



**REVIEWS OF
PUBLIC ELECTRICITY SUPPLIERS
1998 TO 2000**

PES BUSINESS PLANS

**CONSULTATION PAPER
DECEMBER 1998**

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FOREWORD

In July 1998 I issued a consultation paper on price controls and competition in the present programme of PES reviews. This described the main considerations likely to be relevant and set out the proposed approach to the following areas of work:

distribution and metering price controls;

quality of supply standards;

competition and supply price restraints;

Scottish transmission price controls; and

prepayment meter customers.

This consultation paper deals with certain issues relating to the setting of the distribution price controls. In setting price controls it is necessary to consider the level of operating costs and capital expenditure that an efficient company might need to incur. As part of this process the PESs have been asked to complete business plan questionnaires for their distribution businesses. This consultation paper sets out information derived from the PESs' responses to these business plan questionnaires, including information on operating costs and capital expenditure over the period until 2004/05. As the price control reviews progress it will be necessary to take an independent view as to the appropriate level of operating costs and capital expenditure, bearing in mind the implications for quality of supply. Responses to this consultation paper will help inform these judgements. I have also appointed consultants to assist with the analysis of operating costs and capital expenditure. Further information will be published later in the PES reviews summarising the results of this analysis.

Early in 1999 each Electricity Consumer Committee will be holding a public meeting with its local PES. These meetings will provide an opportunity for the PESs to explain their forecasts of operating costs and capital expenditure and assumptions relating to quality of supply. They will also provide the opportunity for Committee members, customers and other interested parties to question the PESs about their future plans. Further details of these meetings can be obtained by contacting Ms Jane Morris (telephone 0121-456-6359, fax 0121-455-6277 or by writing to the address below).

I should like to hear from all those with an interest in these issues, including customers, their representatives and other interested groups as well as the companies themselves and other suppliers. Views are invited by 2 March 1999 on matters raised in this paper. These comments should be sent to:

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

PROFESSOR S C LITTLECHILD
Director General of Electricity Supply

December 1998

OVERVIEW

Introduction

- 1 Each PES owns and operates the electricity distribution network in its authorised area. The distribution systems consist of overhead lines, cables, switchgear, transformers, control systems and meters to enable the transfer of electricity from the transmission system to customers' premises. Most of the distribution services provided by PESs, such as use of system, are not subject to competition. Customers' interests are protected by regulation and price control. The present distribution price controls were put in place in 1995 and 1996 and then modified in 1998 to allow PESs to make certain additional charges for services to facilitate competition in supply. They are due to be replaced from April 2000.
- 2 Setting a price control, whatever its precise form, requires an estimate of the revenue that would be sufficient to finance an efficient business. Therefore, it is necessary to consider the level of operating costs and capital expenditure, over the period of the control, that an efficient company might need to incur, and the appropriate level of return to shareholders and other providers of capital. Each PES has been asked to provide information on actual operating costs and capital expenditure over the period 1994/95 to 1997/98 and its projections for the period 1998/99 to 2004/05, and a summary narrative highlighting efficiency improvements to date, how these compare against national and international benchmarking exercises and efficiency targets for the future. This information is set out in the following chapters.
- 3 Customers are concerned not only with price but also with quality of supply. As part of the review it will be important to understand customers' views on this and the extent to which they are prepared to pay higher prices to meet the extra costs that may be associated with improvements in quality levels.
- 4 PESs are required to meet design standards for their networks as set out in Condition 9 (Condition 7 in Scotland) of their licences. In addition there are other standards relating to network design set out in the Distribution Codes. The companies also need to meet Guaranteed and Overall Standards of Performance. Guaranteed Standards set service levels which must be met in each individual case. If a company fails to provide the level of service specified, it must make a prescribed payment to the customer concerned. Overall Standards cover areas of service where it is not feasible or appropriate to give individual guarantees, but where it is reasonable for customers in general to expect a certain level of service. Quality of supply can be measured in a number of ways. Reliability can be assessed in terms of the number and duration of supply interruptions. Performance can be monitored against the Overall and Guaranteed Standards.
- 5 Quality of supply is influenced by a range of factors, including the geography of the areas where customers are located and the prevailing weather conditions.

However, to a significant extent it is determined by the operating practices and capital expenditure programmes adopted by each PES. In order to understand more about the views of companies and the relationship between quality of supply and costs, each PES was asked to provide information on a base case and on its preferred quality of supply scenario. The base case assumes that existing levels of quality of supply are maintained. The quality of supply scenario allowed each PES to propose targets for improvements in quality of supply. In addition, to the quality of supply scenario the PESs have been asked to provide information on the costs of five specified quality of supply initiatives common to all companies.

- 6 As explained in the second consultation paper on the separation of businesses published in November 1998 the DGES is developing proposals for the separation of distribution and supply activities and new arrangements for the treatment of metering and meter reading. These proposals will need to be further developed before the effect on the attribution and allocation of costs between distribution, metering and supply activities becomes clear. The projections of costs in this paper are on the basis of the existing definitions of PES businesses. These allow for the provision of joint services between the distribution and supply businesses and the inclusion of metering costs within the distribution businesses. The existing arrangements are described in more detail in the regulatory accounts consultation paper published in October 1998. As the PES reviews progress it may be necessary to adjust the present attributions and allocations of costs in order that proposals for revised price controls reflect any new arrangements for the separation of businesses. Any additional costs of separation will need to be assessed in the context of the potential improvements in management control and efficiency and the scope for increase in shareholder value which might be realised by the possibility of demerging businesses and of potential merger and acquisition activity.
- 7 OFFER has appointed consultants to assist with the analysis of operating costs and capital expenditure. Over the next few months the consultants will be analysing the business plans and discussing with each PES whether its costs represent an efficient level given the operating conditions in its area and the quality of supply provided to its customers. Although it is conventional and convenient to break down spending between operating and capital costs it will also be important to consider the relationship between these two categories of expenditure. For instance, investment in information technology and control systems may reduce the costs of operating and maintaining the network, and increased capital expenditure may reduce the costs of maintenance. Further information will be published later in the PES reviews summarising the results of the analysis of operating costs and capital expenditure.
 - (i) **Differences between PESs**
- 8 While there are many similarities between the distribution systems which PESs operate, there are also some differences. For example, companies vary in size (in terms of area or the number of customers or the quantities of electricity distributed),

in the degree to which their customers are scattered in rural areas or concentrated in urban areas, in the extent to which they have larger customers who may take supply at higher voltages rather than requiring it to be transformed to a lower voltage, as well as in other ways. Table 1 summarises some of the characteristics of the distribution networks, indicating differences in size and configuration. There are also differences in the quality of supply provided by each network. These are summarised in the section of the overview describing the PESs' preferred quality of supply scenarios.

TABLE 1 PES DISTRIBUTION NETWORKS - 1997/98

PES	Area Sq (Km)	Customers (000s)	Circuit Length (Km)	Percentage Of Circuits Underground	Quantity Distributed LV(GWh)	Quantity Distributed HV(GWh)
Eastern	20,300	3,257	89,303	60	22,776	7,656
East Midlands	16,000	2,300	67,557	64	15,009	10,421
London	665	1,982	29,995	100	16,825	4,454
Manweb	12,200	1,382	45,123	52	9,209	4,250
Midlands	13,300	2,250	63,268	60	14,415	10,234
Northern	14,400	1,441	43,560	61	9,282	3,824
NORWEB	12,500	2,202	58,813	76	14,487	8,058
SEEBOARD	8,200	2,108	44,571	72	14,501	2,934
Southern	16,900	2,647	71,455	61	19,555	6,972
SWALEC	11,800	980	32,529	43	6,063	2,659
South Western	14,400	1,323	51,066	37	9,636	3,405
Yorkshire	10,700	2,072	54,943	71	12,929	8,238
ScottishPower	22,950	1,860	63,944	62	14,296	5,156
Hydro-Electric	54,390	640	44,362	31	6,150	1,342
Average	16,366	1,889	54,321	61	13,224	5,686

(ii) Analysis of operating costs and capital expenditure

- 9 Distribution business operating costs may be influenced by many factors including the geography and topography of the area, the numbers, nature and density of customers, length of circuit, weather, quality of supply, and operating practices. The presentation and allocation of costs will also reflect accounting policies and conventions.
- 10 The trends in the PESs actual and forecast operating costs are described in the following two sections of the overview (the base case and PESs preferred quality of supply scenarios). Operating costs are shown excluding depreciation as this is not a cash outlay. Further analysis also excludes certain transmission business charges recovered from customers by distribution charges and the business rates charged on distribution systems. This allows an analysis of net operating costs.

- 11 Capital expenditure on information technology systems, vehicles and certain property is classified as non-operational capital expenditure. However, some PESs do not provide these services from within the distribution business, instead using third party contractors or affiliated service companies. For these PESs the costs of providing these services may appear as a distribution business operating cost rather than as distribution business capital expenditure. To adjust for this in the analysis which preceded setting the present distribution price controls an amount was added to the operating costs of these PESs, and subtracted from their capital expenditures, to represent the level of non-operational capital expenditure funded directly by the distribution business. This was intended to reflect the relationship between operating costs and non-operational capital expenditure and to standardise for differences in accounting treatment across PESs. In the following analysis the capital expenditure and depreciation associated with non-operational assets are shown separately.
- 12 Capital expenditure on distribution networks can be split between that required to expand the system to accommodate new customers or to cater for shifts in the geographic pattern of demand and generation (called load related expenditure) and that required to replace existing assets (called non-load related spending). When new customers are connected to the network or existing customers wish to upgrade their connection the PESs make connection charges to these customers. These charges can be treated as a capital receipt and netted off capital expenditure. The existing distribution price control was set on the basis of what would be needed to fund network capital expenditure net of connection charge receipts.
- 13 All the information in the overview relating to operating costs and capital expenditure is in 1997/98 prices.

The Base Case

- 14 Each PES was asked to provide information on a base case. This information included forecasts of the level of operating and capital costs necessary to maintain existing distribution business quality of supply standards and targets. Nevertheless, a number of companies have indicated that their base case cost forecasts are consistent with an improvement in the quality of supply. For instance, East Midlands and Yorkshire indicate that their base case spending would allow for an improvement in the number of customer minutes lost and in the number of interruptions experienced by customers. Hydro-Electric has indicated that its base case is consistent with the targets for reducing customer minutes lost and interruptions set following the May 1995 MMC report on its distribution and supply price controls, as described in paragraph 55.
 - (i) **Operating Costs**
- 15 Table 2 shows that in aggregate the total operating costs of the PES distribution businesses fell from about £2830 million in 1994/95 to about £2270 million in

1997/98, a real reduction of about 20 per cent. The PESs' forecasts of total operating costs for the future show a change in this trend, with a projected 10 per cent increase in real terms by 2004/05. Both these patterns are broadly consistent across companies, with only Hydro-Electric having higher costs in 1997/98 than in 1994/95 and only East Midlands forecasting lower real total operating costs by 2004/05 compared to 1997/98.

- 16 Tables 3 and 4 show historic cost depreciation on network assets and non-operational assets respectively. In broad terms aggregate depreciation on the PES distribution businesses network assets has increased in line with capital expenditure on the network. Aggregate depreciation on non-operational assets is projected to increase from about £100 million in 1997/98 to about £185 million per year between 2000/01 and 2002/03, before falling back to about £125 million in 2004/05. This reflects the peak in non-operational capital expenditure between 1997/98 and 1998/99 and the relatively short accounting lives of these assets. There are wide variations between companies in the level and trends in non-operational capital expenditure and depreciation, as discussed in paragraph 20.
- 17 Table 5 shows that aggregate operating costs (excluding all depreciation) of the PES distribution businesses fell from about £2410 million in 1994/95 to about £1790 million in 1997/98, a reduction in real terms of 26 per cent. PESs forecast this level of spending to increase to about £1920 million in 2000/01 before falling to about £1840 million in 2004/05, giving a real increase of 3 per cent from 1997/98 to 2004/05. There is variation between individual PESs, with 5 companies forecasting real falls in operating costs (excluding all depreciation) between 1997/98 and 2004/05, 3 forecasting these costs to remain at about the same level in real terms and 6 forecasting real increases in these costs.
- 18 Table 6 shows that aggregate net operating costs (excluding all depreciation and NGC exit charges and the business rates charged on distribution systems) of the PES distribution businesses fell from about £1870 million in 1994/95 to about £1350 million in 1997/98, a reduction in real terms of 28 per cent. This is broadly consistent with the trends in table 5. PESs forecast spending on net costs to increase to about £1410 million in 1999/00, before falling to about £1290 million in 2004/05, a real reduction of 4 per cent from 1997/98 to 2004/05. Once again there is variation between individual PESs with 8 companies forecasting real falls in net operating costs between 1997/98 and 2004/05, 2 forecasting these costs to remain at about the same level in real terms and 4 forecasting real increases in these costs.

TABLE 2: PES DISTRIBUTION BUSINESS TOTAL OPERATING COSTS (1997/98 PRICES £ MILLION) - BASE CASE

PES	1994/95	Existing Price Control Period					Possible New Control Period				
		1995/96	1996/97	1997/98	1998/99	1999/00	2000/1	2001/2	2002/3	2003/4	2004/5
Eastern	284	294	266	240	241	248	283	286	289	288	291
East Midlands	230	223	216	213	258	235	217	219	217	213	208
London	266	232	218	195	177	210	212	213	214	203	203
Manweb	168	189	146	141	149	151	154	153	154	150	147
Midlands	229	207	204	201	196	203	215	214	215	208	208
Northern	176	167	151	147	152	153	155	157	154	151	149
NORWEB	248	311	207	188	203	204	206	211	215	217	218
SEEBOARD	207	193	130	135	148	158	163	169	170	160	153
Southern	241	189	193	174	183	192	198	199	201	196	199
SWALEC	149	125	106	113	107	121	129	131	130	129	124
South Western	193	187	130	125	126	143	166	169	167	158	159
Yorkshire	206	180	187	167	186	179	188	188	188	181	181
ScottishPower	148	149	158	144	152	166	171	172	172	166	163
Hydro-Electric	82	86	87	84	87	96	96	98	100	100	91
Total	2,827	2,733	2,397	2,268	2,365	2,460	2,553	2,579	2,585	2,519	2,493

SOURCE: 1994/95 TO 1997/98 ACTUAL; 1998/99 TO 2004/05 PES PROJECTIONS

TABLE 3: PES DISTRIBUTION BUSINESS DEPRECIATION ON NETWORK ASSETS (1997/98 PRICES £ MILLION) - BASE CASE

PES	1994/95	Existing Price Control Period					Possible New Control Period				
		1995/96	1996/97	1997/98	1998/99	1999/00	2000/1	2001/2	2002/3	2003/4	2004/5
Eastern	29	35	41	42	44	48	51	53	56	60	63
East Midlands	26	27	28	29	30	31	32	33	35	37	39
London	24	25	27	29	30	31	33	33	34	35	36
Manweb	25	29	30	28	30	30	31	31	33	33	33
Midlands	25	28	27	32	33	35	37	39	41	41	42
Northern	16	17	17	19	21	20	22	22	23	24	24
NORWEB	23	23	24	24	25	28	30	33	35	38	41
SEEBOARD	19	20	20	22	24	24	26	27	28	29	29
Southern	30	32	35	38	40	42	44	46	48	50	52
SWALEC	16	16	17	19	20	21	22	24	24	25	26
South Western	23	23	24	23	24	27	29	31	32	34	34
Yorkshire	22	22	23	24	24	26	27	28	29	30	31
ScottishPower	23	26	30	28	33	40	42	44	44	44	44
Hydro-Electric	20	19	21	18	19	25	26	29	32	36	32
Total	322	342	365	374	398	428	450	473	494	514	526

SOURCE: 1994/95 TO 1997/98 ACTUAL; 1998/99 TO 2004/05 PES PROJECTIONS

TABLE 4: PES DISTRIBUTION BUSINESS DEPRECIATION ON NON-OPERATIONAL ASSETS (1997/98 PRICES £ MILLION) - BASE CASE

PES	1994/95	Existing Price Control Period					Possible New Control Period				
		1995/96	1996/97	1997/98	1998/99	1999/00	2000/1	2001/2	2002/3	2003/4	2004/5
Eastern	21	27	22	23	19	17	19	21	20	22	24
East Midlands	13	14	13	12	16	23	26	27	27	25	20
London	10	11	10	16	14	22	23	24	24	13	12
Manweb	2	23	0	1	4	7	7	7	7	3	0
Midlands	14	11	12	11	11	11	9	8	6	6	6
Northern	1	1	1	1	4	6	6	7	6	4	3
NORWEB	13	14	10	8	15	21	21	23	26	26	26
SEEBOARD	9	8	7	5	5	5	6	7	8	8	7
Southern	0	1	1	1	0	8	8	8	8	0	0
SWALEC	5	3	0	1	5	13	14	14	14	12	7
South Western	2	4	3	10	4	6	6	6	6	1	1
Yorkshire	6	6	8	8	12	13	14	14	15	16	15
ScottishPower	0	0	0	0	5	8	8	8	7	3	0
Hydro-Electric	1	6	5	5	9	13	13	13	13	10	6
Total	98	130	91	102	123	172	180	187	188	149	127

SOURCE: 1994/95 TO 1997/98 ACTUAL; 1998/99 TO 2004/05 PES PROJECTIONS

TABLE 5: PES DISTRIBUTION DISTRIBUTION BUSINESS OPERATING COSTS LESS TOTAL DEPRECIATION (1997/98 PRICES £ MILLION) - BASE CASE

PES	1994/95	Existing Price Control Period					Possible New Control Period				
		1995/96	1996/97	1997/98	1998/99	1999/00	2000/1	2001/2	2002/3	2003/4	2004/5
Eastern	234	231	203	175	178	183	214	213	212	206	204
East Midlands	191	182	175	172	212	180	159	159	155	151	149
London	232	196	180	150	133	157	156	156	156	155	155
Manweb	141	137	116	113	115	114	116	115	115	114	113
Midlands	190	168	164	159	151	158	169	168	168	160	160
Northern	159	149	134	127	128	127	127	128	124	123	122
NORWEB	211	274	173	156	163	155	155	155	154	152	151
SEEBOARD	178	165	102	108	119	130	132	135	134	123	117
Southern	210	156	157	136	143	142	146	146	145	146	147
SWALEC	128	106	89	94	83	87	93	93	92	92	92
South Western	168	160	103	92	97	111	131	132	129	124	124
Yorkshire	179	152	156	134	150	140	147	145	144	135	135
ScottishPower	125	123	128	116	115	118	121	120	120	119	119
Hydro-Electric	61	62	61	61	59	58	57	56	55	54	53
Total	2,407	2,261	1,942	1,792	1,845	1,859	1,924	1,919	1,903	1,855	1,840

SOURCE: 1994/95 TO 1997/98 ACTUAL; 1998/99 TO 2004/05 PES PROJECTIONS

TABLE 6: PES DISTRIBUTION BUSINESS OPERATING COSTS EXCLUDING DEPRECIATION, NGC EXIT CHARGES AND RATES (1997/98 PRICES £ MILLION) - BASE CASE

PES	1994/95	Existing Price Control Period					Possible New Control Period				
		1995/96	1996/97	1997/98	1998/99	1999/00	2000/1	2001/2	2002/3	2003/4	2004/5
Eastern	174	173	150	128	131	136	143	142	143	137	136
East Midlands	144	144	132	133	174	142	122	122	119	115	114
London	184	151	136	112	94	118	113	111	111	111	111
Manweb	105	102	81	83	86	86	85	85	85	85	85
Midlands	138	118	114	117	109	116	116	115	116	108	107
Northern	128	117	103	98	99	98	94	91	90	88	87
NORWEB	168	232	133	121	127	120	118	116	112	108	104
SEEBOARD	137	126	64	76	87	97	95	97	97	86	81
Southern	149	98	99	87	95	95	89	87	86	85	84
SWALEC	105	82	65	74	64	68	67	66	65	65	64
South Western	142	134	78	71	72	86	89	90	87	83	83
Yorkshire	130	103	110	93	108	99	101	100	99	91	91
ScottishPower	109	108	113	100	100	103	102	101	101	100	100
Hydro-Electric	55	55	54	53	51	50	49	47	46	46	45
Total	1,868	1,743	1,432	1,346	1,398	1,414	1,382	1,371	1,356	1,309	1,292

SOURCE: 1994/95 TO 1997/98 ACTUAL; 1998/99 TO 2004/05 PES PROJECTIONS

(ii) Non-operational Capital Expenditure

- 19 Table 7 shows that aggregate non-operational capital expenditure of the PES distribution businesses increased very significantly over the period of the existing price control. The PESs say that to a significant extent this reflected new requirements on the distribution businesses to provide systems to facilitate the introduction of competition in supply for domestic and small business customers. In aggregate, spending increased from about £170 million per year to a peak of about £400 million per year in 1997/98. PESs forecast the aggregate level of spending falling back to about £150 million per year during the period 2000/01 to 2004/05.
- 20 There is considerable variation in the level of spending between companies, some of this reflecting differences in organisational structure and accounting policies between PESs. For instance some companies buy in a large proportion of the services provided by non-operational investment, from either affiliated companies or third parties. In these circumstances some companies may treat these charges as an operating cost, others capitalise these costs and treat them as non-operational capital expenditure.

TABLE 7: PES DISTRIBUTION BUSINESS NON-OPERATIONAL CAPITAL EXPENDITURE (1997/98 PRICES £ MILLION) - BASE CASE

PES	Average	Existing Price Control Period					Possible New Control Period				
	1990/91-1994/95	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/2	2002/3	2003/4	2004/5
Eastern	23	34	33	41	27	35	31	29	28	28	25
East Midlands	19	18	26	40	33	28	21	15	17	17	17
London	15	9	18	22	44	18	17	10	9	9	8
Manweb	17	12	23	25	21	12	4	4	5	5	5
Midlands	16	12	15	11	15	13	10	8	10	8	8
Northern	8	3	4	15	9	2	3	3	3	2	2
NORWEB	18	21	16	93	42	18	38	33	26	23	19
SEEBOARD	14	5	15	30	33	12	13	10	8	9	9
Southern	2	2	5	16	18	2	2	2	2	2	2
SWALEC	6	3	7	21	39	9	8	6	4	4	4
Sweb	11	5	8	15	10	10	6	4	4	4	4
Yorkshire	5	10	20	15	19	14	11	11	13	13	12
ScottishPower	7	14	20	38	29	14	10	10	10	10	10
Hydro-Electric	6 ⁽¹⁾	7	12	17	37	9	7	8	6	6	7
Total	169	154	221	397	376	197	181	156	144	139	133

SOURCE: 1990/91 TO 1997/98 ACTUAL; 1998/99 TO 2004/05 PES PROJECTIONS

NOTES: (1) EXCLUDES 1990/91

(iii) Network Capital Expenditure

- 21 Table 8 shows that in aggregate load related capital expenditure of the distribution businesses averaged about £580 million per year over the five year period of the first price control, then fell to about £490 million in 1995/96 and 1996/97 before increasing to about £560 million per year in 1997/98. PESs forecast that this level of spending will continue over the period 1998/99 to 2004/05. However, there is considerable variation between companies, with Eastern forecasting a real increase in spending of 60 per cent from 1997/98 to the average for the period 1998/99 to 2004/05 and SWALEC forecasting a real reduction of 40 per cent compared to the average over the same period.
- 22 Table 9 shows that in aggregate non-load related capital expenditure of the PES distribution businesses averaged about £520 million per year over the five year period of the first price control, then increased to about £720 million per year between 1995/96 and 1997/98. PESs forecast this level of spending increasing to about £950 million per year by 2004/05. As with load related expenditure there is considerable variation between companies. Six companies forecast spending broadly level or falling in real terms between 1997/98 and 2004/05 while eight forecast real increases of between 15 and 90 per cent.
- 23 Table 10 adds together the load related and non-load related expenditures shown in table 8 and 9 to give total network capital expenditure for the PES distribution businesses.
- 24 Table 11 shows connection charge receipts and table 12 shows total network capital expenditure net of these receipts. Over the period 1995/96 to 1997/98 connection charge receipts increased in real terms by about 17 per cent, broadly in line with the 15 per cent real increase in load related capital expenditure shown in table 8. The PESs are in aggregate forecasting a slight real decrease in connection charge receipts over the period 1997/98 to 2004/05 and a slight real increase in load related capital expenditure. As before there is variation between companies, although in broad terms those companies forecasting real increases in load related spending are forecasting real increases in connection charge receipts and those forecasting a real fall in load related spending are forecasting a real fall in connection charge receipts.
- 25 As a result of the forecast reduction in aggregate connection charge receipts PESs forecast that distribution business network capital expenditure net of these receipts will increase in real terms by 17 per cent over the period 1997/98 to 2004/05 compared to a 13 per cent increase for total network capital expenditure.

TABLE 8: PES DISTRIBUTION BUSINESS LOAD RELATED CAPITAL EXPENDITURE (1997/98 PRICES £ MILLION) - BASE CASE

PES	Average	Existing Price Control Period					Possible New Control Period				
	1990/91-1994/95	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/2	2002/3	2003/4	2004/5
Eastern	50	60	52	54	77	72	88	91	97	98	94
East Midlands	72	42	43	56	57	64	61	67	69	63	62
London	41	33	29	36	34	37	47	46	43	39	37
Manweb	26	23	31	37	36	38	39	39	39	40	40
Midlands	47	52	56	55	44	37	41	43	44	46	47
Northern	32	26	29	31	32	30	35	33	36	37	37
NORWEB	33	27	24	46	36	36	36	42	40	39	36
SEEBOARD	37	23	27	22	25	29	27	23	22	21	20
Southern	66	66	66	72	58	57	49	49	48	48	49
SWALEC	34	30	30	33	32	26	15	16	16	15	15
Sweb	27	24	29	34	33	33	30	30	31	31	31
Yorkshire	32	32	37	44	48	47	42	43	43	43	44
ScottishPower	50	47	43	43	42	48	50	51	52	52	52
Hydro-Electric	28 ⁽¹⁾	23	25	26	24	25	23	23	22	21	21
Total	576	486	497	561	556	554	560	572	579	573	565

SOURCE: 1990/91 TO 1997/98 ACTUAL; 1998/99 TO 2004/05 PES PROJECTIONS

NOTES: (1) EXCLUDES 1990/91

TABLE 9: PES DISTRIBUTION BUSINESS NON-LOAD RELATED CAPITAL EXPENDITURE (1997/98 PRICES £ MILLION) - BASE CASE

PES	Average	Existing Price Control Period					Possible New Control Period				
	1990/91-1994/95	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/2	2002/3	2003/4	2004/5
Eastern	31	56	68	91	99	108	110	113	118	121	121
East Midlands	39	44	45	47	44	46	71	73	72	79	78
London	40	58	75	65	69	75	57	59	63	71	70
Manweb	42	39	35	36	36	42	47	47	47	47	47
Midlands	41	45	53	43	45	47	48	50	54	55	57
Northern	32	30	34	31	26	32	32	35	36	36	39
NORWEB	39	57	60	77	66	77	123	127	142	141	145
SEEBOARD	38	46	50	42	50	49	53	55	55	57	57
Southern	59	82	92	82	81	79	103	101	102	100	96
SWALEC	29	32	40	45	40	40	50	50	48	48	46
Sweb	42	40	44	45	45	43	40	41	39	38	39
Yorkshire	39	58	61	91	78	68	59	62	65	68	70
ScottishPower	31	40	39	45	42	39	42	48	48	48	48
Hydro-Electric	18 ⁽¹⁾	31	40	38	36	36	38	38	38	35	35
Total	522	657	736	775	756	781	872	899	927	945	949

SOURCE: 1990/91 TO 1997/98 ACTUAL; 1998/99 TO 2004/05 PES PROJECTIONS

NOTES: (1) EXCLUDES 1990/91

**TABLE 10: PES DISTRIBUTION BUSINESS TOTAL NETWORK CAPITAL EXPENDITURE (1997/98 PRICES £ MILLION)
- BASE CASE**

PES	Average	Existing Price Control Period					Possible New Control Period				
	1990/91-1994/95	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/2	2002/3	2003/4	2004/5
Eastern	81	117	121	144	176	180	197	204	215	219	215
East Midlands	111	86	88	102	101	111	133	140	141	143	141
London	81	91	104	101	103	112	104	104	107	110	107
Manweb	68	62	65	73	72	80	86	86	86	87	87
Midlands	87	97	109	98	89	84	89	93	98	101	104
Northern	64	56	63	62	58	62	67	69	72	73	76
NORWEB	73	84	84	122	102	113	159	169	182	181	181
SEEBOARD	76	70	76	64	75	78	80	78	77	78	76
Southern	126	148	159	154	140	136	152	150	151	149	145
SWALEC	64	62	70	77	72	66	65	66	64	63	62
Sweb	69	64	74	78	78	76	70	71	70	69	70
Yorkshire	70	90	99	134	126	115	102	105	108	111	114
ScottishPower	81	86	82	87	84	87	92	99	100	100	100
Hydro-Electric	47 ⁽¹⁾	55	64	63	61	62	61	61	60	57	56
Total	1097	1167	1258	1362	1336	1361	1455	1494	1529	1539	1534

SOURCE: 1990/91 TO 1997/98 ACTUAL; 1998/99 TO 2004/05 PES PROJECTIONS

NOTES: (1) EXCLUDES 1990/91

TABLE 11: PES DISTRIBUTION BUSINESS CONNECTION CHARGE RECEIPTS (1997/98 PRICES £ MILLION) BASE CASE

PES	Average 1990/91-1994/95	Existing Price Control Period					Possible New Control Period				
		1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/2	2002/3	2003/4	2004/5
Eastern	25	34	33	31	45	36	34	34	34	35	35
East Midlands	28	26	25	27	29	29	32	32	32	32	33
London	16	16	17	18	19	13	22	24	21	16	17
Manweb	14	10	12	25	19	17	17	17	17	18	18
Midlands	16	14	15	15	16	14	16	16	17	18	18
Northern	16	13	17	19	18	17	17	16	15	16	16
NORWEB	16	11	8	9	10	10	9	9	10	10	11
SEEBOARD	24	17	13	16	16	20	14	10	9	9	9
Southern	17	12	14	21	14	14	14	14	14	14	14
SWALEC	9	7	10	13	8	7	5	5	5	5	5
Sweb	12	10	10	13	16	14	8	8	8	9	9
Yorkshire	22	28	28	29	32	34	34	33	34	33	34
ScottishPower	13	16	20	19	17	19	20	20	21	21	20
Hydro-Electric	8 ⁽¹⁾	5	5	6	6	6	6	6	6	6	6
Total	235	220	228	258	264	250	248	247	244	242	245

SOURCE: 1990/91 TO 1997/98 ACTUAL; 1998/99 TO 2004/05 PES PROJECTIONS

NOTES: (1) EXCLUDES 1990/91

TABLE 12: PES DISTRIBUTION BUSINESS NETWORK CAPITAL EXPENDITURE NET OF CONNECTION CHARGE RECEIPTS IN (1997/98 PRICES £ MILLION) BASE CASE

PES	Average	Existing Price Control Period					Possible New Control Period				
	1990/91-1994/95	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/2	2002/3	2003/4	2004/5
Eastern	57	83	87	114	132	144	163	170	180	184	179
East Midlands	83	59	63	76	72	82	101	108	109	111	108
London	65	76	86	83	83	99	82	80	86	94	90
Manweb	54	52	53	49	53	63	69	69	69	69	69
Midlands	72	83	94	83	73	70	73	77	81	83	86
Northern	49	42	45	43	40	44	50	53	57	57	60
NORWEB	57	73	76	114	91	103	149	159	172	170	171
SEEBOARD	52	53	64	48	59	58	66	68	69	69	67
Southern	109	136	145	134	126	122	138	136	137	134	131
SWALEC	54	55	60	65	64	59	59	60	58	58	56
Sweb	57	53	64	65	61	63	62	63	61	61	61
Yorkshire	49	62	70	105	94	81	68	71	74	77	80
ScottishPower	68	71	62	69	67	68	72	79	78	79	80
Hydro-Electric	38 ⁽¹⁾	49	61	57	55	56	55	55	54	51	50
Total	862	947	1030	1104	1072	1111	1207	1247	1285	1297	1289

SOURCE: 1990/91 TO 1997/98 ACTUAL; 1998/99 TO 2004/05 PES PROJECTIONS

NOTES: (1) EXCLUDES 1990/91

The PESs' Preferred Quality of Supply Scenarios

- 26 OFFER monitors the distribution system performance of each PES using information supplied by companies under PES Licence Condition 9 (Condition 7 in Scotland). PESs monitor and set targets for two measures of network performance, namely security (in terms of interruptions per customer) and availability (in terms of minutes lost per customer). The companies' reports are summarised and published annually. These reports show that, on average, each customer suffers 0.9 interruptions per year and each of these interruptions lasts approximately 90 minutes. In aggregate security of supply has been maintained and availability of supply has slightly improved since privatisation. There is a wide range of performance between and within companies and from one year to another. Some customers experience no interruptions, or very few, whilst others suffer them frequently. Tables 13 and 14 show companies' performance for network availability and security since privatisation, together with their targets for 1999/00. Further details of PES performance on quality of supply is set out in OFFER's 'Report on Distribution and Transmission System Performance 1997/98' published in November 1998.

TABLE 13: PES DISTRIBUTION NETWORK SECURITY OF SUPPLY: INTERRUPTIONS PER 100 CUSTOMERS

PES	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98	Company Target For 1999/2000
Eastern	76	68	96	59	65	85	89	74	70
East Midlands	169	82	75	92	96	97	95	93	88
London	41	47	38	36	40	33	39	39	30
Manweb	82	74	86	89	70	62	57	57	50-60
Midlands	170	110	129	125	121	139	148	132	109
Northern	108	90	87	80	89	90	89	90	87-92
NORWEB	58	62	57	56	70	61	60	84	55
SEEBOARD	98	90	139	87	91	83	80	91	76-86
Southern	80	81	82	78	75	79	79	73	70
SWALEC	285	229	195	214	220	223	192	186	189
South Western	146	129	118	119	124	116	106	106	86
Yorkshire	158	69	72	71	85	86	93	80	78
ScottishPower	70	71	83	58	61	65	57	73	55-65
Hydro-Electric	176	204	235	178	176	193	146	153	147
Average Customer-Weighted	111	88	95	85	88	91	89	88	79

TABLE 14: PES DISTRIBUTION NETWORK AVAILABILITY OF SUPPLY: MINUTES LOST PER CUSTOMERS

PES	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98	Company Target For 1999/2000
Eastern	76	65	91	63	94	85	77	70	66
East Midlands	1,004	87	87	97	105	95	79	82	73
London	51	67	53	52	58	54	56	50	40
Manweb	185	108	129	121	102	88	78	97	65-75
Midlands	398	118	122	144	128	151	126	116	86
Northern	246	97	102	102	95	86	82	87	96
NORWEB	88	75	77	69	70	67	66	96	64
SEEBOARD	101	86	106	75	83	69	82	92	55-65
Southern	104	109	91	74	78	78	67	56	60
SWALEC	330	325	212	200	212	233	189	183	191
South Western	185	176	184	167	133	111	103	108	93
Yorkshire	175	60	59	61	69	62	60	59	56
ScottishPower	85	76	98	77	70	81	89	77	65-75
Hydro-Electric	172	270	356	254	233	365	206	219	210
Average Customer-Weighted	226	102	106	96	97	97	87	88	76

- 27 Each PES was asked to propose appropriate improvements in the quality of supply for its area, based on its own customer research, and to provide forecasts of the expenditures necessary to bring about these improvements. Paragraphs 28 to 55 provide a summary of their customer research and the quality of supply improvements proposed by each PES. Paragraphs 56 to 58 discuss the PES forecasts of the extra spending associated with these targets.

Eastern

- 28 Customer research: Eastern says the great majority of its customers are at least reasonably satisfied with their quality of supply, those relatively few customers who suffer an abnormally high number of interruptions are less satisfied.
- 29 Quality improvements: Eastern's proposals focus on improving the position of worst served customers. Eastern proposes for 2004/05 a target of 60 for the number of high voltage circuits with more than 5 interruptions in any year, an improvement in the existing overall target for customer minutes lost from 66 to 60 and an improvement in the overall target for interruptions per 100 customers from 70 to 60.

East Midlands

- 30 Customer research: East Midlands suggests that over 90 per cent of its customers are satisfied with the present quality of supply, however, if customers experience multiple interruptions each year this is less satisfactory and if the number of interruptions increases to more than 4 or 5 a year this is unacceptable.
- 31 Quality improvements: East Midlands proposes targeting improvements at customers experiencing multiple interruptions and an improvement in the existing target for customer minutes lost from 73 to 57 and an improvement in the target for interruptions per 100 customers from 88 to 71.

London

- 32 Customer research: London reports a very high level of satisfaction with present levels of service.
- 33 Quality improvements: London's proposals focus on reducing customer minutes lost from interruptions and improving the position of worst served customers. London proposes that by 2004/05 it would reduce the number of customer groups (defined as customers being on the same electrical circuit) experiencing five or more low voltage network failures per year from 35 to 30, an improvement in the existing target for customer minutes lost from 40 to 35 and maintaining the existing target for interruptions per 100 customers at 30 (which it regards as very challenging).

Manweb

- 34 Customer research: Manweb says the majority of customers would be willing to forego some reduction in the price of electricity for improvements in the quality of supply, but they would be unwilling to see price increases.
- 35 Quality improvements: Manweb proposes targeting spending so that no community experiences more than 4 supply interruptions per year and developing cost effective improvements for those individual customers who presently experience more than 7 supply interruptions per year. Also an improvement of 6 per cent in the existing target band for customer minutes lost and maintaining the existing target band for interruptions per 100 customers at 50- 60.

Midlands

- 36 Customer research: Midlands says expectations relating to quality of supply are rising, with 85 per cent of customers wanting no more than one interruption in supply per year, but that customers are not willing to pay higher prices for quality of supply improvements.
- 37 Quality improvements: proposes improving the information available to customers during interruptions associated with severe weather, targeting network improvements at customers experiencing more than 6 interruptions per year, an improvement in the existing target for customer minutes lost from 86 to 65 and an improvement in the target for interruptions per 100 customers from 109 to 98.

Northern

- 38 Customer research: Northern suggests that 95 per cent of all its customers and 96 per cent in rural areas are very or fairly satisfied with the quality of supply and most customers are unwilling to pay more to improve the quality of supply in rural areas.
- 39 Quality improvements: Northern proposes an improvement by 2004/05 in the targets associated with faults for customer minutes lost of 12 and interruptions per 100 customers of 9.

NORWEB

- 40 Customer research: NORWEB suggests that overall around 70 per cent of customers would be prepared to pay more for modest improvements in quality over the longer term and customers in rural areas should receive similar levels of service to those in urban areas.
- 41 Quality improvements: NORWEB proposes an improvement by 2004/05 in the targets for customer minutes lost from 64.2 to 60.3 and interruptions per 100 customers from 54.8 to 53.2.

SEEBOARD

- 42 Customer research: SEEBOARD says nearly all its customers are happy with the quality of supply and the majority do not wish to pay for any further improvements.
- 43 Quality improvements: SEEBOARD proposes directing resources in a cost effective way at improving the position of its worst served customers. SEEBOARD does not propose revised targets for customer minutes lost or interruptions per 100 customers but suggests; targets for measuring and reducing transient interruptions, that 99.99 per cent of customers should not experience an average of more than 4 interruptions per year in a five year period, 97 per cent of customers have 3 or less unplanned interruptions in any year and 99.9 per cent of customers are restored within 18 hours of an interruption.

Southern

- 44 Customer research: Southern says there are increasing expectations on overall supply reliability and particular dissatisfaction where customers experience a disproportionate number of faults.
- 45 Quality improvements: Southern proposes targeting investment at the worst served customers, improving the existing target for customer minutes lost from 60 by 10 per cent (to towards 50) and improving the target for interruptions per 100 customers from 70 to 67.

SWALEC

- 46 Customer research: SWALEC says 95 per cent of its customers are happy with the quality of supply with the majority of customers wanting to see any further investment in quality of supply directed to improving quality of supply in rural areas and during severe weather.
- 47 Quality improvements: SWALEC proposes targeting effort to reflect these priorities, including an improvement in the target for customer minutes lost from 191 to 108 by 2004/05.

South Western

- 48 Customer research: South Western says the vast majority of its customers are happy with their quality of supply, but with some customers in rural areas expecting to see improvements in the number of interruptions and minutes lost.
- 49 Quality improvements: South Western proposes targeting network reliability schemes to help the worst served customers and improving the existing targets for customer minutes lost from 93 to 65 interruptions per 100 customers from 86 to 80.

Yorkshire

- 50 Customer research: Yorkshire says most customers would accept an interruption lasting between 2 and 3 hours every two years. Business customers would like faster restoration times of 30 minutes.
- 51 Quality improvements: Yorkshire proposes targeting improvements on those areas where customers experience more frequent interruptions giving priority to areas where there have been four or more interruptions per year over a four year period. Yorkshire's proposed quality of supply scenario includes an improvement by 2004/05 in the existing targets for customer minutes lost from 56 to 48 and interruptions per 100 customers from 78 to 66.

ScottishPower

- 52 Customer research: ScottishPower says the majority of customers would be willing to forego some reduction in the price of electricity for improvements in the quality of supply, but they would be unwilling to see price increases.
- 53 Quality improvements: Scottish Power proposes targeting spending so that no community experiences more than 4 supply interruptions per year and developing cost effective improvements for those individual customers who presently experience more than 7 supply interruptions per year. Also an improvement of 6 per cent in the existing target band for customer minutes lost and maintaining the existing target band for interruptions per 100 customers at 55-65.

Hydro-Electric

- 54 Customer research: Hydro-Electric says 90 per cent of its customers are satisfied with the quality of supply and the number of complaints are falling, supporting its existing programme for improving quality.
- 55 Quality improvements: Hydro-Electric has indicated that its base case includes the forecasts of costs necessary to meet the target for customer minutes lost set following the 1995 MMC report on its distribution and supply price controls. It has not provided a separate quality of supply scenario. The MMC report concluded that the maintenance or improvement of quality of supply was at least as important to customers as further reductions in prices. Following publication of that report targets were established relating to high voltage faults for customer minutes lost of 190 and interruptions per 100 customers of 130 by 2004/05.

