

October 1999

**Reviews of Public Electricity
Suppliers 1998 to 2000**

Scottish Transmission Price Control Review

Draft Proposals Paper

REVIEWS OF PUBLIC ELECTRICITY SUPPLIERS
1998-2000

SCOTTISH TRANSMISSION PRICE CONTROL REVIEW

DRAFT PROPOSALS PAPER

CONTENTS PAGE

FOREWORD

1	FORM OF THE PRICE CONTROL	5
2	OPERATING COSTS	11
3	CAPITAL EXPENDITURE	23
4	FINANCIAL ISSUES	32
5	PRICE CONTROL CALCULATIONS	38

ANNEX 1: Summary of responses to June Consultation Paper

ANNEX 2: Definitions of the separate businesses

ANNEX 3: Specimen Calculations

ANNEX 4: Developments to charging arrangements

FOREWORD

The existing transmission price controls for ScottishPower and Scottish Hydro-Electric are due for revision from 1 April 2000.

This paper sets out draft proposals for the Scottish transmission price controls and follows consultation papers of February and June 1999 on the subject. The Scottish transmission price control review has also proceeded alongside reviews of the distribution price controls and trading arrangements for Scotland, England and Wales. The Scottish transmission price control review takes account of aspects of these other reviews, as presented in the recent consultation papers on the distribution price control of 12 August and the draft proposals for Scottish trading arrangements of 7 October.

The latter paper identifies three separate activities into which the present transmission business could be classified and separated. These are:

- a system operator concerned with real time despatch of generation power stations and operation of the transmission network;
- an interconnector activity, comprising the pre-Vesting and post-Vesting interconnector business; and
- a 'core' transmission activity, which is the primary owner of transmission assets other than the interconnector assets.

Presently, the price-regulated Scottish transmission business comprises all the above activities, excluding the post-Vesting interconnector.

Until a separation of businesses such as that proposed in the proposals paper on Scottish trading arrangements comes into effect, it remains appropriate to retain a price control for the existing regulated business activities. When such a separation is complete, it will be appropriate to consider price regulation for each of the businesses separately. In order to ease the transition from one regime to the other, this price review proposes a single transmission price control but also provides indicative costs and revenues for the separate activities which can be taken out as and when necessary. At that stage further consideration will also be given to the impact of implementation on the regulatory entitlement of the companies. If at that stage ScottishPower and Scottish Hydro-Electric do not reach agreement with Ofgem on the implementation of separation, it will be necessary to make a reference to the Competition Commission (previously the Monopolies and Mergers Commission).

In carrying out the price control review Ofgem has taken advice from a range of consultants and advisers. A firm of management consultants, Pannell Kerr Forster (PKF), has assisted with the analysis of operating costs. PB Power has supported PKF during this process as well as assisting with the analysis of capital expenditure. A senior industrial adviser, Mr Peter Warry, has also given advice in relation to these matters. KPMG, a firm of accountants, has audited the financial model for use in setting the price controls.

In the light of the consultation process and advice described above this paper sets out draft proposals for revised price controls. These are based on initial conclusions on the form of price control, projections of operating and capital costs and initial conclusions on financial issues. All these issues are described in this paper.

A final view will be taken on these matters following consideration of responses to this paper. Final proposals for the transmission price control will be published around the end of November 1999.

If ScottishPower and Scottish Hydro-Electric do not accept the final proposals then it will be necessary to make a reference to the Competition Commission, which will consider these matters and report in due course. If a reference is necessary, and it appears that the Competition Commission will not be in a position to make recommendations in time to allow licences to be modified from 1 April 2000, then it will be important to consider at that time whether transitional arrangements or licence modifications would be appropriate to protect the interests of customers.

It would be helpful to hear from all those with an interest in the issues raised in this paper, including customers, their representatives and other interested groups as well as the companies themselves. Views are invited by 29 October 1999. Responses should be sent to:

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Responses will be published by placing them in the Ofgem library.

Ofgem
October 1999

1 FORM OF CONTROL

Introduction

- 1.1 The transmission of electricity at voltages of 132 kV and above is an important part of the Scottish electricity industry. It accounts directly for about 5 per cent of a typical customer's bill and is a significant contributor to the finances of each Scottish company. It provides a link between generation and distribution and can have a significant influence on the operations and costs of these activities. It is particularly relevant to the efficient operation of generation, which accounts for the majority of a typical customer's bill, and the promotion of competition in generation. The Scottish transmission businesses also include the interconnector between the Scottish and English electricity systems, which has an important bearing on the operations of, and competitive markets in, both systems. The interconnector is made up of pre and post-Vesting assets.
- 1.2 The two Scottish transmission businesses constitute effective monopolies within their designated areas. In order to protect customers from the potential abuse of monopoly power each transmission business is subject to controls on the prices it can charge. At present, the price-regulated transmission businesses include the core transmission business, the system operator and the pre-Vesting interconnector.
- 1.3 The costs associated with the price regulated elements of the transmission business in Scotland are relatively predictable. Major areas of uncertainty, such as the timing of the interconnector upgrade, do not affect the level of costs within the price regulated business, since post-Vesting interconnector costs fall outside the scope of the present control. Load growth for the business which lies within the existing price regulation is not expected to be significant or to have a significant effect on costs. As a result it is appropriate to determine, as in the past, a set level of revenues sufficient to allow the companies to fulfil their duties and to earn an appropriate return. This level of revenue need not vary according to the actual number of units transmitted.
- 1.4 Previously, this set level of revenues has been converted into a price control by dividing it by a pre-ordained number of units. For the purposes of this paper a similar methodology has been adopted, which has the benefit of indicating, for a given level of unit growth, the impact on customer prices. However, given that this could present a misleading picture to consumers of the encountered effects of the proposals and that it has no additional impact on the companies' incentives, it is for consideration whether it would not be fairer to present these controls in terms of allowed revenues, recognising that the impact on customers unit prices will be affected by the out-turn. This form of presentation may be particularly appropriate in the

circumstances of this review, since the timing of the completion of the interconnector upgrade could have a material impact on the way in which allowed revenue is recovered, and hence unit prices for customers.

June consultation paper

1.5 The June consultation paper explained that an objective of this price control review is to strengthen the incentives on companies to increase efficiency and reduce costs, so that prices to customers can be lowered. At the same time it is recognised that sufficient revenue must be raised to maintain appropriate levels of network performance, to finance required new investment and to allow an appropriate return on capital employed. These objectives are best secured by encouraging the companies to achieve an optimal balance between:

- network performance;
- efficient capital investment;
- efficient operating expenditure; and
- efficient financial management.

1.6 In general, respondents to the June consultation paper supported these objectives although there were differences between respondents as to how they thought these might be best secured. A summary of the responses to the June consultation paper is included in Annex 1.

1.7 One respondent regarded the separation of the transmission businesses from the Scottish companies and the creation of an independent system operator as an essential pre-requisite to the operation of an efficient and equitable trading system in Scotland. The draft proposals for Scottish trading arrangements (October 99) discuss the separation of the system operator in some detail and its proposal to separate out the system operator in the future forms part of the considerations for this proposals document.

1.8 One respondent questioned the inclusion of the pre-Vesting interconnector in the transmission price control. The reason for its inclusion initially was based on the idea that the interconnector provided export capacity and system security for the Scottish network. Subsequent upgrades, post-Vesting, were considered to facilitate exports, and were excluded from the price control. The draft proposals for Scottish trading arrangements treat the pre and post-Vesting interconnector assets as a single link, with the capability to perform the same functions. They include a proposal to separate out the pre-Vesting interconnector in the future, to be combined with the post-Vesting interconnector so as to create a separate interconnector entity. That proposal forms part of the considerations for the draft proposals set out in this document.

- 1.9 One company suggested that the incentives for efficiency should be strengthened more generally. Regulatory incentives for the Scottish transmission businesses form part of the draft proposals, and will be considered further within the reviews of information and incentives presently being undertaken by Ofgem.

Type of Price Control

- 1.10 At present each of the Scottish transmission businesses is subject to an RPI-X price control, under which allowed revenue is related to a pre-set projection of the number of units transmitted. This is effectively a revenue control translated into a price control. This form of regulation has led to significant price reductions and improved network performance, as discussed in the June consultation paper. Most respondents to that paper supported the continuation of RPI-X type controls.
- 1.11 A number of respondents to the distribution and transmission consultation papers, of May and June respectively, identified weaknesses with the way RPI-X has been applied or features which could be improved. One respondent proposed that the price control for the next period should include a range of correction factors to cover variations between the forecast and actual figures for each of the variables used to set the price control. One company proposed that the review should address imbalances and distortions in the incentives for capital efficiency.
- 1.12 For transmission, as with distribution, ways need to be found to reduce the emphasis on periodic negotiation with the regulator. The August distribution consultation paper set out in more detail some of the problems associated with the present regulatory regime, including the asymmetry of information between the regulator and regulated companies and the balance between incentives to reduce operating and capital costs. These concerns also apply to the regulation of transmission.
- 1.13 Ofgem will be carrying out a programme of work to improve the information that it receives from the PESs' distribution businesses. It is intended that the results of this work should be applied more broadly and include the Scottish transmission businesses, in particular to facilitate, where appropriate, comparisons between the three transmission businesses in Great Britain.
- 1.14 Ofgem is also intending to introduce additional mechanisms to regulate quality of supply for distribution at the beginning of 2002/03. (It is presently consulting on incentives on NGC - the transmission business in England and Wales.) Scottish customers should also benefit from a revised regulatory framework which increases the incentives on the transmission businesses to deliver objective pre-agreed output targets. Consultees' views are sought on the most appropriate way of improving incentives on companies to deliver a particular quality of supply and in particular

whether an approach along the lines proposed for the distribution review (namely an amendment to the price control in 2002/03 to introduce additional mechanisms to regulate network performance) is appropriate for Scottish transmission.

Scope

- 1.15 The June consultation paper explained that the present transmission price control covers all charges made by the Scottish transmission businesses except rental charges to the telecommunications business, connection charges to extra high voltage (EHV) customers, entry connection charges for generators and charges for use of the post-Vesting interconnector upgrades. It also noted that a review of Scottish trading arrangements and the separation of businesses could lead to changes to the present price control arrangements.
- 1.16 Rental from use of the transmission lines by the telecommunications business is presently excluded revenue and will continue to be so for the next transmission price control. The level of the rental has been reviewed and increased to more closely reflect the charges that Ofgem considers should be made for such rental.
- 1.17 In Scotland, at present, revenue from EHV connection charges is excluded revenue and revenue from EHV use of system charges is regulated revenue. It is proposed that this arrangement should continue for the duration of the next transmission price control period.
- 1.18 Revenue from the connection of generators to the Scottish system is excluded revenue. The connection policy for generators, and particularly that of Scottish Hydro-Electric, remains under review. For the present no change to the connection policy is assumed for the proposals for the next price control period.
- 1.19 The scope for change in Scottish trading arrangements and the separation of businesses is discussed in detail in the draft proposals paper of 7 October 1999. The paper proposes separation of the system operator functions and interconnector functions from the core transmission business activities. For the purposes of this paper the functions of the system operator and the definition of the pre-Vesting Interconnector are as outlined in Annex 2.
- 1.20 To facilitate these changes, it is appropriate to identify as part of the present review the relevant revenues and costs that may be taken out of the price-regulated transmission businesses. These revenues and costs relate to the system operator (principally functions of the control room for generation despatch and real time operation of the transmission network) and the pre-Vesting interconnector. If separation of the transmission businesses subsequently went ahead, the revenue for the separate interconnector activities, covering both pre and post-Vesting assets, and the system

operator, including any additional costs associated with the introduction of the new arrangements, should then be more readily identified.

