

**Extending the National Grid Company's
Transmission Asset Price Control for
2006/07**

Initial Consultation

May 2004

102/04

Summary

The present transmission asset price control for the National Grid Company (NGC) is due to run until 31 March 2006. This paper sets out proposals for extending the price control by one year in order for it to align with price control review dates for other transmission asset owners in both electricity and gas. This will have the considerable benefit of enabling all transmission issues to be considered together at the next review.

In setting the price control for a one year period it will be important to meet the objectives of the review in an appropriate and proportionate way. Ofgem will have to ensure that the interests of consumers are protected and that NGC has appropriate incentives to operate and maintain an efficient, economic and coordinated transmission system, while at the same time recognising that a full review of all NGC's activities for the year would not be practicable or desirable.

The proposals set out in this paper draw on policy developments in related areas of Ofgem's work, and consider a preliminary assessment of NGC's performance relative to the assumptions made in setting the present price control. It is proposed that where appropriate, assumptions made in the present price control should be extended and applied to the additional year in a straightforward way. Where evidence exists that assumptions are no longer valid, some additional review work will be carried out. For example, a limited review of capital expenditure may be necessary to take account of the rising trend in essential asset replacements. It is also proposed to adjust the cost of capital in the light of work carried out as part of the review of the electricity distribution companies' price controls.

Following comments received to this document, Ofgem proposes to issue a statement later this year confirming the approach to be taken in extending NGC's transmission asset price control for 2006/07. It is proposed to carry out a limited review of NGC's capital expenditure requirements in 2004/05 in conjunction with a wider review of transmission investment to support renewable generation. The price control calculations will then be finalised in 2005/06 for implementation on 1 April 2006.

Table of contents

1. Introduction.....	1
Purpose of this document	1
Background	1
Previous documents and consultation	2
Other relevant workstreams.....	4
Structure of the document	5
Responses and timetable	6
2. Links with other projects	7
Transmission investment and renewable generation.....	7
BETTA and the extension of the Scottish TO price controls	8
Distribution price control review	10
Developing network monopoly price controls	10
Network security of supply	11
3. Current price control update	12
Performance against price control assumptions.....	12
Capital expenditure	13
Operating expenditure	14
4. Setting the 2006/07 price control	15
Options for the review.....	15
Operating expenditure	16
Capital expenditure	17
Cost of capital and other financial issues.....	18
Excluded revenues	21
Review of NGC's SO internal costs.....	22
5. Issues for consideration and next steps	23
Appendix 1 Respondents to Ofgem's open letter	24
Appendix 2 Present price control calculations.....	25

1. Introduction

Purpose of this document

- 1.1. This paper discusses the approach to extending NGC's transmission asset price control for the period 1 April 2006 to 31 March 2007. The intention is to protect the interests of consumers while ensuring that the regulatory framework in which NGC operates provides appropriate incentives for the company to invest in and operate an economic, efficient and co-ordinated electricity transmission system.

Background

- 1.2. As a transmission licence holder, NGC has two roles:
 - ◆ Transmission Asset Owner and Operator (TO); and
 - ◆ System Operator (SO).
- 1.3. In its role as TO, NGC has responsibility to construct, maintain and operate the high-voltage transmission lines and associated equipment in England and Wales in an economic, efficient and co-ordinated manner. There are two further companies licensed to carry out TO activities in Scotland – SP Transmission Ltd and Scottish Hydro-Electric Transmission Ltd.
- 1.4. In England and Wales suppliers and generators contract with each other in a competitive wholesale electricity market. In its role as SO, NGC has responsibility to physically balance the electricity system between supply and demand in real time. This involves ensuring that the system remains within safe operating limits and that the pattern of generation and demand is consistent with any transmission-related constraints. It also gives NGC responsibility for the residual purchasing and selling of electricity to keep the system in balance.
- 1.5. This paper is concerned with proposals for NGC's TO responsibilities. The SO incentive scheme for NGC's external costs from 1 April 2004 has been the

subject of separate proposals by Ofgem.¹ The internal cost SO incentive scheme is due for renewal from 1 April 2006 and there may be advantages in including an extension of this scheme as part of the proposals discussed in this paper. This is explained in chapter four.

- 1.6. NGC's TO functions are regulated by means of periodic review of relevant activities and the setting of a price control. Under this approach, Ofgem sets the allowed revenue of the company, typically for a period of five years. The allowed revenue is based on an assessment of efficient capital and operating expenditure over the period, together with an assessment of efficient financing costs required to fund the business. This approach to regulation has proved to be an effective means of incentivising monopoly operators to carry out their licence obligations in an efficient way while allowing an appropriate share of the subsequent benefits to be passed on to consumers.
- 1.7. NGC's present price control covers the five years to 31 March 2006. SP Transmission and Scottish Hydro-Electric Transmission's price control periods come to an end on 31 March 2005. Ofgem has previously consulted on the possibility of adjusting the review dates so that the TO price controls align with each other.