TABLE 15: PES DISTRIBUTION BUSINESS OPERATING COSTS (EXCLUDING TOTAL DEPRECIATION, NGC EXIT CHARGES AND NETWORK RATES) IN 1997/98 PRICES £ MILLION - PREFERRED QUALITY OF SUPPLY SCENARIO

PES	1994/95	Existing Price Control Period					Possible New Control Period				
		1995/96	1996/97	1997/98	1998/99	1999/00	2000/1	2001/2	2002/3	2003/4	2004/5
Eastern	174	173	150	128	131	136	143	142	144	139	137
East Midlands	144	144	132	133	174	142	122	121	118	115	113
London	184	151	136	112	94	118	113	111	111	111	111
Manweb	105	102	81	83	86	86	85	85	85	85	85
Midlands	138	118	114	117	109	116	118	117	117	110	109
Northern	128	117	103	98	99	98	94	91	90	89	88
NORWEB	168	232	133	121	127	120	120	118	115	111	109
SEEBOARD	137	126	64	76	87	97	96	98	97	87	81
Southern	149	98	99	87	95	95	89	87	86	85	84
SWALEC	105	82	65	74	64	68	67	66	65	65	64
South Western	142	134	78	71	72	86	94	95	92	88	88
Yorkshire	130	103	110	93	108	99	101	100	100	91	91
ScottishPower	109	108	113	100	100	103	102	101	101	101	100
Hydro-Electric	55	55	54	53	51	50	49	47	46	46	45
Total	1,868	1,743	1,432	1,346	1,398	1,414	1,392	1,381	1,368	1,321	1,306

SOURCE: 1994/95 TO 1997/98 ACTUAL; 1998/99 TO 2004/05 PES PROJECTIONS

(i) Operating Costs

56 Most PESs quality of supply scenarios lead to a forecast increase in distribution business operating costs (excluding all depreciation, NGC exit charges and business rates on the distribution system) of less than £1 million per year. South Western forecasts the largest increase, of about £5 million per year.

(ii) Non-operational Capital Expenditure

57 All the PESs forecast the same level of non-operational capital expenditure for their quality of supply scenario as in their base case. Paragraph 19 describes non-operational capital expenditure in the base case and PES forecasts over the period 1998/99 to 2004/05.

(iii) Network Capital Expenditure

58 Table 16 shows that in aggregate PESs forecast that total network capital expenditure in the preferred quality of supply scenarios will increase from about £1360 million in 1997/98 to about £1670 million by 2004/05. Over the period 2000/01 to 2004/05 aggregate spending is forecast to be about £130 million higher per year in the preferred quality of supply scenarios than in the base case, an increase of 9 per cent. The majority of companies suggest a 5 to 10 per cent increase in capital expenditure to improve quality of supply. Midlands suggests the largest increase, 21 per cent of extra spending. Hydro-Electric has suggested the same level of spending as in the base case, consistent with the quality of supply targets for 2004/05 established after the 1995 MMC report on its distribution and supply price controls. Table 17 shows total network capital expenditure in the quality of supply scenario net of connection charge receipts. As in the base case aggregate net spending is forecast to be about £250 million per year less than total spending, with PESs forecasting the same level of connection charge receipts in the quality of supply scenario and the base case.

TABLE 16: PES DISTRIBUTION BUSINESS TOTAL NETWORK CAPITAL EXPENDITURE (1997/98 PRICES £ MILLION) - PREFERRED QUALITY OF SUPPLY SCENARIO

PES	Average 1990/91-1994/95	Existing Price Control Period					Possible New Control Period				
		1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/2	2002/3	2003/4	2004/5
Eastern	81	117	121	144	176	180	212	218	229	232	228
East Midlands	111	86	88	102	101	111	158	165	166	168	166
London	81	91	104	101	103	112	108	109	111	114	112
Manweb	68	62	65	73	72	80	91	91	91	92	92
Midlands	87	97	109	98	89	84	112	115	119	119	123
Northern	64	56	63	62	58	62	70	72	76	76	79
NORWEB	73	84	84	122	102	113	169	178	195	201	201
SEEBOARD	76	70	76	64	75	79	83	82	81	81	78
Southern	126	148	159	154	140	136	162	161	164	163	161
SWALEC	64	63	71	78	72	66	71	72	70	69	67
South Western	69	64	74	78	78	76	81	81	81	80	80
Yorkshire	70	90	99	134	126	115	108	111	114	116	120
ScottishPower	81	86	82	87	84	87	97	104	105	105	105
Hydro-Electric	47 ⁽¹⁾	55	65	63	61	62	61	61	60	57	56

TABLE 17: PES DISTRIBUTION BUSINESS TOTAL NETWORK CAPITAL EXPENDITURE NET OF CONNECTION CHARGE RECEPITS (1997/98 PRICES £ MILLION) - PREFERRED QUALITY OF SUPPLY SCENARIO

PES	Average 1990/91-1994/95	Existing Price Control Period					Possible New Control Period				
		1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/2	2002/3	2003/4	2004/5
Eastern	57	83	87	114	132	144	178	184	194	197	193
East Midlands	83	59	63	76	72	82	126	133	134	136	133
London	65	76	86	83	83	99	86	84	90	98	94
Manweb	54	52	53	49	53	63	74	74	74	74	74
Midlands	72	83	94	83	73	70	96	99	103	102	105
Northern	49	42	45	43	40	44	53	56	60	60	63
NORWEB	57	73	76	114	91	102	160	169	185	190	190
SEEBOARD	52	53	64	48	59	59	69	72	72	72	69
Southern	109	136	145	134	126	122	148	147	150	149	147
SWALEC	54	56	61	65	64	59	66	67	65	64	62
South Western	57	53	64	65	61	63	73	72	72	71	72
Yorkshire	49	62	70	105	94	81	74	77	80	83	86
ScottishPower	68	71	62	69	67	68	77	84	83	84	85
Hydro-Electric	38 ⁽¹⁾	49	61	57	55	56	55	55	54	51	50
Total	862	948	1031	1104	1072	1112	1336	1372	1416	1432	1423

SOURCE: 1990/91 TO 1997/98 ACTUAL; 1998/99 TO 2004/05 PES PROJECTIONS

NOTES: (1) EXCLUDES 1990/91

Specified Quality of Supply Initiatives

59 Each PES was asked to provide information on the costs of the five following quality of supply initiatives. These five initiatives were designed to reflect some of the suggestions made by customers, customer groups and others for improving quality of supply. Each PESs' estimates for the additional costs of these initiatives are set out below. Over the next few months it will be necessary to verify that PESs have provided data on a reasonably consistent basis. Nevertheless, these initial estimates should facilitate consideration by customers and other interested parties of the possible costs and benefits of various quality of supply measures.

(i) Tightening from 24 to 12 hours in the Guaranteed Standard and Overall Standards on supply restoration after an interruption

60 The existing Guaranteed Standards require payments to individual customers when a PES does not restore supply within 24 hours of an interruption. The Overall Standards require supplies to be restored within 24 hours in a 100 per cent of cases. PESs were asked to provide information on the costs of tightening these standards so that companies would be required to restore supplies within 12 hours.

Eastern: it is not possible to guarantee that a fault can be located within 12 hours.

East Midlands: proposed capital expenditure plans would allow consideration of this change in about 2020.

London: additional capital expenditure of £52 million and additional operating costs of £0.4 million per year, however it would not possible to guarantee all faults repaired within 12 hours.

Manweb: additional capital expenditure of £12 million.

Midlands: it is not possible to guarantee that a fault can be located within 12 hours or guarantee repairs within 12 hours during severe weather.

Northern: additional capital expenditure of £69 million and additional operating expenditure of £5.3 million per year.

NORWEB: it is not possible to guarantee that a fault can be located and repaired within 12 hours.

SEEBOARD: existing performance on restoring supplies within 12 hours is about 99.5 per cent on the basis of a five year average, substantial expenditure would be required to increase performance beyond 99.6 per cent.

Southern: at present it is not possible to guarantee that a fault can be located and repaired within 12 hours; in the longer term additional capital expenditure of £300 million would be required to meet this target.

SWALEC: if the severe weather exemption was to be removed additional capital expenditure of £2700 million would be required.

South Western: additional capital expenditure of between £20 million and £40 million.

Yorkshire: gives no indication of costs but comments long interruptions are often related to the need to maintain safety and additional expenditure would not necessarily deal with these difficulties.

ScottishPower: additional capital expenditure of £12 million.

Hydro-Electric: additional capital expenditure of £629 million.

(ii) An Increase of 3 percentage points in the Overall Standards on the percentage of customers to be restored to supply within 3 hours of an Interruption

61 One of the existing Overall Standards (1a) requires companies to restore supplies to specified minimum percentages of customers within 3 hours of an interruption. Targets for this standard presently range from 85 to 95 per cent. Companies were asked to provide information on increasing these targets by 3 percentage points.

Eastern: increase in standard to 96 per cent, initial set-up costs of £6 million and then on-going additional costs of £4 million per year.

East Midlands: increase in standard to 93 per cent, proposed base case plans would allow this increase in the overall standard to be achieved by 2005.

London: increase in standard to 88 per cent, target unachievable without substantial capital and operating expenditure.

Manweb: increase in standard to 93 per cent, additional capital expenditure of £7½ million.

Midlands: increase in standard to 98 per cent, would make this target unachievable.

Northern: increase in standard to 93 per cent, additional capital expenditure of £52 million and additional operating expenditure of £¾ million per year.

NORWEB: increase in standard to 93 per cent, additional capital expenditure of £70 million.

SEEBOARD:	increase in standard to 93 per cent, additional capital expenditure of £40 million to £100 million and additional operating expenditure of at least £1 million per year.
Southern:	increase in standard to 93 per cent, additional capital expenditure of £10 million.
SWALEC:	increase in standard to 88 per cent, additional capital expenditure of £3 million.
South Western:	increase in standard to 88 per cent, additional capital expenditure of £40.3 million plus additional operating expenditure of £0.3 million per year.
Yorkshire:	increase in standard to 88 per cent, no additional expenditure required.
ScottishPower:	increase in standard to 88 per cent, additional capital expenditure of £7½ million.
Hydro-Electric:	increase in standard to 88 per cent, substantial additional expenditure would be required to meet this increased target.

(iii) A new Overall Standard with a target of 99.5 per cent of customers experiencing not more than 3 interruptions per year

62 This possible new Overall Standard would establish a target of 99.5 per cent of customers experiencing not more than 3 interruptions (each lasting for more than one minute) per year.

Eastern:	if the target was based on a 5 year average then the proposal would have no material impact on costs.
East Midlands:	this new Overall Standard could only be achieved with substantial additional capital expenditure.
London:	this new Overall Standard could only be achieved with substantial additional capital expenditure.
Manweb:	additional capital expenditure of £10 million.
Midlands:	this new Overall Standard would be unachievable.
Northern:	additional capital expenditure of £276 million and reductions in operating expenditure of £2.1 million per year.

NORWEB: given information presently available it is not possible to estimate the costs of this new Overall Standard.

SEEBOARD: additional expenditure of £7 million to £15 million per year.

Southern: this new Overall Standard could only be achieved with substantial additional capital expenditure.

SWALEC: additional capital expenditure of £400 million and additional operating expenditure of £2 million.

South Western: additional capital expenditure of between £80 million and £100 million.

Yorkshire: this new overall standard could not be guaranteed because of third party damage to the network.

ScottishPower: additional capital expenditure of £10 million.

Hydro-Electric: additional capital expenditure of £221 million.

(iv) New Overall Standards requiring 90 per cent of customer telephone calls for information on loss of supply to be answered with a substantive response within 15 seconds in normal circumstances and 80 per cent to be answered within 30 seconds in exceptional circumstances

63 In a report on the supply interruptions during the Christmas 1997 and New Year 1998 storms OFFER concluded that communications with customers were unsatisfactory and consideration should be given to new Overall Standards relating to these matters. As part of this process the PESs have now been asked to provide information relating to possible new Overall Standards on responding to customer telephone calls.

Eastern: existing systems meet the proposed standard for normal circumstances, substantial new investment would be required to meet the proposed standard for exceptional circumstances.

East Midlands: initial set-up costs of £½ million to £1million.

London: additional staff costs, in excess of £1½ million per year.

Manweb: additional capital expenditure of £½ million per year plus additional operating costs.

Midlands: the additional costs of answering telephone calls within 15 seconds rather than the existing company target of 20 seconds could not be justified, answering calls within 30 seconds in exceptional circumstances would require additional investment of £ ½ million.

Northern:	additional operating costs of £0.4 million per year.
NORWEB:	additional costs of about £0.1 million per year.
SEEBOARD:	additional costs of about £½ million per year.
Southern:	additional costs of about £0.3 million per year.
SWALEC:	substantial additional costs would need to be incurred to meet the proposed standard for exceptional circumstances.
South Western:	additional capital expenditure of £0.1 million and additional operating expenditure of £0.6 million for the new standard in normal circumstances, additional capital expenditure of £19.2 million and additional operating expenditure of £9.6 million for the new standard in exceptional circumstances.
Yorkshire:	initial set-up costs of £2½ million and on-going costs of £½ million.
ScottishPower:	additional costs of £1.7 million per year.
Hydro-Electric:	unspecified additional operating costs.

(v) Undergrounding 5 per cent of the high voltage overhead network by 2004/05

64 PESs were asked to estimate the costs of undergrounding 5 per cent of the high voltage overhead network by 2004/05. Where companies have not provided a total for the length of network involved a figure has been estimated.

Eastern:	undergrounding 1000 km of the high voltage overhead network would require additional capital expenditure of £40 million.
East Midlands:	proposed base case plans already assume undergrounding 8 per cent of the 11 kV overhead network between 2000/01 and 2004/05, with 17 per cent in the quality of supply scenario.
London:	its high voltage network is already underground.
Manweb:	undergrounding 654 km of the high voltage overhead network would require additional capital expenditure of £32½ million plus additional operating costs of £0.1 million per year.
Midlands:	undergrounding 5 per cent of the high voltage overhead network would not be justified.

- Northern:** undergrounding 560 km of the high voltage network would require additional capital expenditure of £123 million and additional operating expenditure of £0.8 million per year.
- NORWEB:** undergrounding 420 km of the high voltage network would require additional capital expenditure of £25.2 million.
- SEEBOARD:** undergrounding 282 km of the high voltage network would require additional capital expenditure of £25 million and produce reductions in operating expenditure of £0.7 million.
- Southern:** undergrounding 683 km of the high voltage network would require additional capital expenditure of between £45 million and £61 million.
- SWALEC:** undergrounding 615 km of the high voltage network would require additional capital expenditure of between £50 million and £75 million.
- South Western:** undergrounding 953 km of the high voltage network would require additional capital expenditure of £60 million.
- Yorkshire:** undergrounding 492 km of the high voltage network would require additional capital expenditure of £36 million.
- ScottishPower:** undergrounding 833 km of the high voltage network would require additional capital expenditure of £40 million plus additional operating costs of £0.1 million per year.
- Hydro-Electric:** undergrounding 1040 km of the high voltage network would require an additional capital expenditure of £38 million.

1. EASTERN

Executive Summary

Eastern has, for many years, been at the forefront of efficiency improvements in electricity distribution. Here we summarise some of the ways in which this has been achieved, and explain how Eastern has significantly lower Distribution Use of System (DUoS) charges than any other distributor in Great Britain for a typical domestic customer. The following table shows the extent of these differences.

Public Electricity Supplier	Total Distribution Use of System Charge £ p.a.
Eastern	59.45
SEEBOARD	67.31
Midlands	70.81
Southern	73.17
East Midlands	72.50
Yorkshire	74.64
London	75.66
NORWEB	80.12
Hydro-Electric	80.23
Northern	81.79
Manweb	89.80
South Western	90.44
Scottish Power	95.52
SWALEC	106.34
Average	79.84

Source: OFFER, Price Controls and Competition Consultation Paper
Prices as at April 1998, for customer on standard domestic tariff using 3300 units per annum

We believe such significant differences are unjustified, and look to the opportunity of this price review to begin the process of convergence in DUoS charges across the Country.

In addition to continually improving our efficiency we have been and are improving the service we give to our customers. An essential part of this service is our attention to quality of supply and also environmental performance; both these areas are addressed below.

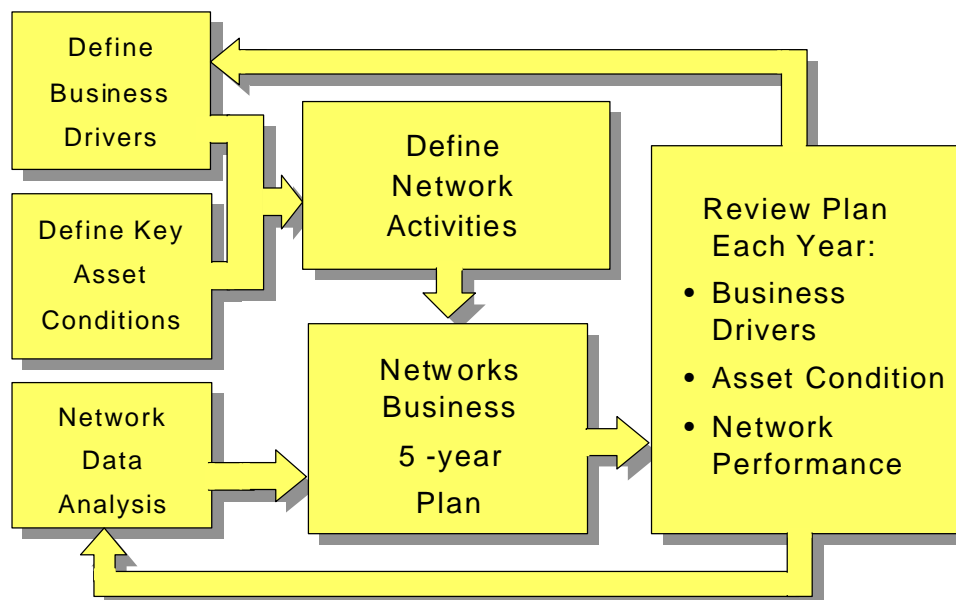
This summary covers the following areas:

- **Productivity improvements**
- **Quality of supply**
- **Investing in new technology**
- **Environmental improvements**
- **Looking to the future.**

Productivity improvements

We have developed a radical approach to network management and investment planning that has enabled us to achieve a quantum leap in network management performance. We call this new process our Distribution Business Asset Plan (DBAP), as illustrated below.

Asset Planning Process

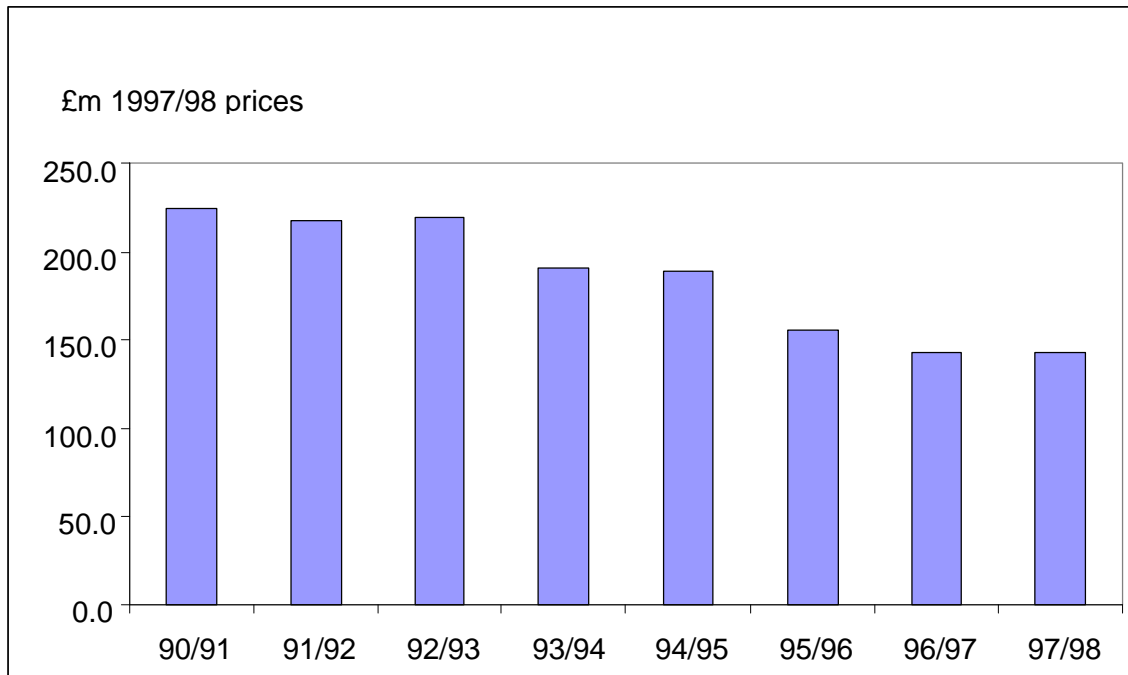


DBAP has enabled us to more effectively direct and time network investment and has helped us to achieve real efficiencies, both in operating costs and in capital investment expenditure, whilst substantially improving quality of supply and standards of service for our customers.

For example, in the past we scheduled maintenance on a rigid time basis, so that for instance switchgear was stripped down every four years and then reassembled. In many cases it was found that the maintenance checks themselves were the source of problems rather than normal wear and tear. Now we only strip down equipment when it needs repair, and maintenance checks are carried out by using state of the art non-invasive technology. This diagnoses the condition of the equipment without the need for disconnecting it from our network and therefore not interrupting supplies to our customers. Similar techniques are applied to wooden poles. In the past they were tested by taking core samples to see if they were rotten. Now we use an ultra-sonic collar that can see inside the pole without damaging it in any way.

The chart below shows clearly the two time periods where implementing the DBAP principles and also empowering our field staff to participate in the planning and implementation of their own workload has reduced our costs. The changes occurred in 1993/94 and 1995/96 and has saved millions of pounds in operational spending (opex) alone.

Eastern Networks Operational Spend (Opex) 1990/91-1997/98



Source: Offer Business Plan Questionnaire Table 4.14 – Less exceptional items

A slight increase in opex is forecast into the future as the age profile of our assets increase. Our asset management approach will ensure that we do not unnecessarily make replacements before they are needed. This will enable us to defer capital spend but will require additional operating expenditure for inspection and maintenance to sustain performance. Overall this has and will continue to reduce the lifetime costs of our network assets.

Because of the efficiency gains that our DBAP process delivers, our current forecast for net capital expenditure for 1994/95-1999/00 is £618m, compared with our original forecast of £698m; a saving of some 11% overall. Within this, investment has been redirected towards enhancing the network. Our investment on non-load related capex will exceed the forecast made at the time of the last price review by 9%. Importantly, this expenditure represents, in real terms, a greater **effective** level of network investment than our original submission represented, but at lower cost.

Our asset is ageing however, and while age itself is not a reason for replacement, our analysis predicts an increasing need to replace assets if we are to maintain our quality of supply.

Quality of supply

Our vision is that we shall ultimately be able to provide an interruption-free network for our customers. This is necessarily a long-term goal, but one which is supported by a strategy which will also deliver real improvements in network performance in the short term.

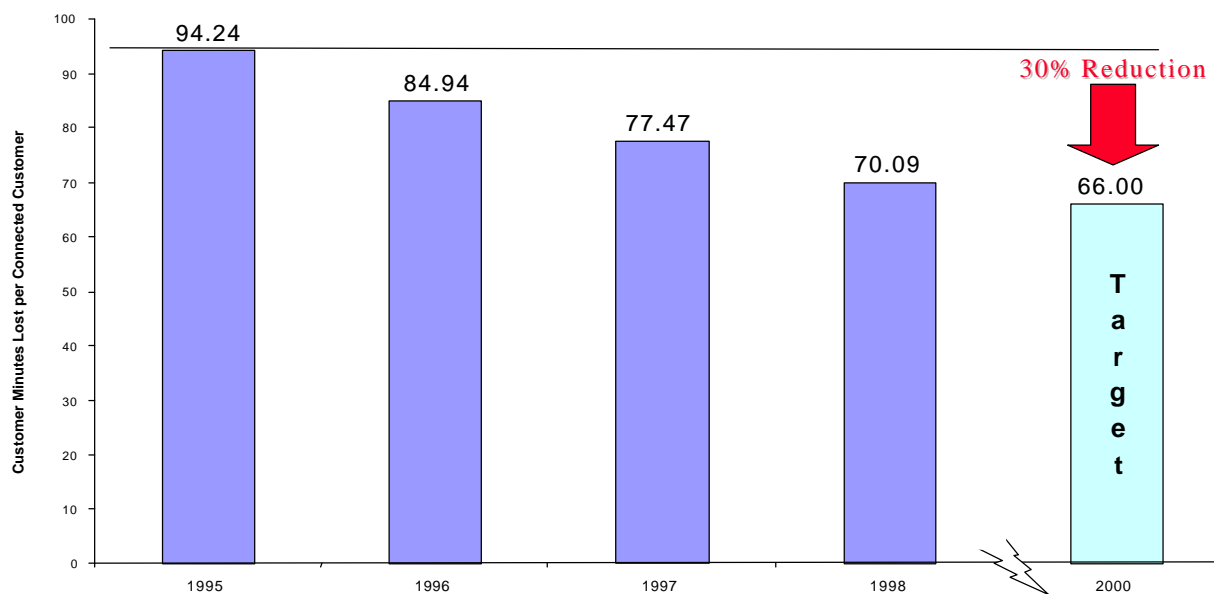
Our overall Quality of Supply improvement strategy includes a number of mutually supporting strands:

- to improve the reliability of our networks by taking action to reduce the number of faults;
- to ensure the maximum availability of network assets at any given time, consistent with inspection and maintenance outage needs;
- to improve both our reaction and response times, and the management of fault-switching, to minimise customer minutes lost (cml);
- to ensure that network running conditions are optimised with regard to Security (interruptions per customer) and Availability (duration of interruption and number of customers affected);
- to re-design our networks such that, in the event of a fault, the number of customers off supply is minimised;
- to re-design our networks such that if our customers do suffer a supply interruption, the means are available to restore their supplies as quickly as possible.

Capital investment will play a major part in delivering improved network performance, but improved network management procedures and more effective inspection and maintenance techniques can also make a significant contribution to Quality of Supply.

In recent years we have been the best performing network of any REC in terms of overall reliability. This year, 1997/1998, has seen a fall in customer minutes lost for the third year in a row and we are well on the way to achieving our target of a 30% reduction in Customer Minutes Lost (CMLs) by the end of 1999/2000, compared with our performance at 1994/1995.

Eastern Electricity Customer Minutes Lost Performance and Target



Source: Eastern Electricity Quality of Supply Report 1997/98

We believe that Quality of Supply should now be focussed on worst served customers. Although it must be recognised that a consequence of this is that more capital will be absorbed for lower **overall** improvements in performance measures.

We require far more sophisticated information systems to allow us to more accurately identify those customers that are worst served. Such systems will not reduce our costs but they will bring big benefits in customer service terms. Spending for such systems was not allowed under the last review, but in the context of the above they are entirely appropriate costs for our quality of supply objectives.

Investing in new technology

Our focus on quality of supply improvements has created the need for a new approach to network (especially 11kV network) design. Our approach has been not only to improve the reliability of network components but also to introduce new technologies, such as enhanced protection and automation/remote-control. Recent developments, and our own extensive field trials, have enabled us to introduce remote control, automation, and enhanced protection, and other network enhancements. We selectively apply these technologies towards those parts of our network where our customers (in particular our less well served customers) will derive the greatest benefit in terms of improved quality of supply.

In the past a fault on a line would have required field staff to manually go and perform switching operations. Auto-reclosing technology means that if the fault was transient, a wind borne object or fallen branch affects an overhead line for example, then after a few seconds the switch will close and supply will be restored. If the problem is more serious we are able to perform switching operations to restore supplies remotely from our control centre in Ipswich. This allows supplies to be restored to many, if not all, customers as field staff are deployed to resolve the problem. We have now added to our network, and commissioned, over 600 remotely controlled 11kV distribution switches. By the end of 2000 almost half of all our customers will benefit from this new technology. Our projected capital expenditure in this area exceeds our original forecast.

Environmental improvements

Our Environment, Health and Safety (EHS) programmes are concerned with improving health and safety or amenity and reducing environmental impact. We differentiate EHS programmes from mainstream Asset Replacement for three reasons:-

- a) because assets will be replaced earlier than would otherwise have been necessary had environmental impact not been a specific consideration (e.g. ageing oil-filled cables with porous sheaths);
- b) the EHS driver may require enhancements, in the form of additional or replacement assets, and will therefore represent additional cost. Examples include enhanced substation security measures, noise reduction, amenity (aesthetic) enhancements, reduced use of herbicides for vegetation management, and measures to mitigate against oil-leakage from cables and transformers;
- c) we believe that this is a driver which will become increasingly important and our long-term investment planning needs to reflect this.

Eastern takes its environmental responsibilities very seriously. This has been publicly acknowledged by "Friends of the Earth" who recently voted Eastern the most environmentally

friendly PES in the UK. Our Networks Business has a comprehensive Environmental Management System and our concern for social and environmental issues is the basis of one of our core values. The environmentally responsible manner in which we manage our business has been recognised in the form of both BS 7750 and ISO 14001 accreditation.

Looking to the future

The Electricity Distribution industry is likely to look very different in 2005 compared to today. Below is a summary of Eastern's thoughts on the challenges facing the industry as a whole, and our Networks business, over the next five years.

The Distribution Industry

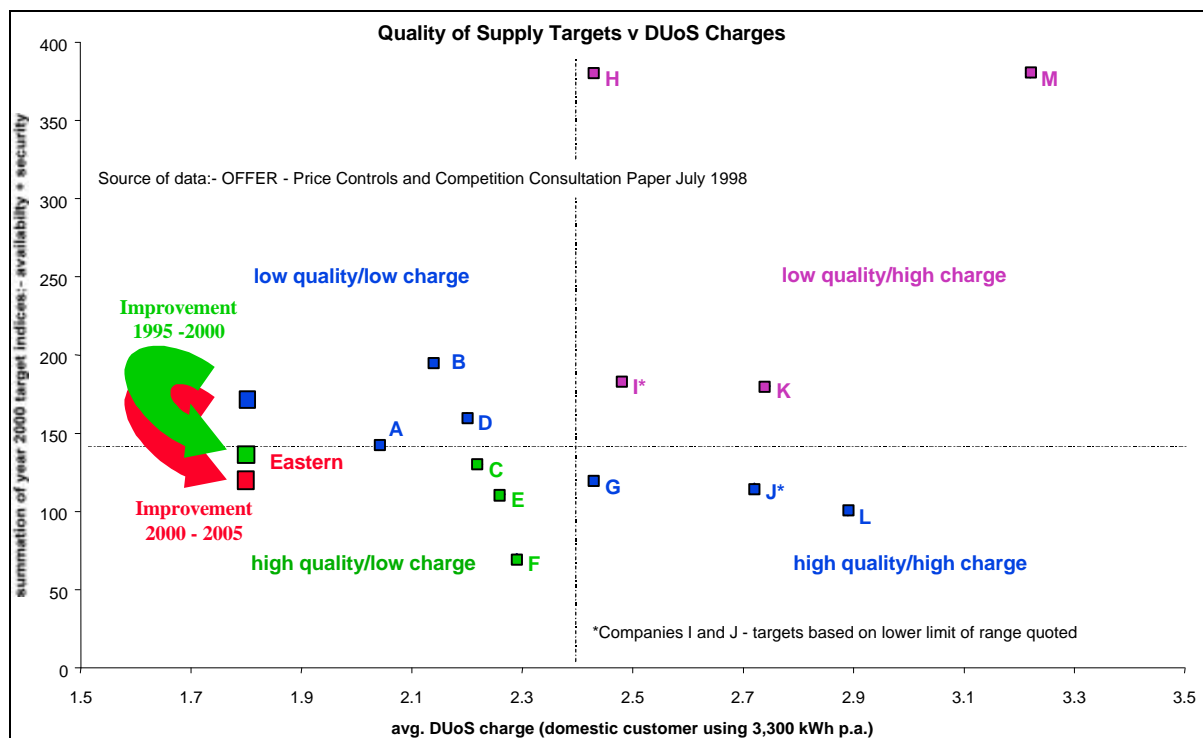
New technology, regulatory changes and increasingly higher quality of supply standards will all bring new demands for the UK's Public Electricity Supply Companies.

New technology brings both opportunities and challenges. Auto-reclosing mechanisms and remote switching assists in reducing customer minutes lost. Embedded Generation, where small-scale generation plants, such as windfarms, are connected directly with Electricity Company networks rather than the National Grid, brings many new technical challenges. If the Government is to achieve its targets for this form of generation there will need to be proper commercial structures and stronger incentives.

It seems likely that Distribution will be a separately licensed business in future, which will open up the possibility of rationalisation of the industry.

We do not think that enforced separation of ownership is justified, as the costs will outweigh the benefits in many cases. In any case, where it is economically viable we believe electricity distribution networks will merge with each other, and even the distribution parts of other utilities. This may bring greater efficiencies to the industry and it will become increasingly clear which of the current distributors have long term ambitions in the industry.

The chart below analyses the Public Electricity Companies by comparing their DUoS charge and quality of supply targets, and judges how well they are serving their customers. The impact of Eastern's targets in quality of supply is illustrated.



Whilst Eastern supports the RPI-X formula, we believe that in calculating the price control a greater emphasis is needed on outputs rather than inputs. At present, there is some separation between outputs and allowed revenue. We believe allowed revenue should reflect the price, quality, customer service and environmental impact achieved rather than a detailed calculation of what costs might be expected. There is a danger in trying to control costs rather than outputs in that innovative thinking is directed into positioning spending rather than achieving greater standards. We are already seeing evidence of 'gaming' on capital and operational expenditure leading to excessive capitalisation. Regulation should seek to move all of the companies in the above chart into the low-cost high-quality sector. This will only be achieved by concentrating regulation on achieving convergence in the outputs of distribution companies, such as price, quality and customer service.

Eastern's Network Business

Eastern Electricity Networks Business' vision is that: **'Network operators throughout the world will use Eastern's Networks Business as the benchmark for innovative, cost effective, quality service'**.

We can always improve the service we are delivering to our customers. With new information systems we could better target resources to our customers needs. We already seek to reduce losses on the network, but there really is not a strong business case for doing so. Greater incentive would allow us to do more. And we would also like greater flexibility to allow us to deliver more in terms of environmental improvements, beyond what we are already doing. Given the right regulatory environment we can do all these things. This price control is the opportunity.

Some aspects of our business, however, fall outside the industry's and OFFER's control. Distribution is a business that is closely tied to the economy. There are close links between growth in the economy, in terms of Gross Domestic Product, and electricity usage volumes and new connections. How the Eastern region grows, therefore, can have a very big impact on our business. We anticipate that GDP in our region will increase by 2% per annum over the period 2000/01 to 2005/06 based on published forecast data and our analysis. We expect that this growth will increase the number of units delivered over our distribution system by 1½% per annum when economy trends and energy efficiency measures by customers and Eastern Electricity are taken into account.

We anticipate that the number of customer connections to increase slightly above the national average at 1.3% per annum when government led building programmes and predicted regional trends are considered.

Eastern will continue to improve efficiency, quality of supply and customer service in the next price control period. We would like to see recognition, however, that we have already done more than many companies and further improvements will be more difficult and costly to achieve. We have long term ambitions and wish to be the distribution business others look to as the benchmark for their own performance. This business plan outlines how we can achieve this ambition and continue to improve the service our customers receive until 2005 and into the future.

EASTERN - TABLE 14.2 SUPPLEMENTARY ANALYSIS OF DISTRIBUTION BUSINESS HCA COSTS - BASE CASE IN 1997/98 PRICES

DESCRIPTION	ACTUAL				FORECAST						
	1994/95 £m	1995/96 £m	1996/97 £m	1997/98 £m	1998/99 £m	1999/00 £m	2000/01 £m	2001/02 £m	2002/03 £m	2003/04 £m	2004/05 £m
NGC exit charges	35.1	34.8	28.8	22.2	22.4	22.1	21.0	20.3	19.5	18.8	18.0
Rates on distribution system	25.2	24.0	24.5	24.3	24.5	24.4	50.3	50.4	50.3	50.3	50.3
Depreciation on distribution system	28.8	34.9	40.7	42.3	44.1	48.0	50.5	53.3	56.4	59.6	62.8
Payroll costs	0.0	65.1	50.2	44.0	45.7	46.8	47.9	49.0	50.2	51.4	52.6
Non payroll IT costs	0.0	0.0	0.0	29.1	26.2	25.5	25.4	25.4	25.4	25.5	25.4
Premises costs	0.0	0.0	0.0	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
Insurance	4.4	4.5	4.5	3.9	4.2	4.4	4.8	5.1	5.4	5.8	6.2
Materials	0.0	0.0	0.0	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
Other	190.6	130.4	117.6	62.0	62.2	64.9	71.6	71.2	70.0	64.4	63.5
Total Costs	284.1	293.8	266.4	239.7	241.3	247.9	283.5	286.5	289.2	287.6	290.7

(EASTERN - TABLE 14.4) SUPPLEMENTARY ANALYSIS OF DISTRIBUTION BUSINESS HCA COSTS - QUALITY OF SUPPLY SCENARIO IN 1997/98 PRICES

DESCRIPTION	ACTUAL				FORECAST						
	1994/95 £m	1995/96 £m	1996/97 £m	1997/98 £m	1998/99 £m	1999/00 £m	2000/01 £m	2001/02 £m	2002/03 £m	2003/04 £m	2004/05 £m
NGC exit charges	35.1	34.8	28.8	22.2	22.4	22.1	21.0	20.3	19.5	18.8	18.0
Rates on distribution system	25.2	24.0	24.5	24.3	24.5	24.4	50.3	50.4	50.3	50.3	50.3
Depreciation on distribution system	28.8	34.9	40.7	42.3	44.1	48.0	50.5	53.7	57.3	60.8	64.3
Payroll costs	0.0	65.1	50.2	44.0	45.7	46.8	47.9	49.0	50.2	51.4	52.6
Non payroll IT costs	0.0	0.0	0.0	29.1	26.2	25.5	25.4	25.4	25.4	25.5	25.4
Premises costs	0.0	0.0	0.0	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
Insurance	4.4	4.5	4.5	3.9	4.2	4.4	4.8	5.1	5.4	5.8	6.2
Materials	0.0	0.0	0.0	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
Other	190.7	130.5	117.6	62.0	62.2	64.9	71.6	71.2	70.0	64.4	63.5
Total Costs	284.1	293.8	266.4	239.7	241.3	247.9	283.5	286.9	290.0	288.8	292.3

EASTERN - TABLE 14.6 SUPPLEMENTARY ANALYSIS OF DISTRIBUTION BUSINESS CAPITAL EXPENDITURE - BASE CASE SCENARIO IN 1997/98 PRICES

DESCRIPTION	ACTUAL				FORECAST						
	1994/95 £m	1995/96 £m	1996/97 £m	1997/98 £m	1998/99 £m	1999/00 £m	2000/01 £m	2001/02 £m	2002/03 £m	2003/04 £m	2004/05 £m
Capital expenditure - load related	43.7	60.4	52.4	53.5	77.2	71.7	87.6	90.6	96.5	98.3	93.9
- non load related	42.6	56.4	68.5	90.9	98.9	107.9	109.5	113.3	118.0	120.6	120.7
- non operational	26.4	34.3	32.5	40.9	26.5	35.0	30.9	28.9	27.9	27.5	25.4
-customer contributions	-27.9	-33.7	-33.4	-30.5	-44.6	-35.7	-34.4	-33.8	-34.4	-34.9	-35.3
Net Capital Expenditure	84.9	117.3	120.0	154.8	158.1	178.9	193.7	199.0	208.0	211.6	204.8

EASTERN - TABLE 14.8 SUPPLEMENTARY ANALYSIS OF DISTRIBUTION BUSINESS CAPITAL EXPENDITURE - QUALITY OF SUPPLY SCENARIO IN 1997/98 PRICES

DESCRIPTION	ACTUAL				FORECAST						
	1994/95 £m	1995/96 £m	1996/97 £m	1997/98 £m	1998/99 £m	1999/00 £m	2000/01 £m	2001/02 £m	2002/03 £m	2003/04 £m	2004/05 £m
Capital expenditure - load related	43.7	60.4	52.4	53.5	77.2	71.7	87.6	90.6	96.5	98.3	93.9
- non load related	42.6	56.4	68.5	90.9	98.9	107.9	124.3	127.2	132.0	134.0	134.0
- non operational	26.4	34.3	32.5	40.9	26.5	35.0	30.9	28.9	27.9	27.5	25.4
-customer contributions	-27.9	-33.7	-33.4	-30.5	-44.6	-35.7	-34.4	-33.8	-34.4	-34.9	-35.3
Net Capital Expenditure	84.9	117.3	120.0	154.8	158.1	178.9	208.4	212.9	222.0	225.0	218.0

RPI INDEX TO 1997/98 PRICES	1994/95	1995/96	1996/97	1997/98	1998/99	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05
(future values assume 3% inflation)	145.35	150.08	153.73	158.78	163.54	168.45	173.53	178.74	184.10	189.63	195.31

2. EAST MIDLANDS

Introduction

The Distribution Business of East Midlands Electricity (EME) operates the electrical network system which transfers electricity from supply points on the National Grid to the homes and business premises of 2.3 million customers in the region. Our aim is to provide our customers with a safe, reliable and economical service. Since privatisation in 1990, we have made significant strides in this respect and we have plans in place which will deliver further benefits to customers in the years to come.

During 1999, the transition to full competition in the region's electricity supply market will be completed. All customers will then be able to shop around for their electricity. Regardless from whom they choose to buy, the EME Distribution Business will continue to be responsible for conveying electricity to customers when they need it. Whilst these market developments bring the benefits of competition and choice to customers, they also make running the Distribution Business more complex and costly.

We hope that our customers, their representatives and other interested parties will take the opportunity to participate in OFFER's public consultations on the current review of distribution price controls. We therefore welcome this opportunity to provide them with the information set out below on our past performance and future plans for the EME Distribution Business

Customer Service

EME has continued to improve its customer service. Over the period 1994/95 to 1997/98, customer complaints to OFFER are down by over 60% with a further fall projected during 1998/99. Against the ten Guaranteed Standards which OFFER has set for us to meet, the total number of failures has reduced by more than over 80% over the same period. We have also made it easier for customers to contact us by establishing two new call centres with dedicated freephone telephone numbers that allows the customer to contact us 24 hours a day 365 days a year.

Quality of Supply has improved over this period and EME has undertaken a number of major initiatives to improve further quality and supply reliability. These initiatives include the installation of new equipment on our most vulnerable pole mounted transformers to reduce the impact of lightning on our network and "Hot Glove" working, where operators can work on "live" wires without interrupting supplies to our customers. By focusing on "rogue" circuits and identifying customers affected by repeated interruptions and by using our call logging and sorting system we can target those sections of our network and improve performance.

Over the period EME has improved the security and availability of supply. This is reflected in reductions in both the incidence of supply interruptions and the average number of minutes off-supply experienced by our customers ("Customer Minutes Lost"). Whilst EME's distribution achieves a supply reliability of 99.98%, we recognise the importance of supply reliability to all of our customers and we are continuing to look for further improvements in this area over the forthcoming review period.

With our customers now using more sophisticated electronic products such as personal computers, EME has been at the forefront in looking to improve power quality and has been dedicated to the solution of customers power quality problems. As part of our commitment to ensuring that we provide a high quality electricity supply, we have an ongoing, system wide, survey of power quality. EME has performed well against the British and European Power Quality Standard 50160 (introduced in 1995), and has exceeded the standard in most of the measures.

EME has also undertaken market research using an external agency to conduct customer service research on our behalf and the latest results showed that over 90% of EME's customers were satisfied with our services. The results of this survey are being used to shape our future customer service initiatives.