- 1.21 A timetable for the separation of businesses is discussed in the draft proposals paper on Scottish trading arrangements. It is presently envisaged that some changes may be proposed for introduction from April 2000 with further changes proposed during the price control period.

Structure

- 1.22 The June consultation paper noted that under the present price control arrangements customers observed real price increases notwithstanding a positive X value in the RPI-X price control. This has been attributed to out-turn units being less than the projected pre-set units on which the control was based. This arose, at least in part, from lower than expected levels of export units.
- 1.23 Respondents to the June paper identified a number of alternative drivers for the future price control, with a view to allowing the regulated revenue to vary with, for example, the system maximum demand, units transmitted, system capacity and line length rather than being fixed on the basis of a projected number of units.
- 1.24 One PES proposed that the real price increases observed by some customers could be resolved by a revenue control which was not linked to any underlying revenue driver. In the view of another PES, transmission system capacity was probably the most accurate driver of costs although the PES also commented that it could be difficult to measure this in a meaningful way.
- 1.25 The August distribution draft proposals paper linked changes in the level of regulated revenue to two drivers, customer numbers and units distributed. For transmission a combination of drivers may hold true but, at present, there is limited data to support regression analysis to test such a hypothesis. In the absence of such analysis, if the present price control arrangements are retained it would appear sensible to continue to set the control as a revenue control, which is then translated into an price control, with correction for under and over-recovery.
- 1.26 The separation of the transmission business into its three components provides scope to vary by component the way in which a revenue control is converted into a price control. For instance, the 'core' transmission business regulated revenue could be predetermined with a pre-set number of transmitted units within a price control. For the system operator, regulated revenue could be predetermined within a revenue control. For the interconnector regulated revenue could depend on the associated available interconnector capacity within a price control. These options would need to be considered at the time of separation.

- 1.27 The companies' transmission business plans include costs associated with the implementation and operation of generation registration services and system data provision. These form part of the settlements system. Their treatment for the price control is discussed in Chapter 2 (Operating Costs).
- 1.28 The price control for the period April 1994 to March 1999 was extended by one year to March 2000. The allowed revenue for 1999/2000 was the same, in real terms, as the revenue in 1998/99. The extension made no reference to the level of capital and operating expenditures. The level of capital expenditure in 1999/2000 affects the opening asset value for the setting of the revenue control and is considered further in Chapter 3 (Capital Expenditure). Other than this, it does not seem appropriate to revisit the 1999/2000 control.

Duration

- 1.29 In general, respondents to the June consultation paper supported a five-year duration RPI-X price control. However, a number recognised that the future development of the transmission business may require the price control(s) to be revisited before the end of a five-year period.
- 1.30 The identification of separate costs for the 'core' transmission, system operator and interconnector components, as set out in these draft proposals, should reduce concerns about the uncertainty that separation could have on the price-regulated transmission business. Nevertheless if the definition of the three components, in the event, is different from that assumed in this paper, in order to facilitate full implementation of the revised Scottish trading arrangements, it may still be necessary to reconsider the allocation of costs between the respective activities.
- 1.31 It is presently proposed that a single price control for the three components be set for a five-year period. The regulated revenue of separated components will be taken out as and when necessary, and at that stage further consideration will also be given to the impact of separation on the regulatory entitlement of the activities.

2. OPERATING COSTS

Introduction

- 2.1 Transmission business spending can be broken down into capital costs and operating costs. Capital costs cover spending on assets, such as transformers or switchgear, the benefits of which would be expected to last over several years. Operating costs cover the day-to-day costs of running the network, such as repairs and maintenance, planning, overheads, system control, interconnector charges and transmission system business rates.
- 2.2 The June consultation paper showed the composition of operating costs for pre-Vesting interconnector costs, transmission business rates and the remaining costs under the present price control for 1997/98. A major component of interconnector costs are determined by contractual arrangements although there remain interconnector cost elements that are more directly under the control of the transmission business management. Business rates are levied by the Government and are considered to be largely outside the control of the companies. The remaining costs, which primarily relate to engineering and overhead costs and may be considered to be more directly under management control, represent about one-quarter to one-third of the overall operating costs under the present price control arrangements.
- 2.3 In addition capital expenditure on IT systems, vehicles and certain property is classified as non-operational capital expenditure. A company may choose not to provide these services from within the transmission business and instead use third-party contractors or affiliated service companies. In these circumstances the costs of providing these services may appear as a transmission business operating cost rather than as transmission capital expenditure. This can require adjustments to increase operating costs and reduce capital expenditure to standardise accounting treatments across companies.
- 2.4 In the calculations underlying the present price controls the companies were given an allowance for operating costs. These operating costs may be split into three categories for:
- the "core" transmission functions;
 - the system operator functions; and
 - the pre-Vesting interconnector functions.

The operating costs are reviewed under these three headings to facilitate changes to the price control arrangements discussed in Chapter 1. Post-Vesting interconnector costs are outside of the present price control arrangements and are discussed further in this Chapter.

- 2.5 Ofgem has appointed PKF as consultants to assist with the analysis of operating costs. PKF has examined transmission business operating costs in 1997/98 and the companies' forecasts of operating costs over the period from 1997/98 to 2004/05, and presented their draft report to Ofgem in June. In addition, a senior industrial adviser, Mr Peter Warry, has given advice in relation to these matters.
- 2.6 The business growth of those elements of the Scottish transmission business to which the price controls apply is expected to be negligible over the coming price control period. Consequently, the base level of operating costs, before adjustments and considerations of efficiency, are expected to remain broadly constant in real terms. For the avoidance of doubt, this should not be confused with the unit base to which the price control applies, which is forecast to grow by two per cent per annum over the next price control period. This unit base includes units whose costs and revenues lie outside the price controlled businesses. It affects the way in which the allowed revenues are recovered but does not affect the level of those allowed revenues.

Overall Approach

- 2.7 The June consultation paper included an assessment of transmission business cost movements for 1994/95 and 1997/98, and reviewed companies' forecasts for 2000/01 and 2004/05 as well as their previous forecasting records. It then analysed the costs in detail for 1997/98, making adjustments for differences in accounting policies, cost allocations and attributions and one-off costs. The costs are standardised for:
- profit on sale of assets;
 - capitalisation of expenditure arising from changes in capitalisation policy that affect the classification of expenditure between operating costs, non-operational capital expenditure and network capital expenditure;
 - cost allocations and recharges between transmission and other company activities - in particular, the allocation of corporate overheads to transmission and profit taken out of transmission into other parts of the company; and
 - restructuring costs, provisions and exceptional items relating to non-recurrent costs.
- 2.8 The accounting adjustments to the base level of costs in PKF's draft report, excluding business rates, depreciation, interconnector and generation registration services (GRS) and system data provision (SDP) costs for the two transmission businesses, are set out in Table 2.1. The consultants have identified minor adjustments for capitalisation, allocation and recharges and non-recurrent costs. The principal

adjustments identified by the consultants relate to the allocation of corporate overheads and provisions.

TABLE 2.1 ACCOUNTING STANDARDISATION OF BASE-YEAR OPERATING COSTS FOR THE PRESENT PRICE CONTROL ARRANGEMENTS EXCLUDING DEPRECIATION, INTERCONNECTOR COSTS, RATES AND GRS/SDP COSTS (EMILLION 1997/98)

Company	Unadjusted base year cost	Profit on sale of assets	Capitalisation adjustment	Allocations and recharges	Non-Recurrent Costs	Adjusted base year cost
ScottishPower	15.1	0.6	0.2	-1.0	1.3	16.2
Scottish Hydro-Electric	6.1	0.1	0.0	-0.9	1.0	6.3

2.9 PKF reviewed the efficient level of operating costs for the base year, and in particular those relating to the three functions of engineering, repairs and maintenance non-capitalised planning and construction, and system control. Their analysis compared the initiatives undertaken by distribution and transmission businesses and identified the potential for further efficiency initiatives and savings in transmission. It compared the companies' costs with a view of efficient cost levels, developed in part from the analysis for the distribution price control review and in part from the comparison of costs between the two Scottish transmission businesses.

2.10 PKF's report considered the projected costs of generation registration services (GRS) and system data provision (SDP) costs, as part of the settlement system in Scotland and, in the case of ScottishPower, the transfer of costs relating to the system operator function from generation wholesale to transmission. PKF's report also included consideration of projected business rates and pre-Vesting interconnector costs.

2.11 Each draft report prepared by PKF was provided to the relevant company for comment. The companies' comments included the following:

- the approach to cost allocations and attributions for corporate overheads was alleged to have removed too high a proportion of costs from the transmission business;
- certain cost factors were claimed to have been excluded from the analysis, or given insufficient weight, including non-operational capital expenditure, the potential for real increases in certain costs (such as wayleave costs) and company specific factors.

2.12 The rest of this Chapter sets out some of the analysis and indicates a view of the operating costs and non-operational expenditure. These projections of operating costs and non-operational expenditure are not final and remain under review. They form the basis of a calculation of the regulated revenue in Chapter 5, and an indicative P₀ value.

'Core' transmission

2.13 Table 2.2 shows PKF's base year figures for the 'core' transmission businesses, excluding depreciation (including network and non-operational depreciation) and business rates, before and after accounting adjustments. The principal adjustments identified by the consultants relate to the allocation of corporate overheads and provisions, as discussed above.

TABLE 2.2: PKF'S BASE YEAR AND EFFICIENT 'CORE' TRANSMISSION OPERATING COSTS (1997/98 PRICES £MILLION)

Company	Costs before accounting adjustments	Costs after accounting adjustments	PKF's efficiency savings	Costs after accounting and efficiency adjustments
ScottishPower	13.3	14.2	2.1	12.1
Scottish Hydro-Electric	4.5	4.1	0.5	3.6

2.14 It also shows PKF's estimates of potential efficiency savings on actual 1997/98 costs. For ScottishPower PKF identified potential efficiency savings for repairs and maintenance of £1.8 million and non-capitalised planning and construction of £ 0.3 million. For Scottish Hydro-Electric PKF reported potential savings for repairs and maintenance of £0.5 million.

2.15 In addition to PKF's report, some analysis has been undertaken to compare the 'core' transmission costs of ScottishPower and Scottish Hydro-Electric. Candidates for comparators include demand (or units), line length and system capacity. The analysis which can be carried out for transmission is limited by the number of transmission companies and therefore the absence of sufficient data for regression analysis. The results are strongly influenced by the choice of comparators.

2.16 For distribution, regression analysis confirmed the cost driver, or comparator, to be based on a number of variables. This may also be expected to hold true for transmission. Comparison with NGC would suggest that demand (or units) is the dominating cost driver for transmission. Comparing the costs of ScottishPower and Scottish Hydro-Electric on the basis that the substantial majority is determined by demand,

with small but equal weightings on line length and substation capacity, would indicate ScottishPower's base year operating cost to be approximately £0.7 million higher when compared to those for Scottish Hydro-Electric.