Previous documents and consultation

- 1.8. Ofgem issued a consultation paper in June 2003 that included a discussion of the timetable for setting future price controls.² The paper discussed extending the two Scottish TO price controls by one year to align the timing of their next full review with the TO price control review in England and Wales. It also sought views on whether there were advantages in aligning electricity transmission review dates with those for gas transmission (the current gas transmission price control runs until 31 March 2007). The majority of respondents commenting on these issues were in favour of extending the Scottish price controls and recognised that there would be advantages in aligning the timing of all the electricity and gas transmission price controls.

¹ See 'NGC System Operator incentive scheme from April 2004 – proposals and statutory licence consultation' February 2004, 39/04

² Developing network monopoly price controls – initial conclusions, June 2003 54/03
Extending NGC's transmission asset price control for 2006/07

- 1.9. Following the June paper, Ofgem issued an open letter setting out the possible approach that could be taken in aligning transmission price controls.³ The letter set out Ofgem's intention of implementing a two year extension to the Scottish TO price controls and a one year extension to NGC's TO price control. This would enable new price controls to commence simultaneously for all TO activities in April 2007 and allow GB-wide transmission issues to be considered together for both electricity and gas. It also suggested delaying implementation of the gas distribution price control by one year to 1 April 2008. This would have the advantage of allowing gas transmission and distribution issues to be considered separately as they are in electricity, as well as leading to a more balanced workload for all parties involved.
- 1.10. The open letter also set out some of the issues that would need to be considered in extending the transmission price controls. It recognised that a full price control review might not be appropriate or proportionate. It also recognised that in extending price controls it would be important to ensure that the interests of consumers are adequately protected and that companies are able to finance their licensed activities.

Summary of responses

- 1.11. As listed in appendix one of this paper, four responses were received to the open letter. These are available from Ofgem's website (www.ofgem.gov.uk). In general, respondents were supportive of the proposal to align transmission price control review dates. Two respondents supported the need for an appropriate and proportionate approach to the extension of the existing price controls. One respondent stressed the need for great care to be taken in extending the present price controls and that a simple roll-forward would not be acceptable; all elements of each control should be revisited to ensure that the controls continue to be set at an appropriate level.

³ Timetables for price control reviews – Ofgem open letter, 17 November 2003 143/03
Extending NGC's transmission asset price control for 2006/07
Office of Gas and Electricity Markets

Ofgem's proposals

- 1.12. Based on responses to previous consultation, Ofgem proposes to align transmission price control review dates across both electricity and gas by extending the existing electricity TO price controls. It is also Ofgem's intention to extend the current gas distribution price control by one year so that the next full price control would take effect from April 2008, enabling gas transmission and gas distribution issues to be considered separately.
- 1.13. This paper considers the approach that should be taken in extending NGC's TO price control for an additional year. The intention is that the next full price control review will be implemented with effect from 1 April 2007. Ofgem is making separate proposals for the extension of the Scottish TO companies under the BETTA project, and a consultation paper on the proposed approach to extending the gas distribution price controls will be published next year.

Other relevant workstreams

- 1.14. There are links between the issues raised in this document and other areas of Ofgem's work. In particular, developments in the following areas of work need to be taken into account:
- ◆ transmission investment and renewable generation - this area of work has important implications for the overall level of capital expenditure and the development of a supplemental incentive mechanism to run alongside the main price control;
 - ◆ BETTA and the extension of the Scottish TO price controls from 2005 – there are clearly issues of consistency between the approach taken in extending the Scottish transmission companies' price controls and that taken in respect of NGC;
 - ◆ the distribution price control review – further proposals are due to be published later this year. The proposals will include updated analysis of the cost of capital and certain components of expenditure that may be relevant in reviewing NGC's price control;

- ◆ developing network monopoly price controls – this workstream set out key principles to be applied in setting future price controls, and considered issues such as the retention period for operating and capital expenditure efficiencies; and
 - ◆ SO incentive arrangements – as noted in paragraphs 1.4 and 1.5 there are important SO incentive arrangements in place to ensure that NGC faces balanced incentives across all its activities.
- 1.15. It is important to ensure that where appropriate a consistent approach is taken across the various areas of Ofgem’s work. These areas are discussed in more detail in chapter two.