Cost Effectiveness

The period from 1994/95 to 1997/98 has also seen improved cost effectiveness with management action leading to rationalisation and efficiencies. In real terms total costs have fallen by 7.5% over the period (15.8% excluding exceptional costs).

New information technology ("IT") including an appointments scheduling system, a call logging system and a geographical information system have made it possible for services to be rationalised. Instead of services being provided through 13 "district" offices, we now have 6 regionally-based networks/construction units and our metering service operates from 4 regional bases. This rationalisation of our services has resulted in lower infrastructure costs. More importantly it has allowed us to streamline the management structure, cutting costs and bringing our managers closer to the customers they serve. Implementation of project management and extension of team working has further reduced operating costs.

The reorganisations were also significant in that they have required cultural changes and new ways of working, changes to systems and control and greater flexibility whilst looking to maintain and then improve customer service. More flexible working arrangements, together with a strong management focus, have provided reductions in operating expenditure.

Improvements in operational efficiency have been achieved in all parts of the business. In metering, for example, the move to hand held recording devices has led to greater numbers of meter readings being obtained per meter reader. EME continues to put downward pressure on the number of estimated meter readings and, therefore, estimated bills which can lead to customer dissatisfaction. EME retains its leading position in the provision of this service, as measured and reported by OFFER.

On the other hand, a number of important external influences have worked to increase costs. First, there have been the preparations (which OFFER has overseen) for the introduction of full competition in the region's electricity supply market. Second, there are the measures which we are having to take to deal with the threat to our services from the Year 2000 IT changes (millennium bug). Third, the introduction of the Euro (single European currency) is also expected to impact on costs adversely over these years.

Business Separation

A major change to the organisation was introduced in early 1996 with the formal business separation of the core activities of Distribution and Supply. Each business has a Managing Director and has its own Headquarters.

This separation has enabled greater management focus to be brought to bear on the different customer needs which each of these businesses meet. We believe that, whilst implementing such separation does involve some additional costs, it will lead to improvement in customer service and improved operational and capital efficiency.

Within Distribution, the monopoly business of Networks Management has been further separated from the competitive and potentially competitive services of Metering and Construction.

OFFER is currently considering changing the obligations in licence conditions and associated industry agreements for Public Electricity Suppliers (PESs) such as EME to provide for supply and distribution activities to be clearly and separately established. The aim is to ensure that the businesses have an arm's length relationship with each other, so that non-PES suppliers can compete on an equal footing. EME believes that the business separation it has already implemented largely meets OFFER's requirements. Over time, it is possible that market developments together with management decisions will lead to even greater separation of these businesses. However, in the short term, separation beyond the current level, and especially if forced through within a very short timescale, would be prohibitively expensive because of the need for independent IT systems and duplicated resources. It is important for customers to realise that the projected operating costs discussed below assume that no additional expenditure will be incurred to meet regulatory requirements for business separation.

Operating Costs

Over the period 1994/95 to 1997/98 there has been a step reduction in the level of underlying operating costs as a result of efficiency savings arising from business reorganisation and restructuring during 1995/96 and 1996/97. Payroll costs have fallen in real terms and non payroll IT costs reduced over the same period. Operating costs are forecast to rise initially from 1997/98 to 1999/00. Thereafter, over the period 2000/01 to 2004/05 underlying controllable costs are forecast to fall by 7.6% as a result of efficiency savings. Depreciation on the Distribution Business will increase reflecting growth in capital expenditure whilst, as a result of further productivity improvements, payroll costs are forecast to fall in real terms over the forthcoming period.

Capital Expenditure

Investment in EME's distribution network is required to replace worn out plant, to handle increased demand from existing customers and to meet the requirements of new customers. Over the period from 1994/95 to 1997/98, we have undertaken a large amount of work to

obtain a better understanding of the network requirements and how these might be optimised. This has increased the capital efficiency of the Distribution Business.

As part of the work in this area, we have put considerable resource into developing data bases that quantify both the physical asset and its customer related performance.

Taking the first of these, a detailed asset data base has been established for overhead lines and switchgear based on a specific record of each item of equipment in terms of age and condition. For example, the overhead line Network has a PSION based data base that records the age of all poles and the associated equipment, together with assessment of condition. This is generally comprehensive although some pre-nationalisation data is not specifically available. Access to this information means that we are now able to plan the replacement of Network assets not just on age alone but also on an assessment of condition and potential performance.

In terms of customer performance the introduction of the Customer “Call Logging And Sorting System” (CLASS) linked to NAFIRS (National Fault Interruptions System) has enabled us to analyse the interruption rate for individual customers. This ability to identify customers affected by repeated interruptions allows us to target investment to improve performance on those sections of our network.

Looking ahead, EME has drawn up its investment plans based on a fundamental analysis of the Network in terms of age profile, condition and potential performance together with a detailed assessment of customer expectation linked with possible future regulatory output standards. The Network has been analysed in terms of age profile of individual components, performance expectations and the consequent replacement strategy.

Whilst we have been replacing the Network on a performance and condition basis over recent years, the age profile of the assets, arising particularly from the major expansion of the Network in the early 1950s, means that we are now facing a ‘bow wave’ of replacement. This provides an opportunity for us to review the design and specification of the Network, to see how it can best be developed to meet the demands of customers at an affordable price in the next century.

Customer expectation is quite rightly increasing. Whilst traditional measures such as Customer Minutes Lost still have a value in assessing overall performance, more specific issues are coming to the fore. The most relevant of these are those customers who receive a significant number of interruptions from a variety of causes. Also, short term interruptions such as those caused by auto reclosers, which were once viewed as a benefit in avoiding longer interruptions, are now regarded as being unacceptable by customers due to the increasing sensitivity of their electrical equipment.

Environmental issues are also becoming more relevant with growing concern not only over the siting of new overhead lines but also, in some cases, over the rationalisation and replacement of existing lines. This is particularly the case in the National Parks and in Areas of Outstanding Natural Beauty.

We are very much aware of public sentiment on all these matters and we have developed a strategy which we believe provides a balanced response.

Strategic Options

We believe that investment plans for the Network need to be developed within a long term funding framework based on a demonstrable link between customer related performance and capital expenditure. With that in mind, our studies have identified the following four options:

Option 1

Option 1 is to continue at the current rate of investment. Whilst this may still leave scope for us to make marginal improvements in customer performance in some areas, it cannot deliver the overall standards of customer service being demanded nor address the ‘bow wave’ of investment arising from the age profile of the Network. This option could lead to a situation in which the Network faced a major back log of replacement investment in future, potentially similar to that in the water industry.

Option 2

Option 2 is to replace assets on a like-for-like basis as indicated by their age profile but also taking account of their condition and performance. This option implies a significant increase in investment but leaves the Network design unchanged. It will have some benefit in terms of improved performance and will gradually reduce the back log referred to in Option 1. However, the design of the existing Network means that there is a level beyond which customer performance cannot be improved. The design also limits the extent to which environmental concerns can be met. Indeed experience suggests that renewal of the existing Network on the scale implied by this option would give rise to significant environmental objections.

Option 3

Option 3 is to implement an investment strategy that proactively embraces technological advances whilst also avoiding an excessive ‘step change’ in capital investment. The Network envisaged by this option will be fundamentally different from the existing Network in that the 11kV spine Network in rural areas will be placed underground and meshed with a high level of segmentation and high speed protection. Progressively the 33kV voltage level will then be eliminated leaving a Network comprising a 132kV backbone with direct connection to an integrated 11kV Network. This strategy will thus contribute both to lower environmental impact and to the ability to withstand extreme weather conditions.

Design studies have demonstrated that the new type of Network can produce customer performance levels significantly better than that of the existing Network in terms of the incidence of multiple interruptions and of Customer Minutes Lost. Short term interruptions would also be significantly reduced due to the reduced volume of overhead lines and to the protection regime adopted. With careful targeting of the migration to the new Network, our existing multiple interruption performance will be significantly improved and with it a progressive reduction in overall Customer Minutes Lost. All of these measures will be quantified and specific over a 20/40 year period.

The investment is focused on the 11kV rural overhead line network, as it is this part of the Network that contributes disproportionately to Short Term Interruptions, to Multiple Longer

Interruptions and to Customer Minutes Lost. The option takes advantage of the ‘window of opportunity’ arising from the “bow-wave” of asset replacement.

Another key part of the investment plan under this option will be a structured programme to refurbish overhead lines together with switchgear replacement on the urban network. This has the objective of ensuring that existing assets perform at their optimum level, from which the wider body of customers will benefit. Public safety is a key issue particularly in terms of aged overhead lines in difficult physical situations and this investment will address also that aspect.

The strategy is constructed within the financial parameters of the “like for like” replacement case outlined in option 2 but as modified to manage the asset life risk i.e. the risk that by failing to undertake a particular level of replacement investment, the condition of the Network will deteriorate to an extent which leaves an even greater “bow wave” of investment. It also provides the foundation for enhanced Quality of Supply investment cases and is a long term strategy that would show full benefits over a 20/40 year period in terms of Network rationalisation and development. However, with investment targeted on the 11kV Network initially, benefits will accrue within the five year period which OFFER is currently reviewing.

Option 4

Option 4 is to accelerate the programme of 11kV undergrounding of the spinal Network beyond that outlined in Option 3 so as to extend performance improvements in the levels of interruptions and Customer Minutes Lost to more of our customers. It also includes further remote control together with the development of automation on the existing urban Network so as to provide enhanced performance to those of our customers supplied by the urban Network.

This option shows the extent to which it will be necessary to invest in specific Quality of Supply initiatives outside those presented by the need to replace ageing assets if the aim is to improve Network performance beyond the levels envisaged by Option 3. Obviously, to fund the investment levels envisaged in this option will raise issues over the impact on the level of charges to our customers.

Conclusions

Option 1, the option of continuing at the present rate of investment, will not address the key issues of customer expectation, public safety and the need to ensure appropriate long term investment in a sound electricity infrastructure. It has thus been discounted.

Option 2 is a viable case that addresses the key issues indicated above but will mean that performance cannot be improved beyond a de-minimus level that will become increasingly unaligned to customer and environmental expectations whilst requiring significant increases in investment. It is therefore not a preferred solution.

Option 3 takes advantage of the ‘window of opportunity’ of the necessary investment profile to bring a new generation of Network design into commission and has the potential progressively to address valid customer expectations. It also manages the asset life risk over a practical time frame so as to avoid the investment demands of Option 2. This is, therefore, the company’s proposed way forward and is our **Base Case**.

Option 4 is an enhanced Quality of Supply case. Were this case to be adopted, the investment in the addition of urban remote control and automation together with accelerated implementation of the new generation of Network design would bring significant customer improvements.

EAST MIDLANDS - TABLE 14.2 SUPPLEMENTARY ANALYSIS OF DISTRIBUTION BUSINESS HCA COSTS - BASE CASE IN 1997/98 PRICES

DESCRIPTION	ACTUAL				FORECAST						
	1994/95 £m	1995/96 £m	1996/97 £m	1997/98 £m	1998/99 £m	1999/00 £m	2000/01 £m	2001/02 £m	2002/03 £m	2003/04 £m	2004/05 £m
NGC exit charges	28.9	21.7	25.2	20.6	19.9	19.7	18.9	18.4	17.9	17.3	16.8
Rates on distribution system	17.4	17.0	18.3	18.4	18.3	18.3	18.3	18.3	18.4	18.3	18.3
Depreciation on distribution system	26.4	27.1	27.9	28.5	30.5	31.2	32.0	33.5	35.2	36.9	38.6
Payroll costs	75.4	70.9	60.6	54.4	51.5	52.8	51.3	50.0	49.9	49.6	48.9
Non payroll IT costs	19.1	20.0	14.9	16.8	22.8	25.7	26.3	26.7	26.6	25.6	26.7
Premises costs	3.1	3.9	3.7	4.6	4.5	4.2	4.2	4.1	3.9	3.6	2.9
Insurance	4.3	4.2	3.3	2.8	3.2	3.1	3.0	2.9	2.8	2.8	2.8
Materials	15.2	13.1	14.8	15.4	13.6	12.9	12.8	12.7	12.6	12.3	12.0
Other	40.7	45.3	47.3	51.7	94.1	66.6	50.0	52.3	49.8	46.9	40.8
Total Costs	230.5	223.2	216.0	213.2	258.4	234.5	216.8	218.9	217.1	213.3	207.8

EAST MIDLANDS - TABLE 14.4 SUPPLEMENTARY ANALYSIS OF DISTRIBUTION BUSINESS HCA COSTS - QUALITY OF SUPPLY SCENARIO IN 1997/98 PRICES

DESCRIPTION	ACTUAL				FORECAST						
	1994/95 £m	1995/96 £m	1996/97 £m	1997/98 £m	1998/99 £m	1999/00 £m	2000/01 £m	2001/02 £m	2002/03 £m	2003/04 £m	2004/05 £m
NGC exit charges	28.9	21.7	25.2	20.6	19.9	19.7	18.9	18.4	17.9	17.3	16.8
Rates on distribution system	17.4	17.0	18.3	18.4	18.3	18.3	18.3	18.3	18.4	18.3	18.3
Depreciation on distribution system	26.4	27.1	27.9	28.5	30.5	31.2	32.0	34.1	36.4	38.7	41.0
Payroll costs	75.4	70.9	60.6	54.4	51.5	52.8	51.3	49.7	49.7	49.2	48.5
Non payroll IT costs	19.1	20.0	14.9	16.8	22.8	25.7	26.3	26.7	26.6	25.6	26.7
Premises costs	3.1	3.9	3.7	4.6	4.5	4.2	4.2	4.1	3.9	3.6	2.9
Insurance	4.3	4.2	3.3	2.8	3.2	3.1	3.0	2.8	2.8	2.7	2.7
Materials	15.2	13.1	14.8	15.4	13.6	12.9	12.8	12.7	12.6	12.3	12.0
Other	40.7	45.3	47.3	51.7	94.1	66.6	50.0	52.1	49.6	46.6	40.4
Total Costs	230.5	223.2	216.0	213.2	258.4	234.5	216.8	218.9	217.9	214.3	209.3

EAST MIDLANDS - TABLE 14.2 SUPPLEMENTARY ANALYSIS OF DISTRIBUTION BUSINESS CAPITAL EXPENDITURE - BASE CASE SCENARIO IN 1997/98 PRICES

DESCRIPTION	ACTUAL				FORECAST						
	1994/95 £m	1995/96 £m	1996/97 £m	1997/98 £m	1998/99 £m	1999/00 £m	2000/01 £m	2001/02 £m	2002/03 £m	2003/04 £m	2004/05 £m
Capital expenditure - load related	48.5	42.0	43.3	55.7	57.1	64.5	61.5	67.0	68.8	63.5	62.4
- non load related	34.8	43.7	45.1	46.6	43.9	46.3	71.5	73.2	72.2	79.5	78.3
- non operational	16.3	17.9	25.9	39.5	33.3	28.0	21.4	15.2	16.7	16.6	17.0
- customer contributions	-26.9	-26.4	-25.3	-26.7	-29.1	-29.0	-31.8	-32.2	-32.3	-32.3	-32.7
Net Capital Expenditure	72.7	77.2	89.0	115.1	105.2	109.8	122.6	123.2	125.4	127.3	125.0

EAST MIDLANDS - TABLE 14.8 SUPPLEMENTARY ANALYSIS OF DISTRIBUTION BUSINESS CAPITAL EXPENDITURE - QUALITY OF SUPPLY SCENARIO IN 1997/98 PRICES

DESCRIPTION	ACTUAL				FORECAST						
	1994/95 £m	1995/96 £m	1996/97 £m	1997/98 £m	1998/99 £m	1999/00 £m	2000/01 £m	2001/02 £m	2002/03 £m	2003/04 £m	2004/05 £m
Capital expenditure - load related	48.5	42.0	43.3	55.7	57.1	64.3	61.5	67.0	68.9	63.5	62.4
- non load related	34.8	43.7	45.1	46.6	43.9	46.3	96.5	98.2	97.2	104.5	103.3
- non operational	16.3	17.9	25.9	39.5	33.3	28.0	21.4	15.1	16.6	16.6	16.9
- customer contributions	-26.9	-26.4	-25.3	-26.7	-29.1	-29.0	-31.8	-32.3	-32.3	-32.4	-32.7
Net Capital Expenditure	72.7	77.2	89.0	115.1	105.2	109.6	147.6	148.0	150.4	152.2	149.9

RPI INDEX TO 1997/98 PRICES	1994/95	1995/96	1996/97	1997/98	1998/99	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05
(future values assume 3% inflation)	145.35	150.08	153.73	158.78	163.54	168.45	173.53	178.74	184.10	189.63	195.31

3. LONDON

In this commentary, unless otherwise stated, all money figures (which include the regulator's assumptions behind the last distribution price control review) are expressed at 1997/98 prices (identified throughout as 'real terms'). This is for consistency with the figures shown in OFFER's tables published with this document. It also ensures that comparisons between actual or projected outturns in the current period and amounts expected at the time of the last review can be readily undertaken.

1. Introduction

1.1 OFFER's review of the price control will put a limit on the distribution business revenues that London Electricity ('we') are able to earn in the early years of the next century. We shall actively seek a new control that rewards further cost savings at all levels across our business and enables us to improve our network performance and achieve growth in earnings through productivity gains and efficient investment. In view of the strategic importance of the review to our business, we welcome this opportunity to publish key points from the overall case that we have presented to the regulator.

2. Summary of Past and Planned Performance

2.1 In April 1995, a revised price control (later modified in April 1996) came into force for our distribution business. In response, by 31 March 2000, when a new price control should take effect, and despite the diversion of substantial management resources from our distribution business into building the infrastructure required to facilitate the new competitive supply market, we shall have:

- Reduced annual controllable operating costs within our distribution business, in real terms, from £140m to £92m over five years. This represents a saving of £48m, or some 8% a year, consistent with an annual real reduction of 11% in controllable costs for each unit of electricity distributed.
- Achieved our published quality of supply targets for the arrival of the next century in terms of higher network security, greater network availability, a quicker restoration of the network after failures, and improved reliability for the least well-served customer groups at low voltage level.

2.2 Over the assumed life of a new control, from 2000 to 2005, we plan to:

- Further reduce annual controllable costs within our distribution business, in real terms, from £92m to £88m, even though some of these costs are expected to rise at a rate above inflation. This more modest trend in cost reduction is, nevertheless, consistent with a further annual reduction of 3% in real controllable costs per unit of electricity distributed.
- Continue targeting capital investment to further enhance our quality of supply performance, with a focus on improving network availability, while

also reducing to a practicable minimum the number of least well-served customer groups.

3. The Overall Business Context

3.1 Most of our capital assets and the great majority of our total group operating profits are in the distribution business. We expect this to remain our core business for the foreseeable future and we shall continue to give priority to it in the allocation of management and financial resources.

3.2 Our aims in distribution are to run a business that can meet all the reasonable demands of customers and suppliers on a long-term sustainable basis, and that achieves sufficient profits both to finance that activity and to provide an acceptable return to investors. These objectives require us to pursue the most effective use of capital resources and also to secure maximum value for money from operating costs, consistent with delivering a high quality of network service and meeting all relevant legal and regulatory requirements.

4. The Distribution Business in London

4.1 London is one of the world's largest cities and, as Europe's financial centre, and as the centre also of national government and commerce, is unique in the UK. We are likewise unique, amongst UK electricity companies, in that we operate a distribution system comprising some 30,000 kilometres of cable network that is entirely underground.

4.2 Our network distributes electricity to roughly two million domestic and business customers within the London metropolitan area. This covers 665 square kilometres, with a resident population of about four million people, and includes some of the most deprived and densely populated inner-city areas in the UK, as well as many areas of great political or commercial sensitivity and cultural prestige. The network as a whole is managed, maintained, and operated by our distribution business. This business is also responsible for all meter-related operations in the area – although these will become open to competition in the year 2000 – and for providing other services, such as metering point administration and use of system, to suppliers to facilitate competition in supply.

4.3 The unique nature of the area served poses correspondingly unique problems in electricity distribution terms. Overall, the system design has been evolved to maximise the utilisation of the network assets because of the exceptionally high load densities and the unremitting demands on space in an intensely urbanised environment. The load density in the City of London is, at 215MW per square kilometre, amongst the highest in the world, and average load density across our area as a whole is 6.6MW per square kilometre, more than 22 times that of the average electricity company in the UK.

4.4 These extremely high load densities over extended areas have led to the development of the present unique network, which represents the most

economical solution to the problem of supplying such loads, and also incidentally provides a high security of supply. This is particularly the case in the central London area, where the network is still operated as an interconnected system in order to meet, most economically, the high load requirements and security expectations of customers there. As a result, network operations in London are inherently more reliable than elsewhere in the UK. But they are also, by the same token, more expensive than network operations elsewhere.

- 4.5 For example, the nature of our area forces us to construct large sub-stations, containing multiple transformers, within the high-cost central areas. High load densities inevitably require more complex networks, and this complexity complicates the work of construction, maintenance, and fault repair. In many parts of central London, congestion of the service networks under the streets is such that installation of major new cable routes in the traditional surface trench is uneconomic, and would in any case create unacceptable traffic problems. At the same time, the sensitivity of users to supply interruptions and the high utilisation factors in the central area mean that a larger than average amount of operational and maintenance work involving network rearrangement must take place outside normal working hours.
- 4.6 These and other network-related factors are estimated to add some £3m a year, at current prices, to the cost of operating a distribution business in London, relative to the distribution cost of the average UK operator. This higher cost burden is additional to the generic higher costs faced by all utility companies operating in London, which are quantified in the next section.

5. Operating Costs in the Distribution Business

- 5.1 We believe that, in formulating our allowed revenues for the next price control, the regulator should make a proper assessment of our operating efficiency based on our own business record and business plans, and taking account of the nature of our service area. Making comparisons between distribution companies is not straightforward, and even sophisticated methodologies are inherently biased against companies that operate in high-cost environments. We also believe that the relevant costs that should be used for this purpose are controllable operating costs, as it would be wrong to judge efficiency on the basis of large operating cost items over which we have no direct influence.
- 5.2 To identify controllable costs in this commentary, we have: put the total operating costs onto a cash-flow basis by excluding depreciation; stripped out NGC exit charges and ‘non-trading rechargeables’ (which reflect work done for other parties, mainly local authorities), since neither of these cost elements is covered by the price control; and excluded local authority rates levied on our distribution system, which are largely outside management control (and are also derived from a statutory formula against which we have no legal rights of appeal). We have also ignored mandatory expenditures required by our regulator to support the introduction of competition in supply, and other exceptional items such as severance costs and movements in provisions. On

this basis, the controllable costs in our distribution business comprise, on average, some 60% of the total operating costs shown in OFFER's tables published with this commentary.

- 5.3** We are an efficient company, both absolutely and in relative terms. This can be substantiated by reference to the achieved operating cost reductions in our distribution business since the current price control was set, underpinned by the further cost reductions that we intend to achieve during the next period. To illustrate this, we have provided, in Table 1 (next page), an overview of the actual, planned, and forecast trends in our distribution costs, in real terms, across OFFER's review period taken as a whole. This period runs from the first year (1995/96) of the current control to the assumed final year (2004/05) of the next one. As direct manpower costs are a large component of operating costs, the table also sets out the changes in manpower numbers over the ten-year period, measured on a whole-time equivalent basis.
- 5.4** As Table 1 indicates, total operating costs are projected to fall by 24% over OFFER's review period, with the best part of this reduction being achieved in the current period. The downwards trend in these costs levels out after the year 2000, reflecting the impact of a number of items outside our own direct control. These include an expected large increase in our local authority rates bill, and also the additional costs of operating and maintaining the large new infrastructure required for the competitive supply market. Controllable cost performance, by contrast, shows even greater reductions within the current control period and a continuing, though modest, downwards trend into the next period, even though salary costs – reflecting market conditions – are expected to rise at a somewhat higher rate than inflation.
- 5.5** Overall, real controllable costs in our distribution business reduce by over 4% a year across OFFER's ten-year period. With the benefit of higher volumes, this trend is equivalent to annual real reductions in controllable costs per unit distributed of 11% in the current period, and of 3% in the next one. Over OFFER's review period as a whole, real controllable costs per unit distributed are reduced by 7% a year.

TABLE 1: Real operating cost trends and manpower changes in our distribution business, shown for both the present and the next price control period						
MEASURE \ YEAR	Actual 1994/95	Actual 1995/96	Actual 1997/98	Planned 1999/2000	Forecast 2000/01	Forecast 2004/05
Total operating costs (£ million)	226	194	164	176	178	171
Cumulative change (per cent)		- 14	- 27	- 23	- 22	- 24
Controllable costs (£ million)	140	112	95	92	87	88
Cumulative change (per cent)		- 20	- 32	- 34	- 38	- 37
Distribution unit volumes (GWh)	19,698	20,729	21,588	23,243	24,112	25,984
Controllable costs (pence) per unit distributed	0.708	0.540	0.439	0.396	0.360	0.341
Cumulative change (per cent)		- 24	- 38	- 44	- 49	- 52
Distribution business total manpower	3,720	3,187	2,602	2,217	2,160	1,979
Cumulative change (per cent)		- 14	- 30	- 40	- 42	- 47

5.6 Reductions of this size in controllable operating costs are consistent with the reductions of nearly 6% a year in our distribution manpower numbers over ten years. The major process redesign projects that we have implemented within the three operating units of our distribution business – meter operations, public network services, and customer operations – have been key drivers of these manpower reductions in the current period. These projects have introduced improved working practices and smarter systems and procedures into the emergency service, system records, asset maintenance, network control, and stores and procurement functions, rationalised our use of properties, and made greater and more effective use of contract staff.

5.7 All the above changes represent a steady continuation of the substantial restructuring initiatives that we have been undertaking in our distribution business since privatisation while nevertheless improving service. However, the projected trend of future manpower numbers in distribution reflects the fact that such reductions become progressively more difficult to obtain as the ongoing cost base is reduced and the business approaches a steady-state condition. In particular, there is significantly less potential for achieving further

real cost savings from manpower reductions. To the extent that these are achievable in future, they will be driven mainly by investment in new information technology projects.

- 5.8** So far as concerns our relative efficiency, certain characteristics of the London economy inevitably increase the operating costs of all utility companies located in the capital city, relative to those in the rest of the UK. An objective cost differential can be quantified in at least three areas: they are staff salaries, property rents, and insurance premiums (particularly against the risk of terrorism).
- 5.9** These generic London cost drivers are estimated to add at least £13m a year, at current prices, to our distribution business operating costs. This sum comprises more than £9m for staff salaries (derived from the methodology used by OFFER at the last pricing review), nearly £3m for property rents, and £1m for insurance. To this must be added the specific network-related cost element of £3m identified in paragraph 4.6 (from which the London staff salary premium is excluded to avoid double-counting). This produces a total extra cost for our distribution business of at least £16m a year.
- 5.10** That amount is the verifiable level of additional cost that an efficient and cost-effective distribution company operating in our area would need to incur, compared with the average distribution operating cost of all such companies in the UK. Allowing for the size and the largely intractable nature of this factor, all bench-marking studies in which we have taken part confirm our position as a more than averagely efficient electricity operator. We have previously been successful in convincing OFFER of the need to take account of London costs in our price control formula, and would expect this to continue.

6. Capital Expenditure and Network Performance

- 6.1** Our policy on distribution business capital expenditure is to meet all of the investment needs of the network as efficiently as possible, while aiming to produce lasting improvements in network performance and the quality of supply delivered.
- 6.2** Since the current price control took effect, we have been publicly committed to achieving specific targets for improved quality of supply by the end of the control period. We are pursuing these targets through improved network performance, measured primarily in terms of the number of customer minutes lost and the speed of supply restoration. Our major initiatives include:
- The installation of remote control and radio telemetry facilities at all our secondary substations.
 - The implementation of centralised control over all activities on the low voltage network.
 - Refocusing the capital programme towards progressive improvements in system reliability, particularly by targeting efforts on the geographic areas most prone to supply interruptions.

- The implementation of new business processes within our distribution operations, particularly in the emergency service activity.

6.3 In assessing network performance, the long-term trend is critical. Our quality of supply improvements are set to represent the broad underlying trend of performance, ignoring the sometimes significant effects of one-off events. On that basis, and consistent with the better practices and more selective investments that we are implementing over time in our distribution business, we expect to achieve the targets shown below on the following key quality of supply measures by March 2000 (the figures shown in square brackets are our equivalent achievements for 1994/95):

QUALITY OF SUPPLY MEASURES	YEAR 2000 TARGET
• Security of supply (number of supply interruptions per 100 customers):	30 [40]
• Availability of supply (number of supply minutes lost per customer):	40 [58]
• Worst-served customers (number of groups, by postcode sector, with five or more supply interruptions a year):	35 [66]
• Restoration of supply (percentage of all supplies restored within three hours of failure):	85 [81]

6.4 These expected higher quality outputs will have been delivered on a somewhat lower capital spend than was assumed by OFFER in setting our price control. Reduced expenditure on reinforcement in the load-related category has contributed to this, but we have also improved our capital efficiency. As the regulator has stressed, ‘it is important that companies should retain incentives for greater efficiency in their capital spending in the same way as for other aspects, such as their operating costs, provided that quality of service is maintained’. We have been able to improve capital productivity and achieve our network outputs more cheaply – through better business practices, technical innovation, more focused investment decisions, and greater efficiencies in design and procurement – than was assumed when the price control was set.

6.5 The effects of this are reflected in the comparisons shown in Table 2 (see next page) between actual and projected capital expenditure (gross, before customer contributions) during the price control period, and the amounts which formed the basis for the price control. In real terms, spending for the period is expected to outturn at £511m, some 8% below the sum of £558m assumed by OFFER when setting the control. Significantly, our non-load-related spending for the period will be very close to the regulatory assumption, despite lower than expected levels of replacement expenditure. This is largely because, in real terms, our spending on specific measures to improve the quality of supply will have increased to £37m by the end of the period, some £24m more than was originally assumed.

TABLE 2: Actual and projected network capital expenditure, 1995/96 to 1999/2000, compared with OFFER's assumptions

Spend by category (and the OFFER assumption)	Actual for three years 1995/96 to 1997/98	Forecast for the two years 1998/99 and 1999/2000	Total: 1995 to 2000
Load-related: 1. Nominal terms 2. Real terms 3. OFFER variance (2 on 3)	£95m £98m	£69m £72m	£164m £170m £222m - 23%
Non-load-related: 1. Nominal terms 2. Real terms 3. OFFER variance (2 on 3)	£192m £198m	£136m £143m	£328m £341m £335m + 2%
Total network: 1. Nominal terms 2. Real terms 3. OFFER variance (2 on 3)	£287m £296m	£205m £215m	£492m £511m £558m - 8%

6.6 The total capital programme for the period is, we believe, consistent with our continuing determination to achieve maximum value from network investment and a more effective use of distribution business resources. Looking to the future, we believe that a base-case scenario for the next price control period, in which the network's quality of supply performance is maintained at current targeted levels (see paragraph 6.3), would imply a five-year capital programme of some £533m, in real terms, up to March 2005. This would be broadly in line with our expected capital spending within the current price control period. We would prefer, however, to project a higher level of spending designed to deliver further enhancements of our year 2000 quality of supply targets.

6.7 In particular, given that a major thrust of our network strategy is to ensure that we target firm improvements in areas prone to unplanned supply interruptions, we favour a specific focus on reducing the number of customer groups that experience five or more network failures to no more than 30 a year by March 2005. No other electricity company sets a target of this kind, let alone such a demanding one for low voltage customers, and this will therefore be a difficult challenge. We estimate that our preferred case, also involving a targeted improvement in network availability so that the average time without supply falls to 35 minutes a year per customer, would require a capital programme in

the next period of £554m in real terms (ie, at a level 8% above our projected spending for the current period). This would include specific investment of nearly £50m for maintaining and improving quality of supply.

- 6.8** A sensitivity check on this case can be made by reference to OFFER's own notional specification for a higher quality of supply performance in the next price control period. This would include a requirement for all failed supplies to be restored within 12 hours, instead of the 24 hours currently targeted, and a 88% (instead of 85%) supply restoration rate within three hours. Our best estimate is that, if implemented, performance at such levels would require, in real terms, a capital programme of £820m in the next period, mainly because of the need to invest very heavily in new automatic monitoring and remote switching equipment on both the high and low voltage networks. This would imply an underlying annual rate of expenditure some 60% higher than that which we will incur under the present control. We see no justification for asking customers to finance network investment on this scale.

7. Our Regulatory Review Objectives

- 7.1** In combination, OFFER's two distribution price control reviews, in 1995 and 1996, were designed to remove £390m of revenue, in real terms, from our distribution business income over the five years starting in April 1995. This was achieved by requiring us to implement real distribution price reductions equivalent, on average, to more than 9% below the increase in the retail price index in each year of the period.
- 7.2** The impact of this steep decline in revenues has been partly offset by increases in customer numbers and volumes of electricity distributed. But the effects have also been mitigated by sharp reductions in the underlying cost of our distribution business operations. These have been achieved by maintaining a vigorous downwards pressure on manpower and operating costs, consistent with our ongoing strategy as a regulated utility, producing real cost savings and efficiency gains in our core network activities. At the same time, we have continued to provide the most reliable network service in the UK, and we expect to deliver promised improvements in our quality of supply performance by the end of the century, while achieving greater capital efficiencies than was assumed when the price control was set.
- 7.3** We are proud of this performance, which has benefited both customers and investors. We are determined to continue performing well as an electricity distributor, and further robust efficiency gains and quality improvements are embodied in our business plan submitted to OFFER to assist the review.
- 7.4** We feel justified, therefore, in looking to this price control review for:
- Regulatory recognition that we have achieved our present position as an efficient operator through concerted management action.

- Clear consistency in regulatory objectives and methods from one price control review period to another.
- Protection of our core business operations from any increased risk unless there is commensurate reward.
- Appropriate incentives for continuing efficiency gains and the further development of the business.
- A stable basis for cost recovery and returns on investment.

Full supporting details for the contents of this commentary, including validation of the higher London costs mentioned in section 5, are given in our price control review submission held by OFFER.

**London Electricity
November 1998**

LONDON - TABLE 14.2 SUPPLEMENTARY ANALYSIS OF DISTRIBUTION BUSINESS HCA COSTS - BASE CASE IN 1997/98 PRICES

DESCRIPTION	ACTUAL				FORECAST						
	1994/95 £m	1995/96 £m	1996/97 £m	1997/98 £m	1998/99 £m	1999/00 £m	2000/01 £m	2001/02 £m	2002/03 £m	2003/04 £m	2004/05 £m
NGC exit charges	27.1	25.1	24.3	18.5	18.4	17.9	17.4	19.1	19.1	18.6	18.0
Rates on distribution system	20.4	20.0	20.1	19.9	20.4	20.5	25.8	25.8	25.8	25.8	25.8
Depreciation on distribution system	23.8	25.3	27.3	28.7	30.4	31.2	32.6	33.1	34.1	34.8	36.1
Payroll costs	93.7	67.6	68.3	57.0	46.7	45.7	44.7	44.1	43.6	43.1	42.7
Non payroll IT costs	19.0	26.9	28.3	26.6	21.3	20.3	16.3	17.6	18.2	18.8	19.2
Premises costs	9.5	9.0	9.5	9.4	8.1	7.9	7.8	7.6	7.4	7.3	7.2
Insurance	7.8	3.3	4.8	3.3	3.1	3.4	3.4	3.4	3.4	3.4	3.4
Materials	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	64.2	55.1	35.3	31.6	28.4	63.3	64.2	62.7	62.4	51.3	50.9
Total Costs	265.6	232.2	217.8	195.0	176.8	210.1	212.1	213.4	214.1	203.1	203.4

LONDON - TABLE 14.4 SUPPLEMENTARY ANALYSIS OF DISTRIBUTION BUSINESS HCA COSTS - QUALITY OF SUPPLY SCENARIO IN 1997/98 PRICES

DESCRIPTION	ACTUAL				FORECAST						
	1994/95 £m	1995/96 £m	1996/97 £m	1997/98 £m	1998/99 £m	1999/00 £m	2000/01 £m	2001/02 £m	2002/03 £m	2003/04 £m	2004/05 £m
NGC exit charges	27.1	25.1	24.3	18.5	18.4	17.9	17.4	19.1	19.1	18.6	18.0
Rates on distribution system	20.4	20.0	20.1	19.9	20.4	20.5	25.8	25.8	25.8	25.8	25.8
Depreciation on distribution system	23.8	25.3	27.3	28.7	30.4	31.2	32.6	33.2	34.3	35.2	36.6
Payroll costs	93.7	67.6	68.3	57.0	46.7	45.7	44.7	44.1	43.6	43.1	42.7
Non payroll IT costs	19.0	26.9	28.3	26.6	21.3	20.3	16.3	17.6	18.2	18.8	19.2
Premises costs	9.5	9.0	9.5	9.4	8.1	7.9	7.8	7.6	7.4	7.3	7.2
Insurance	7.8	3.3	4.8	3.3	3.1	3.4	3.4	3.4	3.4	3.4	3.4
Materials	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	64.2	55.1	35.3	31.6	28.4	63.3	64.2	62.7	62.5	51.2	50.9
Total Costs	265.6	232.2	217.8	195.0	176.8	210.1	212.1	213.5	214.3	203.4	203.8

LONDON - TABLE 14.6 SUPPLEMENTARY ANALYSIS OF DISTRIBUTION BUSINESS CAPITAL EXPENDITURE - BASE CASE SCENARIO IN 1997/98 PRICES

DESCRIPTION	ACTUAL				FORECAST						
	1994/95 £m	1995/96 £m	1996/97 £m	1997/98 £m	1998/99 £m	1999/00 £m	2000/01 £m	2001/02 £m	2002/03 £m	2003/04 £m	2004/05 £m
Capital expenditure - load related	27.3	33.4	29.2	35.5	34.2	37.3	47.3	45.6	43.2	38.5	36.9
- non load related	65.4	57.9	74.6	65.4	68.6	74.6	56.8	58.9	63.5	71.3	70.5
- non operational	16.4	9.1	17.8	21.9	43.7	17.7	17.4	10.5	8.7	8.5	8.5
- customer contributions	-15.9	-15.8	-17.4	-17.6	-19.3	-13.4	-22.1	-24.2	-20.9	-16.2	-17.5
Net Capital Expenditure	93.2	84.6	104.2	105.2	127.2	116.2	99.4	90.8	94.5	102.2	98.4

LONDON - TABLE 14.8 SUPPLEMENTARY ANALYSIS OF DISTRIBUTION BUSINESS CAPITAL EXPENDITURE - QUALITY OF SUPPLY SCENARIO IN 1997/98 PRICES

DESCRIPTION	ACTUAL				FORECAST						
	1994/95 £m	1995/96 £m	1996/97 £m	1997/98 £m	1998/99 £m	1999/00 £m	2000/01 £m	2001/02 £m	2002/03 £m	2003/04 £m	2004/05 £m
Capital expenditure - load related	27.3	33.4	29.2	35.5	34.2	37.3	47.3	45.6	43.2	38.5	36.9
- non load related	65.4	57.9	74.6	65.4	68.6	74.6	61.0	63.1	67.7	75.5	74.7
- non operational	16.4	9.1	17.8	21.9	43.7	17.7	17.4	10.5	8.7	8.5	8.5
- customer contributions	-15.9	-15.8	-17.4	-17.6	-19.3	-13.4	-22.1	-24.2	-20.9	-16.2	-17.5
Net Capital Expenditure	93.2	84.6	104.2	105.2	127.2	116.2	103.7	95.0	98.8	106.4	102.6

RPI INDEX TO 1997/98 PRICES	1994/95	1995/96	1996/97	1997/98	1998/99	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05
(future values assume 3% inflation)	145.35	150.08	153.73	158.78	163.54	168.45	173.53	178.74	184.10	189.63	195.31

4. MANWEB

OVERVIEW

Since vesting, the Electricity Supply Industry has experienced radical transformation both in terms of efficiency and performance improvements. The UK electricity industry is now recognised world-wide as an efficient, customer oriented, industry. This is evidenced by the number of overseas companies who now use UK utilities as the target benchmark for a number of operational and customer oriented functions.

We have worked hard to reduce controllable operating costs whilst improving customer service and system performance. Over the current review period, controllable operating costs in Manweb have been reduced in real terms by 24%, whilst customer service and system performance have improved substantially. This was in response to an aggregate reduction in allowed charges from 1994/95 to 1999/00 of 33% following the July 1995 Price Control Review. The majority of cost savings have been achieved through reductions in staffing levels (29% on March 1995). There is obviously a limit to which future staffing levels (hence future levels of controllable operating costs) can be further reduced.

Some of the savings achieved within the industry have arisen as a consequence of take-over activity driven by the capital market. This is perhaps one of the remaining principal drivers for extracting further savings within future distribution operating costs. It is essential that companies are allowed to earn an adequate return on their investments if the capital market is not to be discouraged from further mergers and acquisitions.

As a company we will continue to focus on being an efficient, low cost operator, however, a number of external factors will lead to future increases in distribution operating costs. These factors include increased costs for information services, tightened safety and environmental obligations, increased formula rates and increased depreciation charges.

Within our investment programmes we have embraced the philosophy of identifying and implementing optimal “value for money” solutions. We have moved away from the traditional Electricity Supply Industry approach of routinely replacing assets on a “like for like” basis, and have categorised expenditure on the basis of investment output.

Our commitment to improved performance in customer service is clearly demonstrated by the dramatic improvements achieved to date. However, we remain disappointed with the recent introduction of “unrealistic” revised standards of performance. Performance standards must be challenging, but achievable. Setting targets of 100% for certain measures presents impossible rather than stretching targets for companies. The setting of performance standards must be

carefully balanced against the costs of achieving these targets, and align with business and economic logic.

1. THE MANWEB DISTRIBUTION BUSINESS: STRATEGY & PROGRESS

1.1 Strategic Overview

Distribution is an asset management business responsible for key elements of the local infrastructure. Our strategy is to deliver high quality service whilst keeping costs to the level that customers can afford, but having to take into account the forecast increase in costs outside our control such as:

- Higher operational rates
- Tightened performance standards
- New infrastructure to facilitate the 1998 market place.

Strategic Objectives

Our strategies and actions are organised under three strategic objectives:

- Aggressive focus on operating cost performance to achieve value for money to our customers.
- Prudent investment focused on output performance of the Network.
- Positioning the Metering business to deliver efficient metering services in the competitive market.

Environmental Scan

The industry has experienced significant change since the last distribution price review. A summary of the main factors likely to influence the forthcoming price review process is given below.

- Changing Industry Structure

The industry has witnessed substantial take-over activity and the subsequent restructuring has resulted in savings being achieved within many companies. The Regulator will have to give careful consideration to the treatment of synergy savings if the discipline of the capital market is not to be suppressed over future years.

- Government and EU Reviews

The Government is simultaneously undertaking a number of policy reviews including utility regulation. The outcome of these reviews, in particular business separation, remains uncertain but is likely to result in increased costs not captured by the current price review process.