- 2.17 In their business plan submissions Scottish Hydro-Electric apply a real reduction in operating costs of 2 per cent per annum and ScottishPower identified possible savings of £0.8 million (equivalent to about 1 per cent per annum). If an annual efficiency factor of 2 per cent is attainable at present and applied to the base year costs of 1997/98, the average annual saving for the period from April 2000 to March 2005 is £0.4 million for Scottish Hydro-Electric. The corresponding figure for ScottishPower is £1.3 million.
- 2.18 This additional review of operating costs tends to support the view that the average efficient level of 'core' transmission operating costs for the period from April 2000 to March 2005 are £12.1 million for ScottishPower and £3.7 million for Scottish Hydro-Electric, with an average annual saving of £2.0 million and £0.4 million on the respective base year costs. These figures closely reflect the PKF estimates set out in Table 2.2.
- 2.19 On this basis the average controllable operating costs for 2000/01 to 2004/05 are £12.1 million for ScottishPower and £3.7 million for Scottish Hydro-Electric. This is equivalent to reductions on the 1997/98 adjusted base year costs of 15 per cent for ScottishPower and 10 per cent for Scottish Hydro-Electric.
- 2.20 PKF has also assessed the level of costs for implementation of the efficiency programme as being one-off costs of £0.5 million and £0.3 million for ScottishPower and Scottish Hydro-Electric respectively. These one-off costs are presently included in the allowed costs.
- 2.21 Provision for business rates is added to that for the controllable costs. For the purpose of this paper projections for 2000/01 to 2004/05 are taken to be the same as the level in 1997/98 in real terms. Hence for ScottishPower the annual projection is £9.6 million and for Scottish Hydro-Electric is £3.4 million.
- 2.22 Non-operational expenditure was reviewed by the consultants. For ScottishPower non-IT non-operational expenditure of about £0.7 million was included within the company's proposed capital expenditure and has been taken out of allowed capital expenditure in Chapter 3. For Scottish Hydro-Electric there is no non-IT non-operational capital expenditure for the period from 2000/01 to 2004/05. Ofgem is presently minded to set the level of non-IT non-operational expenditure to zero for both companies on the advice of PKF.

- 2.23 IT non-operational capital expenditure includes, as examples, management information systems, project, asset, work and stock systems, and network management and control systems. The former two types of systems relate to 'core' transmission, while the latter type could include some elements of system operator in addition to 'core' transmission. For these proposals the IT non-operational expenditure is taken to be entirely 'core' transmission. Scottish Hydro-Electric proposed IT non-operational expenditure averaging £1.5 million per annum for the period from 2000/01 to 2004/05. ScottishPower proposed IT non-operational expenditure averaging £2.6 million per annum (£13.3 million over five years) included in the capital expenditure proposed by the company and taken out of allowed capital expenditure (see Chapter 3).
- 2.24 PKF consider that this type of expenditure should only be made if it is offset by future benefits. A proportion of this expenditure is made to maintain and enhance network performance and quality of supply. Incentives for this expenditure form part of the on-going review of incentive mechanisms for the network businesses. Without such incentives Ofgem is presently minded to set the annual level of allowed IT operational expenditure to £1.0 million for each of ScottishPower and Scottish Hydro-Electric.
- 2.25 In their business plan questionnaire response ScottishPower also included costs for a corporate branding initiative to promote public awareness of their transmission business. Scottish Power considers that its branding initiative campaign focuses on safety and environmental issues and seeks to earn the trust of the communities in which it operates. PKF considered this expenditure to be discretionary. It is considered to be of no added value to electricity customers, the vast majority of whom would not normally be expected to have cause to directly contact the transmission business. It is therefore excluded from the allowable costs.
- 2.26 Table 2.3 shows the average annual projection of allowed operating costs for the 'core' transmission functions. Table 2.3 also shows the average annual projection of allowed non-operational expenditure for the 'core' transmission business.

TABLE 2.3 AVERAGE ANNUAL PROJECTION OF ALLOWED OPERATING COSTS AND NON-OPERATIONAL EXPENDITURE FOR THE 'CORE' TRANSMISSION BUSINESS (£MILLION 1997/98)

Company	Operating costs			Non— operational Expenditure
	Controllable operating costs	Business rates	Total	Total
ScottishPower	12.1	9.6	21.7	1.0
Scottish Hydro-Electric	3.7	3.4	7.1	1.0

System Operator

2.27 Table 2.4 shows PKF's base year figures for system control, before and after accounting adjustments. For ScottishPower an addition of £0.2 million is made as a capitalisation adjustment. For Scottish Hydro-Electric a reduction of £0.2 million is made for non-recurrent severance and payroll payments.

TABLE 2.4: PKF'S BASE YEAR AND EFFICIENT SYSTEM CONTROL OPERATING COSTS (1997/98 PRICES £MILLION)

Company	Costs before accounting adjustments	Costs after accounting adjustments	PKF's efficiency savings	Costs after accounting and efficiency adjustments
ScottishPower	1.8	2.0	-	2.0
Scottish Hydro-Electric	1.6	1.4	0.4	1.0

2.28 Table 2.4 also shows PKF's efficient base year figures for the 'system control' activity. For ScottishPower PKF have made no adjustment to the base year cost of £2.0 million. For Scottish Hydro-Electric PKF have made an adjustment of £0.4 million based on the company's own view of achievable efficiency savings.

2.29 If the relative base-year costs are accepted, the efficiency savings attainable at present should be reflected in the efficient base year level. For 'core' transmission this was in part reflected by the average level for the period 2000/01 to 2004/05 obtained by a 2 per cent per annum efficiency saving, as discussed in paragraphs 2.17. and 2.18. If similar proportionate savings were assumed for system control the costs would be £1.8 million and £1.3 million for ScottishPower and Scottish Hydro-Electric respectively. It is for further consideration whether any of the projected IT operational expenditure on 'core' transmission should be allocated to the system operator.

2.30 GRS/SDP costs were reviewed by PKF. They considered the annual operating costs for the function to be £0.2 million for 2000/01 to 2004/05. In addition non-operational capital expenditure of £1.4 million should be represented as an annual depreciation allowance of £0.2 million to 2004/05.

2.31 In Table 2.5 the average, annual projection of operating costs for the system operator (including GRS/SDP) is shown for the period 2000/01 to 2004/05. Table 2.5 also shows the average, annual projection of non-operational capital expenditure associated with GRS/SDP for the period 2000/01 to 2004/05. It is for further consideration whether these projected costs reflect the functions to be attributed to the system operator as defined in final proposals for business separation and Scottish trading arrangements.

TABLE 2.5 AVERAGE PROJECTION OF ANNUAL OPERATING COSTS FOR SYSTEM CONTROL (£MILLION 1997/98)

Company	Operating costs	Non-operational expenditure
ScottishPower	1.8	0.2
Scottish Hydro-Electric	1.3	0.2

Interconnector Administrator

2.32 In 1997/98 ScottishPower's system control costs were captured in generation wholesale, and were reallocated to generation, transmission and generation wholesale based on workload. The June consultation paper referred to ScottishPower's proposal to transfer these system control costs from generation wholesale to transmission in the light of the EU Directive 96/92/EC.

2.33 In their review PKF considered that, if these costs were to be treated as falling within transmission, those previously attributed to generation and generation wholesale should remain so. These costs were considered primarily to relate to the interconnector administrator functions of the External Interconnector Party (EIP). In 1997/98 this would have led to the transfer of an additional £1.6 million into transmission from generation wholesale, of which £0.5 million and £1.1 million would have been recharged to generation and generation wholesale respectively.

2.34 In their response to PKF's report Scottish Power considered that the costs of performing External Interconnector Party (EIP) duties should not be distinguished from the functions of the Scottish system operator. They also considered that the EIP formed an integral part of system operation activities that would need to be performed even in a situation where no trade existed. Scottish Power considered that the net costs of £1.6 million transferred from generation wholesale should be borne by all of the companies connected to the transmission system.

2.35 Ofgem considers that the system operator function should have responsibility for real-time operations while the interconnector administrator should have responsibility for commercial arrangements. As such the interconnector administrator costs could be separate from the

system operator function, and combined with interconnector activities. For these proposals, the administrator costs are allowed and are included with the figures for the pre-Vesting interconnector costs. This would form part of the considerations associated with the separation of businesses.

- 2.36 If the same annual efficiency factors as above were applied to system control for the period 2000/01 to 2004/05 average transferred costs would be £1.5 million. Ofgem is presently minded to allow average costs of £1.5 million for the interconnector administrator. It is expected that this will be recovered in an annual charge to generators based on their usage of the interconnector.

Pre-Vesting Interconnector

- 2.37 Table 2.6 shows PKF's base year figures for pre-Vesting interconnector operating costs, excluding business rates and NGC's use of system charges that are passed through directly to suppliers and excluded from the price control. No accounting adjustments were proposed for these costs. Most of the costs are under contract, of which NGC interconnector charges form the majority. The contract costs of Scottish Hydro-Electric reflect changes following a determination by the Director in December 1998¹.

TABLE 2.6: PKF'S BASE YEAR PRE-VESTING INTERCONNECTOR OPERATING COSTS (1997/98 PRICES £MILLION)

Company	Controllable	Contracted	Total
ScottishPower	0.4	6.1	6.5
Scottish Hydro-Electric	0.7	8.9	9.6

- 2.38 PKF considered that the controllable costs, for overheads, repairs and maintenance and direct operating costs, should be the same for ScottishPower and Scottish Hydro-Electric at £0.4 million.
- 2.39 The contracted costs for the period of the price control are assumed to remain the same as those shown in Table 2.6.
- 2.40 Provision for business rates is added to that for controllable costs. For the purpose of this paper projections for 2000/01 to 2004/05 are taken to be the same as the level in 1997/98 in real terms. Hence for ScottishPower the annual projections for the pre-Vesting interconnector is £0.3 million. For Scottish Hydro-Electric the figure is zero.

¹ Determinations by the Director General of Electricity Supply of Applications by British Nuclear Fuels plc, National Power Co-generation (Trading) Limited and ScottishPower plc in respect of Access to Capacity on the Scotland- England Interconnector.

2.41 In Table 2.7 the average projection for the pre-Vesting interconnector activity is shown for the period 2000/01 to 2004/05. This includes the interconnector administrator costs as discussed in paragraphs 2.35-2.36. It is for further consideration whether these projected costs reflect the functions to be attributed to the interconnector administrator as defined in final proposals for business separation and Scottish trading arrangements.

TABLE 2.7 ANNUAL PROJECTION FOR PRE-VESTING INTERCONNECTOR BUSINESS (£MILLION 1997/98)

Company	Controllable	Contracted	Business rates	Interconnector administrator	Total
ScottishPower	0.4	6.1	0.3	1.5	8.3
Scottish Hydro-Electric	0.4	7.8	-	-	8.2

Post-Vesting Interconnector

2.42 PKF's draft report did not review post-Vesting interconnector costs. The companies' projected costs for the post-Vesting interconnector upgrades from 850 MW to 1600MW and from 1600 MW to 2200 MW were not discussed in the June consultation paper.