Requirement for an impact assessment

- 1.16. Section 5A of the Utilities Act 2000 requires the Authority to either publish an assessment of the likely impact of implementing significant policy proposals or to set out its reasons for thinking that it is unnecessary to carry out such an assessment.
- 1.17. The Authority considers that the proposals set out in this document do not amount to a significant policy proposal under the terms of section 5A of the Utilities Act. The proposal to extend NGC’s TO price control to 2006/07 was originally made in June 2003, and confirmed in an open letter in November 2003. Both documents summarised the clear benefits in aligning the price control review dates across both the gas and electricity transmission companies and received the support of respondents. The proposals in this document discuss the most appropriate approach that should be taken in implementing this decision and allow for further responses from interested parties.
- 1.18. Ofgem intends to issue a further document in 2005/06 that sets out the proposed price control calculations for 2006/07. It is for consideration as to whether an impact assessment will be required at that time.

Structure of the document

- 1.19. This document is structured as follows:

- ◆ chapter two – discusses the links between the issues raised in this document and other relevant workstreams;
- ◆ chapter three – an update of NGC’s performance in the present price control period;
- ◆ chapter four – options for setting the price control and Ofgem’s proposed approach; and
- ◆ chapter five – a summary of issues for consideration and next steps.

Responses and timetable

1.20. Views are invited on any aspect of the matters raised in this document, and in particular on the specific issues raised in chapters four and five. All responses will be published on Ofgem’s website and held electronically in the Research and Information Centre. Consultees should put any confidential material in a separate appendix to their response. Ofgem prefers to receive responses in an electronic form.

1.21. Responses should be received by **9 July** and sent to:

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1.22. Once responses to this consultation have been considered, a short statement will be issued that summarises the views expressed and sets out how Ofgem plans to proceed in setting NGC’s TO price control for 2006/07. It is then the intention that a further document will be issued in 2005/06 setting out the proposed price control calculations for the interim year.

2. Links with other projects

- 2.1. This chapter discusses other areas of Ofgem's work that need to be taken into account in reviewing NGC's TO price control for 2006/07.

Transmission investment and renewable generation

- 2.2. One of the goals of the government's energy policy is to stimulate the growth in electricity generation from renewable sources. As set out in the Energy White Paper, the aim is for renewables to provide 10 per cent of UK electricity by 2010 with a further aspiration to double this share by 2020. The consequent change in the pattern and location of generation is likely to have a significant impact on the requirements for future transmission investment.
- 2.3. At the time the present transmission price controls were set there was considerable uncertainty about the level, location and timing of renewable energy development and Ofgem decided to exclude any significant allowances for the related transmission investment from the projections underlying the price controls. NGC's price control contains a mechanism that allows its price control revenues to vary if new generating or interconnection capacity exceeds or falls short of that assumed in the price control.⁴ However, as much of the renewable generation capacity will be in Scotland, this mechanism will not deal adequately with investment requirements that are spread across all three transmission networks. At present, there is no adequate mechanism by which the transmission companies can recover funding for renewable-related investment before the start of the next control period.
- 2.4. Ofgem recently published its second consultation document that discusses these issues.⁵ The paper includes NGC's estimates of infrastructure expenditure related to renewables over the next three years and they are set out in table 2.1. Although NGC has yet to commit to this expenditure, the table shows forecast expenditure assuming that funding arrangements are agreed.

⁴ The correction mechanism is based on an investment cost of £23m per GW of new generation or interconnections above or below the 5 GW assumed in setting the price control.

⁵ Transmission investment for renewable generation, second consultation, May 2004, 98/04
Extending NGC's transmission asset price control for 2006/07
Office of Gas and Electricity Markets

Table 2.1: NGC's estimated infrastructure expenditure related to renewables over the next 3 years (money of the day)

2004/05	2005/06	2006/07
£12m	£48m	£79m

- 2.5. By way of comparison, NGC's TO price control allowed for £257m and £250m of capital expenditure in 2004/05 and 2005/06 respectively. Clearly, renewable-related expenditure is likely to be a significant component of capital expenditure in 2006/07.
- 2.6. The recent consultation document also proposes the introduction of an adjustment mechanism to supplement existing price control arrangements. This mechanism will cover the period until implementation of the next main transmission price controls in 2007/08. The options being considered for such a mechanism are as follows:
- ◆ a lump sum allowance to the existing price controls;
 - ◆ establishing a revenue driver to assist in dealing with some of the uncertainties of renewable-related transmission investment; or
 - ◆ a cost pass through mechanism - although it is Ofgem's view that such an approach is unlikely to be appropriate .
- 2.7. In implementing the proposed adjustment mechanism, Ofgem will review the plans of licensees for new transmission network investment and other relevant information. Draft proposals are expected to be published in July 2004 and final proposals in autumn 2004.

