ii): the balancing services activity revenue restriction on internal costs.

7.2 The Part 1 revenue restrictions is often referred to as the "TO price control" and the Parts 2(i) and 2(ii) together are often referred to as the "SO incentive scheme".

7.3 Under NGC's charging methodology statement, NGC recovers from users the revenues allowed under its TO price control from TNUoS charges[77] and the allowed revenues under its SO incentive scheme from BSUoS charges to users.

TO price control

7.4 NGC's TO price control is an RPI-X form of revenue restriction. It was set for the period 2001/2 to 2005/6, following a review carried out in 2000. The allowed revenues were related to a set of outputs, expressed in terms of the levels of transmission capacity to be provided on NGC's transmission system.

7.5 The revenue restriction includes a revenue adjustment mechanism which comes into play if the quantity of new generation connections[78] is higher or lower than

[77] The amounts recovered from TNUoS charges are the allowed revenues net of income received from pre-Vesting connection charges income.

the levels specified by Ofgem at the time of the price control review and set out in NGC's licence.

7.6 Recently an adjustment has been made to NGC's TO price control to take into account the additional assets funded through price controlled revenues following the introduction of the revised connection charging boundary in England and Wales (PLUGS).

SO incentive scheme

7.7 The SO incentive scheme covers both NGC's internal costs and its external costs associated with operating and balancing the transmission system.

7.8 The SO internal cost controls have two components:

- an incentivised component which specifies a target for each year of the period 2001/2 to 2005/6.
- a non-incentivised component which mainly relates to the financing of SO related assets.

7.9 The SO incentive scheme as it applies to incentivised internal costs and to external costs takes the form of a sliding scale (profit sharing) scheme.

[78] The scheme also includes changes in interconnector capacities.

Appendix 8 Transmission owner SO related activities

8.1 Ofgem has set out below a set of activities which, if carried out by transmission owners, it considers should be remunerated under the same revenue restriction component as NGC's SO internal cost control:

- the operation, development and maintenance of computer facilities and associated activities necessary for the real-time operation of the transmission system.
- the planning and co-ordination of transmission circuit outages for the purposes of construction, asset replacement, repairs and maintenance
- rates (related to the above activities).

8.2 It should be noted that under BETTA transmission owners will not be involved in procuring and using balancing services, the charging and billing of users, or the development and maintenance of user-facing codes, and therefore should not incur internal costs associated with these activities.