2.43 The post-Vesting interconnector upgrade to 1600 MW is complete and the upgrade to 2200 MW is scheduled for completion in 2000/01. The companies' operating costs for the year 2000/01 and the average for 2001/02 to 2004/05 are shown respectively in Tables 2.8 and 2.9. The controllable costs relate to the direct operating costs, repairs and maintenance costs and overhead costs. The contracted cost includes NGC interconnector charges and, for Scottish Hydro-Electric, a corridor charge from ScottishPower. "Other" costs include business rates and insurance.

TABLE 2.8: POST-VESTING INTERCONNECTOR OPERATING COSTS FOR 2000/01 (1997/98 PRICES £MILLION)

Company	Controllable	Contracted	"Other" including business rates	Total
ScottishPower	0.7	4.9	1.3	6.9
Scottish Hydro-Electric	0.2	2.9	-	3.1

TABLE 2.9: AVERAGE POST-VESTING INTERCONNECTOR OPERATING COSTS FOR 2001/02 TO 2004/05 (1997/98 PRICES £MILLION)

Company	Controllable	Contracted	Other including business rates	Total
ScottishPower	0.7	6.5	2.0	9.2
Scottish Hydro-Electric	0.3	3.1	-	3.4

2.44 These costs will require further review and consideration in the light of developments for business separation and Scottish trading arrangements.

Conclusions

2.45 The review of operating costs and non-operational capital expenditure for the present price control arrangements includes the costs of three components, 'core' transmission, system operator and pre-Vesting interconnector. These are summarised in Tables 2.10 and 2.11.

TABLE 2.10: AVERAGE ANNUAL PROJECTION OF OPERATING COSTS FOR 2000/01 TO 2004/05 (1997/98 PRICES £MILLION)

Company	'Core' transmission	System operator	Pre-Vesting interconnector	Total
ScottishPower	21.7	2.0	8.3	32.0
Scottish Hydro-Electric	7.1	1.5	8.2	16.8

TABLE 2.11: AVERAGE ANNUAL PROJECTION OF NON-OPERATIONAL EXPENDITURE FOR 2000/01 TO 2004/05 (1997/98 PRICES £MILLION)

Company	'Core' transmission	System operator	Pre-Vesting interconnector	Total
ScottishPower	1.0	0.2	0.0	1.2
Scottish Hydro-Electric	1.0	0.2	0.0	1.2

2.46 Projected operating costs shown in Table 2.10 are similar to the out-turn figures for 1997/98 of £33 million and £17 million for ScottishPower and Scottish Hydro-Electric respectively. The proposed annual projection of

non-operational expenditure is £1.2 million per year as shown in Table 2.11.

- 2.47 As mentioned in paragraph 2.20 above, one-off provisions for the implementation of the efficiency programme have been allowed of £0.5 million and £0.3 million for ScottishPower and Scottish Hydro-Electric respectively in 2000/01.
- 2.48 While the companies have indicated some upward pressures on costs, Ofgem considers these can be offset by achievable efficiency savings without jeopardising network performance. This is reflected in the allowed levels of operating costs.

3. CAPITAL EXPENDITURE

Introduction

3.1 The June consultation paper included a preliminary analysis of capital expenditure in the present price control period and also examined companies' forecasts for the forthcoming price control period. It identified that there has been a significant divergence of company behaviour with respect to capital expenditure in the present price control period and companies' forecasts show continuing divergence. It identified several issues for consideration:

- the extent to which past underspend can be justified on the basis of efficiency savings or relate to mis-forecasts or changes in other factors;
- the extent to which capital expenditure has been unnecessarily high or inappropriate in the present price control period;
- the extent to which companies have distorted the phasing of capital expenditure programmes and what should be done about this;
- the extent to which companies' plans for expenditure on Interconnector developments might influence main transmission system costs, and what influence this may have on charges to customers;
- the determination of appropriate levels of load-related expenditure for the next price control period;
- the determination of appropriate levels of non-load related expenditure for the next price control period; and
- in determining the above, the extent to which longer-term considerations of asset replacement or possible deterioration in performance ought to be included in considerations of capital expenditure.

3.2 In making projections for the level of capital expenditure for each company in the forthcoming period, two aims are important:

- ensuring appropriate levels of network performance at least overall cost; and
- incentivising capital efficiency and hence reductions in overall cost levels.

3.3 In the calculations underlying the present price controls the companies were given an allowed level of capital expenditure. These capital expenditures may be split into three categories for:

- the “core” transmission business;
- the system operator functions; and
- the pre-Vesting interconnector.

The capital expenditures are reviewed under these three headings to facilitate changes to the price control arrangements discussed in Chapter 1. Post-Vesting interconnector costs are outside of the present price control arrangements and are discussed further in this Chapter.

3.4 This Chapter sets out some of the analysis and indicates Ofgem’s presently minded view of the appropriate levels of capital expenditure to allow in setting the revised control. These capital expenditure levels are not final and remain under review. They form the basis of a calculation of the regulated revenue in Chapter 5.

Responses to the June consultation paper

3.5 In response to the June consultation paper on Scottish transmission the companies drew attention to the differences of forecasting capital expenditure for transmission and distribution. Capital expenditure for transmission is less regular in nature so that the level of expenditure needed in one regulatory period may differ substantially from that in another.

3.6 ScottishPower considered that it would be inappropriate to determine the levels of capital expenditure solely on the basis of run-rates, out-turns from the last price review period or comparisons with other companies. ScottishPower considered that deriving accurate calculations of capital efficiency is unachievable because of the large divergence of planned and actual capital expenditure over the present period.

3.7 The companies also considered that the variance between forecast and actual load related expenditure presented in the June consultation paper reflects a range of factors including differences between price control review periods and between companies on the level of load created requests, the type of load connected, higher levels of churn, interconnector upgrade work and the likely growth of Scottish Renewable Order (SRO) and Independent Power Purchaser (IPP) generation in Scotland.

3.8 ScottishPower indicated that the actual costs of the additional schemes would have been considerably greater if the benefit of the procurement and design savings were not achieved throughout the price control period. Scottish Hydro-Electric identified the considerable savings that had been

made from efficiencies arising from integrated network planning and deferment of expenditure.

- 3.9 These comments have been considered in the approach used to assess the level of capital expenditure for the next control period.

Capital Expenditure during the Present Price Control Period

- 3.10 Terminology used in this paper to describe forecasts and projections of capital expenditure follows the approach used in the June consultation paper. In 1992, the companies submitted capital forecasts in respect of the years 1994 to 1999 ("the companies' 92 forecasts"). In 1993, OFFER made projections for capital expenditure in respect of the years 1994 to 1999 ("OFFER's 93 projections"). As part of the present review, the companies have submitted outturn figures for expenditure in the first three years of the present price control period and updated projections for the two remaining years ("the companies' 98 updated forecasts"). The companies have also provided forecasts for the period 2000/01 to 2004/05 ("companies' 2000 forecasts"). Ofgem's present projections of capital expenditure for the period 2000/01 to 2004/05 are referred to subsequently as "Ofgem's '99 projections".
- 3.11 The June consultation paper included analyses of variances between companies' 92 forecasts, OFFER's 93 projections and companies' 98 updated forecasts for capital expenditure during the present price control period. It is important to ensure that companies do not instigate periodic delays in capital expenditure, such that they regularly under-spend Ofgem's forecasts, thereby gaining a financial benefit, and then claim a higher allowance for the subsequent period in respect of the capital expenditure which has not been undertaken.
- 3.12 In the case of ScottishPower LRE, overspend was attributed by the company to higher than expected growth, and to a degree was offset by an NLRE under-spend attributed mainly to efficiency improvements and some deferrals. In the case of Scottish Hydro-Electric, LRE was similar to the company's 92 forecast and NLRE under-spend was attributed mainly to efficiency improvements and some deferrals. For the period 1994/95 to 1998/99, the explanations for the over and under-spends do not appear unreasonable.
- 3.13 For distribution, as discussed in the August draft proposals paper on distribution, some PESs appear to have distorted the phasing of capital expenditure programmes and benefited from periodic delays in expenditure. Ofgem is considering a number of measures to ensure that companies do not benefit unduly, particularly where quality of supply is deemed to be at risk in the short or medium term. For Scottish transmission

any such distortions are less apparent and hence the need to introduce measures linking capital expenditure to network performance is reduced.

- 3.14 The June consultation paper also identified that companies' plans for expenditure on interconnector developments might influence main transmission system costs. A distinction is drawn between expenditure needed to meet the requirements to serve demand in area and expenditure needed to meet the requirements to serve the interconnector. This enables expenditure for inclusion in the present price control arrangements to be distinguished from expenditure for the interconnector upgrades outside the present price control arrangements. Similarly, under the revised price control arrangements discussed in Chapter 1 it distinguishes expenditure for 'core' transmission and the interconnector.

Review of Expenditure for 2000/01 to 2004/05

- 3.15 Transmission business capital expenditure is mainly driven by relatively few, large scale investments to meet the requirements of generators, interconnectors, distributors, customers and also the replacement of life-expired assets.

Load related

- 3.16 PB Power has reviewed LRE for the transmission businesses on a project-by-project basis. The projects were reviewed to assess:
- their classification as LRE;
 - their justification for inclusion as projects requiring implementation during the next price control; and
 - the reasonableness of the companies' estimated capital costs.
- 3.17 The companies' transmission licences require the companies to plan and develop the transmission system in accordance with planning standards. In Scotland these include the transmission system security standard (NSP 366), the security of supply standard (P2/5) and voltage limit standards. The companies' expenditure plans have been reviewed to assess the degree to which they are necessary to ensure compliance with these standards.
- 3.18 The examination has taken account of the main expenditure drivers, including underlying demand growth, the effect of new connections and/or power station closures, and the movement of demand within a network. The companies' forecast expenditure plans have also been reviewed for consistency with expenditure incurred during the present price control.

Non-load related

- 3.19 As part of the on-going distribution review PB Power developed an asset replacement model building upon the techniques used for the previous review. This model makes use of the detailed information provided by the companies in response to the business plan questionnaire, relating in particular to their asset age profiles, unit replacement costs and replacement practices. The data was supplemented by PB Power's own information on equipment unit costs. The range of major plant and equipment categories for which asset replacement modeling was performed was extended to include other categories of non-load related expenditure, including environmental and safety related expenditure and diversions.
- 3.20 This model was used to assess the replacement of 132 kV assets within distribution in England and Wales and the 132 kV assets within transmission in Scotland. The replacement for 275 kV and 400 kV assets of Scottish transmission was reviewed by asset replacement modelling and comparisons between the companies and with NGC.

'Core' transmission Expenditure for 2000/01 to 2004/05

- 3.21 Table 3.1 shows PB Power's projected 'core' load-related expenditure for 2000/01 to 2004/05.