BETTA and the extension of the Scottish TO price controls

- 2.8. The British Electricity Trading and Transmission Arrangements (BETTA) project will create a single market for electricity across Great Britain. This involves establishing a common set of rules for the wholesale trading of electricity,

developing a consistent basis for access to and charging for the transmission network, together with the creation of a single GB-wide system operator.

- 2.9. Under BETTA, the two Scottish transmission companies will have revised statutory duties and licence obligations as TOs. The present transmission price controls for the two companies come to an end on 31 March 2005, which coincides with the planned implementation date for BETTA. Ofgem has made proposals to extend these price controls by two years in order to align them with the review date for other transmission price controls.⁶
- 2.10. There are additional issues relating to BETTA that need to be considered in extending the Scottish companies' transmission price controls. Nevertheless, it is likely that a broadly consistent approach between the Scottish companies' and NGC's price control extensions will be appropriate. Draft proposals for the extension of the Scottish transmission companies' price controls are due to be published in July 2004, with final proposals following in October 2004. The new price controls will be implemented from 1 April 2005.
- 2.11. The additional costs that NGC incurs in implementing BETTA will be considered as part of developing the price controls and incentives that will apply under BETTA. Once BETTA commences, licensees' allowed revenues will include an appropriate allowance for the implementation costs incurred. In the event that BETTA is significantly delayed or does not go ahead, consideration would need to be given to allowing appropriate implementation costs to be included in NGC's allowed revenues for 2005/06 and 2006/07.
- 2.12. Other issues relating to BETTA, such as the extension of SO arrangements, the development of an SO / TO interface in Scotland and the integration of the England–Scotland interconnector within the price control, will also be dealt with as part of the BETTA project.

⁶ 'Review of transmission price controls from 2005: SP Transmission Ltd and Scottish Hydro-Electric Transmission Ltd, Initial thoughts' March 2004 52/04
Extending NGC's transmission asset price control for 2006/07
Office of Gas and Electricity Markets

Distribution price control review

2.13. In March 2004, Ofgem issued its latest policy document as part of the distribution price control review (DPCR).⁷ The key stages in finalising the review are as follows:

- ◆ June 2004 – initial proposals paper published, including a first estimate of revenue allowances and the associated recovery profile;
- ◆ September 2004 – update paper published;
- ◆ November 2004 – final proposals paper published, including proposed licence modifications; and
- ◆ 1 April 2005 – new price controls implemented.

2.14. When it comes to establishing the level of NGC's TO price control for 2006/07, the DPCR will be the most recent full price control to have been completed by Ofgem. There may be particular issues considered as part of the DPCR that are of relevance in assessing NGC's price control for 2006/07. For example, the DPCR will present analysis of the cost of capital and determine appropriate treatment of certain categories of cost – such as pensions. These areas are discussed in more detail in chapter four of this paper.

Developing network monopoly price controls

2.15. In June 2003 Ofgem published a paper that reviewed the way in which price controls work and identified potential improvements.⁸ The paper confirmed the merits of incentive regulation and recognised the benefits of a transparent process in aligning the incentives that companies face with consumers' interests. The intention was to establish a framework for setting price controls that could be applied across all distribution and transmission activities.

2.16. It will be appropriate to consider the issues raised in the June 2003 paper and assess their relevance to extending NGC's TO price control. In particular, the

⁷ 'Electricity distribution price control review, policy document' March 2004, 62/04

⁸ 'Developing network monopoly price controls, initial conclusions' June 2003, 54/03
Extending NGC's transmission asset price control for 2006/07
Office of Gas and Electricity Markets

paper proposed a move to rolling retention periods for efficiency savings to provide for more consistent incentives over time.

Network security of supply

- 2.17. Ofgem is currently carrying out an investigation into the causes of the interruptions to electricity supply that took place in parts of South London and the Midlands last year. Any conclusions reached that impact on the operation or funding of the transmission network may need to be taken into consideration in setting NGC's price control for 2006/07.

3. Current price control update

Performance against price control assumptions

- 3.1. An important consideration in assessing how to extend NGC's TO price control is its performance against the various assumptions that were made in setting the existing price control.
- 3.2. Appendix two of this paper summarises the price control calculations used in setting NGC's current TO price control. Financial information against which to assess outturn performance relative to price control assumptions is only available for two full years, 2001/02 and 2002/03. Table 3.1 gives a high-level breakdown of each year's summary financial information in comparison to allowances made at the time the price control was set. This information has been provided by NGC.