- Changes to Legislation and Tightening Performance Standards

A number of recent changes have been made to safety legislation, environmental obligations and performance standards. These changes will result in increased costs over the current and future review periods.

Strategic Response

We believe the correct response to these external challenges is a focus on value for money customer services as the priority for all activities. Whilst cost reductions have always been a priority, plans are being revisited to ensure a clear focus on outputs. We believe this strategy will serve the business through the price control review and beyond.

Key Actions

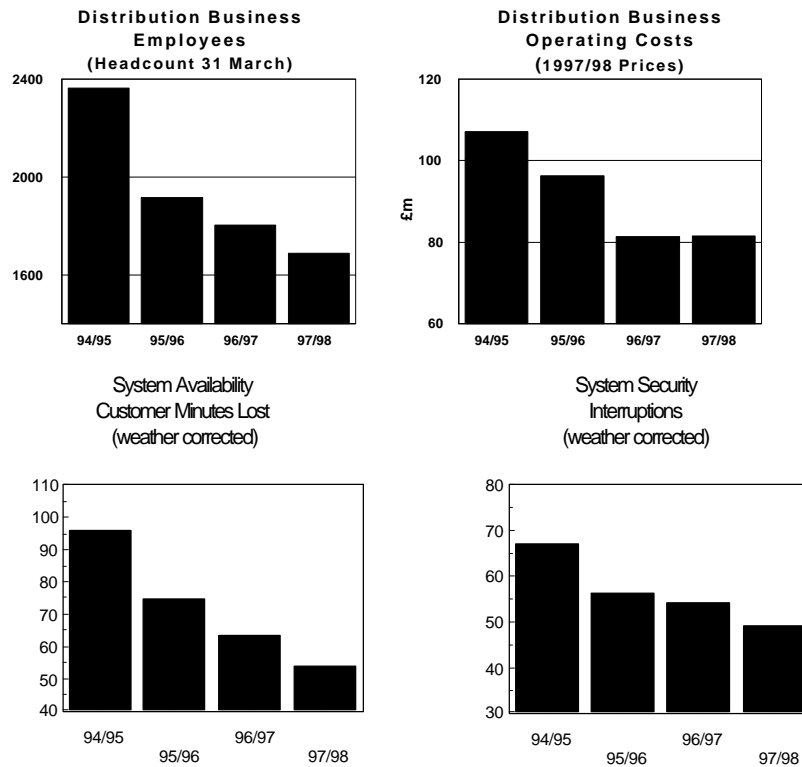
Following the acquisition by ScottishPower, capital investment policy was reviewed and modified to achieve a strong focus on output performance improvements. Our overhead protection policy is a good example of how we are now using emerging technologies in this way to achieve performance improvement.

Quality of Supply Scenario

Recent research shows that although the majority of customers would be willing to forego some reduction in the price of electricity for improvements in Quality of Supply, they would be unwilling to see price increases, as recently proposed by OFWAT. One of the key areas for debate in this Review will be the extent to which customers are willing to pay for the additional costs associated with the Quality of Supply Scenario included in our attachments.

1.2 Manweb Performance

As well as setting, and achieving, aggressive financial targets and headcount savings, strong emphasis has been placed on improving system performance and the already high level of customer service in Manweb.



We take our public responsibilities very seriously and the safety of the public and our staff is paramount. Manweb's overall investment over the period 1995/96 to 1999/00 is projected to be a 14% real increase over the period 1990/91 to 1994/95 and has been reflected in benefits to customer service and improved system security.

OFFER recently revised some of the Guaranteed and Overall Standards. We believe that some of the changes have resulted in targets for the companies that are either impossible to achieve or would require us to incur excessively high costs. The costs within our submission are set at a realistic level and will not therefore be sufficient to meet all of the new standards. It is important that OFFER recognises that the level of funding provided is no longer appropriate to the new performance targets.

2. CONTINUED FOCUS ON OPERATING COST PERFORMANCE

2.1 Management Initiatives

The operating costs, excluding Rates, Depreciation and NGC Exit Charges, have reduced in real terms by 24% over the last three years as a result of a focused and co-ordinated drive to improve efficiency and productivity following the acquisition, while increasing the quality of service provided.

The initiatives following the acquisition were to:

- Merge the management of duplicate support functions.
- Align operating cost base of ScottishPower and Manweb by transfer of best practice and general efficiencies;
- Reorganise Manweb Distribution Operations into three regions with supporting depots for the more rural operations;
- Reduce Corporate Centre in size;
- Reduce Customer Service call centres from three down to two.

These initiatives have all been fully delivered by 1997/98 as planned but have required significant reorganisation costs not anticipated in our last submission, which should now be recognised.

Employee numbers at 31 March 1998 were down 29% on March 1995. These productivity improvements in employee numbers have been supported by procurement efficiencies. For example, the approach to transformer procurement was completely reviewed and changed following the merger with ScottishPower.

2.2 Benchmarking and Efficiency Studies

As part of the drive for further efficiencies, the Company has undergone extensive benchmarking activities, both at a National and International level. Strategically, benchmarking is becoming less effective as a management tool for further cost reduction.

2.3 Productivity

The Electricity Sector has achieved significant reductions in its cost base since privatisation and more recently since many have been taken over, with cost reductions well ahead of UK industry in general.

As discussed, the business has achieved significant cost reductions over the current price review period. The efficiency gains realised have been overwhelmingly achieved from reductions in staffing levels. There is

obviously a limit to which labour force reductions, hence reduced levels of future costs, can continue.

We believe that for 1997/98 we are at an efficient level of expenditure taking into account the area we serve and the levels of service we deliver. It is likely that future savings will be limited to smaller incremental efficiencies achieved through a continual review of working practices, procedures and procurement efficiencies.

2.4 External Cost Drivers

A number of external factors will lead to a gradual increase in the level of activity for the Distribution business, such as increased safety regulations, customer numbers and customer expectations. We have also anticipated a significant increase in formula rates on the Distribution System in the year 2000, based on a recommendation from our advisers. Our plans do not reflect possible changes and costs that could come from government reviews of business separation, competition, social action plan, energy resources or regulation.

Manweb's improved performance in relation to our Customer Service Standards demonstrates our commitment to continuous improvement in customer service. As indicated in previous correspondence we were disappointed with the recent introduction of revised Standards of Performance which we believe are unrealistic. Performance targets should, in our opinion, be "challenging, but achievable" and should be set to strike a balance between customers' desire for improved service levels and their willingness to pay for improvements.

Setting targets of 100% for certain measures presents impossible rather than stretching targets for the companies and simply undermines the reason for having standards in the first place. This aside, in doing what we can to meet these tighter standards it is inevitable that additional costs will be incurred.

2.5 Efficiency Comparisons

It will be necessary for OFFER to make corresponding adjustments to PES operating costs prior to undertaking efficiency comparisons. We welcome the recent consultation document on Regulatory Accounts and support the aims of improving the existing transparency of PES regulatory accounting.

3. CONTINUED FOCUS ON THE CUSTOMER AND THE ENVIRONMENT

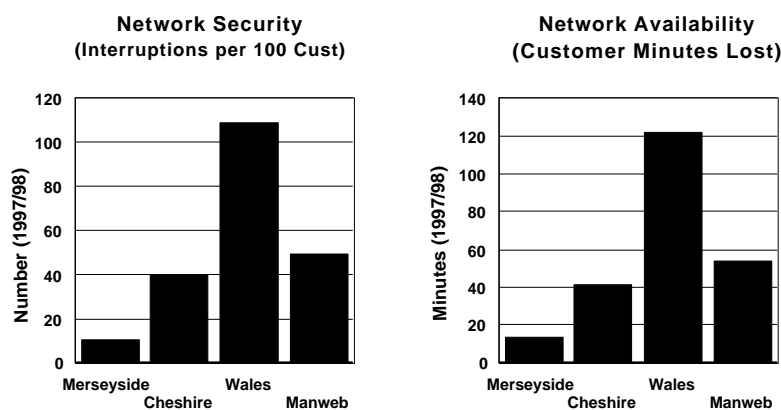
3.1 Commitment to the Customer

Our stated aim is to reduce our underlying CML by around 30% from 1994/95 levels by the year 2000, to between 65 and 75 minutes. By the year 2000, we aim to reduce the total underlying customer interruptions to between 50 and 60 for every 100 connected customers.

During Christmas 1997 Manweb suffered hurricane force winds of 110 miles per hour, which distorted the real improvements which we are otherwise continuing to deliver in the performance of our network. The severe storms resulted in 20,261 payments being made to customers who were off supply (£2.0m). These payments were not made as GS payments as Manweb felt that exemption should apply, however we did feel that customers should be compensated.

In the year to March 1994 Manweb made 253 payments to customers for failing to meet the Guaranteed Standards set by OFFER. In the year to March 1998 this had been reduced to 62 payments, and for the half year to September 1998 there has been a further 61% improvement to only 12 payments.

Complaints are recorded with OFFER if the customer has previously raised the matter with the company and has been dissatisfied with the response. In 1997/98 the number of complaints per 100,000 domestic customers fell to 14.64, a fall of 38% on the previous year, and one of the lowest of the PESs. For the half year to September 1998, complaints were down a further 38%.





3.2 Environmental Principles

Manweb will meet and improve upon legislative and regulatory environmental requirements and codes of practice. We feel we have a role to play in responding to the needs of the environment and therefore aim to contain the impact of our activities to a practical minimum in accordance with our Environmental Principles.

- Achieving ISO 14001 Accreditation in our three regions
- Introduction of recycling schemes for SF6 gas and excavation spoil.
- Increasing the use of trenchless technology for cable laying.
- Implementing oil containment schemes for major transformers.
- Training staff to be EMF specialists in each region to deal with enquiries and customer visits.
- Incorporating environmental improvements during asset replacement.

Over the last few years, requests to deviate or underground overhead lines have increased significantly, which has in turn resulted in a dramatic increase in wayleave terminations for new networks. Public enquiries are now common place and financial provision has been made to allow for these and compensation payments to landowners.

The increased interest in environmental issues is likely to continue into the new millennium, especially with the new Government's drive to integrate social and environmental matters. The quality of the environment, particularly with respect to visual intrusion from the Company's asset in the landscape will also be a key factor for the business for the next review period. Our investment plans reflect some allowance for additional investment associated with this factor.

3.3 Community Involvement

Manweb's long standing commitment to the communities in which we operate is recognised as an example of best practice by the national organisation Business in the Community. We take our role in the

community very seriously, contributing to our region's economic strategy and building on the success Manweb has already achieved in our sponsorship and donation programme.

We follow our community policy's strict guidelines and make sure priority is given to older people, disabled people and disadvantaged people. Our annual Community Report detailing our comprehensive and wide-ranging programme is sent to every employee and we encourage and support those who volunteer for community projects.

4. COMMITMENT TO PRUDENT INVESTMENT

We have adopted a prudent approach to investment, meeting legal and licence requirements and customer expectations in a cost effective manner.

Over the current Price Control period, the Distribution business has improved global network performance and customer service, maintained safety and network security standards and achieved substantial efficiency savings whilst delivering overall programme outputs.

4.1 Management Initiatives

Cost saving initiatives have been successfully implemented in several areas, including:

- network equipment and design
- improved working practices
- project management
- procurement

Substantial investment has been made in improved network control equipment, enabling more effective asset management and prioritisation of expenditure.

4.2 Load-Related Expenditure

The majority of load-related investment is necessary to meet customer requests for new connections or increased supply capacity and to reinforce the distribution network to carry additional demand. Capital expenditure is split into the following categories: industrial, commercial, new housing, services, metering, generation and reinforcement.

Future investment plans are based on an assessment of the prevailing economic conditions (supported by external consultant reports), local regional knowledge, discussion with planning authorities and development agencies and known customer requirements.

- Industrial New Business expenditure is significantly driven by manufacturing output and is forecast to be on an upward trend with capital expenditure in the Cheshire region expected to be the highest with Wales and Shropshire slowly catching up. In the Mersey region where manufacturing has been suffering acutely, industrial capital expenditure is expected to grow at the slowest rate.
- Commercial New Business expenditure is driven by service sector output in the Manweb area and is forecast to remain relatively constant. The majority of expenditure in this category is at hv/lv, with the remainder at 33 kV. There is not the wide fluctuation year by year because the total expenditure at hv/lv is made up of many small schemes.
- New Housing expenditure is driven by housing starts in the Manweb area and a gradual upward trend is forecast, reflecting slowly rising numbers of housing starts in the private and public sectors.
- Capital expenditure on generation connections is dependent on customers own generation (CHP schemes) timing and allocation of Non-Fossil Fuel Obligation (NFFO) contracts and approval of Section 36 planning applications. The recent Government moratorium on CCGT Power Stations has prompted some customers to review their proposed developments.
- Reinforcement investment is necessary to accommodate demand growth or movement (churn) and to ensure that network fault levels and loading do not exceed equipment ratings. The Manweb franchise area is prone to business change which is reflected in the movement of load centres. This trend is expected to continue into the future.

4.3 Non-Load Related Expenditure

The majority of non-load related investment is directed towards maintaining the integrity, safety and performance of the distribution network.

Future plans involve higher levels of investment necessary to address a number of key issues;

- Replacement of 'inadequate' equipment which has been identified as either unsafe or unfit for purpose.
- Pressure from safety legislation, legal judgements and public expectations has driven a requirement for increased investment on measures to safeguard our installations from unauthorised interference.

- Oil filled switchgear is now reaching the end of its safe operational life and a prioritised replacement programme will be introduced to minimise risk to staff and public and ensure system performance and reliability is maintained.
- Public concern regarding the performance of rural networks during extreme weather conditions has increased in the last two years. Additional investment will be targeted toward the upgrading of inadequate post-war overhead line designs.
- Wayleave terminations and the cost of obtaining planning consents has risen significantly in recent years with increased pressure to divert or underground overhead lines as commercial and housing developments encroach into urban fringe areas around cities and towns. A programme has been established to convert wayleaves to easements in order to secure our position against loss of essential network infrastructure.
- Enhanced environmental awareness and associated legislation places additional emphasis on the need to conduct our work in an environmentally sensitive manner. There is a notable upward trend in the costs of managing public inquiries and compensation payments to developers/landowners.

4.4 Quality of Supply Improvement Plan

Significant performance improvements have been achieved in global network measures during the current Price Control period and the majority of our customers have not experienced a supply interruption during the past 12 months.

Since our research confirms that the majority of our customers are satisfied with their quality of supply we intend to target performance improvement investment in specific areas benefiting those customers who are least well served. Our objective is to ensure that no community experiences more than 4 supply interruptions per annum and to develop cost effective improvements for those individual customers who currently experience more than 7 supply interruptions per annum.

5. METERING

Since the acquisition, the Metering business has continued to implement strategies focused on retaining this leading edge position by offering an appropriate level of service to customers (and suppliers) at minimal cost.

The business has also been heavily involved in the development of systems and procedures in preparation for full competition in electricity supply and

for the proposed unwind of the existing metering franchise from 1st April 2000.

6. CONCLUSIONS

- The evidence clearly shows that we have managed our business in an efficient and prudent manner. Substantial savings have been made within our distribution operating costs, whilst customer service and system performance have seen significant improvements. We are confident that, on a like for like basis, regulatory comparisons of PES distribution operating costs will show Manweb to be an efficient operator.
- The industry has experienced substantial cost reductions since vesting. It is unlikely that cost savings of a similar magnitude will be achievable in the future, particularly in the light of Government reviews of utilities (especially business separation).
- Corporate activity within the capital market has resulted in further cost savings being achieved through take-overs and acquisitions. This avenue is thought to be one of the principle remaining drivers for extracting further savings within distribution costs.
- Following the acquisition by ScottishPower, we have implemented an innovative approach to system investment. In contrast to traditional investment policies, adopted by the Electricity Supply Industry, we do not replace assets routinely on a “like for like basis” but appraise and prioritise investment projects based on expected outputs. This approach yields maximum value for money benefits.

MANWEB - TABLE 14.2 SUPPLEMENTARY ANALYSIS DISTRIBUTION BUSINESS HCA COSTS - BASE CASE IN 1997/98 PRICES

DESCRIPTION	ACTUAL				FORECAST						
	1994/95 £m	1995/96 £m	1996/97 £m	1997/98 £m	1998/99 £m	1999/00 £m	2000/01 £m	2001/02 £m	2002/03 £m	2003/04 £m	2004/05 £m
NGC exit charges	22.9	22.5	22.0	17.7	16.7	16.1	15.5	14.9	14.4	13.8	13.3
Rates on distribution system	12.6	12.5	12.4	12.1	12.1	12.1	15.1	15.1	15.1	15.2	15.1
Depreciation on distribution system	25.2	29.0	30.2	27.9	29.8	29.5	30.8	31.4	32.5	32.8	33.3
Payroll costs	36.2	32.7	30.1	27.6	24.8	24.5	24.6	24.2	24.1	24.3	24.5
Non payroll IT costs	5.7	4.8	4.6	4.5	8.5	9.4	9.4	9.2	9.1	8.8	8.6
Premises costs	3.7	3.7	4.0	4.1	4.1	4.1	4.0	4.0	4.0	3.9	3.9
Insurance	2.5	1.4	1.3	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
Materials	59.0	63.5	41.3	46.1	47.6	46.5	45.6	46.1	46.5	46.6	46.7
Other	0.0	18.9	0.0	0.0	4.4	7.4	7.2	7.0	6.7	2.8	0.0
Total Costs	167.8	189.0	145.9	141.4	149.3	150.9	153.5	153.3	153.8	149.5	146.7

MANWEB - TABLE 14.4 SUPPLEMENTARY ANALYSIS OF DISTRIBUTION BUSINESS HCA COSTS - QUALITY OF SUPPLY SCENARIO IN 1997/98 PRICES

DESCRIPTION	ACTUAL				FORECAST						
	1994/95 £m	1995/96 £m	1996/97 £m	1997/98 £m	1998/99 £m	1999/00 £m	2000/01 £m	2001/02 £m	2002/03 £m	2003/04 £m	2004/05 £m
NGC exit charges	22.9	22.5	22.0	17.7	16.7	16.1	15.5	14.9	14.4	13.8	13.3
Rates on distribution system	12.6	12.5	12.4	12.1	12.1	12.1	15.1	15.1	15.1	15.2	15.1
Depreciation on distribution system	25.2	29.0	30.2	27.9	29.8	29.5	30.8	31.6	32.8	33.3	33.8
Payroll costs	36.2	32.7	30.1	27.6	24.8	24.5	24.6	24.2	24.1	24.3	24.5
Non payroll IT costs	5.7	4.8	4.6	4.5	8.5	9.4	9.4	9.2	9.1	8.8	8.6
Premises costs	3.7	3.7	4.0	4.1	4.1	4.1	4.0	4.0	4.0	3.9	3.9
Insurance	2.5	1.4	1.3	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
Materials	59.0	63.5	41.3	46.1	47.6	46.5	45.7	46.3	46.7	46.9	47.1
Other	0.0	18.9	0.0	0.0	4.4	7.4	7.2	7.0	6.7	2.8	0.0
Total Costs	167.8	189.0	145.9	141.4	149.3	150.9	153.6	153.7	154.2	150.4	147.7

MANWEB - TABLE 14.6 SUPPLEMENTARY ANALYSIS OF DISTRIBUTION BUSINESS CAPITAL EXPENDITURE - BASE CASE SCENARIO IN 1997/98 PRICES

DESCRIPTION	ACTUAL				FORECAST						
	1994/95 £m	1995/96 £m	1996/97 £m	1997/98 £m	1998/99 £m	1999/00 £m	2000/01 £m	2001/02 £m	2002/03 £m	2003/04 £m	2004/05 £m
Capital expenditure - load related	25.5	23.4	30.6	37.3	36.3	37.9	38.9	38.9	39.2	39.7	40.1
- non load related	49.8	38.8	34.8	36.0	36.0	42.0	46.9	46.9	47.0	46.9	47.0
- non operational	17.8	11.6	23.0	24.6	21.3	12.2	4.5	4.3	4.7	4.7	4.6
- customer contributions	-11.9	-10.4	-12.2	-24.6	-19.1	-16.8	-17.0	-17.2	-17.3	-17.5	-17.7
Net Capital Expenditure	81.2	63.5	76.2	73.3	74.5	75.3	73.3	72.8	73.6	73.8	74.0

MANWEB - TABLE 14.8 SUPPLEMENTARY ANALYSIS OF DISTRIBUTION BUSINESS CAPITAL EXPENDITURE - QUALITY OF SUPPLY SCENARIO IN 1997/98 PRICES

DESCRIPTION	ACTUAL				FORECAST						
	1994/95 £m	1995/96 £m	1996/97 £m	1997/98 £m	1998/99 £m	1999/00 £m	2000/01 £m	2001/02 £m	2002/03 £m	2003/04 £m	2004/05 £m
Capital expenditure - load related	25.5	23.4	30.6	37.3	36.3	37.9	38.9	38.9	39.2	39.7	40.1
- non load related	49.8	38.8	34.8	36.0	36.0	42.0	52.0	51.9	52.0	51.9	52.0
- non operational	17.8	11.6	23.0	24.6	21.3	12.2	4.5	4.3	4.7	4.7	4.6
- customer contributions	-11.9	-10.4	-12.2	-24.6	-19.1	-16.8	-17.0	-17.2	-17.3	-17.5	-17.7
Net Capital Expenditure	81.2	63.5	76.2	73.3	74.5	75.3	78.3	77.8	78.6	78.8	79.0

RPI INDEX TO 1997/98 PRICES	1994/95	1995/96	1996/97	1997/98	1998/99	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05
(future values assume 3% inflation)	145.35	150.08	153.73	158.78	163.54	168.45	173.53	178.74	184.10	189.63	195.31

5. MIDLANDS

SUMMARY

MEB's Distribution Business strategy is to offer value for money for all our customers.

Our expenditure decisions are managed to achieve the lowest possible prices whilst ensuring a quality of supply which satisfies the demands of the majority of customers.

MEB has made significant efficiency gains during the current price control period by reducing operating costs and capital expenditure whilst steadily improving quality of supply. Maintaining an efficient network which distributes electricity with the lowest level of losses in the UK enables us to maintain our low cost position to the benefit of all our customers. At the same time, complaints to OFFER fell to an all time low in 1997/98, to a level which was the second lowest per 100,000 customers, of all the RECs.

MEB's Business Plan seeks to build upon these achievements over the period to 2005 with a programme of service improvements coupled with further efficiency gains - a strategy we believe can be achieved whilst reducing customers' bills, so preserving the company's value for money objectives.

However, we are concerned that many of these service gains could be lost if the regulatory framework put in place by OFFER over the next Review Period does not enable us to make the investments in new and replacement assets which are necessary to achieve these objectives.

INTRODUCTION

The attached Tables set out in detail our operational and capital expenditure over the last four years and projections through to 2005. The projections are based on two scenarios of the future i.e.

- a base case (shown in Tables 14.1, 14.2, 14.5 and 14.6) which represents expenditure required to maintain MEB's network in its present functional condition; and
- a quality of supply scenario (shown in Tables 14.3, 14.4, 14.7 and 14.8) which includes additional expenditure to improve the performance of the network particularly in rural areas, to a level we believe our customers require. This scenario represents MEB's desired Distribution Business Strategy for this period.

ACHIEVING EFFICIENCY (1994/95 - 1999/2000)

MEB has made significant cost savings and efficiency improvements since 1994, both in its operating and capital expenditure programmes.

Operating Expenditure

Table 14.2 shows that our total operating costs fell by 12% in real terms between 1994/95 and 1997/98. More importantly, our controllable costs which exclude for example, total depreciation, rates and NGC Exit Charges, fell by 17%. Over the same period manpower was reduced from 3742 to 3192.

The efficiencies to date have been achieved at the same time as continued improvements in Customer Minutes Lost (CMLs), and reductions in OFFER complaints. Major investment has been made in organisational restructuring, information systems and infrastructure to make further progress possible.

Restructuring

The restructuring programme was concentrated initially in the Engineering Department and included, in 1995, the creation of a centrally controlled Primary Group to maintain and build upon the company's technical skill base and establish centres of excellence. In addition, Regional Management Centres have been eliminated in favour of a functional organisation with consequent savings in costs and improvements in operating efficiencies.

Metering

A number of initiatives have also been introduced within the Metering Department, including flexible working, new technology and the development of Smartpower to replace token and coin operated meters.

Business Process Improvement (BPI)

We have also undertaken a company wide BPI study. The identification and development phases of this study have now completed. Within the Distribution Business this review has focused on supply chain operations and fundamental changes in the planning, programming and management of work. Further methods of flexible working, particularly in respect of fault management will also be adopted as a result of the process. All of these have enabled significant efficiency gains, whilst improving the service we provide to our customers.

Distribution Engineering Geographic Information System (DEGIS)

The introduction of DEGIS, which captures network information onto a computer database, will be fully operational in 1999. This will significantly improve our control of supply interruptions resulting in quicker response and better information for customers. It will also improve data quality for network planning and help us to optimise capital and operating expenditures.

Comparison with Past Projections

We have also outperformed by 9% the cost projections we made in April 1995 at the time of the last Price Review. The more significant savings include:

- enhanced staff productivity and efficiency which allowed staff reductions to exceed estimates by around 300 people;
- lowered costs of network repairs and maintenance;
- improvements in IT.

Capital Expenditure

Table 14.6 illustrates the trends in capital expenditure since 1994/95. Overall, the level of capital expenditure in real terms, adjusted for capital contributions paid by customers in the form of connection charges, has averaged just over £100m p.a. (1997/98 prices). Approximately half of this expenditure has been invested in the replacement of assets and to enhance the system's quality of supply.

In making our capital investment decisions we seek to optimise the balance between maintaining and improving the quality of supply and the expenditures required to achieve it, which eventually will be reflected in the end prices paid by our customers. We believe we have given our customers excellent value for money – the third lowest household distribution use of system charge and a quality of supply with which the majority of our customers have been satisfied.

Comparison with Past Projections

In terms of the projection for capital expenditure made at the time of the last Review, expenditure to date has broadly matched the projections over the four year period from 1994/95; however, for the remaining two years of the Price Control it is expected to be lower than previously projected.

This reduction is in two parts. First, the expected result of some major initiatives undertaken by the business since 1994/95. These have been focused on the management of capital projects, the streamlining of procurement to allow the purchase of higher quality materials and greater flexibility in working practices. These improvements in operating efficiency are expected to reduce capital investment by between £20m and £25m over the remaining two years to the benefit of customers.

Secondly, we have identified, through a continual process of investment appraisal, several projects which we believe can be deferred in the long term interests of both MEB and our customers. This will not adversely affect the service we provide. On the contrary, our target for service improvement over the period from 1994/95 to 2000, expressed in terms of CMLs per customer, remains the highest of all the RECs, at 33%.

BUSINESS PLAN (2000/01 - 2004/05)

Enhancing Quality and Reducing Prices

Our projections over the period to 2005 refer to the Base and Quality of Supply scenarios described in the Introduction above. The major differences in the two scenarios relate to the levels of capital expenditure necessary to achieve them; there is minimal net change in operational expenditure.

Capital Expenditure

In terms of capital expenditure (excluding non-operational capital) the base case submission over the five years of the new price control period amounts to some £400.7m (1997/98 prices). This compares with the latest estimate of out-turn expenditure in the current period of £401.6m. We estimate that further efficiency gains will be made in the period 2000 - 2005 as a result of our BPI initiatives. Hence the £400.7m submission for the next period represents significantly more work than the present £401.6m estimated for the period to 2000.

Expenditure on new business and reinforcement is expected to grow steadily (at 3% p.a.) through the period, following a decline over the next two years resulting from the downturn in the West Midlands economy.

Raising Quality of Supply

Our Quality of Supply scenario is driven by the needs of our customers and the improvements we believe they would wish to see. The key elements required by customers relate to the frequency and duration of interruptions and the quality of information they obtain when there is an interruption. These needs are fully reflected in the level of service which our plan is targeted to deliver.

MEB's distribution system differs from other RECs because of the geography and the development of the network over a long period of time. One consequence of this is that a typical service interruption in MEB results in more customers being recorded as without supply than is the case elsewhere in the UK. We believe this primarily reflects the detailed configuration of MEB's network. We can only partially offset this structural disadvantage by offering a rapid restoration service. To eliminate the structural difference would require a huge capital investment programme which would be difficult to justify. However, our plan incorporates sufficient additional investment to enable us both to maintain system security and improve quality of supply.

Value for Money

We believe in terms of our overall performance, OFFER complaints and distribution prices, we offer excellent value for money. Our plans for both future operational and capital expenditure will reinforce this position. The MEB

distribution system is also one of the most energy efficient of all the RECs since it distributes electricity with the lowest level of losses.

In general, customers are satisfied with the level of service from the MEB network, but our research shows increased expectations, e.g. 85% of customers wanted no more than one supply interruption per annum and rural customers are now requesting service levels closer to those in cities and towns. Our research also shows that customers are not generally willing to pay for service improvements. MEB's investment and operating cost strategy must therefore seek to balance these conflicting requirements.

Proposals for Enhancing Quality of Supply

Mindful of this difficult balance, we propose to:

- maintain service levels through growth in capital expenditure, reflecting the need for asset replacement;
- complete the major East Birmingham Scheme the majority of which has been deferred from the current review period;
- introduce a targeted quality of supply programme;
- continue to pursue efficiencies in operating expenditure, but not to the detriment of service or by any diminution in our determination to develop staff to work safely and to high skill and service levels.

The capital programme reflects efficiency gains made in working practices and procurement. A case could be made for a significantly greater programme given that the MEB assets are believed to be generally older than average. We consider that the impact on prices of such a programme is difficult to justify by way of the service improvements which could be achieved. Similar programmes when implemented elsewhere by other RECs, have not always delivered value for money.

Prioritisation of Capital Expenditure

The proposed Quality of Supply programme, if we are allowed to implement it, will be targeted firstly at customers receiving supplies through the overhead network. The programme will include the acceleration of overhead line replacement to achieve the removal of the vast majority of small section HV line by 2005.

However, the majority of our customers live in urban areas and it is important that they also see a benefit. Therefore the programme also includes urban remote control which is designed to speed up restoration for those customers affected by faults. We would intend to increase the use of mobile generation during essential maintenance work and longer duration repairs to maintain supply continuity.

Our proposals include the undergrounding of a small proportion of the existing network. This would be targeted at locations with a relatively high frequency of interruption and where some form of interconnection can be established.

Managing the Impact on Quality and Price

Our quality of supply proposals amount to an investment of approximately £20M per annum over the review period. The typical impact on domestic customers' bills would be about £1.00 per annum over the Review Period. We estimate that the CMLs per customer (excluding severe weather impacts) would fall by 21 minutes (or 24%) by the end of the period, compared with the year 1999/00.

Tackling System Emergencies

The service measures commonly used to evaluate RECs' distribution business performance, i.e. CMLs, number of interruptions etc., give an overview of performance, but they do not reflect certain key requirements of our customers, namely our performance in major storms - lightning, wind or ice/snow - and the maintenance of sustainable system security. We have learnt much from the major weather-related incidents of the last 10 years and propose to make further progress through better information provision and better prediction of potential problems. A substantial investment is targeted at enabling us to meet customer expectations for timely and updated information during such outages. This will place MEB at the forefront of the industry.

Financing the Capital Programme

While the overall capital programme has been set at an appropriate level given demand and service needs and the asset replacement profile, it is critical to recognise that this investment can only be undertaken if there is an acceptable return. The level of investment needed exceeds the allowed depreciation implicit in our price controls to date. The means of financing this potential cash flow deficit must be established.

As well as resolving this issue, it is equally important that the current approach to regulation is changed so that there are clear incentives for companies to improve the efficiency of their capital expenditure. No such incentive currently exists. Indeed, regulation currently gives an incentive for companies to capitalise what would normally count as operating costs, and sometimes rewards wasteful or unnecessary investment.

Operating Expenditure

Efficiency gains are inevitably proving harder to achieve after eight years of continuous cost cutting, and increasingly require major investments in systems and training. Nevertheless operating cost reductions have been achieved during the current review period as a result of specific management initiatives, and their effect will be felt through to 2001/02. Thereafter it will be more difficult to predict the scope and impact of any new initiatives, but further efficiencies have been incorporated.

It is essential that in prescribing operating efficiency full recognition is made of MEB's need to meet safety, environmental standards, and to meet new statutory obligations such as changes to the Electricity Supply Regulations. Equally, it is important to recognise the requirement to maintain adequate operational capability for system emergencies.

OFFER will need to acknowledge a number of future 'one-off' expenditures over which we have only limited control, and which are likely to offset some of the cost savings/efficiency improvements. In particular, a General Review of Rates is in progress by the DETR, the outcome of which will not be known before mid-1999. This review is expected to recommend a very significant increase. At £34.5m (see Table 14.1.) this would represent 17% of our total operating costs. Given the low risk implied in our present allowed rate of return MEB could only accept this item if it is held neutral to this increase.

Other one-off costs which will arise in the future are Year 2000 and EMU compliance costs, OFFER Licence Fees (which have increased by 21% this year and by 140% since 1994/95) as well as costs associated with any enforced separation of our business.

Facilitating Competition - "1998 Costs"

MEB is committed to enabling competition in both Supply, and Metering and Data Services. Included in our expenditure forecasts are the costs of systems and processes to deliver full supply business competition since they defer to the Distribution or the Metering business. These costs are proving to be significant and higher than OFFER had predicted so depressing our rate of return. Additional costs also arise in handling enquiries, dealing with change of supplier or meter operator requests, and in carrying out audit and inspection work to ensure that suppliers have properly accounted for the relevant transactions.

Benchmarking Operating Costs

Establishing the relative efficiency of Distribution Businesses is not easy. The operating cost comparisons made by OFFER at the last review have now become increasingly unreliable and they are inconsistent with other more rigorous comparisons.

The real operating cost drivers of the business - number of customers served, fault levels, maintenance policies, wayleaves, restoration targets - can only be reflected (but imperfectly) in higher level measures. However, regulatory incentives have encouraged changes in capitalisation practices which can easily distort operating cost comparisons between companies. This divergence of operational practice and accounting within a common regulatory framework requires specific REC by REC assessment by OFFER. In particular it would be inappropriate to employ the same cost regression techniques as were used in the 1994/95 Price Control Review.

Competitive Procurement

Over 66% of MEB's controllable operating and capital costs are now subject to competitive procurement procedures. Where direct resources are used and potential outside suppliers exist, the internal provision is tested against outsourcing options. For example, cable laying is now almost totally carried out by contractors, while activities such as transport, warehousing and logistics have been tested against the market. The core engineering skill base in Distribution cannot be cut further without risk to safety or service. At the same time the market for contracting to bring in these skills is not sufficiently mature to ensure that any reduction in cost is not simply offset by a fall in quality.

CONCLUSION

MEB's Distribution Business Plan is targeted at improved service delivered efficiently to customers in its area. It seeks to achieve these objectives whilst reducing prices, thus reinforcing our value for money reputation.

Achieving these goals will only be possible if the regulatory returns properly reflect the associated risks and the appropriate regulatory incentives are established by OFFER in readiness for the next Price Control period from April 2000.

MIDLANDS - TABLE 14.2 SUPPLEMENTARY ANALYSIS OF DISTRIBUTION BUSINESS HCA COSTS - BASE CASE IN 1997/98 PRICES

DESCRIPTION	ACTUAL				FORECAST						
	1994/95 £m	1995/96 £m	1996/97 £m	1997/98 £m	1998/99 £m	1999/00 £m	2000/01 £m	2001/02 £m	2002/03 £m	2003/04 £m	2004/05 £m
NGC exit charges	30.7	29.3	28.6	21.5	20.8	20.3	20.7	20.8	20.9	20.4	20.5
Rates on distribution system	21.1	20.7	21.2	20.5	21.0	21.0	31.6	31.6	31.6	31.6	31.6
Depreciation on distribution system	24.8	27.6	27.5	31.6	33.5	34.9	36.8	38.6	40.7	41.3	42.4
Payroll costs	84.4	64.1	60.8	56.9	53.5	53.3	49.6	48.3	48.0	47.1	46.5
Non payroll IT costs	9.4	8.7	8.0	7.4	7.2	7.9	7.5	7.3	7.2	7.2	7.0
Premises costs	6.5	5.8	5.9	5.4	5.1	4.5	4.5	4.5	4.4	4.4	4.4
Insurance	3.9	3.4	4.8	4.0	4.6	4.7	4.6	4.5	4.5	4.3	4.3
Materials	29.0	29.0	30.2	29.4	28.5	28.6	28.6	28.5	28.4	28.3	28.1
Wayleaves	1.4	1.7	3.8	4.0	4.2	4.2	4.7	4.8	4.9	5.0	5.1
Other	17.4	16.5	13.2	20.7	17.5	23.7	26.0	25.1	24.6	18.3	18.1
Total Costs	228.6	206.8	204.0	201.4	195.9	203.1	214.6	214.0	215.2	207.9	208.0

MIDLANDS - TABLE 14.4 SUPPLEMENTARY ANALYSIS OF DISTRIBUTION BUSINESS HCA COSTS - QUALITY OF SUPPLY SCENARIO IN 1997/98 PRICES

DESCRIPTION	ACTUAL				FORECAST						
	1994/95 £m	1995/96 £m	1996/97 £m	1997/98 £m	1998/99 £m	1999/00 £m	2000/01 £m	2001/02 £m	2002/03 £m	2003/04 £m	2004/05 £m
NGC exit charges	30.7	29.3	28.6	21.5	20.8	20.3	20.7	20.8	20.9	20.4	20.5
Rates on distribution system	21.1	20.7	21.2	20.5	21.0	21.0	31.6	31.6	31.6	31.6	31.6
Depreciation on distribution system	24.8	27.6	27.5	31.6	33.5	34.9	36.8	39.1	42.0	43.1	44.8
Payroll costs	84.4	64.1	60.8	56.9	53.5	53.3	49.6	48.3	48.0	47.1	46.5
Non payroll IT costs	9.4	8.7	8.0	7.4	7.2	7.9	7.5	7.3	7.2	7.2	7.0
Premises costs	6.5	5.8	5.9	5.4	5.1	4.5	4.5	4.5	4.4	4.4	4.4
Insurance	3.9	3.4	4.8	4.0	4.6	4.7	4.6	4.5	4.5	4.3	4.3
Materials	29.0	29.0	30.2	29.4	28.5	28.7	28.6	28.5	28.4	28.3	28.1
Wayleaves	1.4	1.7	3.8	4.0	4.2	4.1	4.7	4.8	4.9	5.0	5.1
Other	17.4	16.5	13.2	20.7	17.5	23.7	27.9	27.0	26.2	19.9	19.6
Total Costs	228.6	206.8	204.0	201.4	195.9	203.1	216.5	216.4	218.1	211.3	211.9

MIDLANDS - TABLE 14.6 SUPPLEMENTARY ANALYSIS OF DISTRIBUTION BUSINESS CAPITAL EXPENDITURE - BASE CASE SCENARIO IN 1997/98 PRICES

DESCRIPTION	ACTUAL				FORECAST						
	1994/95 £m	1995/96 £m	1996/97 £m	1997/98 £m	1998/99 £m	1999/00 £m	2000/01 £m	2001/02 £m	2002/03 £m	2003/04 £m	2004/05 £m
Capital expenditure - load related	52.5	51.5	56.3	55.2	43.6	36.9	41.3	42.7	44.3	45.7	47.1
- non load related	52.0	45.1	52.7	42.8	45.3	47.3	47.9	50.5	53.6	55.0	57.3
- non operational	18.9	12.4	14.9	10.8	15.0	13.2	9.9	8.2	10.4	7.6	7.6
- customer contributions	-15.7	-14.1	-15.3	-15.4	-15.9	-14.4	-15.7	-16.2	-16.9	-17.6	-18.3
Net Capital Expenditure	107.7	94.9	108.6	93.4	88.0	83.0	83.4	85.2	91.4	90.8	93.7

MIDLANDS - TABLE 14.8 SUPPLEMENTARY ANALYSIS OF DISTRIBUTION BUSINESS CAPITAL EXPENDITURE - QUALITY OF SUPPLY SCENARIO IN 1997/98 PRICES

DESCRIPTION	ACTUAL				FORECAST						
	1994/95 £m	1995/96 £m	1996/97 £m	1997/98 £m	1998/99 £m	1999/00 £m	2000/01 £m	2001/02 £m	2002/03 £m	2003/04 £m	2004/05 £m
Capital expenditure - load related	52.5	51.5	56.3	55.2	43.6	36.9	41.3	42.7	44.3	45.7	47.1
- non load related	52.0	45.1	52.7	42.8	45.3	47.3	70.7	72.4	75.1	73.8	75.8
- non operational	18.9	12.4	14.9	10.8	15.0	13.2	10.3	8.2	10.4	7.6	7.6
- customer contributions	-15.7	-14.1	-15.3	-15.4	-15.9	-14.4	-15.7	-16.2	-16.9	-17.6	-18.3
Net Capital Expenditure	107.7	94.9	108.6	93.4	88.0	83.0	106.6	107.1	113.0	109.5	112.1

RPI INDEX TO 1997/98 PRICES	1994/95	1995/96	1996/97	1997/98	1998/99	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05
(future values assume 3% inflation)	145.35	150.08	153.73	158.78	163.54	168.45	173.53	178.74	184.10	189.63	195.31

6. NORTHERN

SUMMARY

As Northern Electric approaches the third distribution review:

- significant reductions in allowed income at the first two reviews have already benefited customers
- bills have fallen and service standards have increased
- the capital programme forecast by Northern Electric at the last review has been efficiently delivered; and
- management actions have significantly reduced controllable operating costs.

A sustainable review should:

- recognise each REC's starting point
- adopt a consistent approach to asset values
- recognise that the cost of capital has increased; and
- use the right methodology to assess companies' relative efficiency on the basis of total costs.

The Northern Electric business plan:

- sets a challenging, controllable operating cost reduction target of more than 2.25% per annum in real terms; and
- proposes a prudent level of capital expenditure to meet existing high service standards
- with a background of slow steady growth in unit sales.

This business plan would allow distribution prices to be reduced by 3% in real terms each year until 2005. By then real distribution prices would have fallen a further 17% from the current level.

1. INTRODUCTION

Northern Electric (NE) serves the fourth largest geographic area of the twelve RECs in England and Wales and the third most sparsely populated region. In total, NE's service area comprises 14,400 sq km with a resident population of 3.2 million. In the year to 31 March 1998, the company distributed 15,754 GWh to 1.5 million customers across its network of transformers, switchgear, overhead lines and cables.

The company faces unique twin challenges. On the one hand, the company has substantial areas of very low customer density which still require service. This inevitably puts pressure on average costs. On the other hand the north-east's economy continues to lag behind the rest of England. GDP per head is the lowest of all the English regions, while economic activity rates are lower than any region other than Merseyside. There is no prospect of growth leading to significant reductions in unit costs.