Table 3.1 PB Power's Load Related Expenditure (£ million, 1997/98)

Company	Year					Total
	00/01	01/02	02/03	03/04	04/05	
ScottishPower	3.0	9.0	2.2	3.1	3.2	20.5
Scottish Hydro-Electric	5.0	2.8	3.5	1.8	2.9	15.9

- 3.22 For ScottishPower PB Power's projection of load related expenditure (including capitalised salaries attributed to this category) is £20.5 million, compared to the companies 98 forecast of £45.8 million. Of the difference, £23.0 million relates to expenditure that is not required to meet planning and security standards, and the remaining £2.3 million to adjust the level of attributed capitalised salaries to reflect the reduced level of LRE.
- 3.23 For Scottish Hydro-Electric the company proposes an expenditure (including quality of supply initiatives) of £31.4 million. In contrast, PB Power propose an expenditure of £15.9 million. Of the difference, £0.9 million relates to expenditure that is not justified by expected increases in demand, £12.9 million relates to expenditure for new generator connections that are considered unlikely to proceed under the

present connection policy and the remaining £1.7 million reflects the net adjustment of reallocations between load related and non-load related expenditure made by PB Power.

3.24 Table 3.2 shows PB Power's projection of 'core' non-load related expenditure for 2000/01 to 2004/05.

Table 3.2 PB Power's Projection of Non-Load Related Expenditure (£ million, 1997/98)

Company	Year					
	00/01	01/02	02/03	03/04	04/05	Total
ScottishPower	22.0	19.8	19.5	26.5	27.3	115.1
Scottish Hydro-Electric	11.8	9.7	9.7	9.3	9.0	49.4

3.25 For ScottishPower PB Power's projection of non-load related expenditure for 'core' transmission (including network performance initiatives and capitalised salaries) is £115.1 million, compared to the company's '98 forecast of £162.7 million. Of the difference, £30.3 million relates to expenditure that is considered to be greater than would reasonably be expected as necessary for network retention, £3.3 million of capitalised salaries have been attributed to LRE, and £13.3 million and £0.7 million relates to IT and non-IT non-operational expenditure for 'core' transmission respectively, as discussed in Chapter 2 (and under 'system operator' below).

3.26 Scottish Hydro-Electric proposed an expenditure of £47.7 million compared to PB Power's projection of £49.4 million. The difference of £1.7 million reflects the net adjustment of reallocations between load related and non-load related expenditure made by PB Power.

3.27 Capital expenditure, net of customer contributions, is added to the regulatory asset value in setting the price control. PB Power's figures for this net capital expenditure are shown in Table 3.3. For ScottishPower the net capital expenditure for the five-year period is £124.1 million, compared to the company's '98 forecast of £183.5 million. For Scottish Hydro-Electric the net capital expenditure for the five year period is £60.1 million, compared to the company's '98 forecast of £60.8 million.

Table 3.3 PB Power's net capital expenditure of 'core' transmission for 2000/01 to 2004/05 (£ million 1997/98 prices)

Company	Year					
	00/01	01/02	02/03	03/04	04/05	Total
ScottishPower	22.3	21.6	21.0	28.1	30.5	124.1
Scottish Hydro-Electric	12.7	12.5	11.9	11.1	11.9	60.1

3.28 The general conclusions of PB Power's review of capital expenditure have been presented to the companies and meetings held with the consultants and the companies to discuss the consultants' findings. In some cases additional information has been provided to the consultants for further consideration.

3.29 Ofgem is presently minded to use the figures in Table 3.3 for the price control. These figures are used for the calculations discussed in Chapter 5.

Capital expenditure for 1999/2000

3.30 The June consultation paper explained that the one-year extension of the present control to 1999/2000 set a revenue cap without reference to the level of capital expenditure in that year. The level of capital expenditure in 1999/2000 affects the opening asset value for the price control commencing April 2000. Expenditure that is more than is necessary should not be included for the opening asset value in April 2000. PB Power have reviewed the level of expenditure for 1999/2000 as an extension to their review of capital expenditure for 2000/01 to 2004/05.

3.31 Table 3.4 shows PB Power's projections of net capital expenditure for 1999/00. For ScottishPower, net capital expenditure for 1999/2000 is estimated at £27.9 million, compared to the company's 98 forecast of £37.3 million. For Scottish Hydro-Electric net capital expenditure for 1999/2000 is estimated at £12.2 million, compared to the company's 98 forecast of £12.2 million. In addition to the above, in the case of ScottishPower, £2.9 million of 'system operator' expenditure has been identified and is treated as non-operational expenditure.

Table 3.4 PB Power's net capital expenditure of 'core' transmission for 1999/00 (£ million 1997/98 prices)

Company	Expenditure
ScottishPower	27.9
Scottish Hydro-Electric	12.2

3.32 In the light of PB Power's analysts, Ofgem is presently minded to take the level of expenditure for 1999/2000 as £27.9 million for ScottishPower and £12.2 million for Scottish Hydro-Electric. These figures are used for the calculations discussed in Chapter 5.

System operator

3.33 For these proposals the hardware for tele-control and SCADA has been included as capital expenditure for 'core' transmission. Software for network management and system control has been treated as IT non-operational expenditure for 'core' transmission. It is for consideration whether any of these expenditures should be allocated to the system operator.

3.34 It is also for consideration whether any additional expenditures would be incurred in establishing separation of the system operator functions. This will need to be considered in the light of decisions taken on Scottish trading arrangements and the separation of businesses.

Pre-Vesting Interconnector expenditure

3.35 Since Vesting some expenditure has been made to refurbish the pre-Vesting interconnector. Expenditure for the pre-Vesting interconnector for the period 2000/01 to 2004/05 is zero, as submitted in the companies' business plans.

Post-Vesting Interconnector expenditure

3.36 Upgrade of the Scotland-England Interconnector from 1600 MW to 2200 MW and development of the Scotland-Northern Ireland Interconnector is in progress and its expenditures are outside of the present price control arrangements. Further consideration of the treatment of expenditure on the Scotland-England Interconnector will be required as part of wider considerations for interconnector activities, outlined in Chapter 1 and discussed further in the consultation paper on the separation of businesses and Scottish trading arrangements.

3.37 Table 3.5 summarises the capital expenditures for the Scotland-England upgrade to 2200 MW in the period April 2000 to March 2005, as submitted in the companies' responses to the companies' business plan questionnaires.

Table 3.5 Companies' capital expenditures for upgrade of the England-Scotland interconnector to 2200 MW for the period 2000/01 to 2004/05 (£ million 1997/98 prices)

Company	Year					
	99/00	00/01	01/02	02/03	03/04	04/05
ScottishPower	7.8	15.0	15.9	2.5	2.0	0.9
Scottish Hydro-Electric	0.0	6.9	0.0	0.0	0.0	0.0

3.38 In their responses to the business plan questionnaire, ScottishPower also proposed additional expenditure for an upgrade of the Scotland-England interconnector from 2200 MW to 2500 MW. These expenditures, together with those for the upgrade to 2200 MW, require further review and consideration in the light of developments for business separation and Scottish trading arrangements.

Conclusions

3.39 The review of capital expenditure for the present price control arrangements includes the costs of the components of 'core' transmission. This is shown in Table 3.6 for ScottishPower and Scottish Hydro-Electric respectively. Expenditure for system control is treated as non-operational expenditure in Chapter 2.

TABLE 3.6 'CORE' TRANSMISSION NET CAPITAL EXPENDITURE FROM 1999/2000 TO 2004/05 (1997/98 PRICES £MILLION)

Company	Year					
	99/00	00/01	01/02	02/03	03/04	04/05
ScottishPower	27.9	22.3	21.6	21.0	28.1	30.5
Scottish Hydro-Electric	12.2	12.7	12.5	11.9	11.1	11.9

3.40 The summary in Table 3.6 is based on the present price control arrangements. The structure of the transmission business, as discussed in Chapter 1 is under review in the light of developments for separation of businesses and Scottish trading arrangements. In particular further consideration will need to be given to whether the capital expenditure for the system operator corresponds to the proposed functions of the system operator within the review of the separation of businesses and Scottish trading arrangements. Similar consideration will also be given to the capital expenditure for the interconnector.

4 FINANCIAL ISSUES

Introduction

4.1 The August draft proposals for distribution price controls set out Ofgem's latest thinking on the relevant financial issues and a framework for consideration of the cost of capital and asset valuation. Many similar considerations apply to the transmission businesses. This Chapter does not reproduce the analysis behind those proposals, but instead applies it to the particular circumstances of the Scottish transmission business.

Cost of capital

4.2 The level of return that is required by the financial markets is called the cost of capital. The components used to estimate the cost of capital are discussed in the May consultation paper on distribution and in the June paper on Transmission. The weighted average cost of capital (WACC) is calculated as the weighted average cost of debt and equity finance, with an allowance for corporation tax. Table 4.1 sets out the components of the WACC which Ofgem used in reaching its draft proposals on distribution in August. The WACC is in the range of 6.0-6.9 per cent.

TABLE 4.1 WEIGHTED AVERAGE PRE-TAX COST OF CAPITAL

Component	Low Case	High Case
Cost of debt		
Risk free rate	2.25%	2.75%
Debt risk premium	1.4%	1.4%
Adjustment for long term debt	0.45%	0.3%
Cost of debt	4.10%	4.45%
Cost of equity		
Risk free rate	2.25%	2.75%
Equity risk premium	3.25%	3.75%
Equity beta	1.0	1.0
Post-tax cost of equity	5.5%	6.5%
Taxation adjustment	1.429	1.429
Pre-tax cost of equity	7.9%	9.3%
WACC		
Gearing	50%	50%
Pre-tax WACC	6.0%	6.9%

4.3 The June consultation paper suggested that the transmission business may be less risky than the distribution business and that this would be reflected in a lower beta. There was no consensus in the views of the respondents to the June document on whether this is the case. Ofgem has found no conclusive evidence one way or the other. However, it is apparent from the review of the WACC for distribution that the risk free rate and yields have fallen since setting the last price control and that the

trend has been for the cost of capital to move downwards. For distribution the range for WACC is 6.0-6.9 per cent. In the last Scottish transmission review the assumption regarding WACC was 6 per cent, which is at the bottom of this range. In the light of the trend in the overall level of the WACC for use of system businesses, there appears to be no compelling reason to increase the estimate of the WACC for the Scottish transmission businesses. On this basis, it is proposed to use a 6 per cent WACC in resetting the price control.

Asset Valuation

4.4 In order to secure continuing access to funds on acceptable terms, an enterprise needs to provide an appropriate return on the capital invested in its business. In the last transmission price control review the capital invested in each transmission business was considered in two parts, the initial capital at flotation and investment made since then.

Assets Acquired at Flotation

4.5 For the present price control the asset value at flotation was taken to be the CCA net book value, based on a market valuation. This value accounted for the value of transmission assets within the transmission licensee's area and the value of pre-Vesting Interconnector assets.

4.6 The basis for retaining the CCA net book value was discussed in the June consultation paper. It is supported by the companies and Ofgem is presently minded to retain it for the next price control.

4.7 Table 4.3 shows net CCA book values at flotation for the two transmission businesses in 1997/98 prices. In the June consultation paper the CCA net book value for Scottish Hydro-Electric was reported to be £171 million after adjustment to exclude telecommunications assets. Scottish Hydro-Electric have since stated that the original asset valuation of £192 million in 1997/98 prices should be used with the telecommunications asset adjustment being made to the post vesting assets.