Table 3.1: Allowed price control and outturn revenues (£m, 1999/00 prices)

	2001/02			2002/03		
	Allowed	Actual	Variance	Allowed	Actual	Variance
Opening asset values	4,517	4,473	-44	4,522	4,505	-17
Depreciation	-285	-285	0	-292	-292	0
Capex	290	317	27	279	321	42
Closing values	4,522	4,505	-17	4,509	4,533	24
Controllable operating costs	187	198	11	175	202	27
Operating costs	290	304	14	276	300	24
Depreciation allowance	285	285	0	292	292	0
Return	282	280	-2	282	277	-5
Price control revenues	758	773	15	747	738	-9
Excluded revenues	100	94	-6	105	132	27
Total revenues	858	868	10	852	870	18

- 3.3. NGC has prepared the information in table 3.1 on a consistent basis with the definitions used in the price control calculations. For example, the actual measure of return is calculated as the sum of actual revenues less the sum of actual costs, with both revenues and costs categorised according to regulatory definitions used in setting the price control.
- 3.4. The table shows that both capital and operating expenditure in the first two years of the price control were above the projections made by Ofgem at the last price control review. Capital expenditure exceeded that allowed for in the price control by £27m in 2001/2 and by £42m in 2002/3. Controllable operating expenditure was ahead of that allowed for by £11m in 2001/2 and £27m in 2002/3.

Capital expenditure

- 3.5. The opening Regulatory Asset Value was £44m lower than that assumed in setting the price control. This was a result of reduced expenditure in 2000/01 on various generation connection projects and delays to the second Yorkshire Line project. More of this expenditure than expected therefore fell in the current, rather than the previous, control period.
- 3.6. With respect to the £69m overspend of capital expenditure in 2001/02 and 2002/03, NGC has made the following comments:
- ◆ there was increased expenditure on exit point schemes as a result of higher than expected growth in demand. NGC observes that peak demand is some 7 per cent higher than that assumed when setting the price control;
 - ◆ there has been increased expenditure on other infrastructure and entry connection projects relative to that assumed at the last review. This includes delayed expenditure on the second Yorkshire Line project and the Spalding and Humber refinery projects.
- 3.7. For 2003/04, capital spending is forecast to be £49m higher as a result of further increased spending on exit point schemes, such as those at New Cross and Willenhall, and other increased infrastructure costs.

3.8. NGC forecasts that capital expenditure to the end of the control period will exceed levels assumed in setting the current price control. This is due to increased levels of demand leading to additional expenditure on reactive compensation infrastructure schemes and exit point schemes. This overspend will be higher assuming renewable-related expenditure proceeds.

Operating expenditure

3.9. Controllable operating expenditure has exceeded the projections Ofgem made at the time of the last review by a total of £38m in 2001/02 and 2002/03. NGC cites the following reasons for this:

- ◆ significant re-organisation costs were incurred in 2001/02 in attempting to realise operating efficiencies in the business. Following this, in 2002/03 a wide-ranging strategic review of the company's operations was undertaken which also incurred re-organisation and enabling upfront costs;
- ◆ there were a number of individual project costs in 2002/03 that exceeded the allowances made in the price control. In particular, costs associated with the Birmingham northern relief road and the A1(M) Ferrybridge scheme were higher than anticipated. These projects are rechargeable diversions, generating additional excluded revenue as well as costs.

3.10. NGC's operating expenditure forecast for 2003/4 shows a reduction of £9m against that allowed for in the price control. According to NGC, this reflects the benefits of the company's re-organisation and strategic review, along with a low level of transmission line diversion activity taking place in the year.

3.11. For the remainder of the current price control period, NGC expects annual controllable operating expenditure to out-perform the price control assumptions.

4. Setting the 2006/07 price control

4.1. This chapter takes account of the evidence discussed in previous chapters to suggest an appropriate approach to setting NGC's TO price control for 2006/07. It begins by assessing the broad approach to be taken, followed by a discussion of some of the more detailed issues to be considered in each of the main areas of the review.

Options for the review

4.2. There are three broad approaches that could be taken in reviewing NGC's price control for 2006/07:

- ◆ option one: carry out a full review of NGC's activities for the interim year;
- ◆ option two: use a simplified approach in reviewing the price control for the interim period wherever possible. This will involve a high-level review of the current price control assumptions and where appropriate carrying these forward. Where evidence suggests an alternate approach should be taken, certain aspects of the review will be considered in more detail; or
- ◆ option three: take a high-level approach in setting allowed revenues, possibly following a similar approach to that taken in extending the Scottish companies' price controls in 1999.

4.3. As noted in chapter one, it is unlikely that the first option would be appropriate. A detailed assessment of NGC's costs, revenues and scope for cost efficiencies is appropriate for quinquennial review, but would not be proportionate for a one year period.