This places a great premium on NE's internal efficiency. Costs were reduced during the first regulatory period. In 1995, following the price control imposed by the first distribution review (DRI), NE restructured, forming an operating subsidiary to conduct the distribution business (NEDL) and creating a number of service provider business units from which NEDL purchases services. These changes have enabled the company to shed staff and reduce costs while delivering significantly lower bills to its customers and meeting increased service standards as required by OFFER.

2. PERFORMANCE SINCE PRIVATISATION

Two price reviews established significant reductions in allowed income...

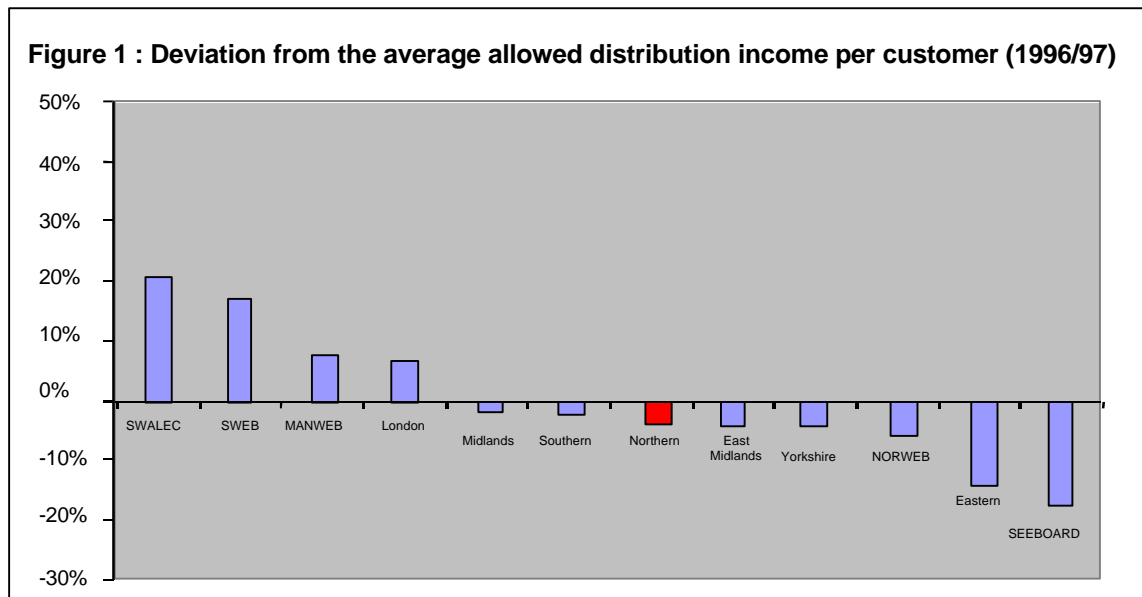
The twelve RECs have been subject to two price reviews since privatisation. At each review the RECs fell into three groups according to the size of the initial price reductions which would follow. NE was the only REC to be placed in the group with the largest price reductions on each occasion.

Table 1 : Reduction in allowed income

Regional Electricity Company	Real price change (%) 1995/96	Real price change (%) 1996/97	Subsequent annual real price change (%)	Cumulative real price change 1995 – 2000 (%)
Northern	-17	-13	-3	-34
MANWEB	-17	-11	-3	-33
SWALEC	-17	-11	-3	-33
SEEBOARD	-14	-13	-3	-32
Yorkshire	-14	-13	-3	-32
London	-14	-11	-3	-30
Midlands	-14	-11	-3	-30
NORWEB	-14	-11	-3	-30
SWEB	-14	-11	-3	-30
East Midlands	-11	-13	-3	-29
Eastern Group	-11	-10	-3	-27
Southern	-11	-10	-3	-27
Average	-14	-11.5	-3	-31

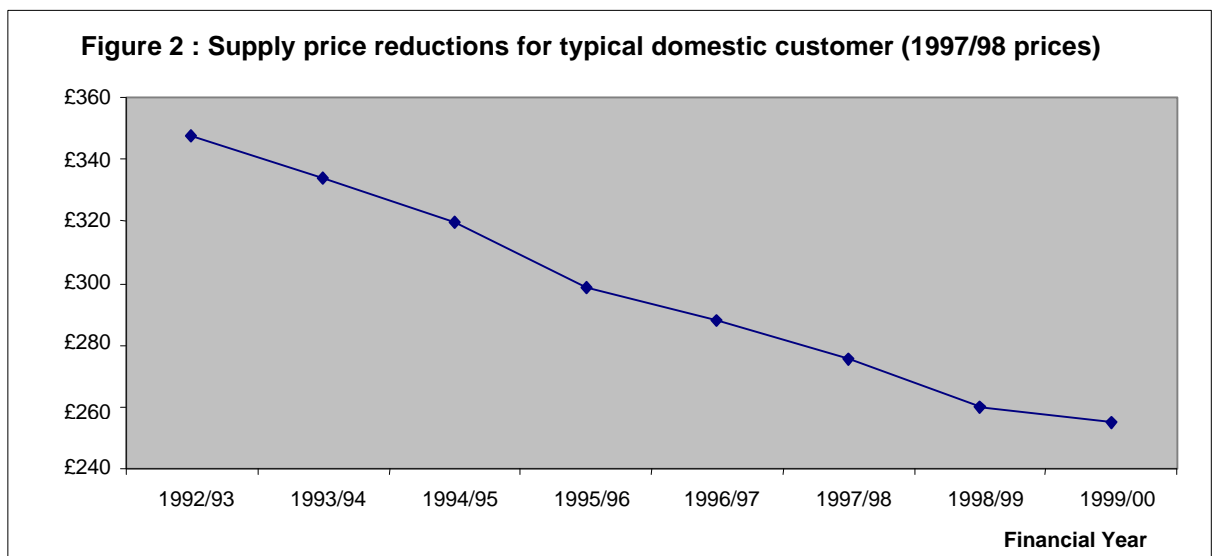
Source: "The Distribution Price Control: Revised Proposals". OFFER, July 1995.

As a result NE's allowed distribution income has fallen by 30% per unit and 27% per customer since 1995. Although NE has more than its share of above average cost customers, its allowed income per customer is 4% below the REC average.



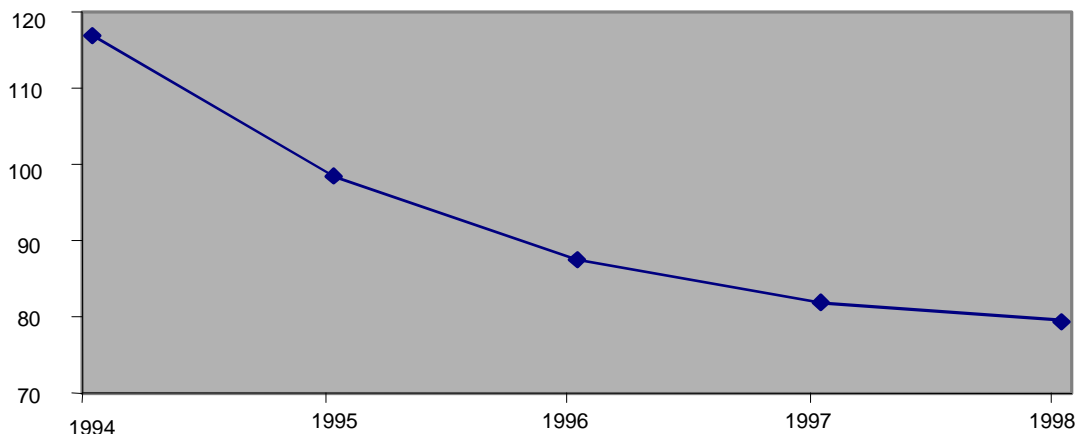
Customers have seen falling bills ...

Overall NE's customers have seen significant real price reductions since privatisation. Since 1992, a typical domestic credit customer using average consumption has seen his final bill fall by 29% in real terms or 31% if a direct debit payer. NE's customers have also received more than £70 each in rebates since 1993.



Since privatisation NE's distribution charges (which represent 25% of the total bill) have also fallen significantly, and in the period since 1994/95 distribution prices have fallen by 32% in real terms for a typical domestic customer.

Figure 3 : Distribution price reductions for typical domestic customer (1997/98 prices) ¹



¹ Price prevailing at 1 April each year

This price reduction compares favourably with the rest of the industry.

...and improved service standards

The three key measures of the quality of distribution service used in the industry are:

- security, measured as the number of interruptions to supply occurring each year per 100 customers;
- availability, measured as the number of customer minutes lost due to interruptions to supply, per customer connected to the network; and
- average length of interruption calculated as “availability” divided by “security” as defined above.

On each of these measures, NE has improved its performance and generally out-performed the sector as a whole.

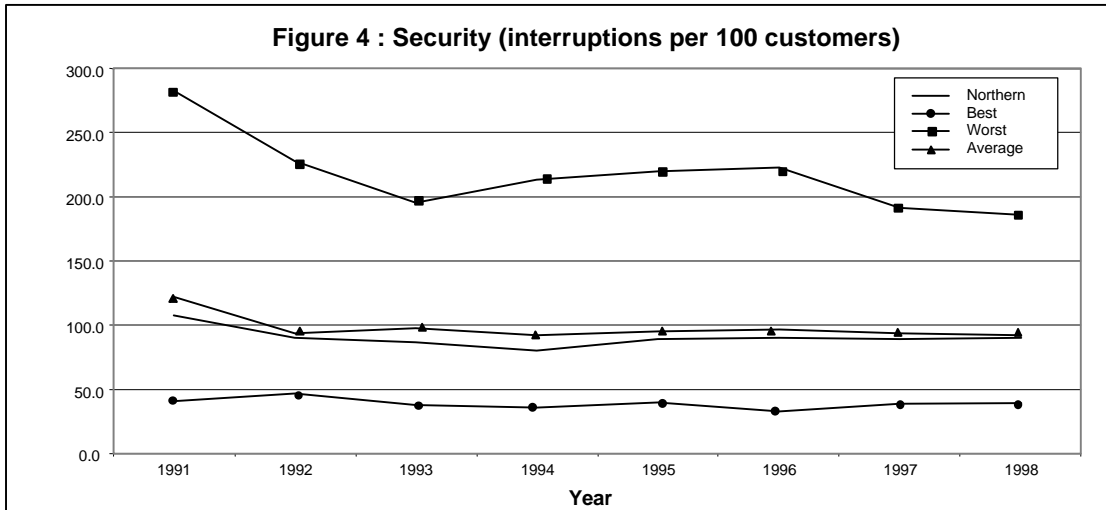
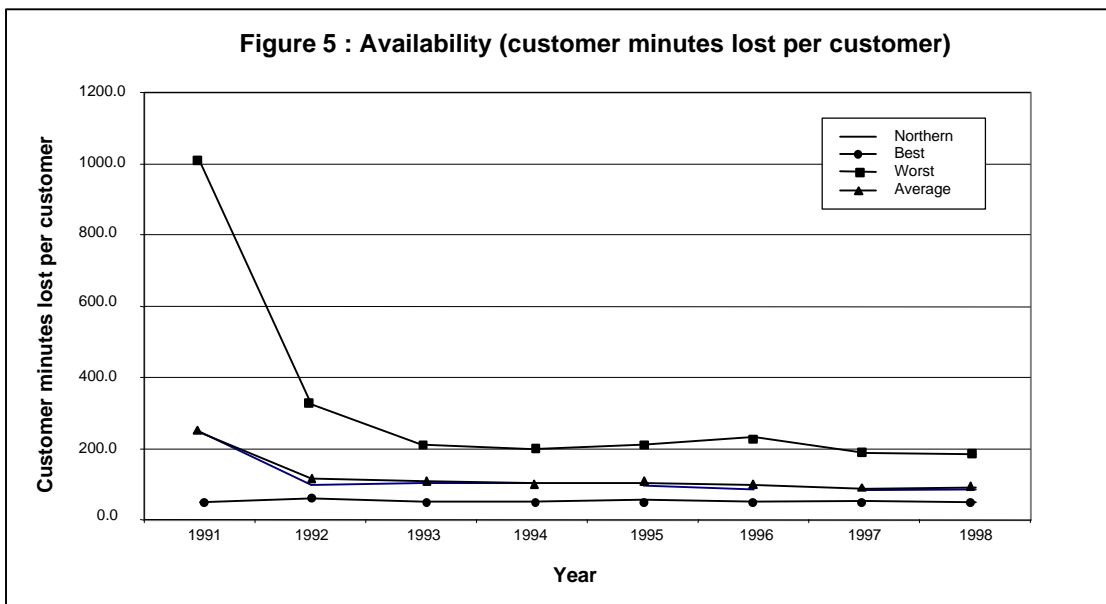
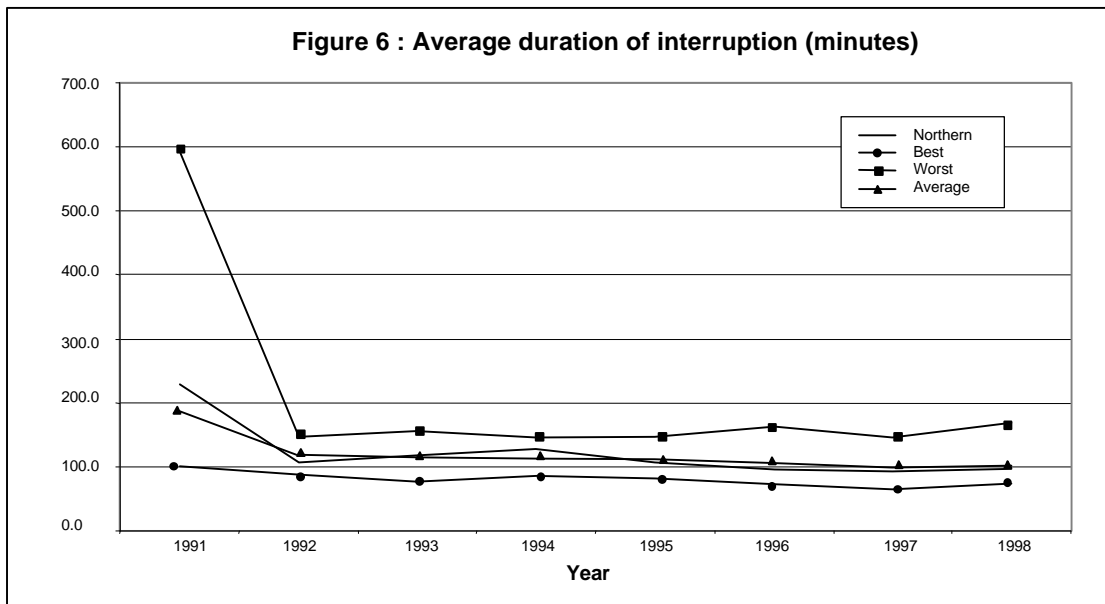


Figure 4 shows that the level of security of supply as measured by the number of interruptions per 100 customers has been largely unchanged at just under 100 interruptions per 100 customers. NE's level of security has been consistently better than the REC average since privatisation.

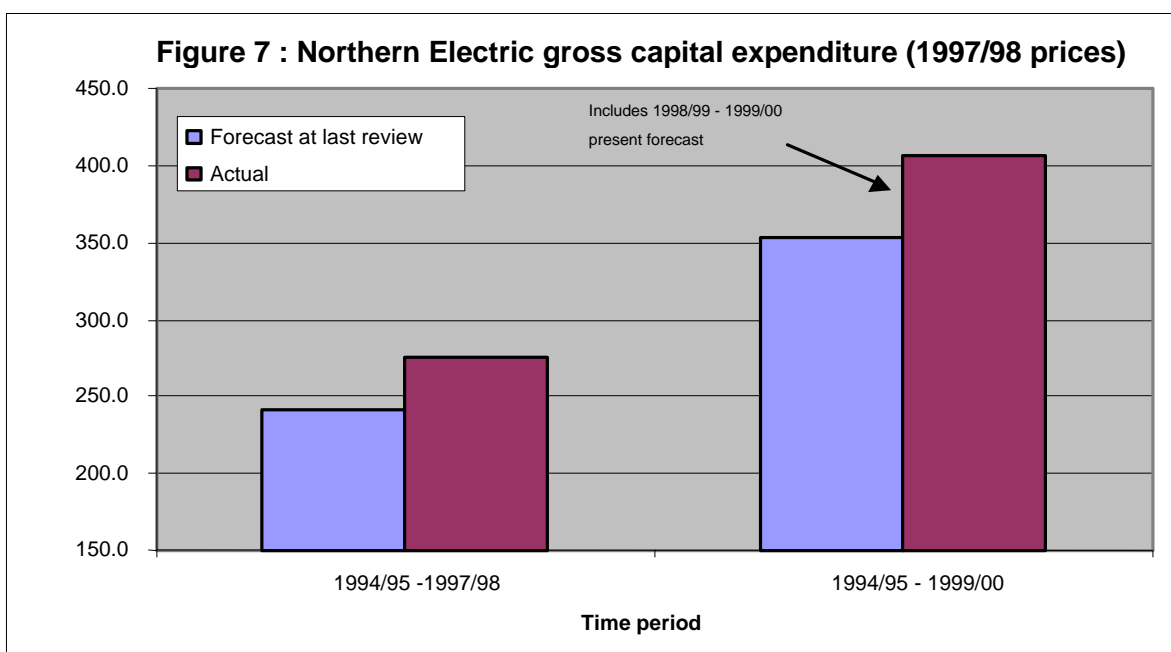




Figures 5 and 6 show NE's performance over time in respect of minutes lost per network customer, and minutes lost on average in each supply interruption. On both measures NE performed better than the average REC in all but two years.

Efficient delivery of our capital programme

At the last distribution price control review NE forecast gross capital investment of £353m over the six year period 1994/95 to 1999/2000. £349m was for operational or system related investment. NE's current forecast is that gross capital expenditure will amount to £407m, of which £373m will be system related, £24m above the forecast.



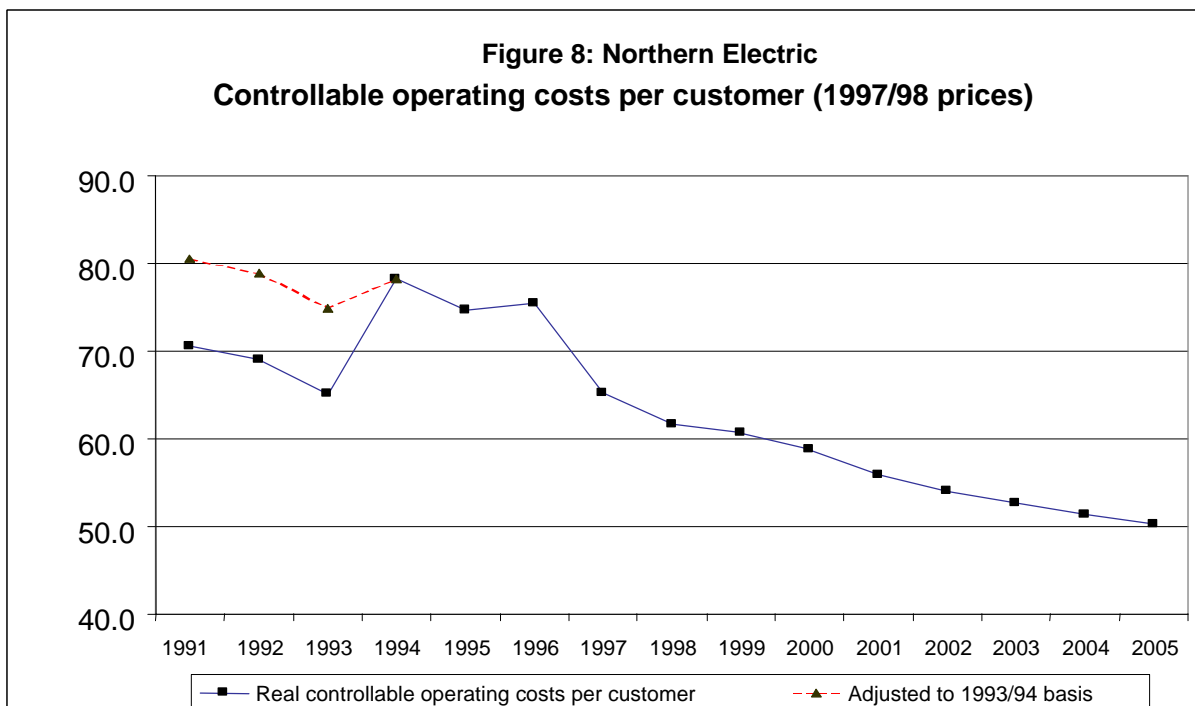
This capital programme, although slightly exceeding NE's forecast, is prudent and is being efficiently delivered.

An impressive reduction in controllable costs...

Any comparison of cost trends needs to ensure that the comparison is made on a like-for-like basis. OFFER's consultation paper refers to NE's operating costs as static between 1992/93 and 1996/97.¹ Such a comparison is misleading for NE where changes were made to the allocation of costs between the supply and distribution businesses in April 1993. These changes were made after discussion with OFFER to bring NE into line with other RECs.

The creation of separate business units for transport and telecommunications has meant that the distribution business now includes the full charges from these businesses as operating costs. In 1992/93 an element of these costs would have been included as depreciation and is therefore excluded from the base which is used for the comparison published by OFFER. The separate businesses also included a profit element to allow them to make a return on their assets employed. Again this is not reflected in the base year in the comparison published by OFFER.

Any proper comparison of costs needs to take these changes into account. Figure 8 below shows the trend of controllable operating costs per customer with the dotted line illustrating the real trend after taking into account these adjustments. This impressive reduction in controllable operating costs has taken place against a background of continued growth in customer numbers and units distributed.



¹ *Reviews of Public Electricity Suppliers 1998-2000 : Price Controls and Competition*, Consultation paper, July 1998, p33.

NE continuously strives to improve the efficiency of its operations learning from national and international best practice. Cost level comparisons, especially international comparisons, have to be handled carefully because of differences in industry structure, cost allocations and operating conditions.

...but NE's capacity to out-perform other companies is now exhausted

NE goes into the third price control review having delivered very significant price cuts since 1994/95 and, on a comparative basis, with the greatest reductions in revenue. This performance can be seen as testament to the effectiveness of the regulatory regime and to the management of NE. Under the combination of a demanding price control and incentive regulation, NE has re-organised, driven out costs and passed the benefits to consumers. However the greatest efficiencies have now been realised. Future cost reductions will be much harder won and the price control process needs to recognise this. NE has now exhausted its capacity to out-perform the other RECs in terms of price reductions.

3. KEY ISSUES AT THIS REVIEW

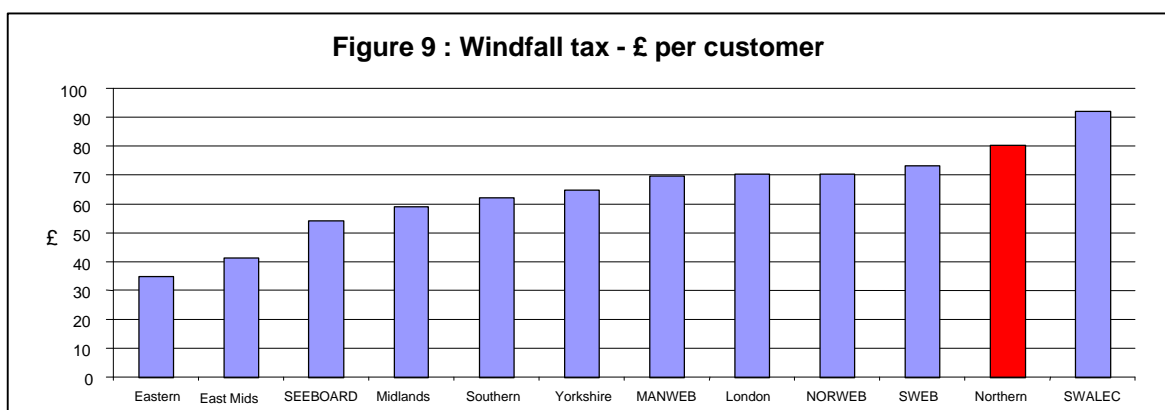
Recognise the starting point

At the regulatory review the regulator's task is to set an allowed income which matches the efficiently incurred costs of the company. This will vary from company to company for various reasons including differences in size, terrain, climate and customer type and density. Any judgement about whether, and how much, each company's allowed income will need to be adjusted must recognise where each company starts from and how much it has already given benefits to customers in the form of lower prices.

A consistent approach to asset values...

At the last distribution review the regulator made a judgement about the initial value of the assets acquired by shareholders at the flotation. This value was 15% higher than the value at the end of the first day's trading. This opening asset value needs to be consistently treated at this review. Providers of funds to invest in the business need to have confidence that they will earn a reasonable return on their investment not just over the next five years but over the lifetime of the asset.

If regulators depart from a consistent approach to the shareholders' investment this will increase the shareholders' perception of risk and therefore of the return which they need to cover that risk. The cost of capital will inevitably rise. It should not be forgotten that since the last review shareholders have made further significant payments in the form of the windfall tax – especially the shareholders of NE.



Similarly, the regulator should adopt a consistent depreciation profile so that investors will remain confident that they will be properly recompensed for the diminution over time in the value of the investment which they have financed. Extending the depreciation profile of the assets represented by the initial investment will raise the investors' perception of risk.

The cost of capital has increased...

The risks taken by investors in the distribution business are generally accepted to be below those of equities in general. The measurement of this (the beta factor) is problematic because the distribution businesses are not separately traded on the stock exchange. Nevertheless appropriate published data can be used to inform this element of the calculation. Since the last review returns from equities have remained fairly stable but the margin on debt (the amount above the risk free rate of gilts) at which RECs are able to borrow has risen. These debt margins can be observed and real data used to inform the cost of capital judgement at this review. The changes in the taxation of dividends have increased the level of the tax wedge which needs to be included to arrive at the pre-tax cost of capital.

Taking all these factors into account NE's view of the cost of capital is above the 7% applied at the last review.

4. RELATIVE PERFORMANCE: MEASURING REAL EFFICIENCY

The right methodology...

A key consideration for OFFER in determining the price control for the five years from 2000 is the measurement of the relative efficiency of the twelve RECs.

However, in measuring efficiency, OFFER has in the past focused on just one measure, operating expenditure when the real costs of delivering service to consumers are a product of operating and capital expenditure. While operating costs

have been subject to strong benchmarking, capital costs have been accepted by the regulator without any assessment of their prudence.

Once capital expenditure has occurred it is “rolled-forward” as part of the company’s regulatory asset base. This means that shareholders receive the return of their investment, through depreciation, and also a return on this investment equivalent to the regulator’s assessment of the investor’s cost of capital.

Capital investment by companies, particularly the utilities, is sometimes seen as a good thing in itself. Yet capital expenditure is only sensible when it is the most cost-effective means of delivering service to customers. It is a bad thing when it is excessive or if there are other, cheaper ways in which the outputs for customers can be generated.

NE believes that the current form of control creates incentives for inefficient investment, through the substitution of capital for operating expenditure. Companies have a disincentive to look after their assets through proper maintenance (an operating cost) as opposed to replacing an asset (new investment). The costs of maintenance count against revenues; every pound spent costs the company a pound. By contrast, every pound invested is returned, over time, together with a return on that investment. The implications are obvious.

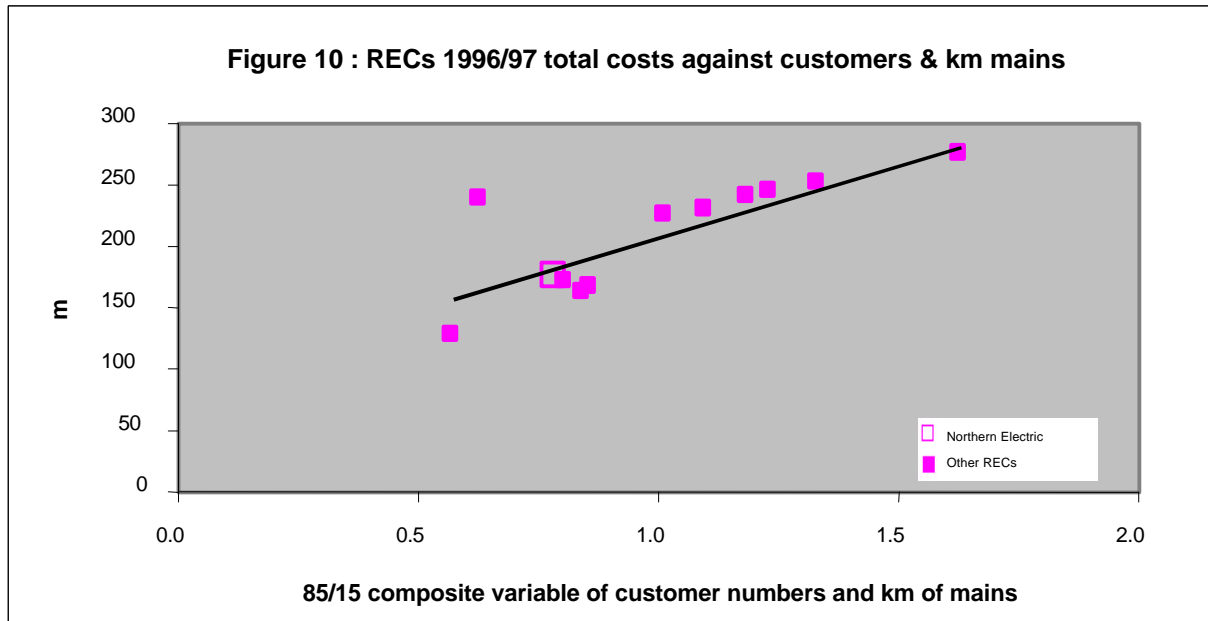
Normally in considering the right balance between capital and operating expenditure, companies would seek the lowest total cost solution over the period. However the regulatory regime can give companies an incentive to invest to replace operating costs even when the total cost to customers would be greater.

Of course different RECs will respond differently to the incentive to make inefficient capital substitution. In particular some will be conscious that a future regulator might recognise the problem and act to restore proper incentives at the next review.

It is essential that OFFER’s review of the relative efficiency of the different RECs examines the total costs of the RECs and not just their operating costs. This point is of fundamental importance to the price control review. Any other approach would distort future incentives and make a mockery of the efficiency assessment process.

...illustrates NE’s efficiency

Benchmarking total 1996/97 costs against a composite variable of customers and kilometres of mains shows that NE is below the “best fit” line that indicates relative efficiency.



This “85:15 composite variable” seeks to mix inputs – customer numbers and kilometres of main –in a ratio which is the same as that used by OFFER in the first distribution review. Of course there are other ways in which the total factor productivity calculation can be structured. For example, benchmarking against a mixture of customers and GWh distributed again shows NE to be achieving efficiencies commensurate with the industry.

The key point is not that this particular model provides the right analysis but that *total* cost is the right basis for any assessment of relative efficiency. Good regulation will look at both operating and capital costs together, and seek to incentivise companies to reduce the total costs which customers will have to pay for their electricity, rather than just one component of bills.

5. A REALISTIC BUSINESS PLAN FOR THE FUTURE

Distribution prices to continue to fall

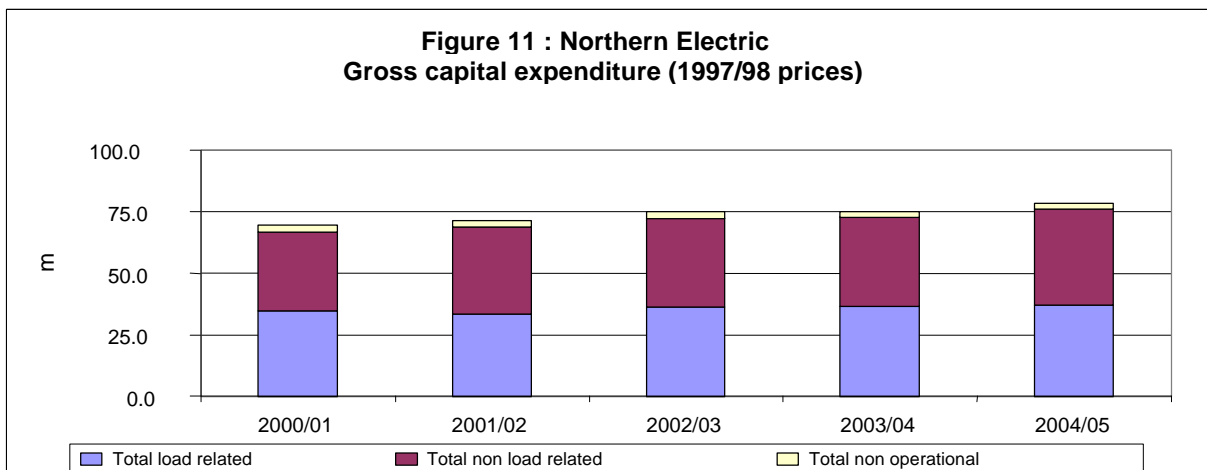
The business plan prepared by NE for OFFER implies a path of distribution prices which would continue to fall by 3% in real terms each year from now until 2005.

Challenging operating cost targets

Significant savings in operating costs made since privatisation make further reductions harder to achieve. Nevertheless, the business plan sets a tough target of a reduction in excess of 2.25% in real terms in controllable operating costs each year until 2005 – a cumulative reduction of about 15%. Expressed on a per-unit basis, this would amount to a reduction of 3% each year and nearly 19% over the period.

A prudent capital investment plan

Optimising the total costs incurred by the business means that the capital investment over the period must be realistic and prudent. NE's approach to capital investment looks at the long term asset replacement needed to maintain quality of supply at the current high levels. Costs are subjected to scrutiny from independent consulting engineers. Over the five year period to 2005, the distribution business' gross capital expenditure is forecast to increase from £64m in 1999/2000 to £78m in 2005 (all figures in 1997/98 prices).



This increased investment is primarily driven by the company's asset replacement programme, based on an assessment of the condition of each asset class.

Current system performance meets customers' requirements

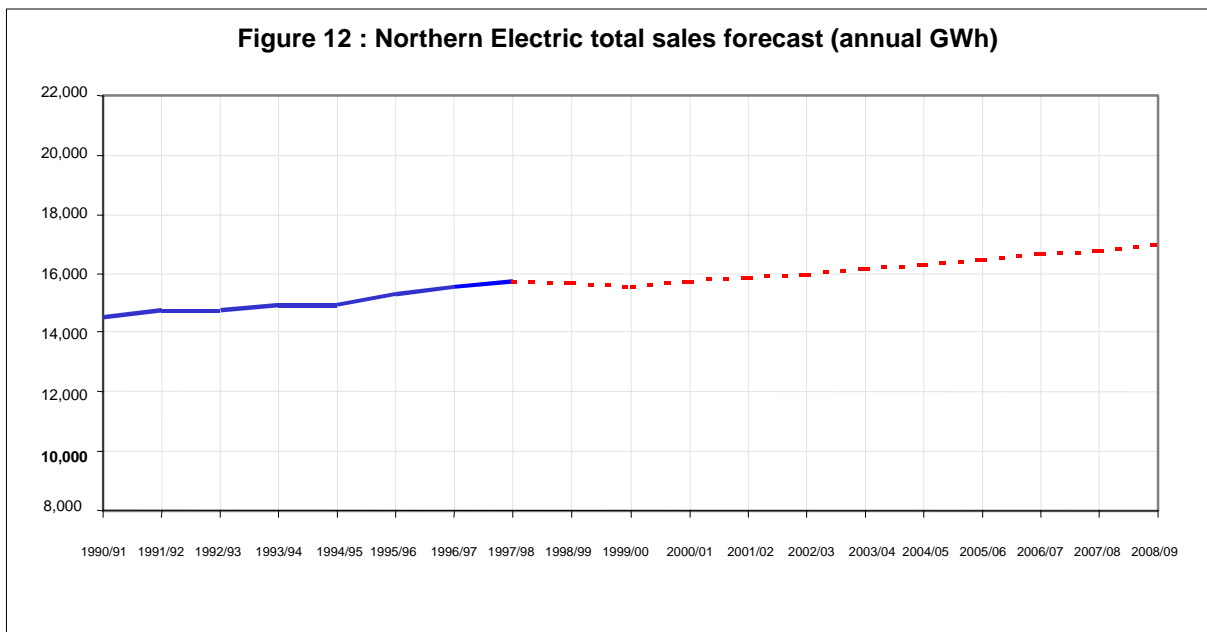
There is increasing evidence that customers do not wish to pay more for very slight increments in the performance of the distribution network. The current restoration standard of 100% of supplies restored within 24 hours of a fault occurring strikes the right balance between cost and service. For example, increasing the proportion of interrupted supplies restored within three hours from 90% to 93% would cost each customer £4 a year. Customers do not wish to pay disproportionately large sums of money for such small improvements.

The costs of further improvements in quality

NE's business plan is based on maintaining the current high quality levels. Customer research suggests that there is no economic justification for any significant improvement in current standards, a finding supported by OFFER's own research. Nevertheless, NE has examined engineering options and has calculated a "quality case" which involves £34m in additional investment over the next ten years, £17m in the next five, which would lead to modest improvements in supply quality. To achieve this would add £2 to the average customer's annual bill.

Slow steady growth

The costs and the revenues of the distribution business are influenced by the growth in the demand for electricity made by customers connected to the network. Customers' demand is related to the performance of the economy as a whole. The economic outlook for the UK is not good and an economic downturn is expected. For structural reasons the north-east economy is likely to underperform the UK in recovery from the predicted economic downturn. Nevertheless, the load forecast for the business plan (1998/99 to 2004/05) indicates compound annual growth rates of 1.1% in domestic, 0.1% in industrial and 1% in commercial.



6. CONCLUSION

Good regulation at this review would mean that OFFER would:

- recognise where each REC starts from, bearing in mind that those who have already given the most in terms of price reductions have less to give now;
- be consistent with the last review in terms of asset values, cost of capital and depreciation;
- use total costs as the basis for comparing companies;
- assume a prudent capital spend and reducing operating costs; and
- balance the current high quality of service against the relatively high costs for customers of achieving improvements.

Recognising these principles of good regulation should enable NE to continue to provide an excellent service to customers while continuing to reduce prices by 3% each year until 2005. By 2005 distribution prices would be 17% lower than today.

NORTHERN - TABLE 14.2 SUPPLEMENTARY ANALYSIS OF DISTRIBUTION BUSINESS HCA COSTS - BASE CASE IN 1997/98 PRICES

DESCRIPTION	ACTUAL				FORECAST						
	1994/95 £m	1995/96 £m	1996/97 £m	1997/98 £m	1998/99 £m	1999/00 £m	2000/01 £m	2001/02 £m	2002/03 £m	2003/04 £m	2004/05 £m
NGC exit charges	17.9	17.1	16.1	14.6	13.5	13.5	15.5	18.4	16.0	15.7	15.4
Rates on distribution system	13.5	14.3	14.7	14.5	14.8	15.1	17.6	18.1	18.5	18.8	19.0
Depreciation on distribution system	15.9	17.2	16.7	18.6	20.9	20.5	21.6	22.4	23.0	23.7	24.5
Payroll costs	38.0	7.0	5.9	5.6	5.2	5.5	4.7	4.7	4.7	4.6	4.7
Non payroll IT costs	1.0	0.6	1.5	2.4	2.9	2.5	3.0	3.1	3.1	3.1	3.2
Premises costs	4.6	4.2	2.3	3.0	2.8	2.6	2.6	2.4	2.3	2.3	2.3
Insurance	2.8	0.7	1.0	1.5	1.2	1.2	1.2	1.2	1.2	1.3	1.2
Materials	14.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	67.8	106.0	92.5	86.4	91.2	92.4	88.5	86.4	84.9	81.3	78.8
Total Costs	176.4	167.2	150.8	146.6	152.4	153.3	154.5	156.8	153.5	150.6	149.1

NORTHERN - TABLE 14.4 SUPPLEMENTARY ANALYSIS OF DISTRIBUTION BUSINESS HCA COSTS - QUALITY OF SUPPLY SCENARIO IN 1997/98 PRICES

DESCRIPTION	ACTUAL				FORECAST						
	1994/95 £m	1995/96 £m	1996/97 £m	1997/98 £m	1998/99 £m	1999/00 £m	2000/01 £m	2001/02 £m	2002/03 £m	2003/04 £m	2004/05 £m
NGC exit charges	17.9	17.1	16.1	14.6	13.5	13.5	15.5	18.4	16.0	15.7	15.4
Rates on distribution system	13.5	14.3	14.7	14.5	14.8	15.1	17.6	18.1	18.5	18.8	19.0
Depreciation on distribution system	15.9	17.2	16.7	18.6	20.9	20.5	21.6	22.4	23.0	23.7	24.5
Payroll costs	38.0	7.0	5.9	5.6	5.2	5.5	4.7	4.7	4.7	4.6	4.7
Non payroll IT costs	1.0	0.6	1.5	2.4	2.9	2.5	3.0	3.1	3.1	3.1	3.2
Premises costs	4.6	4.2	2.3	3.0	2.8	2.6	2.6	2.4	2.3	2.3	2.3
Insurance	2.8	0.7	1.0	1.5	1.2	1.2	1.2	1.2	1.2	1.3	1.2
Materials	14.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	67.8	106.0	92.5	86.4	91.2	92.4	88.6	86.6	85.1	81.6	79.3
Total Costs	176.4	167.2	150.8	146.6	152.4	153.3	154.6	157.0	153.8	151.0	149.5

NORTHERN - TABLE 14.6 SUPPLEMENTARY ANALYSIS OF DISTRIBUTION BUSINESS CAPITAL EXPENDITURE - BASE CASE SCENARIO IN 1997/98 PRICES

DESCRIPTION	ACTUAL				FORECAST						
	1994/95 £m	1995/96 £m	1996/97 £m	1997/98 £m	1998/99 £m	1999/00 £m	2000/01 £m	2001/02 £m	2002/03 £m	2003/04 £m	2004/05 £m
Capital expenditure - load related	27.9	25.7	29.0	30.9	32.3	29.5	34.6	33.3	36.1	36.6	36.9
- non load related	44.5	29.9	33.6	31.1	25.8	32.4	32.0	35.4	36.1	36.0	39.1
- non operational	1.6	2.5	3.9	15.2	9.1	2.3	2.8	2.8	2.6	2.3	2.2
- customer contributions	-14.4	-13.3	-17.4	-18.6	-18.0	-17.4	-17.0	-16.2	-15.1	-15.8	-15.9
Net Capital Expenditure	59.5	44.9	49.2	58.6	49.3	46.8	52.4	55.3	59.7	59.1	62.4

NORTHERN - TABLE 14.8 SUPPLEMENTARY ANALYSIS OF DISTRIBUTION BUSINESS CAPITAL EXPENDITURE - QUALITY OF SUPPLY SCENARIO IN 1997/98 PRICES

DESCRIPTION	ACTUAL				FORECAST						
	1994/95 £m	1995/96 £m	1996/97 £m	1997/98 £m	1998/99 £m	1999/00 £m	2000/01 £m	2001/02 £m	2002/03 £m	2003/04 £m	2004/05 £m
Capital expenditure - load related	27.9	25.7	29.0	30.9	32.3	29.5	34.6	33.3	36.1	36.6	36.9
- non load related	44.5	29.9	33.6	31.1	25.8	32.4	35.5	38.7	39.4	39.4	42.4
- non operational	1.6	2.5	3.9	15.2	9.1	2.3	2.8	2.8	2.6	2.3	2.2
- customer contributions	-14.4	-13.3	-17.4	-18.6	-18.0	-17.4	-17.0	-16.2	-15.1	-15.8	-15.9
Net Capital Expenditure	59.5	44.9	49.2	58.6	49.3	46.8	55.9	58.6	63.0	62.5	65.7

RPI INDEX TO 1997/98 PRICES	1994/95	1995/96	1996/97	1997/98	1998/99	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05
(future values assume 3% inflation)	145.35	150.08	153.73	158.78	163.54	168.45	173.53	178.74	184.10	189.63	195.31

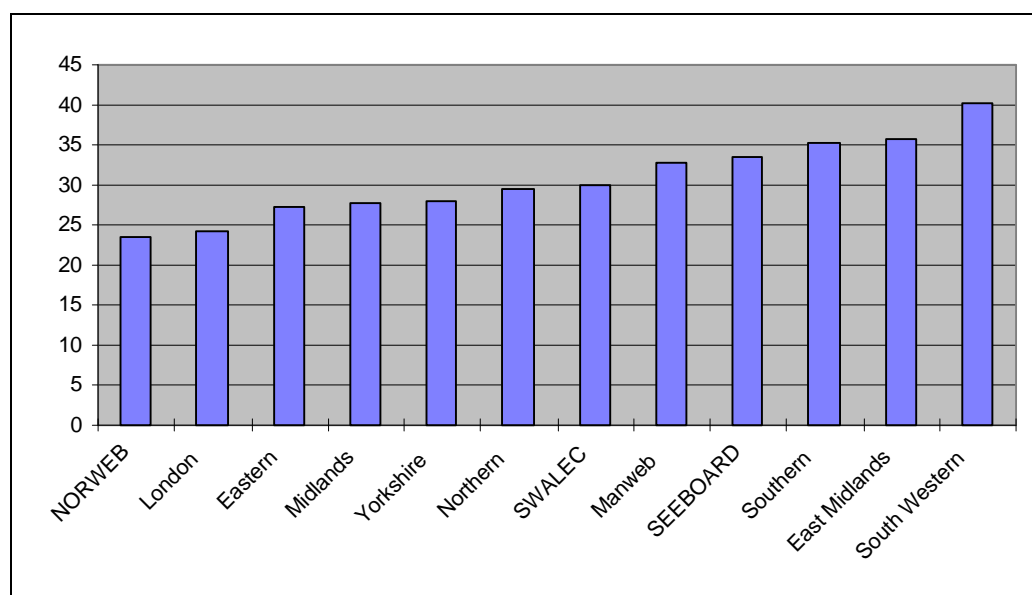
7. NORWEB

Introduction

In the forthcoming Distribution price control review, the fundamental issue for Norweb is the level of replacement investment required over the next 20 years to sustain the performance of our ageing network. Norweb needs to invest £ 961 million on the network and its supporting systems in the five years from 2000/01 to 2004/5.