4.8 In addition, in their responses to the business plan questionnaires the companies stated CCA net book value for the interconnector assets in 1990/91. The valuation submitted was £25 million for ScottishPower and zero for Scottish Hydro-Electric. There is no equivalent CCA net book value for the system operator assets in 1990/91.

4.9 These figures will require further consideration but for this paper, and the calculations in Chapter 5, the asset values at flotation are taken as shown in Table 4.3. This assumes the asset value for the system operator to be zero for both companies and allocates the total value of assets less the asset values for the interconnector to 'core' transmission.

TABLE 4.3 VALUE OF ASSETS AT FLOTATION (£ million 1997/98 PRICES)

Company	'Core' transmission	System operator	Interconnector	Total
ScottishPower	708	0	25	733
Scottish Hydro-Electric	192	0	0	192

Investment Made since Flotation

- 4.10 Since Vesting capital expenditure (net of depreciation) has been added to the asset base of the transmission businesses. For the present price control, outturn expenditure was added for historic years and projected expenditure for the remaining years. In the August draft proposals paper for distribution it was proposed that the price control commencing 2005/06 be set using historic expenditure levels to 1999/2000 and allowed expenditure levels for the period 1999/2000 to 2004/05. This further incentivises companies to improve efficiency and under-spend against the allowed level of expenditure for the period 1999/2000 to 2004/05, whilst additional incentive targets for quality of supply seek to ensure that standards are retained or improved.
- 4.11 For Scottish transmission, in the present price control period there has been considerable variation between projected and forecast load related expenditures. In these circumstances it may be appropriate to incentivise non-load related expenditure as for distribution and allow load related expenditure to be adjusted for out-turn expenditure. The introduction of such changes would require specific network performance targets to ensure that standards are retained and improved. On-going work on network performance targets for Scottish transmission is discussed in Chapter 5. Until this work has been developed further it is proposed that the approach of using out turn expenditure to update the asset value is retained.
- 4.12 The opening values of the two companies for 2000/01 in 1997/98 prices are shown in Table 4.4. These figures are based on the outturn capital expenditures of the companies from 1990/91 to 1997/98, the companies' projection for the final year of the five-year price control, 1998/99, and the level of capital expenditure identified for 1999/2000 in Chapter 3.

TABLE 4.4 OPENING ASSET VALUE UNDER PRESENT PRICE CONTROL ARRANGEMENTS FOR 2000/01 (£MILLION 1997/98 PRICES)

Company	Opening Net Asset Value for 1990/91	Plus capital expenditure	Less depreciation allowance	Less telecoms adjustment	Opening Net Asset Value for 2000/01
ScottishPower	733	232	392	-	574
Scottish Hydro-Electric	192	152	100	21	223

4.13 Provisional estimates for the opening asset values attributable to the system operator and pre-Vesting interconnector are shown in Table 4.5. The opening asset value for the system operator is taken to be zero, system operator capital expenditure being treated as non-operational capital expenditure. The figure for the pre-Vesting interconnector is based on the CCA net book value submitted by the companies in their business plan questionnaire responses. The figures for 'core' transmission are derived from the total in Table 4.4 less the figures for system operator and pre-Vesting interconnector in Table 4.5. Further consideration will need to be given to the actual numbers and the basis on which they are calculated at the time of business separation.

TABLE 4.5 OPENING ASSET VALUE FOR 2000/01 OF 'CORE' TRANSMISSION, SYSTEM OPERATOR AND PRE-VESTING INTERCONNECTOR (£MILLION 1997/98 PRICES)

Company	Opening Net Asset Value for 1990/91	Plus capital expenditure	Less depreciation allowance	Less telecoms adjustment	Opening Net Asset Value for 2000/01
'Core' transmission					
ScottishPower	708	212	375	-	545
Scottish Hydro-Electric	192	135	98	21	208
System operator					
ScottishPower	0	0	0	0	0
Scottish Hydro-Electric	0	0	0	0	0
Pre-Vesting interconnector					
ScottishPower	25	20	16	-	29
Scottish Hydro-Electric	0	17	2	-	15

4.14 For completeness, provisional estimates for the opening asset values for the post-Vesting interconnector are shown in Table 4.6, based on the companies' projected capital expenditure. These have yet to be reviewed by Ofgem.

TABLE 4.5 OPENING ASSET VALUE FOR 2000/01 OF POST-VESTING INTERCONNECTOR (£MILLION 1997/98 PRICES)

Company	Opening Net Asset Value for 1990/91	Plus capital expenditure	Less depreciation allowance	Opening Net Asset Value for 2000/01
ScottishPower	0	63	11	52
Scottish Hydro-Electric	0	18	2	16

Depreciation

4.15 For the previous price control review the provision for accounting depreciation was straight line and based on average asset lives of 20 and 40 years respectively for the pre- and post-Vesting assets of ScottishPower and average asset lives of 22 and 48 years respectively for the pre and post-Vesting assets of Scottish Hydro-Electric - the different figures reflecting differences in the assets for the two companies. These assumptions are retained for the next price control.

4.16 In deciding on the approach to asset lives for the period after 2000/01, it is important to bear in mind the impact of any assumptions on the financial position of the transmission business and on the path of prices to customers over the period of the proposed price control and beyond. The May consultation paper on distribution in England, Wales and Scotland explained that, if the existing assumptions with respect to depreciation are used in setting the revised price controls on distribution, there would be a sharp fall in depreciation after 2000, followed by increasing allowances in the longer term. The August consultation paper on distribution confirmed that some adjustments would be made for distribution. This issue was discussed for Scottish transmission in the June consultation paper on transmission. It was suggested that no adjustments were required in setting the price controls for Scottish transmission to 2004/05. This was agreed by the companies in their responses to the June consultation paper.

Hydro Benefit

4.17 The June consultation paper discussed the provision within Scottish Hydro-Electric's licence for a transfer of a sum known as the Hydro Benefit from the generation business of Scottish Hydro-Electric to its transmission and distribution businesses.

- 4.18 The maximum provision of Hydro Benefit was set at Vesting and reviewed by the MMC in their report of May 1995². For transmission, the maximum provision was based on the benefit of hydro generation and the level of transmission costs in Scottish Hydro-Electric's area relative to that of other transmission businesses. The provision is applied at the discretion of the Director General, to bring the overall level of transmission charges of Scottish Hydro-Electric towards the level of charges of other transmission businesses.
- 4.19 The application of the Hydro Benefit for the separate components of 'core' transmission, system operator and interconnector activities may differ from the present arrangements. If separation were to proceed it is likely that the Hydro Benefit will be retained by 'core' transmission, and comparative charges for 'core' transmission only may lead to a different Hydro Benefit being applied to that of the present arrangements.

Financial Modelling

- 4.20 In the light of the DGES's duty to secure that licence holders are able to finance the carrying on of the activities which they are authorised by their licences to carry on, consideration has been given to the supporting checks that might be appropriate on the financial position and viability of the licence holder.
- 4.21 The June consultation paper referred to checks on the financial viability on the PES, in the light of the price control. The checks typically relate to ensuring that the investment grade credit rating of the PES can be retained during the next price control period, provided that the PES is efficient in managing its business and finances. Particular consideration is given to the level of debt, cash and cash flow.
- 4.22 Before reaching final proposals, Ofgem will perform similar checks in order to satisfy itself that the revised price control proposals for transmission would not have a materially adverse effect on the overall financial position of the companies.

² Scottish Hydro-Electric plc: A report on a reference under Section 12 of the Electricity Act 1989, Monopolies and Mergers Commission, 1995.

5 PRICE CONTROL CALCULATIONS

Introduction

- 5.1 It is important to be transparent about the way in which price controls are calculated. Setting RPI-X price controls requires an estimate of the revenue that would be sufficient to finance an efficient business. The principles governing the calculation of the controls are set out in Chapter 1, while commentary on individual cost components can be found in Chapter 2 (operating costs), Chapter 3 (capital expenditure) and Chapter 4 (financial issues).
- 5.2 The price control for the transmission business is being set against a background of possible change in industry structure. This chapter explains how Ofgem has derived the price control proposals consistent with continuation of the present arrangements. At the same time Ofgem has also presented an initial view of the price control for each of three separate components. This will be the subject of further work at the time when separation of businesses takes place.
- 5.3 Further changes may be required in the light of responses to this paper and any further analysis that Ofgem carries out before final proposals are announced in November. Further consideration will be given to the assumptions relating to the system operator and interconnector and the costs of their implementation, as part of the programme for separation.
- 5.4 For ease of reference, these proposals follow historical practice in dividing the allowed revenues by a number of units in order to determine an allowed price per unit. Chapter 1 discusses the continuing relevance of such an approach. The unit base is a combination of 'existing units' (i.e. those units which may reasonably be expected to occur in the absence of any major upgrade to the interconnector) and 'new' units (i.e. those associated with the interconnector upgrade). Since the timing of the upgrade is uncertain, so too is the forecast number of units in any year. The unit base used in converting the allowed revenues into an allowed price per unit assumes annual growth of 2 per cent, which may be regarded as a stylised assumption which is broadly consistent with the interconnector upgrade becoming operational (for these purposes) towards the end of the period.
- 5.5 The focus of this chapter is to determine the total revenue requirement for the price regulated transmission business over the next review period. There is then the question of how to profile that revenue over that period. The price in the first year of the next price control period is referred to as P_0 . The subsequent annual real reduction in prices is expressed as a percentage, 'X'. The calculations referred to in this chapter assume an X

factor of 1 reflecting low levels of expected efficiency savings relative to those of distribution.

The Main Case for the Price Controls

5.6 Ofgem has derived a main case for the transmission price control based on the conclusions to date as expressed in Chapters 2-4 relating to the following:

- efficient operating expenditures;
- capital expenditure forecasts; and
- hence a path of regulatory asset values; and
- the appropriate cost of capital.

These conclusions may be adjusted subsequently for the final proposals following further analysis. This main case can be separated to form an initial estimate of the path of prices over the duration of the next price control period for the three businesses.

5.7 The levels of operating costs for overall transmission in 2000/01 to 2004/05 is similar to that of 1997/98. In general the identified efficiency savings of about 10-15 per cent of controllable costs are offset by increased costs relating to other factors including GRS/SDP costs and, for ScottishPower, the transfer of system operator costs from generation wholesale to transmission (system operator).

5.8 The levels of capital expenditure relate to 'core' transmission. For Scottish Hydro-Electric Ofgem's proposed net expenditure is presently about 14 per cent less than that proposed by the company. For ScottishPower, Ofgem's proposed net expenditure is presently about 34 per cent less than that proposed by the company.

5.9 The level of the WACC is 6 per cent.

5.10 The draft proposals express possible P_0 reductions compared to 1999/00 levels, combined with an X factor of 1 per cent. Since it is a revenue control, transferred into a price control, the assumption of the growth rate on transmission units affects the distribution of regulated revenue across the price control period but not the overall level of allowed revenue. A 2 per cent growth rate on transmission units (including exports) is used for these calculations. A higher growth rate than 2 per cent would increase the value of the P_0 reduction in order to retain the same overall regulated revenue. Conversely a lower growth rate would result in a smaller reduction in P_0 . By way of illustration if there is assumed to be no growth in units transmitted during the period of the control, Ofgem's initial calculations suggest Scottish Hydro-Electric's prices would be broadly unchanged while those for Scottish Power would fall modestly.