4.4. Option two appears to strike an appropriate balance in adequately protecting the interests of consumers while ensuring NGC can finance its licensed activities within a stable regulatory environment. This approach would require an assessment of performance relative to the assumptions underlying the present price control and, in broad terms, the likely level of expenditure in 2006/07.

The development of policy in other workstreams within Ofgem, particularly in respect of renewable-related transmission expenditure and the distribution price control review, will provide additional guidance on the approach to be taken in respect of key issues.

- 4.5. In extending the two Scottish transmission companies' price controls for the period April 1999 to March 2000, the approach taken was to allow the same level of total revenue in real terms for 1999/00 as was allowed in 1998/99. This was in order to provide reasonable assurance and stability both to customers and to the two companies. However, in extending NGC's price control for 2006/07, there are a number of specific factors that it will be appropriate to take into account, making this approach unsuitable.
- 4.6. The main components of the review, issues associated with them and the proposed approach are discussed below.

Operating expenditure

- 4.7. Operating expenditure assumptions in NGC's present TO price control were developed after a detailed assessment of costs. Controllable costs were assumed to fall in real terms in each year of the present control period. Real reductions of 6 per cent, 5 per cent, 2.4 per cent and 2.5 per cent were assumed between each respective year of the control.
- 4.8. As discussed in chapter three, NGC's cumulative performance in managing operating expenditure over the present control period is expected to be broadly consistent with the assumptions made in setting the current price control. On this basis, and in line with the proposed approach to the review suggested above, it seems appropriate to carry forward similar operating expenditure assumptions for 2006/07.
- 4.9. In extrapolating current control period operating expenditure assumptions to 2006/07, it will be important to consider the impact on incentives for efficiency improvements. If the existing assumptions are carried forward for an additional year, then the benefit of any operating efficiencies in excess of those assumed in setting the price control would be retained during the additional year. Such an

approach would serve to reinforce the efficiency incentives for the remainder of the control period, which in the longer term should be of benefit to consumers.

- 4.10. There is also the question of the treatment of efficiency savings that are achieved during 2006/07. A conventional approach to setting a price control would effectively only offer any benefit to be retained for one year, as assumptions over operating expenditure would be re-assessed as part of the next full review. However, this approach would not be consistent with Ofgem's policy of allowing fixed retention periods in order to generate more consistent efficiency incentives over time. It is therefore proposed that a five year retention period should apply in respect of any 2006/07 operating expenditure efficiency savings in order to strengthen efficiency incentives and facilitate a more consistent treatment of them over time. Operating expenditure for subsequent years would be assessed as part of the next full price control review to take effect from April 2007.
- 4.11. It is proposed to take the above broad approach with the projections of operating expenditure being published in 2005/06 alongside the other calculations necessary to extend the price control. It is for consideration as to whether this requires a further real reduction of 2.5% in assumed controllable costs from 2005/06, or whether they should be maintained at 2005/06 levels in real terms. In addition, specific treatment may be required in respect of certain categories of cost over which NGC has limited control. This may, for example, be the case in assessing revised pension costs. The December 2003 DPCR document set out a proposed method for taking pension costs into account in setting future price controls. The March 2004 DPCR document went on to propose that no adjustment should be made to the distribution companies' present price controls in respect of over or under funding of pension costs, and that it is also not Ofgem's intention to make any such adjustment prior to the end of transmission companies' present price controls. However, it might be appropriate to make an adjustment in respect of any over or under funding in reviewing NGC's TO price control for 2006/07.

Capital expenditure

- 4.12. The analysis in chapter three shows that capital expenditure in the first two years of the present control period has exceeded that allowed for in the price control.

NGC also forecasts that expenditure for each of the remaining years of the control period will exceed that allowed for, mainly as a result of increased demand leading to additional expenditure on reactive compensation infrastructure schemes and exit point schemes. This overspend will be increased further by any renewable-related transmission investment. NGC also forecasts increased levels of asset replacement expenditure, particularly in relation to overhead line equipment and switchgear. These levels of expenditure are expected to increase through the next control period.

- 4.13. In view of these issues, it would be inappropriate to simply roll-forward existing price control assumptions in respect of capital expenditure. Where circumstances have changed significantly, a re-assessment of the required capital expenditure will be required. On this basis, Ofgem therefore proposes to carry out a limited review of NGC's capital expenditure requirements when it sets price control revenues for 2006/07. It is proposed that this will be carried out in 2004/05 in conjunction with the wider review of transmission investment to support renewable generation discussed in chapter two.
- 4.14. As in the case of operating expenditure, it is Ofgem's policy to allow fixed retention periods for efficiency savings achieved in capital expenditure, subject to required outputs being achieved. It will be appropriate to consider how best to incentivise capital expenditure in the light of these commitments and the circumstances described in 4.13

Cost of capital and other financial issues

- 4.15. This section considers the approach to be taken in deriving an appropriate cost of capital and asset valuation to apply in setting NGC's price control for 2006/07.