Norweb's network has the lowest average percentage remaining life of any REC Distribution business as shown in Figure 1.

Figure 1: Proportion of life of network remaining 31st March 1996 (using consistent depreciation lives)



The network has been built up since the start of the century. Our oldest underground cables date from 1900. Cables can be expected to last on average 60 - 80 years. Our oldest overhead lines were installed in 1930. Overhead lines have an average life expectancy of 45 - 60 years.

We have been progressively increasing the amount we spend on network replacement and our latest evidence on the condition and performance of the network shows that we must continue to increase our replacement, otherwise customers will suffer more faults and interruptions in supply.

This summary sets out:

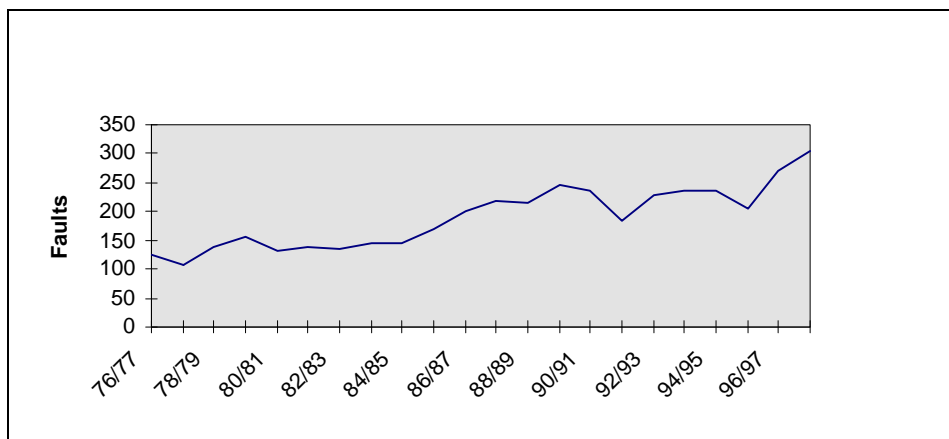
1. Our improvements in service to customers, capital expenditure and operating costs over the last five years.
2. Our base case for maintaining our current performance levels up to 2004/5, minimizing costs, but with an increased rate of network replacement investment.
3. Our quality case for extra initiatives to improve performance in the areas which customers say are a priority, and at a cost they say they can afford.
4. The costs and benefits of five alternative quality objectives suggested by Offer.

1. Our Performance to Date

1.1 Improvements in service to customers

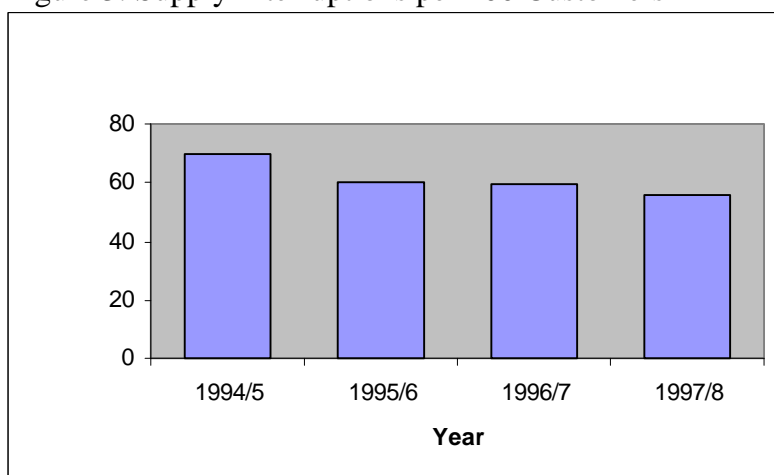
Improvements in Quality of Supply must be judged against the background of an increasing trend in numbers of faults as shown in Figure 2, and have been achieved despite this trend.

Figure 2: HV Underground Faults due to Age and Wear



1.1.1 Supply Interruptions

Figure 3: Supply Interruptions per 100 Customers



Norweb has reduced annual supply interruptions per 100 customers each year from 69.7 in 1994/5 to 56.0 in 1997/8 excluding the effect of the Christmas storms in 1997 and other exceptional events as detailed in the Quality of Supply report, as illustrated in Figure 3. We have contributed to this improvement by reducing planned interruptions for maintenance work through better operating practices, such as “hot glove” live line working and the use of mobile generators.

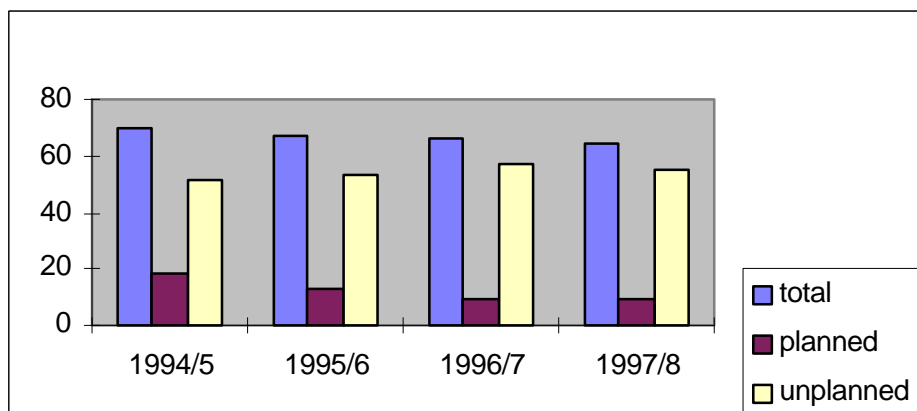
The scope for further reductions in planned interruptions is limited. Unless we invest to stabilise the average remaining life of the network, our Quality of Supply will inevitably deteriorate in the future.

1.1.2 Customer minutes lost

Customer minutes lost is a measure both of the number of interruptions and Norweb’s response to them. We have steadily reduced minutes lost from 70.0 in 1994/5, to 64.4 minutes in 1997/8 as shown in Figure 4 (excluding the effect of exceptional events). This has been achieved through the reduction in planned interruptions, better organization and the application of new technology in response to the underlying deterioration in faults as follows:

- centralized fault reporting
- faster despatch of repair teams
- better fault location
- empowerment of craftsmen
- faster jointing techniques

Figure 4: Planned and Unplanned Minutes Lost per Connected Customer



The scope for further reductions in planned interruptions and customer minutes lost is limited. Unless we invest in the 5 year period to 2005 to stabilise the average remaining life of our network, our Quality of Supply will deteriorate. Statistical analysis backed up by examination of cable samples confirms that deterioration in cables is leading to an increase in faults.

1.1.3 Guaranteed and Overall Standards

Good management of the network has also allowed us to achieve our Guaranteed and Overall Standards targets.

The performance of the entire electricity distribution industry on Guaranteed Standards has improved to such an extent that failures are now rare. We consistently achieve the Overall Standards targets agreed with Offer. Our performances against the key restoration of supply measures are summarised in Table 1.

We are constantly working to improve our performance against these standards in spite of the underlying deterioration in the network.

Table 1: Norweb's Performance Against Key Restoration of Supply Measures

	Guaranteed Standards (payments per 100,000 customers affected by lost supplies). Failures to restore in		Overall Standards (Target percentages of customers restored within a given time limit)	
	24 hours	Over 24 hours	85% in 3 hours	99% in 24 hours
1994/5	0.15	0.00	92.5%	99.99%
1995/6	1.68	1.34	90.2%	99.99%
1996/7	0.89	0.00	90.2%	99.96%
1997/8*	1.01	0.40	91.4%	99.99%

*Excluding the effects of the exceptional storms at Christmas 1997

1.2 Capital expenditure 1994/5 to 1999/00

We have invested more than Offer allowed in setting our current five year price control. The actual spend in 1995/6 to 1999/2000 is expected to be £86 million more, as shown in Table 2.

Load related investment is for connecting new customers to the network, and reinforcing the network to handle higher loads. This has grown steeply over the period, driven by the pattern of economic growth and customer demand. Reinforcement has been higher than expected as spare capacity in the network has been used up. Customers paid less towards these connections than assumed because of changes in the Offer rules for charging for associated reinforcement.

The amount allowed for non load related investment included very little for improving quality of supply, and actual investment has been predominantly on replacement which is

designed to maintain the performance of the network. We have been able to maintain our network to the level allowed in the price control and meet our licence obligations, but at a lower cost through efficiency.

Table 2: Allowed vs Actual Capital Expenditure 1995/96 to 1999/00

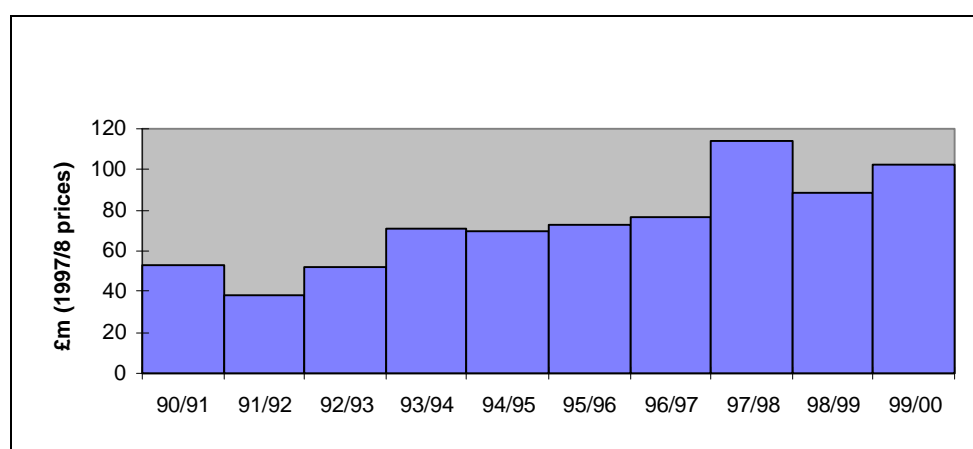
1997/98 Prices	Allowed (£m)	Actual (£ m)
Load related	169	168
Customer Contributions	(80)	(48)
Total Load related	89	120
Non Load Related	378	336
Total Operational	467	456
Non Operational	93	190
TOTAL	560	646

We have achieved efficiency savings in both load and non load related investment through:

- a co-ordinated approach to network assessment and refurbishment
- improved procurement procedures
- improving monitoring and control systems
- improved contract management.

The amount of replacement investment necessary has been growing over the last 10 years as shown in Figure 5.

Figure 5: Total Operational Investment



Non operational investment has been much higher than was allowed by Offer given the high cost of developing systems to handle the requirements of the competitive electricity market.

1.3 Operating costs from 1994/5 to 1997/8

Since 1994/5 we have reduced controllable operating expenses by a third in real terms from £185.9m to £131.3m (excluding NGC exit charges, rates and depreciation).

1.3.1 Management initiatives to increase efficiency

Operating costs have been reduced and service to customers improved through:

- reducing the number of management and supervisory levels
- centralizing or relocating activities where appropriate
- changes in maintenance programmes and working practices
- empowering craftsmen to do tasks previously performed by professional engineers
- outsourcing a number of activities where appropriate
- extending the use of contractors where cost effective
- introduction of technology to help with locating faults
- more flexible terms and conditions with closer links to productivity.

The merger of Norweb and North West Water has delivered additional savings in a number of areas where service provision is common to both.

1.3.2 Evidence of Efficiency in 1996/7 and 1997/8

Efficiency means not only achieving low costs, but also delivering the quality of service required.

- Maintaining Quality of Supply to our customers, despite the age of our network, is a significant explanatory factor when comparing our operating costs with those of other RECs
- Age of the network is a highly significant variable. Our network has the lowest average percentage remaining life of any REC

At the last review Offer assessed Norweb as achieving average efficiency in 1992/3, using statistical techniques. Since then the efficiency of the whole industry has improved and Norweb has kept up, adopting many best practice techniques and working arrangements.

It is more difficult to do efficiency comparisons now because most companies have become part of larger groups, and because the way they report their costs has diverged. But using the same techniques as were used at the last review we conclude that Norweb has maintained its relative efficiency ranking, and the spread between the most and least efficient distribution businesses has narrowed.

Modelling opex plus CCD gives the best fitting regression model, with an R squared statistic of 0.96. This model ranks Norweb seventh in operating efficiency, with a residual of 1 %. This suggests that Norweb is around average in operating efficiency.

2. The base case - maintaining current performance and minimising future costs

2.1 Service to customers

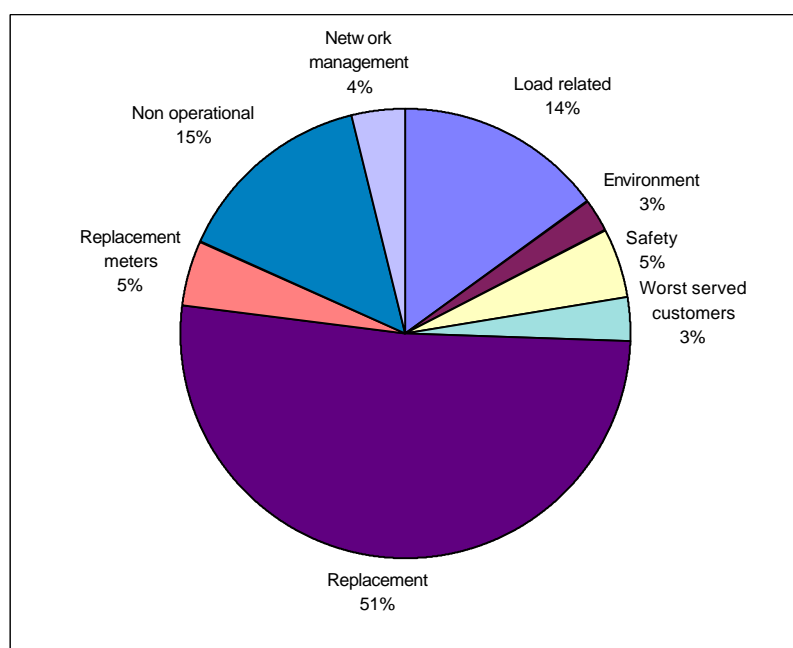
Our base case will maintain the existing performance of the network in terms of customer minutes lost and supply interruptions and will also meet our license obligations.

2.2 Capital expenditure 2000/01 to 2004/5

As noted earlier, the fundamental issue of the price control review for Norweb is the level of replacement investment required over the next 20 years to maintain the current performance of the oldest network of any PES.

NORWEB needs to invest £ 961 million in its network and supporting systems and assets in the five years from 2000/01 to 2004/05 made up as shown in Figure 6.

Figure 6: Investment Requirements from 2000/01 to 2004/05

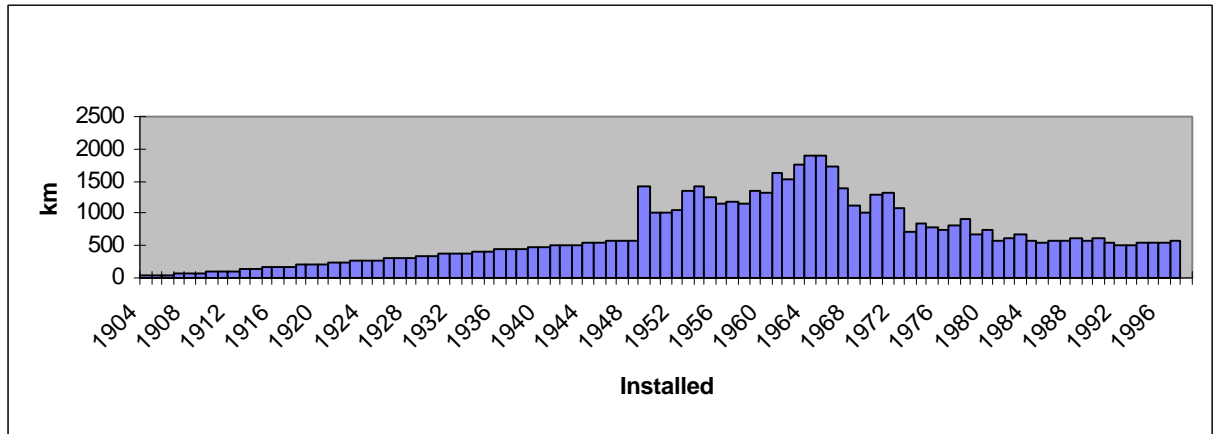


Nearly two thirds of the total network investment needed is on the replacement of overhead lines, underground cables, equipment and meters.

Our oldest underground cables date from 1900 (as illustrated in figure 7), with investment peaking in the late 1960's. Cables can be expected to last on average 60 - 80 years. Our

oldest overhead lines were installed in 1930, with investment peaking in 1960. Overhead lines have an average life expectancy of 45 - 60 years.

Figure 7: Cable Age Profile

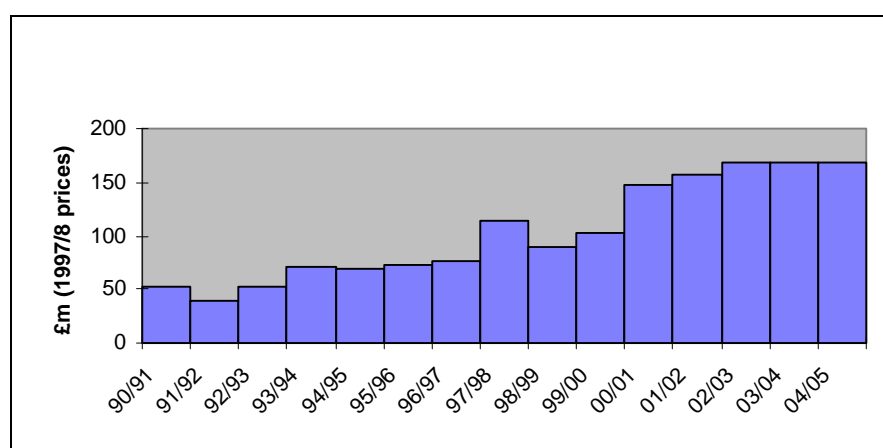


Investment has been lower since 1970, and the average remaining life has been decreasing. This has been the right policy. It would be inefficient to replace assets which are still doing a good job. We maintain our assets well and keep a check on their condition. We replace assets for safety reasons or because they show a deteriorating performance, but not simply because they are old.

However the amount of replacement investment necessary has been growing over the last 10 years and our latest evidence on performance of the network shows that we need to continue to increase our replacement investment, otherwise we will see more faults and interruptions of supplies to customers.

Assisted by respected independent advisors, we have calculated the amount of investment needed to keep the average percentage remaining life of the assets at the present level. Remaining life has been assessed based on condition, rather than age of the assets.

Figure 8: Total Operational Investment 1990 to 2005



The non operational investment we propose covers maintenance of buildings and replacement of other assets reaching the end of their useful lives. IT investment also includes new systems driven by business needs. These include:

- Support for system control through the modelling of the impact of outages
- Support for the formulation of maintenance strategy and JIT asset replacement.
- Customer connectivity records allowing rapid identification of faults , improving the information that could be given to customers and enabling faster restoration times
- Support for the management of logistics of faults through to repair

Non operational investment is essential to our achievement of our opex efficiency target.

2.3 Operating costs 1997/8 to 2004/5

Overall operating expenses can be held constant in real terms, increasing only in line with RPI.

- We have identified a number of specific initiatives to reduce costs and have also set ourselves a further target. In total this gives a saving of 2.5% p.a. of controllable operating expenses.

However there will be some increases in costs.

- The introduction of full competition in electricity Supply from 1998 will create extra administration costs for Distribution businesses. For example, it will be essential to keep a record of the Supplier for each customer on the network
- Some costs such as business rates are not under our control. We believe that the current rate review will increase our business rates by 60%.

- More demanding guaranteed and overall standards would also mean extra operating costs.

Since we are planning to invest only sufficient to keep average percentage remaining life at the same level there will be no change in network maintenance operating expenses, although historical cost depreciation will increase.

3. The Quality Case - Improving Performance

3.1 Customer survey

Professional market researchers, B&MR, surveyed a representative sample of domestic and business customers on our current service, the most important areas for improvement, and the improvements they would find affordable. We have involved the North West Electricity Consumers Committee in the preparation of the survey.

Overall, customers said they would be prepared to pay extra in order to make modest improvements in quality. They believe that rural customers should receive a similar service to urban customers.

Around 70 % of customers said they would be prepared to pay extra towards suggested investment initiatives to reduce either the frequency of supply interruptions or the length of time they last. The average level was £2.48 per quarter for domestic customers and £4.73 per quarter for business customers. This is 12 % of Distribution's average change for a domestic customer.

There was support for refurbishing the network on a like-for-like basis to keep the number of interruptions to the current level

There was also support for modest levels of:

- putting a proportion of overhead lines underground as they come up for replacement, reducing the number of supply interruptions
- automation of the High Voltage network to restore supplies more quickly
- replacing a proportion of existing bare overhead lines with covered lines which stand up to weather and wind borne materials better, reducing the number of supply interruptions

The level of investment that we propose against these initiatives is within the level that customers were willing to fund, but constrained by overall affordability.

Our base case already includes replacement related initiatives;

- £17m for undergrounding of 10% of existing High Voltage overhead lines and 30% of existing Low Voltage overhead lines coming up for replacement, plus undergrounding of some particularly environmentally sensitive lines.
- £3m to replace 10% of overhead lines coming up for replacement with covered conductors

3.2 Quality of Supply benefits

Our quality case would provide initiatives to improve quality of supply at an affordable level. The benefits would be:

- reduce supply interruptions by 3%, or by 1.6 per 100 customers, from our target of 54.8 in 1999/00 to 53.2 by 2004/05.
- reduce customer minutes lost by 6%, or by 3.9, from our target of 64.2 in 1999/00 to 60.3 by 2004/05.

It should be noted that the Quality initiatives build on, and are dependant on the base case investment.

3.3 Quality case capital expenditure 2000/1 to 2004/5

The additional quality case capital investment is £73m, which would pay for:

- further installation of remote control of switching and automation of the 11kV and 6.6kV network bringing faster and more effective restoration of supplies to customers after a fault.
- alternative sources of supply to 1400 substations which have only one high voltage cable supply, and the provision of 10 mobile generators. This will mean that more customers' supplies can be restored quickly after a fault, rather than waiting for the fault to be repaired

3.4 Quality case operating costs 2000/01 to 2004/5

The additional remote control and system automation assets will cost £ 3 million in maintenance, operation and communications costs. Operation of the additional mobile generators will cost £ 1.3 million.

4. Alternative quality objectives

Offer have suggested five possible Quality initiatives which could be included in the Business Plan. The costs and benefits of these initiatives are explained below.

4.1 Expectation of restoration within 12 rather than 24 hours.

Where a fault is temporary (for example caused by bird strike or wind borne debris) supplies can be restored by re-energizing the affected part of the network. If done manually this generally takes under 3 hours. If autoreclosers are fitted they will automatically try re-energizing, generally within one minute.

Where there is a fault that needs repair many of the supplies affected can be restored in a short time through switching to an alternative source of supply, depending on the design of the network. It may also be possible to use a mobile generator to provide a temporary supply.

Where none of the above is possible, the customers affected will be off supply until the fault is located and repaired. This is more difficult where the supply is underground and location and repair involves excavation work. Another consideration is the acceptability to the community of overnight working. 60 % of interruptions are due to faults on underground cables, where the repair time is between 3 and 24 hours.

In 1997/8 out of 1,170,267 supply interruptions there were 8,149* instances of restoration of supply taking between 12 and 18 hours, and 1,399* between 18 and 24 hours.

*Excluding exceptional incidents in the period.

We have improved repair times in the last five years as explained in section 1, but we do not see scope for significant further reductions in average repair time.

To reduce the expectation of restoration to 18 hours we would buy additional mobile generators for £ 1 million and appoint additional fault repair staff at a cost of £ 0.9 million per annum. This is included in our Quality case.

To reduce the expectation of restoration a further 6 hours to 12 hours would not be practical within our present ability to locate and repair underground faults.

4.2 3% increase in 3 hour restoration

Excluding faults restored within one minute, at present Norweb is required to restore 90% of lost supplies within 3 hours.

Significant improvements from the current 90% level would best be achieved by reducing the number of customers off supply for the full time for a fault to be located and repaired.

We estimate that a 1% increase in 3 hour restoration could be achieved by splitting blocks of customers connected to the High Voltage network, at a cost of £15m. Further splitting to achieve the 3% increase in 3 hour restoration would cost a further £70m.

However, our proposed automation of the network is likely to make our performance deteriorate when measured in this way, because some faults that would have been corrected in hours will be corrected in less than a minute. We therefore suggest that this measure should be replaced by a more comprehensive standard which avoids this perverse effect.

4.3 New overall standard targeting 99.5% of customers suffering not more than 3 interruptions of more than one minute per year

To implement such a new standard, we would need to be able to identify every customer affected by each fault. We would need to keep a record of faults for each customer and flag instances of three faults in a 12 month period.

By 1999/00 we will have installed power fail monitors to identify all faults in our High Voltage system, including those of short duration. But we would also need systems to identify individual customers affected by these faults and record customer fault experience. These would be unlikely to be available until 2004 at the earliest.

Without information on the present level of performance it is difficult to comment on the appropriate target level for such a standard.

4.4 New overall standard on loss of supply telephone calls.

The suggested new standard is to answer 90% of loss of supply calls within 15 seconds under normal circumstances, and 80% within 30 seconds in exceptional circumstances.

We estimate that providing a service to meet this standard 24 hours a day, 365 days a year would cost an extra £110,000 a year.

Realistically, we are never likely to have the call centre resources to maintain a 'normal' no supply answering service during the type of exceptional events which occurred during Christmas 1997, when incoming calls increased from an average 1,000 per day to 200,000 on Christmas Eve and 300,000 on Christmas Day.

Therefore in exceptional circumstances it would be sensible to allow a mobilisation period before the standard was applied and an upper limit of calls per hour beyond which the standard should not apply.

4.5 Undergrounding 5% of the High Voltage (11kV and 6.6kV) network by 2004/5

For Norweb, 5% of the High Voltage network means 420km of overhead line. This would cost an average of £60,000 per km to put underground, or a total of £25.2 million.

Underground cables are far less prone to faults, and we would expect to reduce interruptions on the lines replaced by 75 %. By 2004/5 this would mean a reduction of 8250 interruptions a year, or 0.6 interruptions per 100 customers.

4.6 Inclusion of the alternative quality objectives in our plan

Our Quality case includes initiatives to reduce expected restoration time, and a modest amount of undergrounding.

These are included at a level which our customers say is affordable, and not to the extent suggested by Offer.

When the price control review is complete Norweb will keep customers informed of how much is to be invested where and when, and the resulting benefit to customers

NORWEB - TABLE 14.2 SUPPLEMENTARY ANALYSIS OF DISTRIBUTION BUSINESS HCA COSTS - BASE CASE IN 1997/98 PRICES

DESCRIPTION	ACTUAL				FORECAST						
	1994/95 £m	1995/96 £m	1996/97 £m	1997/98 £m	1998/99 £m	1999/00 £m	2000/01 £m	2001/02 £m	2002/03 £m	2003/04 £m	2004/05 £m
NGC exit charges	24.3	22.7	21.1	17.2	16.9	16.5	16.9	16.9	16.9	16.9	16.8
Rates on distribution system	18.7	18.5	18.8	18.6	18.6	18.6	20.5	22.6	25.0	27.6	30.2
Depreciation on distribution system	22.9	22.9	23.8	23.7	25.4	28.1	29.9	32.9	35.3	37.8	40.7
Payroll costs	79.5	75.3	40.8	33.0	34.8	35.1	34.2	33.4	32.1	30.7	29.4
Non payroll IT costs	8.8	8.7	9.3	9.2	19.3	26.3	27.8	30.3	31.3	31.5	31.1
Premises costs	0.0	0.0	3.2	3.0	4.1	4.1	4.0	4.0	3.9	3.7	3.6
Insurance	4.7	2.9	3.7	2.8	2.6	2.7	2.7	2.8	2.7	2.7	2.7
Materials	0.0	0.0	0.0	5.7	5.2	4.8	4.8	4.7	4.5	4.2	4.0
Other	88.9	159.5	85.9	75.0	75.9	67.9	65.3	63.6	63.3	61.4	59.9
Total Costs	247.8	310.5	206.6	188.3	202.8	204.2	206.1	211.1	214.9	216.6	218.4

NORWEB - TABLE 14.4 SUPPLEMENTARY ANALYSIS OF DISTRIBUTION BUSINESS HCA COSTS - QUALITY OF SUPPLY SCENARIO IN 1997/98 PRICES

DESCRIPTION	ACTUAL				FORECAST						
	1994/95 £m	1995/96 £m	1996/97 £m	1997/98 £m	1998/99 £m	1999/00 £m	2000/01 £m	2001/02 £m	2002/03 £m	2003/04 £m	2004/05 £m
NGC exit charges	24.3	22.7	21.1	17.2	16.9	16.5	16.9	16.9	16.9	16.9	16.8
Rates on distribution system	18.7	18.5	18.8	18.6	18.6	18.6	20.5	22.6	25.0	27.6	30.2
Depreciation on distribution system	22.9	22.9	23.8	23.7	25.4	28.1	30.3	33.6	36.4	39.5	43.3
Payroll costs	79.5	75.3	40.8	33.0	34.8	35.1	35.5	34.7	33.5	32.2	31.2
Non payroll IT costs	8.8	8.7	9.3	9.2	19.3	26.3	27.9	30.5	31.5	31.8	31.4
Premises costs	0.0	0.0	3.2	3.0	4.1	4.1	4.0	4.0	3.9	3.7	3.6
Insurance	4.7	2.9	3.7	2.8	2.6	2.7	2.7	2.7	2.7	2.7	2.7
Materials	0.0	0.0	0.0	5.7	5.2	4.8	4.8	4.8	4.6	4.4	4.2
Other	88.9	159.5	85.9	75.0	75.9	67.9	66.0	64.7	64.5	63.3	62.0
Total Costs	247.8	310.5	206.6	188.3	202.8	204.2	208.7	214.5	219.0	222.0	225.4

NORWEB - TABLE 14.6 SUPPLEMENTARY ANALYSIS OF DISTRIBUTION BUSINESS CAPITAL EXPENDITURE - BASE CASE SCENARIO IN 1997/98 PRICES

DESCRIPTION	ACTUAL				FORECAST						
	1994/95 £m	1995/96 £m	1996/97 £m	1997/98 £m	1998/99 £m	1999/00 £m	2000/01 £m	2001/02 £m	2002/03 £m	2003/04 £m	2004/05 £m
Capital expenditure - load related	30.2	27.1	23.7	45.6	35.9	36.0	36.3	41.8	40.0	39.4	36.5
- non load related	54.5	57.0	60.1	76.7	65.7	77.0	122.5	127.1	141.6	141.3	145.0
- non operational	21.7	20.9	15.8	93.2	42.1	18.3	37.8	33.3	25.9	23.3	19.3
- customer contributions	-15.2	-11.1	-7.5	-8.5	-10.2	-10.4	-9.3	-9.5	-9.9	-10.4	-10.8
Net Capital Expenditure	91.2	93.9	92.0	207.0	133.6	120.9	187.2	192.7	197.6	193.6	190.9

NORWEB - TABLE 14.8 SUPPLEMENTARY ANALYSIS OF DISTRIBUTION BUSINESS CAPITAL EXPENDITURE - QUALITY OF SUPPLY SCENARIO IN 1997/98 PRICES

DESCRIPTION	ACTUAL				FORECAST						
	1994/95 £m	1995/96 £m	1996/97 £m	1997/98 £m	1998/99 £m	1999/00 £m	2000/01 £m	2001/02 £m	2002/03 £m	2003/04 £m	2004/05 £m
Capital expenditure - load related	30.2	27.1	23.7	45.6	35.9	36.0	36.3	41.8	40.0	39.4	36.5
- non load related	54.5	57.0	60.1	76.7	65.7	77.0	132.9	136.4	155.2	161.1	164.6
- non operational	21.7	20.9	15.8	93.2	42.1	18.3	37.8	33.3	25.9	23.3	19.3
- customer contributions	-15.2	-11.1	-7.5	-8.5	-10.2	-10.4	-9.3	-9.5	-9.9	-10.4	-10.8
Net Capital Expenditure	91.2	93.9	92.0	207.0	133.6	120.9	197.6	202.0	211.1	213.4	209.6

RPI INDEX TO 1997/98 PRICES	1994/95	1995/96	1996/97	1997/98	1998/99	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05
(future values assume 3% inflation)	145.35	150.08	153.73	158.78	163.54	168.45	173.53	178.74	184.10	189.63	195.31

7. SEEBOARD

Introduction

We welcome the opportunity to outline SEEBOARD's past performance and future plans.

Since privatisation we have achieved significant success in driving rapid and substantial improvements in both operating and capital efficiency. We now believe that we are the most efficient of the companies in terms of total (capital and operating) expenditure and performance. Going forward, we are determined to sustain and build on our performance. It would be unreasonable, however, to expect efficiency to continue to improve at the same extraordinary rate. The switch from public to private ownership created opportunities that cannot be replicated in the future.

Whilst we fully support the efficiency incentives inherent in the RPI-X price control regulation, we strongly believe that the incentives need to be balanced properly. Future revenues must be set by an objective methodology, if the beneficial incentive properties of price cap regulation are to be carried through from one regulatory period to the next. This means penalising the less efficient companies so that they are incentivised to improve performance to that of the most efficient. We, therefore, expect a methodology to be adopted for setting future revenues which provides a clearly defined incentive for efficiency by including a balanced reward for achieving efficiency savings in both operating and capital expenditure, and which penalises inefficiency. As part of this we believe that OPEX and CAPEX should be reviewed together to avoid misleading results and creating incentives to over invest in the network.

Objectives

We have put forward plans to achieve the following aims:

- Our corporate aim is to protect and increase shareholder value. To do this, we aim to maintain our ability to attract capital for future investment, by earning an appropriate return for our shareholders on our past investments.
- As a regulated utility with obligations to consumers, we will aim to minimise long-term costs per customer, to improve service quality to the worst served customers, and to maintain the high level of service received by all our other customers.
- In all our activities, we will have regard to legal objectives imposed by other regulators, and will safeguard the environment, and public and staff safety.

Approach to investment

Our plans comprise both capital investments in extending, improving or replacing the network, and operating expenditure on operations, repairs and maintenance. Both are controlled to ensure that customers' connections, general growth in demand and supply reliability are achieved in the most cost-effective way.

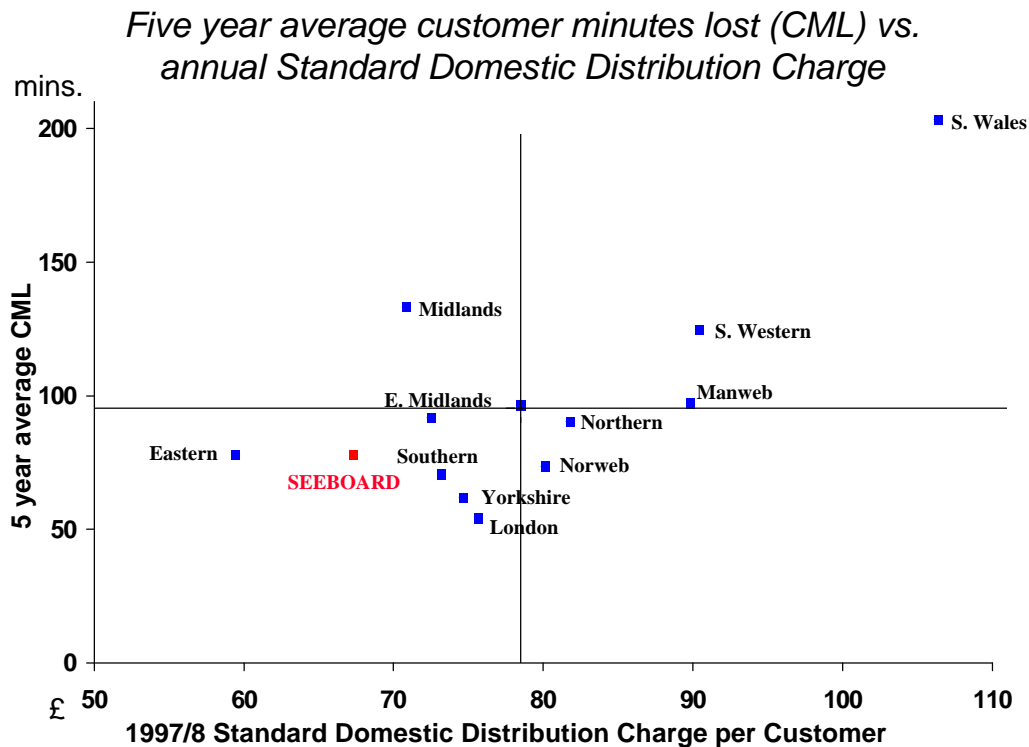
We aim to deliver the best value to customers by getting the right balance between low costs and quality of service. Our investment policies are therefore designed to minimise the long term costs of distributing electricity by:

- achieving a cost effective balance with operating expenditure
- avoiding investments ahead of time
- anticipating and exploiting appropriate new technology and practices
- minimising the cost of solutions
- managing uncertainty
- being responsive to changing customer requirements and network performance

Due to ever changing needs and opportunities it remains essential to operate a dynamic investment programme, rather than a fixed plan, that can be regularly reviewed and flexed to manage risk and reduce cost. The success of this approach can be judged by the considerable capital efficiencies we have been able to achieve.

Value for money

Customers value our service in terms of price and quality. The chart below shows that for



the average domestic customer SEEBOARD delivers one of the best deals of all RECs.

CHANGES

Whilst our underlying costs continue to be largely driven by growth in our customer numbers and the increased costs of operating in outer London and the South East, we now face a number of new pressures that will substantially increase costs. The most significant are:

- Supply competition processes (1998)

- Revisions to the form and level of operational rates
- European Monetary Union, in the event of UK entry
- Employment costs
- Maintenance of tightened quality standards
- Year 2000 costs
- Increases in embedded generation

By 2005, UK Government policies and EU Directives on climate change and energy efficiency, as well as technological and lifestyle changes, could result in network energy demand reducing by 20% compared to previous projections and increases of 450 MW in medium and small scale embedded generation. This could significantly impact both revenues and costs.

EFFICIENCY IMPROVEMENTS

Since privatisation we have taken successive actions to rapidly improve efficiency. By the time the original price controls were announced in 1994 the company had already divided into business streams and significant savings were being achieved and were reported when our revised business plans were submitted in March 1995. Following this we undertook a fundamental review of our plans for the Distribution Business. The outcome of this work was a new strategic approach for the Distribution Business with a client/provider structure based on commercial relationships and a clear focus on customers and business processes. The transformation of the business in line with the strategy took place during 1996 and achieved an additional step change in performance. The scale of the change has been considerable and has impacted every one of our staff in their working practices or the role they undertake.

Throughout the period we have also reviewed and developed our procurement processes, to achieve the best value from our network purchases (28% price saving over the last four years) and achieved considerable efficiencies in our capital investment programmes.

Operating efficiency

Our positive response to the price control incentives to improve efficiency has resulted in a rapid reduction of costs whilst delivering improving standards of customer service. These have produced savings in operating costs of over 33% during the last four years and nearly 40% since privatisation, largely through major labour productivity initiatives which have now fully borne fruit. Beyond this, although significant efficiencies will continue to be made, these will be at a lower level (about 20% after growth over the period to 2004/5) and will be more difficult to achieve and represent fine tuning of the business in terms of building on best practices and wage/productivity improvements.

These efficiencies will be exceeded by increased costs of additional work, including:

- maintaining enhanced levels of quality of supply and service
- supporting the competitive supply market
- year 2000 IT changes

- European Monetary Union
- increased employment and labour costs
- revised rates

Over the period 1998/99 to 2002/3 overall costs excluding depreciation are expected to rise in real terms by about 2% per annum.

Our projections result in real underlying operating costs (excluding depreciation and additional work) reducing from £42.26 per customer in 1997/98 to £34.13 per customer in 2004/05.