- 5.11 The calculation of P_0 and X presented here is in the interests of transparency and should not be regarded as a definitive judgement about each assumption, but merely as illustrative of a main case. It is for consideration whether the X factor for the final proposals should differ from 1 overall.
- 5.12 There remains the possibility of variation in operating costs, capital expenditure and cost of capital for the three components of 'core' transmission, system operator and pre-Vesting interconnector, or indeed overall.
- 5.13 In terms of sensitivities, for the present price control arrangements a reduction in the rate of return by one per cent would result in a five percentage points increase in the P_0 . A reduction in operating cost of one per cent would account for about half of one percentage point increase in the P_0 . A reduction in capital expenditure of ten per cent would result in about half of one percentage point increase in the P_0 .

Other Adjustments

- 5.14 The August draft proposals paper on distribution set out a number of factors that may influence P_0 in the final proposals made later this year. Possible adjustments to the Scottish transmission are discussed and proposed below, together with two other factors that may influence the final proposals later this year, namely the treatment of mergers and business rates.

Network Performance and Quality of Supply

- 5.15 For the majority of customers the important factor is the performance of the transmission network overall. Some provision for enhancement of network performance is included within the allowed transmission capital expenditure.
- 5.16 There are a small number of customers directly connected to the transmission system where quality of supply is relatively important. Some of these have experienced levels of quality of supply which do not meet their needs. Where planning and security standards are met the customers are expected to make a full contribution to any improvements in the quality of supply that they request.
- 5.17 The views of consultees are invited on how incentives should be introduced for network performance and quality of supply for Scottish transmission.

Network Losses

- 5.18 In contrast to distribution where out-turn units affect the level of regulated revenue, for Scottish transmission the regulated revenue is fixed and does not vary with out-turn units. Hence for Scottish transmission there is no direct link between units, network losses and regulated revenue.
- 5.19 The application of transmission and interconnector losses in Scotland is being reviewed separately by Ofgem. The present arrangements raise concerns as to whether there are adequate and appropriate incentives for measuring transmission losses. In particular, targets for transmission losses are written into generation contracts so that the generators, and not consumers, benefits when actual losses fall below contracted losses.
- 5.20 The views of consultees are invited on how the present arrangements for transmission losses could be improved and if any incentive mechanism to reduce such losses needs to be introduced into the price control arrangements.

Mergers

- 5.21 The August draft paper on distribution discussed different types of mergers and their impact on operating costs, and in particular fixed costs. In addition, since the distribution business in England and Wales includes the 132 kV network, as does the Scottish transmission businesses, savings should also be realised by the transmission business from the joint ownership of a distribution business in England and Wales and distribution and transmission businesses in Scotland.
- 5.22 Although the identification of merger savings is not straightforward the potential for considerable savings was noted. Ofgem's advisors have identified cost savings in the order of £10 million to £12.5 million for the combined ScottishPower/Manweb and Scottish Hydro-Electric/Southern companies. The proportion of cost reduction attributable to each individual company and business is a matter for further consideration as is the appropriate period of time for the retention of the financial benefits.

Business Rates

- 5.23 The draft transmission price proposals set out below assume no substantial change in business rates from those in 1997/98. To the extent that The Scottish Executive makes firm proposals to change business rates before 30 November it should be possible to accommodate these within the final transmission price proposals. If not, it will be appropriate at the time of any change to consider the impact that such a change should

have on future prices. The impact may differ between the two companies.

Separation

- 5.24 The revenue for separated 'core' transmission, system operator and interconnector activities cannot be finalised until the proposals for separation of businesses have been concluded. The definitions of 'core' transmission, system operator and interconnector may differ from those assumed in this paper and alter the corresponding split of revenue. At that time Ofgem would also need to consider whether the revenues should be adjusted to take account of the introduction of business separation. Hence the values of P_0 and X in this paper provide only an initial indication of what the final proposals may look like.
- 5.25 This paper has discussed the split of regulated revenue under the present price control arrangements into three categories, 'core' transmission, system operator and interconnector. It is proposed that the charging structure be revised in line with the changes being proposed for separation and the introduction of revised Scottish trading arrangements. Annex 4 briefly outlines the present charging arrangements and how these may be revised.

Last Price Control

- 5.26 For distribution, out-turn units was a variable in determining the level of regulated revenue and hence the August draft proposals paper on distribution discusses the need for reconciliation with 1999/2000 figures before setting the price control. For Scottish transmission the regulated revenue to 1999/2000 is fixed, subject to adjustments for under and over-recovery, and hence no comparative reconciliation is required.

The Draft Proposals

- 5.27 On the basis of all the information available to Ofgem, and taking into account the considerations described above, it is proposed that both companies should have an X of 1 for each of the years 2001/02 to 2004/05. Table 5.1 shows the P_0 for the combined components of 'core' transmission, system operator and interconnector each company. The regulated revenues for the separate components which are consistent with the proposed P_0 are shown in Annex 3.

TABLE 5.1: RANGE OF P_0 FOR EACH COMPANY

Company	Proposed reduction in P_0
ScottishPower	13
Scottish Hydro-Electric	5

Hydro-Benefit

- 5.28 If the present arrangements are retained a provision of the hydro-benefit may be applied to bring Scottish Hydro-Electric's transmission charges down to a similar level as those of ScottishPower. For this to be achieved the annual level of hydro-benefit would be about £3 million (in 1997/98 prices) for the next price control period.
- 5.29 With the separation of components, the provision for the hydro benefit would reside with 'core' transmission. For the 'core' transmission alone the level of hydro-benefit would be zero. It is presently proposed that no hydro benefit be applied for transmission.

ANNEX 1

SUMMARY OF RESPONSES TO THE JUNE 1999 CONSULTATION PAPER

Eleven responses were received to the consultation paper. Three of the responses were submitted by Public Electricity Suppliers (PESs), four were from other license holders, one response was received from an electricity consumers committee. The remaining three responses came from other interested parties.

Form of the Control

Views Of The Public Electricity Suppliers

A five-year price control based on RPI-X was supported by each of the PESs who responded to the consultation paper.

One respondent considered that the aim of regulation should be to replicate competitive markets as closely as possible and suggested this could best be achieved by performance based regulation which, the respondent suggested, should be introduced at the earliest possible date.

One respondent considered that the introduction of an error correction mechanism would give rise to misleading messages and incentives for companies to spend forecast or allowed levels, rather than focusing on efficiency. The mechanism could also increase investor perceptions of uncertainty and risk, leading to an increased cost of capital.

One respondent proposed that the review of RPI-X should address the timing of distortions associated with efficiency initiatives and the imbalance between capital and operating cost incentives by introducing "rolling calculations". The respondent considered that this would eliminate timing distortions and enable capital expenditure incentives to be brought into line with operating expenditure incentives by lengthening the period in which savings could be retained.

The prospect of developing yardstick comparisons for transmission was welcomed by one respondent although it was considered that the task of collecting and comparing the necessary data would be extremely onerous. As an alternative the respondent advocated the principle of developing additional incentive mechanisms, possibly on a company specific basis, which should be structured so as to ensure that the incentives result in the companies taking actions which are in the interests of customers.

The June consultation paper noted that certain customers had observed year on year price increases for transmission in excess of RPI-X and that this was in part a consequence of the structure of the price control. One PES argued that this situation would be resolved by a revenue control that was not linked to any underlying driver.

The June consultation paper asked for comments on the possible need to open the price control to take account of developments during the price control period. One PES proposed that an agreement should be reached on the circumstances under which it could approach Ofgem with the possibility of re-opening the price control, for example for a major system reinforcement.

The June consultation paper noted that the present price control was extended by one year to cover 1999/00, allowing the companies the same revenue in real terms as for 1998/99. The paper then considered whether it might then be appropriate to set the price control for the period from 1999/00 netting off the allowed revenue for 1999/00. The two Scottish companies were opposed to this proposal.

Two respondents pointed out that the costs of the System Data Provision and Generation Registration Services, introduced by the Scottish transmission businesses as part of the 1998 Scottish Trading Arrangements, had not been accounted for in the present price control.

Views Of Other Licence Holders

Two respondents supported the continuation of RPI-X. One respondent suggested that the structure of the control based should be based on network capacity rather than transmitted units, reflecting the respondents belief that capital spending in a mature transmission is driven by the incremental (peak) demand for which capacity has to be provided.

Two respondents supported a five-year price control as striking an appropriate balance between incentives for the companies to improve performance against the requirement for periodic reviews.

One respondent considered that the form of the RPI-X control should be enhanced so as to compensate for inaccurate forecasts from the business in previous controls. The same respondent suggested that yardstick measures should be introduced or trialled during the next price control period.

Views Of Other Parties

One respondent proposed tighter fiscal control of the transmission assets to prevent what was considered to be a potential opportunity for the Scottish PESs to move profits between monopoly and competitive businesses.

One respondent considered that RPI-X did not give consumers immediate benefits from reductions in costs and proposed that the review should examine other potential forms of control which reflected the costs of supply more accurately and which took account of the economic conditions in the country and the performance of the companies. Failing this the respondent supported the

ideal of using additional correction factors to minimise the distortions caused by the present form of RPI-X.

One respondent suggested a number of other measures including:

- establishment of separate asset registers for plant and equipment exclusive to the generation business, the interconnector business, for site specific assets and for those assets principally concerned with serving the general the customer base.
- rules for the allocation of costs to non-core businesses such that the PESs pay the market value of the costs which would be incurred were the non-core businesses to have been started from scratch.
- assumptions on depreciation, asset lives and other factors that lead to changes in the structure of costs should be agreed before the start of the price control review period and then frozen for the duration of the period.

Operating Expenditure

Views Of The Public Electricity Suppliers

One respondent commented that it was not appropriate for Ofgem to consider an incentive for the transmission business to reduce the rating bill because rates are largely outwith the control of the companies and the scope for reducing them is extremely limited. Rather, the respondent proposed that Ofgem should allow a pass through of rates in the new control so that any reduction in rates could be passed onto to customers whilst the transmission businesses would not suffer unfairly in the event of an increase in rates.

One respondent commented that controllable operating costs are a minority percentage of the total costs for transmission businesses, making it difficult for the companies to achieve major costs reductions. As an example, many operating costs, including rates, interconnector costs and depreciation cannot be influenced by the companies themselves and it is therefore not appropriate for Ofgem to consider introducing incentives to reduce such costs.

One respondent considered that turnover should not be included in the basket of variables used to allocate corporate overheads.

Capital Expenditure

Views Of The Public Electricity Suppliers

One respondent considered that the central issue in considering capital expenditure was whether capital has been effectively and efficiently used. One respondent considered that deriving accurate calculations of capital efficiency is unachievable because of the large divergence of planned and actual capital expenditure over the present price control period.

One respondent argued that transmission business expenditure was irregular in nature and cannot be assessed or projected on the basis of comparisons with other regulatory periods and that strong conclusions cannot be drawn from comparisons with other transmission businesses.