The cost of capital

- 4.16. As well as incurring operating and capital costs, a company also incurs financing costs in running its business. The cost of capital is the level of expected return that is required by the financial markets to provide capital to a business, in the form of both debt and equity. In setting a price control, regulators estimate an appropriate cost of capital and apply it to the value of capital employed in the

business. This then enables price control revenues to allow for the recovery of efficient financing costs.

4.17. In setting NGC's present price control in 2000, Ofgem used a real pre-tax cost of capital of 6¼ per cent. This was based on a weighted average of the cost of debt and equity finance and took into consideration relevant evidence available at the time, including decisions taken by other regulators, Competition Commission reports and an analysis of NGC's financial ratios. In determining an appropriate cost of capital, the following assumptions were made:

- ◆ **the level of gearing** – Ofgem assumed that the proportion of debt to debt plus equity, known as gearing, was in the range of 60 to 70 per cent. This was considered to be appropriate in view of the available evidence and consistent with NGC maintaining a solid investment grade credit rating;
- ◆ **the cost of debt finance** – this was based on an analysis of its two components: a risk-free rate and a company specific premium. The risk-free rate was assessed as being in the range of 2.5 to 2.75 per cent with a company specific premium for NGC of 1.7 per cent. Combining these components suggested a real cost of debt finance of between 4.2 and 4.45 per cent; and
- ◆ **the cost of equity finance** –using the Capital Asset Pricing Model (CAPM) and assuming an equity risk premium of 3.5 per cent which, combined with the assumed risk-free rate, gave a post-tax cost of equity finance of between 6 and 6.25 per cent. Adjusting for taxation gave a pre-tax cost of equity of 8.6 to 8.9 per cent.

4.18. In extending NGC's price control, Ofgem will need to consider whether the cost of capital assumed in the current price control should apply for 2006/07. In doing so, it will be appropriate to consider the suitability of the above assumptions in the light of more recent evidence that has become available.

4.19. Work is being carried out in determining an appropriate cost of capital for electricity distribution companies as part of the review of the distribution price controls. It may be appropriate for the cost of capital that is derived as part of the distribution price control review to be considered for use in extending

NGC's price control given the similarities between the businesses and the objectives and timing of each review.

- 4.20. At the last review of NGC's TO price control in 2000, Ofgem used a real pre-tax cost of capital of 6¼ per cent. When the electricity distribution companies' price controls were last reviewed in 1999 a real pre-tax cost of capital of 6½ per cent was used. It is for consideration as to whether such a differential should apply during 2006/07.
- 4.21. In the latest DPCR policy document, Ofgem set out an initial range for the cost of capital for electricity distribution companies, based on the CAPM model for the cost of equity and taking account of other relevant evidence currently available.⁹ This proposed a range for the pre-tax cost of capital of between 6 and 7.2 per cent.
- 4.22. Whereas previous price controls set by Ofgem, including NGC's current control, have used a pre-tax cost of capital, Ofgem is considering using a post-tax return for the distribution review. Moving to a post-tax approach for an extension of NGC's price control would involve making an assessment of the expected tax position of the company. For consistency with the pre-tax approach used in the existing price control it may be appropriate to make a simple conversion of the cost of capital developed as part of the distribution review to a pre-tax basis and applying this rate of return for the interim period. Consideration of moving to a fully developed post-tax approach would be made at the next full price control review.

The value of the asset base

- 4.23. In order to determine an appropriate return and regulatory depreciation allowances for 2006/07, a view will be required of the Regulated Asset Valuation (RAV) at 1 April 2006. 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.

⁹ For a full discussion see 'Electricity distribution price control review – background information on the cost of capital' 62a/04, March 2004
Extending NGC's transmission asset price control for 2006/07
Office of Gas and Electricity Markets

4.24. For the purposes of extending the present price control it would not be appropriate or proportionate to make a full assessment of efficiently incurred capital expenditure. As set out above, Ofgem proposes to carry out a limited review of capital expenditure during 2004/05. Further work will be undertaken in 2005/06 as part of the next full price control review that will allow Ofgem to estimate the RAV from 1 April 2006.

Excluded revenues

4.25. Certain categories of NGC's revenues are excluded from the price control calculations. These include revenues from Energis for the use of NGC's transmission assets in providing telecommunication services, revenues in respect of post-vesting connection charges and revenues received from third parties in relation to chargeable diversions of the transmission network. In determining price control revenues, a forecast of these categories of revenue is deducted from the total revenues that NGC is permitted to recover in order to cover its costs. Revenues in respect of providing excluded services are then recovered in addition to price control revenues and NGC bears the risk of any under or over recovery.