Capital Efficiency

We have also applied our rigorous approach to cost efficiency to our capital expenditure programmes and have achieved real net savings of 27% against our March 1995 submission for net capital expenditure. We believe that this is the best performance of all RECs and has been achieved through a combination of procurement savings, internal efficiencies, lower cost engineering solutions, life extension and tailoring our investment to the lower overall growth and requirements of our customers.

These efficiencies generate long term benefits for customers. Not only has the cost of the new assets been reduced, but the policies we are pursuing are ongoing and result in lower capital expenditure requirements than projected before.

Whilst expenditure on quality of supply (including network IT) has been increased, our savings have been achieved predominantly in areas of asset replacement (transformers, switchgear, meters) and major reinforcements where investment ahead of need serves only to increase costs and provides no significant benefit to customers' quality of supply. It also locks out opportunities for more cost effective options that may be available in the future.

We will continue to maintain and build on these savings going forward.

As an example, our policy of condition based replacement and deferment where possible will continue to ensure that asset replacement expenditure is kept to a minimum and remains significantly below the levels forecast at the last review. Nevertheless, there will need to be a steady increase in replacement expenditure year on year to match expected deterioration and ensure environmental and safety compliance.

Despite the need to commence additional programmes (e.g. refurbishment of HV overhead lines) and increases in new business activity, our projection of £388m for net capital investment during the five year period from 2000/01 is 11% below our March 1995 (DR2) submission for the current five year period.

Manpower

There have been six main initiatives which have led to continuing manpower reductions.

- new IT systems
- separation of businesses
- business process re-engineering

- rationalisation of customer services
- distribution strategic change
- corporate restructuring

These initiatives have been enabled by a wide range of changes in working practices such as:

- Multiskilled self managed craftsmen
- Incentive schemes
- Field information systems
- Improved work management systems
- Self permitting craftsmen
- Switching and senior authorisation of craftsmen

The overall effect has been to reduce manpower in Distribution Business activities by 31% from 1993/4 to 1997/8. Throughout we have ensured, by increasing the flexibility of our resources, that we have continued to deliver good service to our customers. For instance over the past three years we have increased by 55% the number of staff authorised for operational switching, which is a major factor in responding to network failures.

Purchasing

Innovative contracts, effective specifications, volume leverage and market trends have enabled cost savings of 28 % in network goods and services to be achieved in the period from 1994/5 to date. We have obtained not only price reductions but overall cost reductions resulting from the way we purchase, such as reduced installation and storage costs.

Best Practices and Efficiency Studies

We have looked both externally and internally to identify best practices and implement these within our businesses. External or externally facilitated studies include:

- UK & world wide benchmarking
- business process re-engineering
- reviews of our purchasing, logistics, telecommunications, IT, transport
- reliability centred maintenance

Internal studies include:

- best practices study within CSW
- distribution strategic change
- market pricing

Regression analysis of REC 1997/98 controllable operating costs shows that SEEBOARD has amongst the lowest operating costs per customer which are around 16% better than a company of average efficiency.

Information Technology

Our investments in new network information systems form an integral part of overall network investments and are key to delivering good standards of service. Despite a range of technical challenges and complexities, we have successfully implemented two of our largest ever projects to put in place the most advanced Customer Information and Network Management Systems in the country.

The Network Management System, together with the Asset Management System, Decision Support tools, enhanced monitoring and analysis techniques are enabling better utilisation and life extension of existing assets, thereby allowing asset replacement, maintenance and load related reinforcement expenditure to be reduced. Our Customer Information System and the developing Trouble Management System are enabling us to improve fault restorations and information to customers. The Map Management System, currently being developed, is essential for the long term management of network assets and replacement of records.

Other investments, such as office automation, field computing, metering systems and improvements to work management systems have formed an integral part of our operational efficiency improvements.

QUALITY OF SERVICE STANDARDS

After the last review we tightened our already aggressive targets for quality of supply improvements. Whilst these have proved more difficult to achieve than we had expected, the evidence from surveys shows that nearly all our customers are happy with the reliability of their supply and most do not want to pay for any further improvements. Indeed, the latest survey carried out by MORI in September 1998 showed less than 2% were dissatisfied.

We are therefore convinced that improvement efforts should be directed in a cost effective way at our worst served customers. We do not believe that expensive wide scale investment programmes to reduce overall levels of customer minutes lost, but whose benefits are not discernible to an individual customer, can be justified.

As a consequence, our approach is to concentrate on ensuring that the current level of performance is maintained in association with expenditure to raise the standard of supply to the less than 2% who are dissatisfied with their current quality of supply. Our future strategy builds on our current programmes and focuses on:

- improving supply reliability to worst served customers
- reducing transient interruptions
- maintaining restoration times
- improving severe/adverse weather performance
- providing better customer information - especially during restoration of faults

Current Performance

Achievements so far against quality standards and targets are:

Regulated standards - all four consistently met or bettered for restoring customers' supplies after faults and rectifying voltage complaints.

Worst served customers - we have already achieved 99.97% success against our year 2000 target that no customer shall experience more than four interruptions per year (averaged over 5 years) due to HV faults and work is in hand to remedy this for the 596 customers whose supplies are not up to this standard.

Number of interruptions per connected customer - we achieved in 1996/97 our year 2000 target

Customer minutes lost per connected customer - between 69 and 92 since 1994/5 against our year 2000 target of 60.

During the past two years our customer minutes lost have been higher than expected due to bedding down of our new distribution organisation and increasing traffic congestion in urban areas. Improvement initiatives are now starting to achieve significant reductions in restoration times and this year we expect to see a substantial underlying reduction in customer minutes lost.

Between November 1996 and March 1997 we introduced an IT system (Network to Premises Link) which accurately records the number of customers affected by a fault. This has been shown to produce figures for customer minutes lost per connected customer and interruptions per 100 customers which are around 15% higher than the previous manual methods on which the year 2000 targets for these indicators were set. These manual methods are still widely used in some other companies. The year 2000 targets, when adjusted for the change to the new reporting method, become 67 customer minutes lost and 90 interruptions (for average weather conditions). We expect to achieve or better these targets in 1999/2000.

As Quality of Supply levels are driven by a range of expenditure on network related IT, telecommunications, operational activities (maintenance, operations) and network capital expenditure on overhead line refurbishment, system improvement and replacements after fault, we carefully balance capital and operating expenditure to achieve the most cost effective means of maintaining and improving performance. About 30% of our network capital investment is directly associated with quality of supply

By adopting more cost effective operating cost solutions (e.g. restoration process improvements, increased tree cutting, cable damage initiative etc.) in preference to expensive network investments we have achieved investment savings of up to £20m.

Future Quality of Supply Improvements

Under the Quality of Supply Measures Scenario we have proposed an improvement programme of £18m capital investment and £ 0.4m additional operating costs to achieve the following targets:

- measure and reduce transient interruptions
- ensure 99.99% of customers do not experience an average of more than four interruptions per year over five years from any fault cause.
- ensure 97% of customer have three or less unplanned interruptions in any one year
- ensure 99.9% of customers interrupted are restored within 18 hours

Ongoing capital investments and operating costs will be required in future periods to maintain these enhanced standards.

We have assumed that other guaranteed and regulated standards remain unchanged.

CONCLUSIONS

Value for Money

We have consistently delivered amongst the best value to customers in terms of low prices and overall performance of all other companies.

Operational And Capital Efficiency

We have achieved exceptional success in driving rapid and substantial improvements in both operating and capital efficiency, to a position where we now believe we are the most efficient of the companies in terms of total (capital and operating) expenditure and performance

Since 1994/5 we have reduced operating costs by 33%, manpower by 31%, network procurement costs by 28% and generated net capital efficiencies of 27%

Incentives And Rewards

However, future revenues must be set by an objective methodology, if the beneficial incentive properties of price cap regulation are to be carried through from one regulatory period to the next. This means penalising the less efficient companies so that they are incentivised to improve performance to that of the most efficient. We, therefore, expect a methodology to be adopted for setting future revenues which provides a clearly defined incentive for efficiency by including a balanced reward for achieving efficiency savings in both operating and capital expenditure, and which penalises inefficiency. As part of this we believe that OPEX and CAPEX should be reviewed together to avoid misleading results and creating incentives to over invest in the network.

Customer Opinion

After the last review we tightened our already aggressive targets for quality of supply improvements. Whilst these have proved more difficult to achieve than we had expected, the evidence from surveys shows that nearly all our customers are happy with the reliability of their supply and most do not want to pay for any improvements

Quality Of Service

We are therefore convinced that improvement efforts should be directed in a cost effective way at our worst served customers and that other existing overall standards should be maintained. We do not believe that expensive wide scale investment programmes to reduce overall levels of customer minutes lost, but whose benefits are not discernible to an individual customer, can be justified

Change Drivers

Whilst customer numbers remains the most important driver of our costs, other new pressures such as maintaining enhanced levels of quality of supply and service, supporting the competitive supply market, year 2000 IT changes., European Monetary Union, increased employment and labour costs, and revised rates will cause future costs to rise.

By 2005, UK Government policies and EU Directives on climate change and energy efficiency, as well as technological and lifestyle changes could potentially result in network energy demand reducing by 20% compared to previous projections and increases of 450 MW in medium and small scale embedded generation in SEEBOARD's area.

Future Plans And Projections

Now that the major initiatives have fully borne fruit, it would be unreasonable to expect efficiency to continue to improve at the same extraordinary rate as has been achieved since privatisation. The switch from public to private ownership created opportunities that will not be replicated in the more stable environment to come. Our plans build therefore on our achievements to date to deliver smaller, but significant, underlying reductions in real operating costs/customer of 20% by 2004/5 and maintain ongoing capital efficiencies

Risks

There are a number of risks to the business over which we have no control as to whether they happen or not. They potentially involve substantial sums of money and their effects are asymmetric. These include operational rates increases, termination of consents, increases in embedded generation, tighter imposition of environmental and safety legislation, and imposition of further social obligations. Whilst we have made some allowances for lower electricity demand due to a range of energy efficiency measures and lifestyle changes, extension of these measures and other future social and environmental changes pose significant risks to network investment and revenues which, in accordance with the guidance, are excluded from the submission. It is essential that the ongoing regulatory framework provides sufficient flexibility to ensure that we are not unduly financially exposed to the impact of such risks between reviews, and that material additional costs of doing business are taken into account at each review.

SEEBOARD - TABLE 14.2 SUPPLEMENTARY ANALYSIS DISTRIBUTION BUSINESS HCA COSTS - BASE CASE IN 1997/98 PRICES

DESCRIPTION	ACTUAL				FORECAST						
	1994/95 £m	1995/96 £m	1996/97 £m	1997/98 £m	1998/99 £m	1999/00 £m	2000/01 £m	2001/02 £m	2002/03 £m	2003/04 £m	2004/05 £m
Payroll costs	60.4	51.5	38.1	39.1	40.6	41.7	40.4	40.2	39.8	39.5	39.5
Payroll costs exceptional	18.9	9.7	-18.9	-4.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non payroll IT costs	10.4	9.9	10.1	12.0	15.1	14.9	14.9	19.1	19.8	13.6	13.7
Depreciation of distribution system	19.2	19.6	20.5	21.5	23.9	24.0	25.6	26.6	27.6	28.6	28.8
Formula rates	14.0	13.3	14.3	14.7	14.5	14.5	17.5	17.5	17.5	17.5	17.6
Premises costs	6.9	6.2	6.0	5.1	5.2	4.7	4.4	4.4	4.3	4.3	4.2
Insurance	2.9	3.0	2.9	2.5	2.7	2.9	3.4	3.4	3.4	3.3	3.4
Wayleaves	1.7	1.8	1.7	1.6	1.7	1.8	1.8	1.8	1.8	1.8	1.9
Materials	11.5	10.7	7.0	9.3	12.5	13.5	13.6	13.3	13.5	13.6	13.8
Transport	5.6	6.1	5.8	5.7	5.0	4.6	4.6	4.6	4.6	4.6	4.6
Telecoms	3.5	3.0	3.7	3.9	3.9	3.7	3.8	3.7	3.8	3.9	3.7
Fees	3.1	2.6	3.1	2.6	3.1	3.3	3.4	3.4	3.4	3.3	3.3
NGC exit charges	27.2	25.6	23.7	17.2	17.6	18.3	19.0	20.2	19.9	19.3	18.8
Other	21.5	30.1	11.6	4.3	2.0	10.4	10.9	10.7	10.4	6.8	-0.2
Total Costs	206.8	193.3	129.5	134.8	147.8	158.2	163.4	168.8	169.8	160.1	153.2

SEEBOARD - TABLE 14.4 SUPPLEMENTARY ANALYSIS OF DISTRIBUTION BUSINESS HCA COSTS - QUALITY OF SUPPLY SCENARIO IN 1997/98 PRICES

DESCRIPTION	ACTUAL				FORECAST						
	1994/95 £m	1995/96 £m	1996/97 £m	1997/98 £m	1998/99 £m	1999/00 £m	2000/01 £m	2001/02 £m	2002/03 £m	2003/04 £m	2004/05 £m
Payroll costs	60.4	51.5	38.1	39.1	40.6	41.7	40.4	40.2	39.8	39.5	39.5
Payroll costs exceptional	18.9	9.7	-18.9	-4.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non payroll IT costs	10.4	9.9	10.1	12.0	15.1	14.9	14.9	19.1	19.8	13.6	13.7
Depreciation of distribution system	19.2	19.6	20.5	21.5	23.9	24.0	25.6	26.8	27.9	29.0	29.2
Formula rates	14.0	13.3	14.3	14.7	14.5	14.5	17.5	17.5	17.5	17.5	17.6
Premises costs	6.9	6.2	6.0	5.1	5.2	4.7	4.4	4.4	4.3	4.3	4.2
Insurance	2.9	3.0	2.9	2.5	2.7	2.9	3.4	3.4	3.4	3.3	3.4
Wayleaves	1.7	1.8	1.7	1.6	1.7	1.8	1.8	1.8	1.8	1.8	1.9
Materials	11.5	10.7	7.0	9.3	12.5	13.5	14.0	13.8	14.0	14.0	14.2
Transport	5.6	6.1	5.8	5.7	5.0	4.6	4.6	4.6	4.6	4.6	4.6
Telecoms	3.5	3.0	3.7	3.9	3.9	3.7	3.8	3.7	3.8	3.9	3.7
Fees	3.1	2.6	3.1	2.6	3.1	3.3	3.4	3.4	3.4	3.3	3.3
NGC exit charges	27.2	25.6	23.7	17.2	17.6	18.3	19.0	20.2	19.9	19.3	18.8
Other	21.5	30.1	11.6	4.3	2.0	10.4	10.9	10.7	10.4	6.8	-0.2
Total Costs	206.8	193.3	129.5	134.8	147.8	158.2	163.7	169.4	170.5	160.8	154.0

SEEBOARD - TABLE 14.6 SUPPLEMENTARY ANALYSIS OF DISTRIBUTION BUSINESS CAPITAL EXPENDITURE - BASE CASE SCENARIO IN 1997/98 PRICES

DESCRIPTION	ACTUAL				FORECAST						
	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05
	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m
Capital expenditure - load related	28.8	23.4	26.6	22.3	25.4	29.0	27.1	23.4	22.1	21.3	19.6
- non load related	35.0	46.1	49.8	41.6	50.0	48.5	52.7	54.9	55.4	56.9	56.9
- non operational	14.9	5.1	15.3	29.5	33.5	12.0	12.7	10.0	8.4	9.1	9.0
-customer contributions	-18.8	-16.6	-12.7	-16.1	-16.0	-19.6	-14.0	-10.3	-8.9	-9.0	-9.3
Net Capital Expenditure	59.9	58.0	79.0	77.3	92.9	69.9	78.5	78.0	76.9	78.3	76.3

SEEBOARD - TABLE 14.8 SUPPLEMENTARY ANALYSIS OF DISTRIBUTION BUSINESS CAPITAL EXPENDITURE - QUALITY OF SUPPLY SCENARIO IN 1997/98 PRICES

DESCRIPTION	ACTUAL				FORECAST						
	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05
	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m
Capital expenditure - load related	28.8	23.4	26.6	22.3	25.4	29.0	27.1	23.4	22.1	21.3	19.6
- non load related	35.0	46.1	49.8	41.6	50.0	49.5	56.4	58.7	59.2	60.0	58.4
- non operational	14.9	5.1	15.3	29.5	33.5	12.0	12.7	10.0	8.4	9.1	9.0
-customer contributions	-18.8	-16.6	-12.7	-16.1	-16.0	-19.6	-14.0	-10.3	-8.9	-9.0	-9.3
Net Capital Expenditure	59.9	58.0	79.0	77.3	92.9	70.9	82.2	81.8	80.7	81.4	77.7

RPI INDEX TO 1997/98 PRICES	1994/95	1995/96	1996/97	1997/98	1998/99	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05
(future values assume 3% inflation)	145.35	150.08	153.73	158.78	163.54	168.45	173.53	178.74	184.10	189.63	195.31

9. SOUTHERN ELECTRIC

OVERALL STRATEGY

1. Over the last five years Southern Electric has been transformed from an average Regional Electricity Company (REC) to a company now recognised as being one of the best run utilities in the world. Our challenge is to remain the sector leader by continually striving to find better ways of serving our customers.
2. Southern Electric's strategy is to:
 - drive down controllable costs by finding ways to make our Distribution business more efficient;
 - provide a high quality service, responsive to changing customer demands and delivering top quartile performance;
 - provide an increasingly reliable service and secure asset base by making judicious investment in both our network and new systems.
3. This business plan shows how Southern Electric has translated this strategy into action and how it plans to develop its Distribution business in future.

REDUCTIONS IN OPERATING COSTS

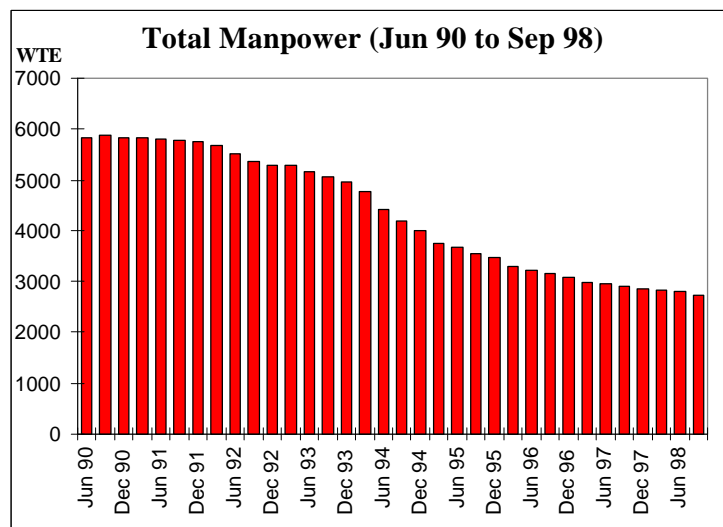
4. The last few years have seen an exceptional reduction in Southern Electric's Distribution business operating costs. Between 1994/95 and 1997/98 controllable costs have been reduced by 33% in real terms.



5. The reduction has come from a whole range of initiatives geared around a combination of:

- **streamlined structures;**
- **a unique staff agreement;**
- **new IT systems.**

6. Southern Electric has changed virtually every aspect of the way it organises and runs its Distribution (and Supply) businesses – from senior managers to field operatives and right across our engineering, customer service and support activities. This has led to very significant reductions in the staff employed in the core businesses, particularly between March 1994 and March 1997, as shown below.



Streamlined Structures

7. In 1993 we abolished an integrated six division structure covering both engineering and customer service, each with its own substantial support and managerial overheads. These have been replaced by two functionally driven customer service centres and a network of nine local depots carrying out all routine field operations.

Unique Staff Agreement

8. We also concluded a radically new staff agreement which provided the springboard for major improvements in productivity and cost reduction by:
- increasing effective time – the proportion of time spent on directly productive work;
 - direct-to-site reporting;
 - new work programme and resource control arrangements;
 - greater flexibility – through multi-skilling to enable staff to undertake a wider range of tasks on any given job.

New IT Systems

9. We have undertaken a substantial programme of IT development:
- a “state of the art” integrated engineering system, including a central engineering database, digital maps for our network records, computerised network control and a new incident reporting system to improve information to our customers;
 - a completely new major customer system providing the interface with our customers for both Distribution and Supply.

OUR CURRENT CAPITAL EXPENDITURE PROGRAMME

Overview

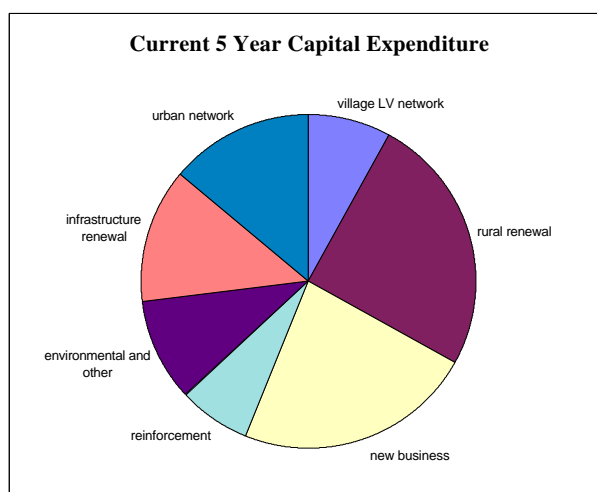
10. Our capital investment decisions are driven by a number of factors: investing capital to replace equipment as it approaches the end of its useful life; ensuring the safety of the public and our staff; meeting increasing demands; and importantly improving the reliability of supply to our customers. A key part of our approach is to extract the maximum benefits from both exploiting the synergies between the different drivers and of being able to optimise our programme over a full five year period.

Comparison with OFFER’s assumptions

11. The current price controls incorporated specified levels of assumed capital expenditure for each REC over the period to 1999/00. The Director General of Electricity Supply stated that he “*would not expect companies’ capital expenditure programmes to diverge significantly from the assumptions underpinning the programme*”. Our capital expenditure for the period to 1999/00 is expected to be some £695m in total. This equates to some 98% of OFFER’s target of £708m.

Our Current Capital Programme

12. A breakdown of our current capital programme is given below:



New Business Expenditure – over the current period Southern Electric expects to connect some 138,000 new customers ranging from domestic to large industrial.

Reinforcement – kept low by driving our plant harder to absorb most of the continuing increases in demand.

Rural Renewal / Refurbishment – we are rebuilding the backbone of our 11kV overhead network using BLX, a covered conductor system for HV overhead lines. This has a fault rate approaching one tenth of that for existing open wire systems, because it is much less susceptible to damage caused by strong winds and trees.

Village LV Network Refurbishment – sections of our existing open wire LV overhead network in small towns and villages are being replaced with Aerial Bundled Conductors. The programme is prioritised by network asset condition, recent fault rates, customer numbers and environmental factors.

Urban Network Renewal – the predominant cause of faults in urban areas is third party damage. We are applying automation to strategic / higher risk 11kV switches to be able to respond to customer interruptions within a matter of minutes rather than hours. We are also identifying and targeting areas where particular cable systems have proved troublesome in the past.

Infrastructure Renewal - we are renewing a range of assets including replacing switchgear, transformers and EHV overhead lines.

Improved Efficiency in our Capital Programme

13. While we are spending almost exactly the total expenditure assumed by OFFER over the current period – in line with our regulatory bargain – we are delivering our capital programme with ever increasing efficiency. This is allowing us to deliver greater benefits to our customers for the same expenditure. Some key examples of improving efficiency are given below:

Improved Specification and Procurement – based on surveys carried out by an independent specialist consultancy we purchase our engineering plant and materials some 15-20% cheaper than RECs on average.

Latest Design and Technology – we have applied technology in an innovative way, for example, using covered conductors and reconfiguring the HV overhead network.

Prioritising Schemes – we have developed a process of Planning Briefs for capital schemes. Key data is held in a database which enables a quantified ranking of priorities to determine which schemes should be implemented.

Improved Productivity – we have implemented incentive schemes, flexible rostering, multi-skilling and direct-to-site working which have made the use of our staff more cost effective.

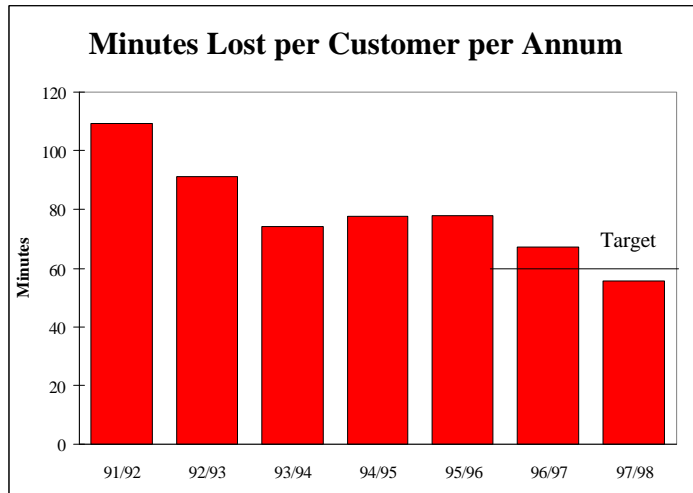
Specialist Project Teams – we have introduced project teams dedicated to completing particular programmes of renewal work.

IMPROVEMENTS IN CUSTOMER SERVICE

14. A key part of our strategy is to make ourselves more efficient and to invest in capital expenditure in ways which will deliver a high quality service. Since the last Review Southern Electric has improved customer service “across the board”.

Network Reliability

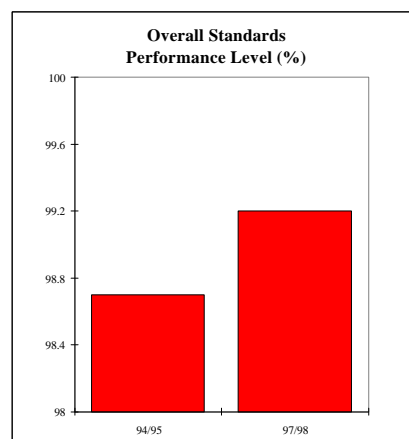
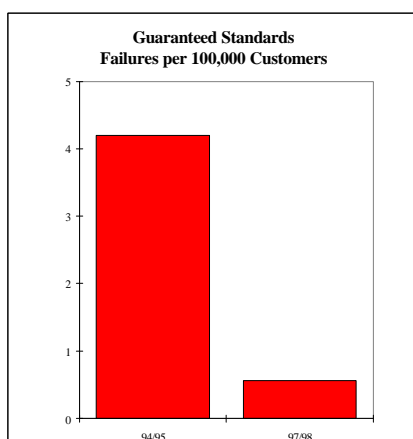
15. Having reduced customer minutes lost by 25% by 1994/95, we then set the target of a further 20% improvement – to less than 60 minutes pa – by 1999/00. We have achieved this two years early.



16. Short term supply interruptions are of increasing concern to customers as modern appliances rely on electronic clocks and timers, and computers can be affected. We have reduced them by 56% since 1994/95; we aim to maintain this improvement.

Guaranteed and Overall Standards

17. Southern Electric is meeting or exceeding all its Overall Standards and has significantly improved its service levels since 1994/95. In addition, it now has exceptionally low failure rates on Guaranteed Standards.

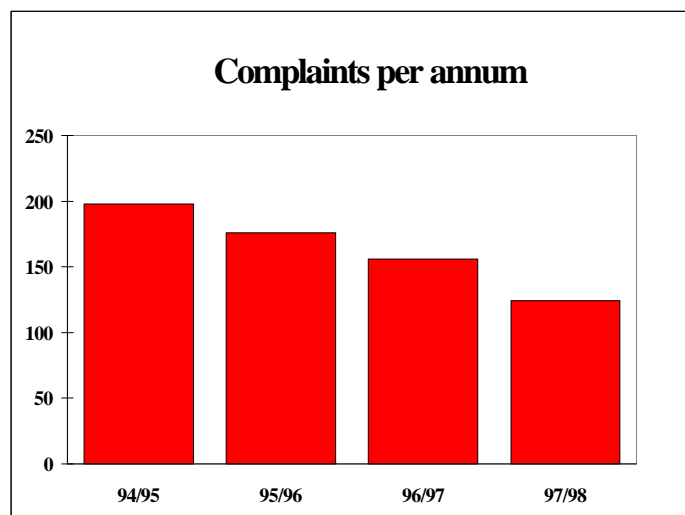


Customer Complaints

18. A concern of customers is the lack of precise information during fault outages. In response we have introduced a new control system coupled with an

emergency centre equipped with the latest telephony technology. A system of computer programmes linked to Network Control and our Geographic Information System will enable us to readily identify fault locations from customers calls. We can then despatch rapid response teams more efficiently and provide more up-to-the minute customer information during faults.

19. As a result of such initiatives customer complaints concerning supply interruptions and quality of supply have dropped by 37% between 1994 and 1998, as shown below. This is particularly encouraging compared to the other RECs where on average complaints have increased by 23%.



COMPARISONS WITH THE OTHER RECS

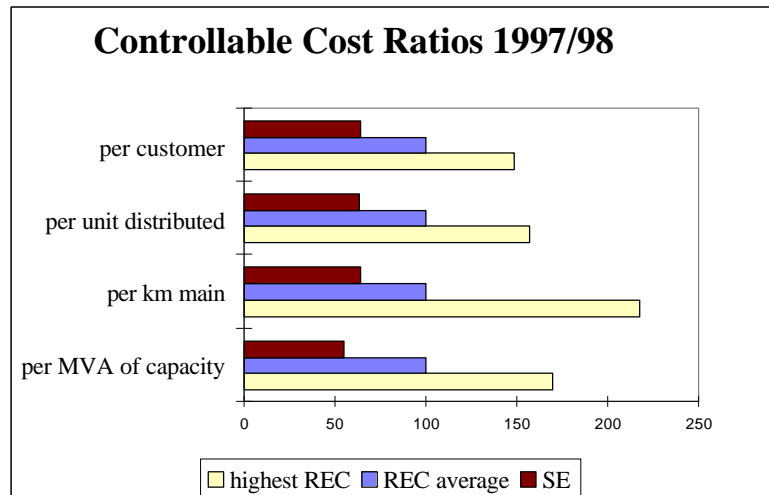
20. We regularly measure the performance of our Distribution business against that of the other RECs in terms of:
- controllable costs;
 - customer service standards.

On every measure of customer service we are top quartile; on operating costs we are consistently “best in class” as shown below.

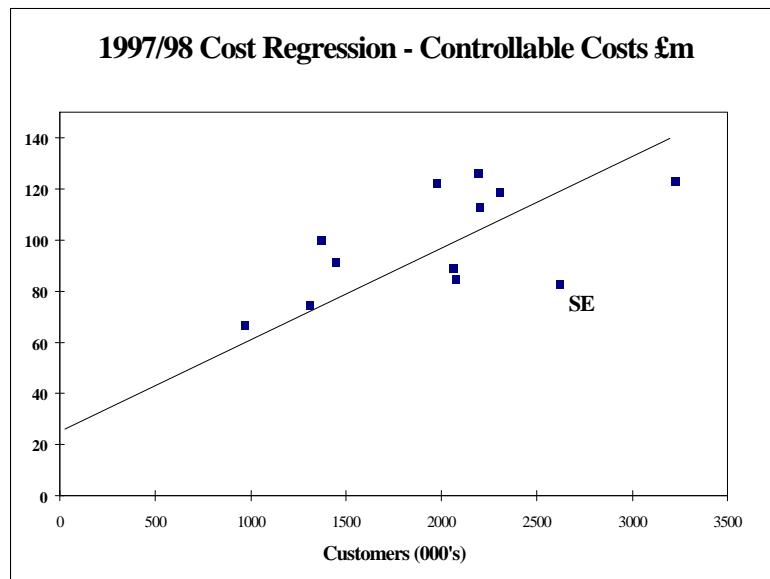
Controllable Costs Comparisons

21. Our controllable cost performance is significantly better than the REC average:
- cost per customer 36% lower;
 - cost per unit distributed 37% lower;
 - cost per km mains 36% lower;

- cost per MVA of transformer capacity 45% lower.

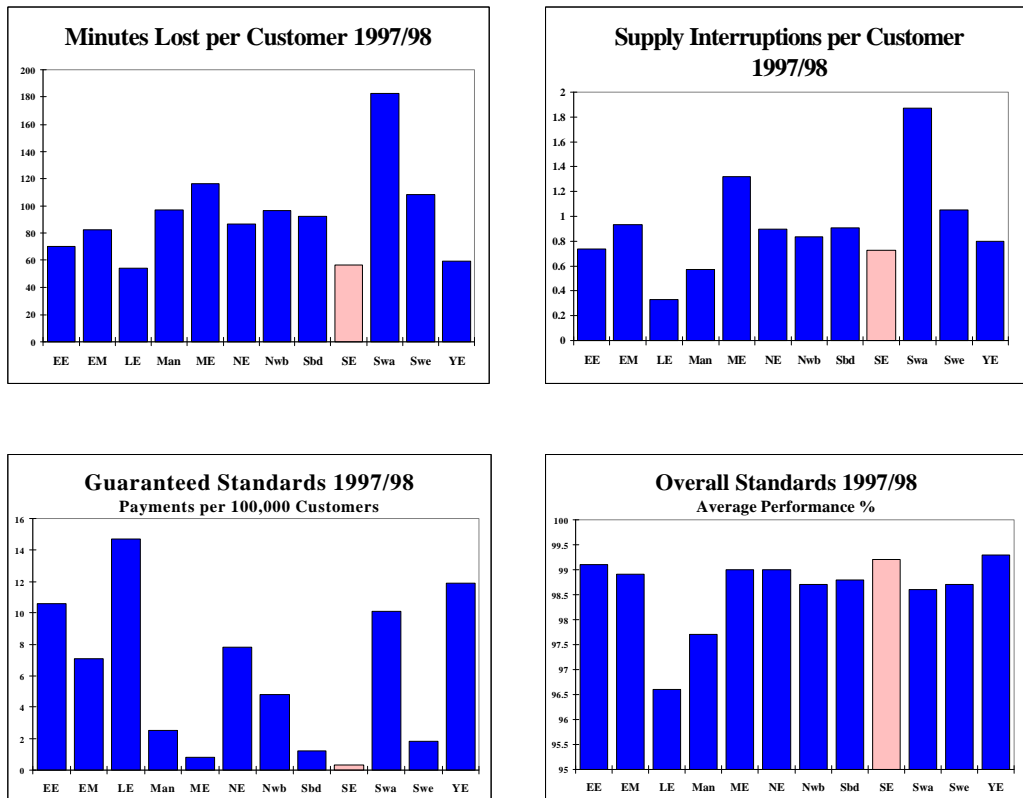


22. During the last Review a number of cost comparisons were carried out to evaluate REC's relative efficiencies. We have updated this to 1997/98 and the diagram below shows the position of each REC and average cost line. Southern Electric has very much lower operating costs than an averagely performing REC of its size.



Customer Service Standards

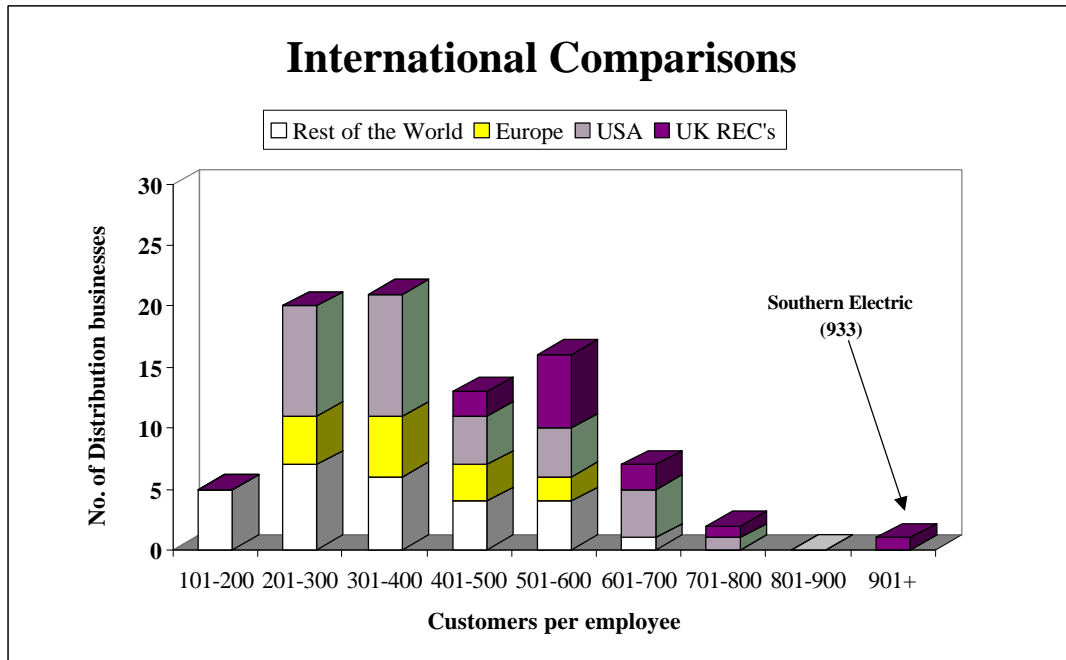
23. Southern Electric's exceptional efficiency has not been at the expense of customer service – quite the opposite. Our twin track approaches of improving efficiency and customer service together have given us the highest service standards. The four key measures of customer service performance for Distribution are shown below. On each measure our performance is top or top quartile; the only REC with such a record.



INTERNATIONAL COMPARISONS

24. Southern Electric benchmarks its performance with other comparable electricity businesses worldwide as well as with other RECs. By comparing customers per manpower ratios with a wide range of electricity companies worldwide a very clear pattern emerges:

- the UK RECs are among the most efficient electric utilities worldwide;
- Southern Electric is the most efficient of the UK RECs and no other electricity company worldwide matches its performance.



25. While all the UK RECs have improved since 1994/95, Southern Electric has made radical changes to every aspect of its activities and has made exceptional strides in efficiency and customer service. It is not only the most efficient REC, it is truly the benchmark for others to aim for worldwide. This performance is combined with top quartile customer service.

DEVELOPMENT PLAN TO 2004/05

26. Previous sections setting out our strategy and achievements have shown the exceptional performance Southern Electric delivers both in absolute and relative terms. This section shows how we intend to take our Distribution business forward over the period to 2004/05. Our plan for the future is built on continuing our strategy of:

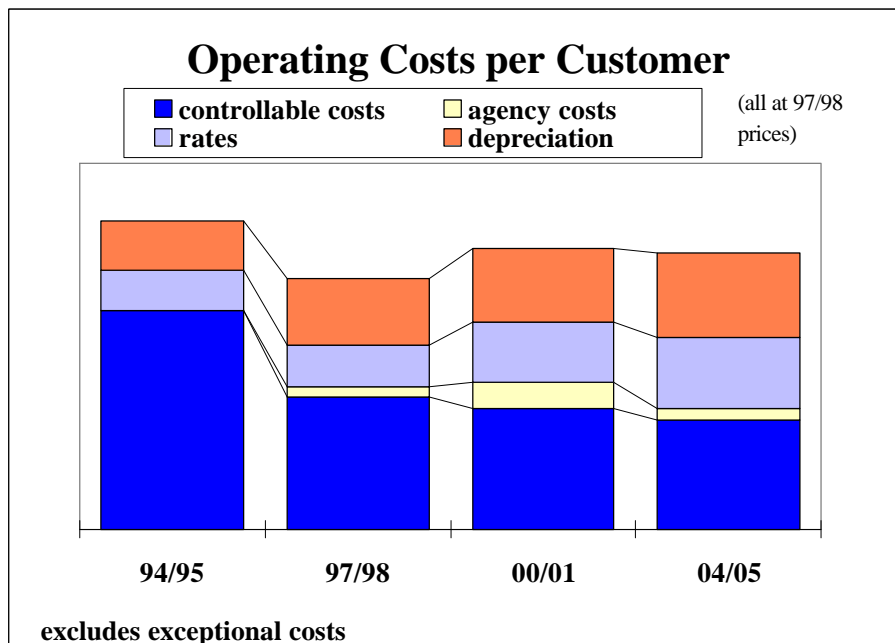
- **driving down controllable costs;**
- **providing high quality service;**
- **judicious investment in our network and systems.**

27. Our plan assumes that the Distribution business remains under a system of incentive regulation which rewards those who deliver the best possible performance and those who make the necessary investments in their networks for the future. It also assumes that Southern Electric will remain free to organise its Distribution business activities in the most efficient way possible and, where appropriate, can take advantage of economies of scale from operating alongside Supply.

28. It is increasingly difficult to achieve further significant improvements in efficiency while delivering the highest levels of customer service. We have already radically streamlined our whole organisation and introduced new staff agreements and company IT systems. There are also increasing demands placed on the Distribution business in its role of providing Agency Services to support the competitive market. Nevertheless, we intend re-doubling our efforts across every aspect of our Distribution business to deliver still higher performance and reduce further our controllable costs per unit. At the same time we will continue to invest in our network to meet increasing customer demands.

OPERATING COSTS TO 2004/05

29. The following diagram shows our trend in operating costs per customer over the ten year period 1994/95 to 2004/05 (in constant prices).



30. After the period of rapid reduction since 1994/95, costs per customer are expected to increase to the year 2000/01 but with a reduction thereafter. This overall picture masks quite different patterns in the key components which make up operating costs as described below:

Controllable Costs – while it will not be possible to repeat the scale of improvement Southern Electric has delivered over the last few years, nevertheless we shall see scope for continuing reductions. By challenging our performance across every aspect of our Distribution operations we aim to deliver a 17% reduction in controllable costs per customer over the period 1997/98 to 2004/05. A key part of this will be still further improvements in efficiency – we are aiming to increase our customers per Distribution employee ratio by 24%. A very considerable challenge given our current world beating

performance described earlier. Taken over the whole ten year period our controllable costs per customer will have reduced by half in real terms.

Agency Costs – Southern Electric’s Distribution business has to provide ‘Agency’ services to any supplier competing in its area. This is a new responsibility on top of network management activities. The costs are both the development costs (written off over a five year period) and the running costs.

Formula Rates – the rates bill Distribution has to pay for the use of land made by its network is calculated by a special formula. Over recent years this cost has increased slowly in real terms. However, there is a major Government review which may well lead to a substantial increase in the rates bill paid by companies like Southern Electric.

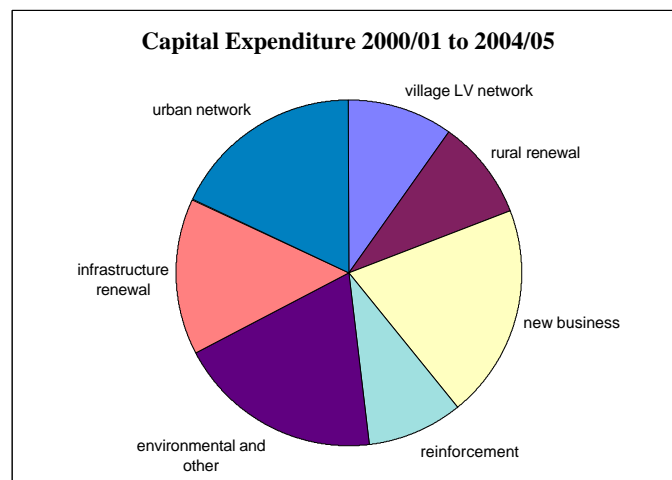
Depreciation Costs (HCA) – the increase in depreciation costs flows from our present capital programme and our plan for the following five years which is described below.