Views Of The Electricity Consumers Committee

The North of Scotland Electricity consumer Committee (NSECC) considered that the level of expenditure over recent years has brought about a slow but steady improvement in system performance and should be allowed to continue so long as improvements in performance continue.

Financial Issues

Views Of The Public Electricity Suppliers

One respondent considered that the approach to estimating the weighted average cost of capital (WACC) in the June consultation paper differed from that taken by OFFER at the last review.

One respondent questioned the range of 2% to 2.5% used by Ofgem in the WACC calculation. The lower end of Ofgem's range of 2% to 2.5 % for the risk free rate was below all historic averages whilst the upper end was below that for all period of one year or longer. The respondent argues that for a five-year price control, it seemed sensible to adopt a five-year historic average and that the MMC had expressed the view that longer terms averages should be taken into account when setting such components. The respondent proposed the use of a five or ten year historic average for the risk free rate resulting in a range of 3.3 to 3.6%.

One respondent proposed the introduction of a "rolling calculation" for the regulatory asset base of the type first defined in the water industry price review as a means of addressing the timing distortions associated with capital incentives. The respondent also proposed that the selection of an appropriate "retention duration" for efficiency savings could be used to redress any imbalance between operating and capital cost incentives.

One respondent questioned Ofgem's view that the cost of capital for the regulated transmission business was lower than that for the distribution business. The respondent did not agree that the risks associated with the transmission business are lower than those for distribution.

The June paper proposed that one of the factors leading to a lower risk for transmission than for distribution was that the revenue of the transmission business was less diverse and more predictable than for distribution. One PES argued that the generators and suppliers who provide the revenue for the Scottish transmission businesses are, in the main, different divisions of the same

vertically integrated companies who provide the revenue for the distribution business.

One respondent challenged the view that the costs of the transmission business are fixed in nature commenting that the large scale of transmission assets, relative to distribution, means that the costs associated with the transmission system tend to be incurred in large increments. Similarly the costs associated with new connections to the transmission system tend to be less regular and much larger in scale than for the distribution system.

Views Of Other Licence Holders

One respondent considered that the appropriated cost of capital for the Scottish Transmission Businesses would be towards the lower end of the range 5.6% to 7.8% and that an appropriate value for gearing would be 50-60%.

Views Of The Electricity Consumers Committee

The NSECC proposed that that it would be in the interests of consumers for the permitted amount of hydro benefit to be applied to Scottish Hydro-Electric's transmission business, in order that transmission charges could be set at a similar level to those of Scottish Power.

Other Issues

Views Of The Public Electricity Suppliers

One respondent considered that the transmission connection policy of Scottish Hydro-Electric should be more consistent with those of Scottish Power and the National Grid Company.

One respondent supported the full operational separation of transmission, distribution, generation and supply businesses. In addition the respondent considered that it was essential to create an independent transmission system operator and for the management and operation of the interconnector businesses to be separated from the transmission businesses.

One respondent stressed that the next price control needs to take into account the costs of business separation and if these issues regarding separation are not resolved before the price control is agreed then the next price control should be adjusted to take them into account.

There was support for the introduction of cost reflective charges for access to the pre-upgrade interconnector on the basis that this would improve the transparency of interconnector charging.

Views Of Other Licence Holders

One respondent supported the creation of an independent system operator (ISO) for the transmission businesses to include the interconnector business and to be fully separate from the host PESs. The respondent stated that this was a necessary step to ensuring that connection and use of system charging in Scotland are dealt with in an independent manner.

One respondent considered that access to the interconnector should be non-discriminatory, whether for existing or for new capacity but should, without allowing parties to sterilise capacity they are not utilising, respect the rights of those who have existing contractual entitlements to capacity.

One respondent advocated separation of the interconnector and system operator activities from the transmission business and management and operation of the transmission business from other businesses. The same respondent proposed that connection policies should be uniform across Scotland and consistent with England and Wales.

Views Of The Electricity Consumers Committee

The NSECC did not consider that the separation of the Scottish transmission and distribution businesses was in the interests of consumers. The NSECC was of the view that separation would result in unnecessary operational duplication, and that the extra costs would not result in tangible benefits for the competitive market place.

Views Of Other Parties

One respondent supported the creation of a single UK transmission system.

There was broad support for the idea that the use of system charges should be similar for both Scottish Power and Scottish Hydro-Electric. One respondent considered that the connection policy of both Scottish Power and Scottish Hydro-Electric should move to a shallow connection wherever contractual arrangements and control systems allowed.

One respondent considered that steps should be taken to encourage greater competition in the use of the interconnector and cross border flows of power.

ANNEX 2: DEFINITIONS

For this paper the following definitions are applied.

'Core' transmission: The 'core' transmission business refers to the present transmission business, excluding the interconnector and interconnector administrative functions and the system operator function.

Pre-Vesting interconnector: The pre-Vesting interconnector has a capacity of 850 MW and consists of several hundred kilometres of line:

- a 275 kV and 400 kV transmission circuit between Strathaven and Harker;
- a 275 kV transmission circuit between Cockenzie and Stella;
- a 400 kV transmission circuit between Torness and Stella; and
- two 132 kV transmission circuits between Chapelcross and Harker.

Post-Vesting interconnector: The post-Vesting interconnector consists of the assets for upgrades of the interconnector above 850 MW.

System operator: The Scottish system operator has responsibility for the present functions of the control centres, including operational planning, scheduling, despatch, switching, safety responsibilities and real-time allocation of interconnector capacity and excluding those of the interconnector administrator.

Interconnector administrator: The interconnector administrator has responsibility to co-ordinate the activities of the External Pool Members (EMP), communicate declarations/redeclarations of trading block availabilities to NGC and distribution subsequent schedule/despatch data to EPMs for implementation.

ANNEX 3

SPECIMEN CALCULATIONS

SCOTTISHPOWER

1997/98 Prices

CAPEX - £M	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	Total
Gross Network capex	27.6	24.7	28.5	21.4	29.3	30.2	161.8
Connection charges		2.7	7.2	0.7	1.5	0.0	12.1
Net network capex	27.6	22.0	21.3	20.7	27.8	30.2	149.7

ASSET VALUE - £M	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	Total
Opening asset value	588.4	574.2	553.8	532.1	509.3	493.1	3250.9
Depreciation	-41.8	-42.5	-43.0	-43.6	-44.1	-44.8	-259.6
Net network capex	27.6	22.0	21.3	20.7	27.8	30.2	149.7
Closing asset values	574.2	553.8	532.1	509.3	493.1	478.5	3141.0

COSTS - £M	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	Total
Return		33.8	32.6	31.2	30.1	29.1	156.9
Depreciation		42.5	43.0	43.6	44.1	44.8	217.9
Operating costs		34.7	33.7	33.2	32.7	32.2	166.5
Total Costs		111.0	109.3	108.0	106.8	106.1	541.2
PV of Total Costs		107.8	100.1	93.4	87.1	81.6	470.1

REVENUE - £M	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	Total
Price control Revenue		99.6	100.6	101.6	102.6	103.6	507.9
Excluded Revenue		7.0	6.9	6.9	6.8	6.9	34.6
Total Revenue		106.6	107.5	108.5	109.4	110.5	542.5
PV of Total Revenue		103.6	98.5	93.8	89.2	85.0	470.1

REVENUE - £M	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	Total
'Core' Transmission		91.6	92.4	93.2	94.1	95.0	466.3
Pre-Vesting		11.4	11.5	11.6	11.6	11.7	57.8
Interconnector							
System operator		3.6	3.7	3.7	3.7	3.8	18.5
Total Revenue		106.6	107.5	108.5	109.4	110.5	542.5

Present Price Control Arrangements	
PO	13%
X	1%
Cost of Capital	6%

SCOTTISH HYDRO-ELECTRIC

1997/98 Prices

CAPEX - £M	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	Total
Gross Network capex	12.2	16.8	12.5	13.2	11.1	11.9	77.7
Connection charges		4.1	0.0	1.3	0.0	0.0	5.4
Net network capex	12.2	12.7	12.5	11.9	11.1	11.9	72.3

ASSET VALUE - £M	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	Total
Opening asset value	221.2	222.1	223.4	224.2	224.1	223.0	1338.0
Depreciation	-11.2	-11.4	-11.7	-12.0	-12.2	-12.4	-71.0
Net network capex	12.2	12.7	12.5	11.9	11.1	11.9	72.3
Closing asset values	222.1	223.4	224.2	224.1	223.0	222.5	1339.3

COSTS - £M	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	Total
Return		13.4	13.4	13.4	13.4	13.4	67.0
Depreciation		11.4	11.7	12.0	12.2	12.4	59.8
Operating costs		19.7	19.3	19.1	18.9	18.8	95.7
Total Costs		44.5	44.4	44.5	44.5	44.6	222.6
PV of Total Costs		43.2	40.7	38.5	36.3	34.3	193.0

REVENUE - £M	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	Total
Price control Revenue		43.0	43.4	43.8	44.3	44.7	219.2
Excluded Revenue		0.7	0.7	0.7	0.7	0.7	3.6
Total Revenue		43.7	44.1	44.5	45.0	45.4	222.8
PV of Total Revenue		42.4	40.4	38.5	36.7	34.9	193.0

REVENUE - £M	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	Total
'Core' Transmission		31.7	32.0	32.3	32.6	33.0	161.7
Pre-Vesting		10.3	10.4	10.5	10.6	10.7	52.5
Interconnector							
System operator		1.7	1.7	1.7	1.7	1.7	8.5
Total Revenue		43.7	44.1	44.5	45.0	45.4	222.8

Present Price Control Arrangements	
PO	5%
X	1%
Cost of Capital	6%

ANNEX 4

DEVELOPMENTS TO CHARGING ARRANGEMENTS

Introduction

Annex 4 briefly outlines present charging arrangements and outlines how these may be revised.

Present arrangements

Charges within the present price control include:

- entry charges to generators with entry connection charges that were in place prior to Vesting;
- generator use of system charges to generators and any interconnector users who import from England and Wales;
- demand use of system charges to suppliers and interconnector users who export to England and Wales;
- system service charges to suppliers and interconnector users who export to England and Wales;
- exit charges charged to distribution business and directly connected customers with exit assets that were in place prior to Vesting.

In addition costs for system operator functions relating to the interconnector have been included in the generator use of system charges.

Revised arrangements

For the split of the present price control arrangements into 'core' transmission, system operator and interconnector, the charges may be amended as follows:

- the pre-Vesting interconnector costs will not be recovered in the use-of- system charges but recovered in separate charges for use of the interconnector;
- the system operator costs will not be recovered within generator use of system charges but will be recovered in separate system operator charges, applied to recover the costs of the Scottish system operator and interconnector system operator, based on use of the respective systems;
- the 'core' transmission costs will be recovered through charges as described under 'Present Arrangements' above, but without the recovery of pre-Vesting interconnector costs and system operator costs and without demand infrastructure charges being applied to users of the interconnector.

These arrangements would be consistent with the proposal to separate the transmission activities into three separate components. It is presently proposed in the proposals paper for Scottish trading arrangements (October 1999) that an auction for use of the interconnector capacity be introduced. Ofgem intends to issue a separate consultation paper on system and system-to-system charges for the transportation of electricity associated with Scotland.