4.26. The main component of excluded revenue relates to connection charges levied since vesting. Modifications were implemented to NGC's connection and use of system charging methodologies on 1 April 2004 in relation to the 'plugs' project.¹⁰ The effect of these modifications was to make the connection boundary shallower, or in other words to re-categorise certain connection assets as infrastructure assets. This means that some revenues that were previously recovered as connection charges, and therefore classified as excluded revenue, will in future be recovered within the price control as use of system charges. Various adjustments have been made to NGC's present TO price control to reflect these changes.

4.27. In reviewing NGC's price control for 2006/07, a forecast of excluded revenue will be required in order to determine the revenues to be recovered within the

¹⁰ Details of NGC's consultation and Ofgem's decision in relation to 'Connection Charging Methodology Modification 07' and 'Use of System Charging Methodology Modification 10' are available from NGC's website (www.nationalgrid.com)

price control. This will need to take account of any additional adjustments required in respect of the above modifications to the connection boundary. Other components of excluded revenue will also be reviewed when the 2006/07 price control calculations are finalised in 2005/06. Where appropriate, it will be the intention to carry forward the same assumptions in forecasting these excluded revenues as used in the present price control.

Review of NGC's SO internal costs

- 4.28. As described in chapter one, NGC has incentive schemes that cover its activities as system operator. The scheme covering its internal costs is due for renewal from 1 April 2006.
- 4.29. Ofgem is considering extending NGC's current SO internal cost price control to cover 2006/07. It may be appropriate to do this as part of the proposals to extend the TO price control set out in this document. Carrying out both the TO and SO internal cost reviews together would have advantages in terms of assessing shared costs between NGC's different activities. It may also mean that potential issues associated with the different incentive structures faced under the TO and SO regimes could be taken into account more effectively.

5. Issues for consideration and next steps

5.1. Views are invited on any of the matters discussed in this paper. In particular, in the light of NGC's TO performance in the present control period and policy developments in related areas, whether:

- ◆ consultees agree with the overall approach proposed for extending NGC's TO price control to 31 March 2007 as set out in chapter four;
- ◆ it is appropriate to carry forward the operating expenditure assumptions used in the current price control, or whether particular issues are likely to require more detailed consideration;
- ◆ carrying out a limited review of capital expenditure during 2004/05 is appropriate;
- ◆ the cost of capital to be used for 2006/07 should be consistent with that derived as part of the electricity distribution price control review; and
- ◆ it is appropriate to include reviewing NGC's SO internal cost price control as part of the proposals set out in this document.

5.2. Once responses to this consultation have been considered, a short statement will be issued that summarises the views expressed and sets out how Ofgem plans to proceed in setting NGC's TO price control for 2006/07.

5.3. Ofgem then intends to issue a further document in 2005/06 that sets out the proposed price control calculations for the interim year.

Appendix 1 Respondents to Ofgem's open letter

1.1 Four companies responded to Ofgem's open letter 'Timetable for price control reviews' dated 17 November 2003. The full responses are available from Ofgem's website (www.ofgem.gov.uk).

1.2 The respondents were:

- ◆ British Gas Trading;
- ◆ EDF Energy;
- ◆ National Grid Transco; and
- ◆ SP Transmission Ltd.

Appendix 2 Present price control calculations

Table 1: NGC's TO price controlled revenues (1999/00 prices)¹¹

£ million	2001/2	2002/3	2003/4	2004/5	2005/6	Total
<i>RAV analysis</i>						
Opening asset values	4,517	4,522	4,509	4,470	4,398	
Depreciation	-285	-292	-299	-306	-312	-1,493
Capex	290	279	260	234	222	1,285
Closing values	4,522	4,509	4,470	4,398	4,308	
<i>Revenue analysis</i>						
Opex incl non-controllable	290	276	262	254	260	1,342
Depreciation allowance	285	292	299	306	312	1,493
Return	282	282	281	277	272	1,395
Total	858	850	842	837	843	4,230
PV of totals	832	776	723	677	642	3,651
<i>Path of allowed revenues</i>						
Price control revenues	758	747	736	724	714	3,678
Excluded revenues	100	105	109	116	121	550
Total revenues	858	852	844	840	835	4,229
PV of totals	833	778	725	680	635	3,651

* discounted at 6.25 per cent cost of capital

¹¹ From 'The transmission price control review of the National Grid Company from 2001: transmission asset owner – final proposals' Ofgem, September 2000
 Extending NGC's transmission asset price control for 2006/07
 Office of Gas and Electricity Markets