CAPITAL PROGRAMME TO 2004/05

31. Over the five year period to 2004/05, our “base case” capital programme requires the expenditure of some £746m (at 97/98 prices). It is designed to meet a number of requirements:
 - growth in demand and new connections – we need to meet increasing customer demands;
 - safety and environment – there are ever increasing demands to meet environmental and safety concerns;
 - quality of supply – we need to ensure our investment keeps pace with network ageing and deterioration and to deal with emerging quality of supply issues;
 - asset renewal – we will continue to keep our assets operating in a safe and reliable condition and maintain the long term health of our network by a prudent replacement policy.

32. Our capital expenditure is designed to meet all of the requirements as efficiently and effectively as possible by a co-ordinated five year programme. Individual schemes are, therefore, often designed to satisfy a number of requirements.

33. The breakdown of our programme into its key work areas is given below:



New Business – our new business spend is driven essentially by customer growth over the period. Between 2000/01 and 2004/05 we estimate that some 150,000 new connections will be required.

Reinforcement – we will continue to keep our expenditure on reinforcement as low as possible by better planning, driving plant even harder and taking every opportunity to increase the capability of our network where this can be done cost effectively as part of other initiatives in the capital programme.

Rural Network Renewal – our current capital investment includes substantial expenditure on rural reliability. There remain, however, a number of ‘time expired’ HV overhead lines with solid copper or steel conductors where fault rates are high and increasing which need replacing. In addition, to keep pace with deterioration we will continue with a programme of minor renewal work on our remaining lines.

Urban Network Renewal – a major programme of replacing our older EHV/HV cables is not justified. We are planning modest selective replacement coupled with investment in remote operation facilities. In addition, approximately 25% of our underground network uses a type of cable known as “Consac”. Owing to fundamental design issues the fault rate on this is very high and increasing, and we need to accelerate our replacement of this to avoid significant deterioration in reliability to the customers affected.

Village LV Network Refurbishment – while we have made considerable progress parts of our LV overhead network are still in poor condition and need replacing. This is particularly so for lines erected pre-war due to age related deterioration, annealing of conductors and tree contact during storms. There are also a range of overhead services erected prior to 1957 reaching the end of their useful lives, with under eaves wiring in some locations deteriorating such that it would give an unacceptable fire risk.

Infrastructure Renewals and Asset Life Extension – based on condition assessment we need to renew a number of parts of our key ‘backbone’ Distribution assets to maintain the integrity of our network. Typically the replacement levels proposed amount to some 3% of the total amount of the type of plant and equipment we have on the network.

Network Alterations / Environmental and Safety Work – we have to modify our network in response to a range of external events and pressures:

- “betterment” work associated with diversions associated with roadworks and new developments;
- underground our overhead lines for safety / environmental reasons where they cross areas such as fishing lakes, recreation areas and playing fields.
- new assets resulting from major fault repairs.

QUALITY OF SUPPLY

34. The “base case” capital programme described above should, at least, maintain the improved overall reliability of supply achieved by Southern Electric. It should also provide improved quality of supply for those who suffer a disproportionate number of faults due to the nature or condition of their local network, and speed up restoration for many others. Importantly, both our current programme and our programme described above will make our system more robust in severe weather. We have already seen the benefits of this through last winter.
35. It would be possible to further enhance supply reliability through additional expenditure over the period to 2004/05 and we have prepared a “quality of supply” case. This involves the expenditure of an additional £65m in the period to 2004/05. It would involve further network automation, reconfiguring parts of our LV network and greater use of mobile generators, and would enable us to improve further reliability to key groups of customers and reduce average minutes lost per customer towards 50 minutes per annum.

CONCLUSION

36. In this business plan Southern Electric is aiming to maintain the highest levels of service for its customers while making significant further reductions in controllable costs. These are ambitious objectives which lead to stretching targets, particularly considering the exceptional performance already achieved. Nevertheless, Southern Electric believes that, given the right regulatory environment and freedom, it can deliver this plan.

SOUTHERN - TABLE 14.2 SUPPLEMENTARY ANALYSIS OF DISTRIBUTION BUSINESS HCA COSTS - BASE CASE IN 1997/98 PRICES

DESCRIPTION	ACTUAL				FORECAST						
	1994/95 £m	1995/96 £m	1996/97 £m	1997/98 £m	1998/99 £m	1999/00 £m	2000/01 £m	2001/02 £m	2002/03 £m	2003/04 £m	2004/05 £m
NGC exit charges & other direct costs	48.0	41.3	40.4	31.8	30.5	29.6	28.7	27.8	27.1	26.3	25.6
Rates on distribution system	22.9	22.9	23.3	23.3	23.6	23.8	35.7	37.5	39.3	41.3	43.3
Depreciation on distribution system	30.5	32.0	35.3	37.6	40.0	41.9	43.7	45.8	48.2	50.1	52.2
Payroll costs	75.6	57.7	49.1	37.5	40.8	41.7	40.4	40.6	40.5	40.2	39.9
Non payroll IT costs	17.0	14.5	18.0	22.4	26.0	32.5	27.8	26.1	24.6	16.7	16.4
Premises costs	3.7	3.4	3.0	2.4	2.4	2.5	2.5	2.5	2.5	2.5	2.4
Insurance	3.2	3.0	2.1	2.0	2.0	2.2	2.2	2.3	2.4	2.5	2.6
Materials, Goods & Services	39.9	34.7	22.3	17.2	17.2	17.9	17.2	16.8	16.6	16.4	16.2
Other - pension provision write back	0.0	-20.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Costs	240.8	189.4	193.5	174.2	182.5	192.1	198.2	199.4	201.2	196.0	198.6

SOUTHERN - TABLE 14.4 SUPPLEMENTARY ANALYSIS OF DISTRIBUTION BUSINESS HCA COSTS - QUALITY OF SUPPLY SCENARIO IN 1997/98 PRICES

DESCRIPTION	ACTUAL				FORECAST						
	1994/95 £m	1995/96 £m	1996/97 £m	1997/98 £m	1998/99 £m	1999/00 £m	2000/01 £m	2001/02 £m	2002/03 £m	2003/04 £m	2004/05 £m
NGC exit charges & other direct costs	48.0	41.3	40.4	31.8	30.5	29.6	28.7	27.8	27.1	26.3	25.6
Rates on distribution system	22.9	22.9	23.3	23.3	23.6	23.8	35.7	37.5	39.3	41.3	43.3
Depreciation on distribution system	30.5	32.0	35.3	37.6	40.0	41.9	43.7	46.1	48.8	51.0	53.5
Payroll costs	75.6	57.7	49.1	37.5	40.8	41.7	40.4	40.6	40.5	40.2	39.9
Non payroll IT costs	17.0	14.5	18.0	22.4	26.0	32.5	27.8	26.1	24.6	16.7	16.4
Premises costs	3.7	3.4	3.0	2.4	2.4	2.5	2.5	2.5	2.5	2.5	2.4
Insurance	3.2	3.0	2.1	2.0	2.0	2.2	2.2	2.3	2.4	2.5	2.6
Materials, Goods & Services	39.9	34.7	22.3	17.2	17.2	17.9	17.2	16.8	16.6	16.4	16.2
Other - pension provision write back	0.0	-20.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Costs	240.8	189.4	193.5	174.2	182.5	192.1	198.2	199.7	201.8	196.9	199.9

SOUTHERN - TABLE 14.6 SUPPLEMENTARY ANALYSIS OF DISTRIBUTION BUSINESS CAPITAL EXPENDITURE - BASE CASE SCENARIO IN 1997/98 PRICES

DESCRIPTION	ACTUAL				FORECAST						
	1994/95 £m	1995/96 £m	1996/97 £m	1997/98 £m	1998/99 £m	1999/00 £m	2000/01 £m	2001/02 £m	2002/03 £m	2003/04 £m	2004/05 £m
Capital expenditure - load related	74.6	66.2	66.4	72.2	58.4	56.8	48.8	48.6	48.2	48.5	48.8
- non load related	74.9	81.7	92.3	82.2	81.1	78.9	103.1	100.9	102.5	100.1	96.4
- non operational	1.9	2.0	5.0	15.9	18.2	2.0	1.9	2.0	2.0	1.9	2.0
- customer contributions	-17.9	-12.0	-14.2	-20.5	-13.8	-13.8	13.8	-13.9	-14.1	-14.2	-14.3
Net Capital Expenditure	133.5	137.9	149.5	149.8	143.9	123.9	140.0	137.6	138.6	136.3	132.9

SOUTHERN - TABLE 14.8 SUPPLEMENTARY ANALYSIS OF DISTRIBUTION BUSINESS CAPITAL EXPENDITURE - QUALITY OF SUPPLY SCENARIO IN 1997/98 PRICES

DESCRIPTION	ACTUAL				FORECAST						
	1994/95 £m	1995/96 £m	1996/97 £m	1997/98 £m	1998/99 £m	1999/00 £m	2000/01 £m	2001/02 £m	2002/03 £m	2003/04 £m	2004/05 £m
Capital expenditure - load related	74.6	66.2	66.4	72.2	58.4	56.8	48.8	48.6	48.2	48.5	48.8
- non load related	74.9	81.7	92.3	82.2	81.1	78.9	113.5	112.5	115.5	114.6	112.2
- non operational	1.9	2.0	5.0	15.9	18.2	2.0	1.9	2.0	2.0	1.9	2.0
- customer contributions	-17.9	-12.0	-14.2	-20.5	-13.8	-13.8	-13.8	-13.9	-14.1	-14.2	-14.3
Net Capital Expenditure	133.5	137.9	149.5	149.8	143.9	123.9	150.4	149.2	151.6	150.8	148.7

RPI INDEX TO 1997/98 PRICES (future values assume 3% inflation)	1994/95	1995/96	1996/97	1997/98	1998/99	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05
	145.35	150.08	153.73	158.78	163.54	168.45	173.53	178.74	184.10	189.63	195.31

10. SWALEC

Introduction

SWALEC's vision is to provide a "best value, high quality" service to its customers. Substantial progress will have been made in achieving this objective by 2000, with considerable further progress planned in the period 2000/05. As a monopoly provider of essential services, SWALEC believes that it is particularly important that it consults extensively with its customers and other interested parties in the development of its plans for the future. This public document is a part of that process.

SWALEC is also in the process of arranging, in conjunction with our Consumers' Committee, a series of public meetings at which we would present our future plans for our distribution business.

SWALEC has reduced operating costs between 1992/93 and 1996/97 by over 23% in real terms (which is significantly in excess of the industry average). As a customer focused business, this cost reduction has been achieved whilst enhancing customer service. The number of complaints received by OFFER has reduced by 63% between 1992/93 and 1997/98. In the same period, the number of guaranteed standard payments has reduced by 81%. Future cost reductions are projected to continue but at a lower rate than in the past.

SWALEC's operational capital expenditure will be in excess of the allowance set by OFFER in the determination of the current price control, with the investment strategy having been developed to meet customers' needs through consultation with customer representatives. Customers' views have been researched for the future capital programme, whose findings indicate strong support for the current strategy. Our future proposed programme more than doubles the planned spend on quality of supply initiatives, with an expectation that the length of time that the average customer is without their supply will be cut by over 40% by 2004/05. The planned capital programme, in our opinion, represents an appropriate balance between prices and performance.

The business plan has been prepared in line with the requirements set out by OFFER in their business plan questionnaire notes. The plan, therefore, assumes:-

- no further business separation of supply and distribution, or separation of metering from the distribution business is required;
- none of the additional costs associated with business separation have been included; and
- competition in metering does not commence during the next price control period.

Distribution Operating Cost Influences

Geographic and demographic factors have a major influence on the design of a distribution network as well as the cost of operating a distribution service.

SWALEC's authorised area covers approximately 11,800 sq. km which is the ninth largest of the RECs in England and Wales and is only 6% less than the average area of the RECs. However, the customer base in SWALEC's area is by far the smallest of all the RECs and is less than 50% of the average. This results in SWALEC having the lowest customer density of all the RECs in England and Wales.

This demographic feature results in SWALEC having the second highest circuit length per customer of the RECs being 21% above the average.

This higher than average circuit length per customer is not simply the impact of overall customer density, but is more dependent on customer dispersion i.e. their location relative to each other. The majority of customers in South Wales are to be found along the coastal strip between Newport and Llanelli plus the valleys regions. The remainder are to be found in rural areas (extensive coastal region and remote uplands) which are sparsely, but evenly populated requiring the greater circuit length.

As with any transportation system, costs are determined both by the capacity and distance carried. A fundamental cost driver for a high proportion of distribution operating costs is the length of network, for example on maintenance and fault repairs. Most transportation systems have output measures that recognise both the capacity and distance dimension (e.g. passenger-miles).

Distribution Operating Cost Trends

1992/93 to 1997/98

Operating costs for 1992/93 represent the mid point of the first price control period for the distribution business and was the base year from which the current price control was determined. SWALEC has achieved the fourth highest percentage reduction in operating costs (excluding depreciation) between 1992/93 and 1996/97 with operating costs falling by over 23% during that period.

Following the large cut in distribution revenue coupled with potential corporate activity, business focus throughout that period centred on cost reduction. The program was undertaken in three main phases:

- removing duplication and overlap of geography, which has been evidenced in site rationalisation;
- excluding any overlap of management and supervisors which primarily took place in the restructuring of the network services division; and
- implementation of what is often called 'best practice', essentially a move to process simplification and productivity improvement.

The ground-work for phase three was laid down with the pay and conditions deal in 1994 through our partnership with the trade unions. It allowed SWALEC to bring in flexible working practices:

- staff were contractually committed to flexible working;

- agreement to lower scale maxima for the new, streamlined grading structure. In addition the profit related pay scheme introduced in 1995 brought with it a “one-off” benefit of an almost unchanged wage bill because of the tax benefits; and
- agreement was also reached on removing demarcation between engineers and craftsmen. This was fundamental to the new working practices that were put in place.

As well as the “top-down” approach referred to above, four distinct programs involved all our people to improve processes and drive out further efficiencies; these were:

- continuous improvement initiative;
- employee drive for greater efficiency (EDGE);
- cross skilling; and
- operational systems improvement.

The reduction in operating costs was allied to a drive to achieve improved levels of service. SWALEC has invested in a series of service improvement initiatives within the distribution business (e.g. investment in IVR technology to enhance customer contact facilities; introduction of freephone contact numbers for enquiries/queries). Over this period the service levels provided have been greatly improved. In 1992/93 OFFER received 65.1 complaints per 100,000 customers in relation to SWALEC. In 1997/98 this had reduced to only 24.31 (representing a 63% reduction). The number of guaranteed standards payments also reduced, from 650 in 1992/93 to 124 in 1997/98, representing a 81% reduction. The performance of the distribution network (as measured in number of supply minutes lost per connected customer) has also significantly improved over this period with the number of minutes lost in 1997/98 being 25% less than the rolling ten year average.

Benchmarking

Benchmarking is used by SWALEC as an appropriate mechanism to monitor, evaluate and constantly improve business efficiency. A detailed benchmarking programme has been carried out in conjunction with a leading independent American company to provide a comparison of relative performance in the areas of both direct costs (or working practices) and indirect costs (or work management practices).

In the area of direct costs, the benchmarking programme has shown that the best practice initiatives introduced through EDGE and Cross-Skilling have been key elements in identifying SWALEC as a best performer. These initiatives have led to work practices that are typical of those seen in the best performing companies. SWALEC has been identified as a best performer in a number of activities associated with the construction and maintenance of switchgear and overhead lines. The movement of work to outfield staff and changes in the demarcation between engineers and craftsmen has improved efficiency in these activities.

In the area of indirect costs, the results of the benchmarking also showed SWALEC to be a best performer in both the management of major capital projects and the design of small projects. Efficiencies have been made in these areas by making best use of specialist skills and the use of turnkey contracts for site works.

Services are also provided to SWALEC's distribution business from an associate company, Hyder Services. A variety of benchmarking projects have been carried out including simulated tender exercises, management consultant audits and price list comparisons on the services provided by Hyder Services.

All services that have been reviewed under this process have been found to be operating at an efficient level.

1997/98 to 2004/05

As outlined above, SWALEC's distribution business operating costs have fallen significantly since 1992/93 and at a faster rate than the industry average. We do not believe that this rate of cost savings is sustainable in future, so future annual cost savings will be reduced. Indeed, it is probable that the potential for future cost savings is inversely related to efficiency savings made in the past. In addition, the Government's removal of profit related pay benefits will add to the wage bill.

However, our plan assumes that the distribution business operating costs will reduce by approximately 1% real per annum from the current level, excluding depreciation, cumulo rates, costs of new obligations on the distribution business to facilitate competition in supply and increased guaranteed and overall standard obligations.

There is currently significant uncertainty around the determination of the valuation for cumulo rates post 2000. The submitted business plan assumes that there will be a 75% increase in our rates bill. We anticipate that the final determination of the distribution price control will either need to take into account the final outcome of the ratings review, or if it is not known, incorporate a pass through of any cost changes into the price control formula.

The business plan projections do not incorporate any synergy savings emanating from the merger of the operational arms of Dwr Cymru and SWALEC's distribution business. We have previously written to OFFER explaining why these potential additional savings should not be considered at this review. We would propose that multi-utilities be treated no differently to other companies in their sectors when determining the level of any price control. We consider this approach to be consistent with the observations made in the joint paper "Regulatory Issues Associated With Multi-Utilities" published by OFFER and the other regulators in May 1998.

Summary of Distribution Cost Movements Between 1994/95 and 2004/05

A summary of the "normalised" distribution operating costs trend between 1994/95 and 2004/05 is tabled below. "Normalised" costs represent total distribution costs excluding depreciation, NGC exit charges, NTR costs, rates, costs associated with new obligations, Year 2000 costs, and exceptional items.

	1994/95	1997/98	1999/00	2004/05
Normalised costs (£m) (1997/98 prices)	77.1	56.3	55.5	52.7
Efficiency saving v 1994/95 (£m 1997/98 Prices)		20.8	21.6	24.4
% Change in normalised operating cost since 1994/95		-27%	-28%	-32%

Operational Capital Expenditure

Capital Expenditure 1990/91 to 1999/2000

The original distribution price control, between 1990/91 and 1994/95, made allowance for capital expenditure programmes that companies submitted to the Government. During the first price control period, SWALEC's spend on capital expenditure was in line with this forecast. As is evidenced from table 17 of OFFER's July consultation paper, in this period SWALEC spent proportionately more on capital expenditure than most other companies (when company size is taken into account).

Although SWALEC has introduced initiatives which have resulted in efficiency savings (e.g. changing working practices, outsourcing activities where it has been demonstrated that it is cost effective, lower purchasing costs), during the current price control period, SWALEC plans to spend £349 million (at 1997/98 prices) on operational capital compared to our projected investment of £343 million submitted to OFFER ahead of the price control in April 1995 (our projected spend was broadly in line with the allowance set by OFFER in determining the price control).

In 1996, following a review of our investment strategy, we re-aligned our non load related investment in order to ensure that there was a more appropriate balance of investment between the needs of :

- the average customer and the worse served customer, or in other words aggregate network performance and localised network performance;
- 132 kV & EHV networks and the HV & LV networks;
- urban and rural EHV networks; and
- urban & rural HV networks.

This investment strategy review also took into account the recommendations of the Internal Panel of Enquiry into the severe weather experienced during January and February 1996. The conclusions of that investment strategy review were that the level of capital investment should be revised as follows:

- urban HV and EHV networks should be decreased; and

- rural HV and EHV networks should be increased.

This re-alignment of investment, which had the support of the Electricity Consumers Committee, would ensure that increased capital was directed at improving the quality of supply experienced by the worse served customers. This approach has also been endorsed by independent customer research which was commissioned this year.

This has resulted in SWALEC planning to spend £14.6 million on quality of supply measures consistent with the above strategy during the current price control period.

Capital Expenditure 2000/01 to 2004/05

The base case plan only includes the investment necessary to maintain the network in its present operational condition (i.e. with no expenditure for enhancements to Quality of Supply).

The aggregate investment associated with the base case plan is £319m. Of this total, £200m is specifically targeted at maintaining the network in its present operational condition through the selective targeting of assets for renewal. SWALEC uses a planning methodology that takes account of the age profile of assets and the statistical probability that the assets will require renewal. Through the use of sensitivity analysis and consideration of the network requirements over an extended period, SWALEC has developed an investment plan that recognises both the capital intensive nature of the industry and the needs for long term stable investment.

The quality of supply scenario includes the investment for network performance in the base case plus specified investments for Quality of Supply improvements. The key features underlying the quality of supply scenario are outlined below.

Customer Survey

A customer survey into electricity supply reliability was recently undertaken on behalf of SWALEC. The conclusions of that survey were:

- generally customers are satisfied with electricity supply reliability, with 95% of respondents indicating that they were either totally, very or fairly satisfied;
- rural customers perceived that they experienced more unplanned electricity interruptions than other customers in the SWALEC area;
- there was a reasonably high level of expectation, i.e. 43% of rural customers, that there would be an improvement in supply reliability over the next few years;
- there was a high degree of agreement, that investment to improve electricity supply reliability should be targeted at rural areas, this was supported by 61% of urban respondents; and
- there was strong agreement with the statement that “More investment is needed to prevent power cuts when there are storms”.

Quality of Supply Experienced

The most commonly used measure of the quality of supply experienced by customers is called Availability. This measure provides an indication of the length of time that the average customer is without electricity during a year. During 1996/97 the average customer in the SWALEC area was without electricity for 189 minutes. In the same period, the average customer in Britain was without electricity for 87 minutes.

When comparing these durations, it is worth bearing in mind the factors that can impact on quality of supply. Customer density and the dispersion of customers throughout an area are important factors as they tend to significantly influence the length of electricity lines. The area operated by SWALEC has one of the lowest customer densities and as a consequence the length of electricity line per customer for SWALEC is one of the highest in Britain. Quality of supply is also influenced by climatic conditions. The combination of a predominantly overhead network together with high wind speeds makes the SWALEC network vulnerable to isolated incidents of storm damage. The effect of wind conditions is compounded by the extent of the coastline in SWALEC's area.

In order to develop a quality of supply target, it is necessary to consider the different quality of supply experienced by rural and urban customers. We estimate that during 1996/97 the average rural and urban customers in the SWALEC area were without their electricity supply for 480 and 110 minutes respectively. In addition, there is a need to ensure that there is an appropriate balance between addressing the needs of both the average and worse served customers.

Quality of Supply Target and Capital Investment

In addition to the capital investment required to ensure that the quality of supply is maintained at the current level and to meet load related needs, SWALEC proposes to invest a further £32.6m specifically targeted at improving quality of supply. In line with the views of customers, SWALEC proposes to target a disproportionate level of investment at the rural areas. SWALEC projects that this investment will reduce the length of time that the average customer is without their electricity supply to 108 minutes by 2004/05, a reduction of over 40% from 1996/97 levels.

The apportionment of this total investment is:

Rural Networks	£17.7m	
Urban Networks	£5.5m	
Worse Served Customers	£3.0m	(Investment to prevent quality of supply deterioration will also improve the service experience by the worse served customers)
Security of Supply	£4.9m	(This initiative is targeted at improving the security of supply associated with large semi rural communities, particularly during severe weather)

Telemetry

£1.5m

It is estimated that changes in the investment specifically targeted at improving quality of supply would have the following impact:

1. Increase of £3.0m; depending on the initiative(s) extended, the projected length of time that the average customer is without their electricity supply would reduce by up to a further 5 minutes by 2004/05.
2. Decrease by £3.0m; depending on the initiative(s) curtailed, the projected length of time that the average customer is without their electricity supply would increase by up to 7 minutes by 2004/05.

Views

We would welcome views from all those with an interest in these issues, including customers, their representatives and other interested parties. Please write with any views to Sue Dasent, Regulation Manager, at SWALEC.

SWALEC - TABLE 14.2 SUPPLEMENTARY ANALYSIS OF DISTRIBUTION BUSINESS HCA COSTS - BASE CASE IN 1997/98 PRICES

DESCRIPTION	ACTUAL				FORECAST						
	1994/95 £m	1995/96 £m	1996/97 £m	1997/98 £m	1998/99 £m	1999/00 £m	2000/01 £m	2001/02 £m	2002/03 £m	2003/04 £m	2004/05 £m
NGC exit charges	13.5	14.8	14.9	10.8	10.2	10.2	10.3	10.7	10.5	10.6	11.2
Rates on distribution system	9.6	9.3	9.1	8.6	8.7	9.4	16.5	16.4	16.5	16.4	16.4
Depreciation on distribution system	15.8	16.4	17.5	18.6	20.2	21.3	22.0	23.7	23.6	24.9	25.9
Payroll costs	39.5	31.1	18.6	17.2	17.0	17.1	16.9	17.3	17.2	17.0	16.8
Non payroll IT costs	6.6	6.6	6.3	3.6	7.8	9.6	10.3	9.4	9.5	9.3	9.3
Premises costs	3.5	3.5	1.9	1.2	1.2	1.1	1.1	1.2	1.1	1.1	1.1
Insurance	2.4	1.1	0.6	1.3	1.4	1.3	1.3	1.2	1.2	1.3	1.2
Materials	7.3	6.7	6.1	5.9	5.5	5.7	5.8	5.7	5.6	5.5	5.5
Other	50.5	35.7	31.3	46.2	35.4	45.6	45.1	45.2	45.0	42.8	36.9
Total Costs	148.8	125.2	106.2	113.4	107.3	121.3	129.3	130.8	130.1	128.9	124.4

SWALEC - TABLE 14.4 SUPPLEMENTARY ANALYSIS OF DISTRIBUTION BUSINESS HCA COSTS - QUALITY OF SUPPLY SCENARIO IN 1997/98 PRICES

DESCRIPTION	ACTUAL				FORECAST						
	1994/95 £m	1995/96 £m	1996/97 £m	1997/98 £m	1998/99 £m	1999/00 £m	2000/01 £m	2001/02 £m	2002/03 £m	2003/04 £m	2004/05 £m
NGC exit charges	13.5	14.8	14.9	10.8	10.2	10.2	10.3	10.7	10.5	10.6	11.2
Rates on distribution system	9.6	9.3	9.1	8.6	8.7	9.4	16.5	16.4	16.5	16.4	16.4
Depreciation on distribution system	15.8	16.4	17.5	18.6	20.2	21.3	22.1	24.1	24.1	25.6	26.7
Payroll costs	39.5	31.1	18.6	17.2	17.0	17.1	16.9	17.3	17.2	17.0	16.8
Non payroll IT costs	6.6	6.6	6.3	3.6	7.8	9.6	10.3	9.4	9.5	9.3	9.3
Premises costs	3.5	3.5	1.9	1.2	1.2	1.1	1.1	1.2	1.1	1.1	1.1
Insurance	2.4	1.1	0.6	1.3	1.4	1.3	1.3	1.2	1.2	1.3	1.2
Materials	7.3	6.7	6.1	5.9	5.5	5.7	5.8	5.7	5.6	5.5	5.5
Other	50.5	35.7	31.3	46.2	35.4	45.6	45.3	45.3	45.2	43.3	37.3
Total Costs	148.8	125.2	106.2	113.4	107.3	121.3	129.7	131.4	130.9	130.0	125.6

SWALEC - TABLE 14.6 SUPPLEMENTARY ANALYSIS OF DISTRIBUTION BUSINESS CAPITAL EXPENDITURE - BASE CASE SCENARIO IN 1997/98 PRICES

DESCRIPTION	ACTUAL				FORECAST						
	1994/95 £m	1995/96 £m	1996/97 £m	1997/98 £m	1998/99 £m	1999/00 £m	2000/01 £m	2001/02 £m	2002/03 £m	2003/04 £m	2004/05 £m
Capital expenditure - load related	38.1	30.5	29.5	32.6	32.0	26.3	14.9	15.7	15.5	15.4	15.3
- non load related	35.3	32.4	41.0	45.2	39.8	39.7	49.8	50.1	48.0	47.9	46.3
- capital stock	-1.9	-0.6	-0.5	-0.4	-	-	-	-	-	-	-
- non operational	5.7	2.9	7.3	20.8	38.8	9.3	8.0	6.3	4.3	4.3	4.3
- customer contributions	-8.7	-7.1	-9.7	-12.5	-7.7	-6.8	-5.4	-5.4	-5.3	-5.3	-5.3
Net Capital Expenditure	68.5	58.0	67.7	85.7	103.0	68.5	67.3	66.7	62.5	62.3	60.6

SWALEC - TABLE 14.8 SUPPLEMENTARY ANALYSIS OF DISTRIBUTION BUSINESS CAPITAL EXPENDITURE - QUALITY OF SUPPLY SCENARIO IN 1997/98 PRICES

DESCRIPTION	ACTUAL				FORECAST						
	1994/95 £m	1995/96 £m	1996/97 £m	1997/98 £m	1998/99 £m	1999/00 £m	2000/01 £m	2001/02 £m	2002/03 £m	2003/04 £m	2004/05 £m
Capital expenditure - load related	38.1	30.5	29.5	32.6	32.0	26.3	14.9	15.7	15.5	15.4	15.3
- non load related	35.3	32.4	41.0	45.2	39.8	39.7	56.3	56.4	54.3	53.8	52.1
- capital stock	-1.9	-0.6	-0.5	-0.4	-	-	-	-	-	-	-
- non operational	5.7	2.9	7.3	20.8	38.8	9.3	8.4	6.7	4.6	4.5	4.5
-customer contributions	-8.7	-7.1	-9.7	-12.5	-7.7	-6.8	-5.4	-5.4	-5.3	-5.3	-5.3
Net Capital Expenditure	68.5	58.0	67.7	85.7	103.0	68.5	74.2	73.5	69.1	68.4	66.6

RPI INDEX TO 1997/98 PRICES	1994/95	1995/96	1996/97	1997/98	1998/99	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05
(future values assume 3% inflation)	145.35	150.08	153.73	158.78	163.54	168.45	173.53	178.74	184.10	189.63	195.31

11. SWEB

Management Initiatives

In 1995 the engineering department conducted a thorough review of its activities. The aim was to deliver outstanding customer service at the least possible cost. As a result of this review operating and capital expenditures were reduced significantly, prices to customers were lowered and customer satisfaction increased.

In real terms we have reduced our total operating costs by 35% since 1994/95. The exclusion of such non-controllable costs as NGC exit charges, depreciation and rates, shows that our controllable costs have fallen by 44%. This is equivalent to an annual reduction of 17% each year.

As a result of the 1995 review a new engineering organisation was introduced which reduced costs and improved customer service by:-

- (i) changing the engineering focus from a technology based network management to a customer service and network performance approach.
- (ii) centralising all major project work under one manager.
- (iii) centralising all primary planning and associated technical work under one manager.
- (iv) reducing organisational levels from 7 to 3 and the number of managers by 40%.
- (v) creating the concept of flexible cross-skilled team working with significant devolvement of switching and safety documentation to industrial staff.
- (vi) reducing the number of offices from 12 to 3.
- (vii) centralising all control centre activities at Exeter and developing new means of communicating with customers under fault conditions.
- (vii) delegating responsibility to the working level. Particular attention was paid to introducing a culture whereby work and responsibility is delegated to the lowest operating level whilst enabling staff to develop and implement changes to their work which improve customer service and/or reduce operating costs.

This radical re-organisation created by devolving the activity based staff and centralising the higher cost high-tech services needed a range of essential tools for it to operate, such as:-

- (i) new mapping arrangements with a central unit providing digitised mapping facilities to all field units.
- (ii) a new telecontrol system.
- (iii) new hot gloving techniques providing quicker and more efficient means of working.
- (iv) a new engineering asset management and work programming IT system

(CROWN) which manages all assets from customer enquiry to installation repair and maintenance.

- (v) a new procurement and supply chain management system.

A major benefit of re-organisation has been to increase the number of staff authorised to work on the network from 170 to 540 whilst reducing the overall number of distribution staff by more than 25%. This change has had a dramatic effect on customer minutes lost - down by 45% this year - whilst also reducing costs by only using professional engineers to oversee the task where appropriate.

Restoration of supplies under storm conditions were also dramatically improved as was normal network operation. Other benefits were also achieved:

*	Lost time accidents	Down 53%
*	Sickness absence days	Down 24%
*	Customer complaints	Down 74%

Centralisation of call centres at Exeter

SWEB's call centres were centralised to one call centre at Exeter with a sophisticated messaging facility to use during storm conditions. Software was developed to enable call centre staff to answer all customer queries with minimum delay and greater efficiency. The single call centre, with a local rate phone number from anywhere in SWEB, handles both Distribution and Supply enquiries and passes them straight to the appropriate team. A major benefit of this centralisation has been to dramatically improve Customer Service.

New Meter Reading Business established

A separate meter reading business (SWEB Data Collection Services) was set up in June 1996, with pay linked to performance. Staff now operate from home using hand-held technology with two-way communication. Meter readings are now more accurate and timely and the number of estimated meter readings have been more than halved.

Procurement and the use of contractors

The purchasing and supply chain management process has been thoroughly revised, enabling us to gradually reduce our stock levels. New IT system linking procurement and financial commitments in a single supply chain management system was implemented

A considerable amount of work has been done on the selection and management of contractors engaged in tree trimming and the monitoring of their performance with the result that efficiency savings of around 10% have been achieved.

Corporate Overheads and Administration

Corporate overheads and administration costs decreased substantially over the period due to initiatives such as; reducing administrative support facilities such as central libraries; centralisation of facilities with one help desk; combining two HR

departments; merging corporate services within the finance function and merging telecommunications with I.T.

External drivers of operating costs

There are three kinds of external drivers:

- (a) Those which are stable and permanently distinguish SWEB from the other RECs.
- (b) Those which affect most RECs to a greater or lesser extent but which change over time - eg rates, wayleaves, EU legislation.
- (c) Changing regulatory requirements.

Drivers that distinguish SWEB from other RECs

The south west area of England has unique geographic and demographic features which have a direct impact on operating and capital costs. As a result it is anticipated that only relatively minor further improvements in operating efficiency will be achieved. The main barriers are:-

- i) Density - low
- ii) Its geography - long and thin
- iii) Sparsity of population - high
- iv) Dispersion - we have to supply almost all of the land area
- v) Network length and asset base per customer - high

The following factors which result from the demographics of the south west are clearly outside SWEB's control:

- (i) SWEB has the longest length of main per customer of all the RECs.
(SWEB 36.6 km/thousand customers; all REC average 29.0)
- (ii) SWEB has the second greatest length of overhead line per customer of all the RECs.
(SWEB 22.3 km/thousand customers; all REC average 11.5)
- (iii) SWEB has the second highest number of transformers per customer of all the RECs.
(SWEB 37.0/thousand customers; all REC average 20.9)
- (f) Climate - exposed to Atlantic, lightning incidence, winds, salt pollution
- (g) Remote industrial areas

Factors affecting all RECs

Economic Activity

SWEB is affected by changes in the national economy. Furthermore, the area has additional challenges, such as Cornwall which has 4 of the UK top ten unemployment black spots. Tourism is one of the West County's major industries, and is particularly sensitive to the effects of national economic growth or slowdown and foreign currency exchange rate fluctuations.

Future Government policy will also have major impacts, particularly in the defence field, where there are major employers in the aerospace industry and Devonport Dockyard. Agriculture also features highly in the South West.

Changes in Rates

The largest step increase in operational costs however comes from the revised method of calculating rates on operational property. Based on a provisional valuation from the Valuation Office (April 1998), we estimate these costs will rise to £35m pa by the year 2000/01.

Environmental legislation

SWEB is more affected by much of the EU environmental legislation than a primarily urban REC - for example the EU Habitats Directive is creating pressure towards undergrounding overhead lines. A large proportion of the countryside in the south west is designated as Areas of Outstanding Natural Beauty.

New legislation will shortly require Environmental Assessments on all significant overhead line schemes, thus increasing costs. UK legislation is more onerous than its European equivalent.

Health and Safety Regulations

Safety requirements for staff on overhead lines and towers to be attached at all times will bring significant one-off costs in equipment and training (estimated £0.8m) and large increases in the costs of tower painting - we are already receiving contractors' quotations which are up by 70% because of the extra time required to work under a system of permanent attachment to the tower for the painters.

Regulatory Requirements

The OFFER proposals on business separation have created much uncertainty on many issues which will have an impact on operating costs and customer service in future. The main areas of concern are separation of businesses - Supply from Distribution and Metering from Distribution. Our view remains - what is the problem we are trying to solve? Competition in supply has been successful - over 75% of load in the above 100kW market has changed supplier. Where is the cost benefit analysis, and an indication of what customers want?

The vast majority of SWEB's savings in operating costs have been achieved by centralisation of business activities. It is therefore clear that the enforced separation of business activities will have the opposite effect, increasing costs whilst reducing customer satisfaction.

Linkage of cost changes to service levels

Customer service improvements

SWEB has been particularly pro-active in seeking improvements to customer service. We have introduced 5 voluntary standards as well as making significant improvements to guaranteed and overall standards.

The customer complaints achievement is particularly significant - in 1997 SWEB had the lowest number of complaints to OFFER, a case of "worst to first" at 9.92 complaints per 100,000 customers. As part of the drive to reduce customer complaints, we invested over £150,000 in a special customer care training programme "First Time Every Time".

There are very few failures of customer guarantees. In 1997 there were 29 payments for CG failures out of 929,335 services provided across the ten CGs.

In respect of the Overall Standards of Performance, SWEB scored 100% on seven of the ten standards, and exceeded OFFER's targets on the other three, covering supply restoration after faults and meter reading.

Network Performance Improvement

SWEB's network performance has shown one of the biggest improvement trends of all the RECs since 1994/95:

- The largest reduction in minutes lost per customer
- The second largest reduction in interruptions
- Top quartile performance in the three hour restoration rate

A major programme of network reinforcement schemes is being undertaken which are aimed at improving network reliability.

The January 1998 storm demonstrated the effectiveness of the money spent. Winds of over 100 mph and severe lightning in the worst storm for nearly a decade brought havoc, affecting 150,000 customers. SWEB achieved one of its best performances to date with 95% of customers restored in 48 hours.

However, these improvements have not been achieved without significant investment. Three examples are:

- (i) Tree trimming - Total expenditure from 1994/95 to 1997/98 - £15.2m.
- (ii) Network reliability schemes aiming solely at improving network performance with a total expenditure over the 4 years to 1997/98 of £9.2m.
- (iii) The introduction of "hot glove" (i.e. HV live) working at a total cost of £1.8m.

Further improvements in performance become incrementally more difficult to achieve and incur significant increases in costs.

Effect of capital expenditure on operating costs

Capex and Opex - the right mix

Since privatisation, the main "driver" for capital expenditure has been the need to improve reliability and customer service. A comprehensive asset replacement programme has been introduced that avoids plant and equipment failures on a "just in time" basis and with programmes aimed specifically at reducing customer minutes lost.

Preventative operational expenditure such as tree cutting, inspection and maintenance, has a significant immediate effect on customer service by eliminating faults caused by external influences and actions.

Opex also has a major role in customer satisfaction in the event of a fault. SWEB has made concentrated efforts in reducing the length of interruptions by the use of generators, design of networks for greater interconnection, and improved working methods under the banner of "Target 60", aimed at restoring supplies in under an hour.

It is SWEB's firm belief that operational and capital expenditure are very interdependent, and that the road to better customer service is an appropriate mix of the two.

Other factors impacting on operating costs

Millennium

SWEB executive management recognises the seriousness of the Year 2000 challenge and has dedicated resources it considers adequate to address the issue.

SWEB's millennium project is divided into two phases. Phase 1 began in 1996 and consisted of identifying and assessing corporate assets (software systems and devices that contain a computer chip or clock). This was completed on schedule on 31 July 1997.

Phase 2 which consists of testing and remedying high priority systems and devices is targeted for completion in June 1999. Contingency planning is included in this phase. The millennium project will continue to monitor SWEB's affected computer systems, devices and applications through the end of 1999 and into the year 2000.

The only major exposure to hardware-related Millennium risks relates to key meters. They will continue to work after the year 2000 but it will not be possible to change the tariff held in the meter. The cost of making changes to meet this requirement will be in the region of £2m.

Evidence of an Efficient Business

Regression Analysis

As part of its ongoing benchmarking process SWEB has undertaken a number of regression analyses, most recently using 1997/98 data. These analyses consistently show that, being at least £4m - £6m below the regression line of best fit, SWEB's costs are those of a highly efficient distribution business.

Call Centre Benchmarking

SWEB have undertaken benchmarking of our Call Centre Service against other Electricity Companies and Airline Companies. This has been carried out by an independent international company. The results consistently show that the SWEB Call Centre is a top performer in the Electricity Industry and in the upper quartile against competition such as BA and KLM. We are still aiming to improve our performance to be the top performer in this arena.

Network Reliability

The initiatives that SWEB has taken have resulted in a dramatic improvement in network reliability:

Minutes off supply have reduced from 133.1 at the end of March 1995 to 72.3 at the end of March 1998 (excluding storms).

The 3 hour restoration rate has improved from 88.1% at end March 1995 to 92.5% at the end of March 1998.

Improved Management Techniques

The new organisation with shorter lines of communication and a new culture has also brought about the following benefits:-

* Lost time accidents	Down 53%
* Sickness absence days	Down 24%

These changes have an indirect effect and beneficial effect on costs by improving productivity and are direct evidence that "an efficient Company is a safe and healthy Company".

Future Operating Costs

The management initiatives on cost levels that have been put in place over the last few years means that we are now one of the more efficient distribution businesses.

The level of cost reduction as achieved by SWEB since 1994/95 is not sustainable in the future and so future annual costs savings cannot be expected to be greater than those achieved by UK manufacturing industry as a whole. Productivity improvements/growth in British industry on average is about 2% per annum and we expect an efficient company such as SWEB to be able to match this rate of productivity improvement.

However outside of controllable costs there are significant cost pressures which in our view SWEB has in reality limited capability to control. These non-controllable costs include depreciation, rates, 1998 systems (DMS) and Euro which are shown within overall operating cost forecasts below:-

Distribution Operating Cost Forecasts

	<u>97/98</u> ¹	<u>00/01</u>	<u>01/02</u>	<u>02/03</u>	<u>03/04</u>	<u>04/05</u>
Operating Costs ²	115	166	174	177	173	179
Depreciation ³	26	38	42	44	41	43
Rates	15	35	36	37	38	39
DMS ⁴ (exc depreciation)	0	4	4	4	4	4
Total exc depn/rates/DMS	74	89	92	92	90	93
1997/98 Prices	74	82	83	80	75	76
		Total Five Years				396
Analysis:-						
Normalised Year	74	74	74	74	74	74
Euro		8	8	5		
Other: salary inflation/ productivity etc			1	1	1	2
	74	82	83	80	75	76

Notes

1 - 1997/98 includes pro-forma adjustments of £6m to reflect a normalised level of costs for tree trimming and other costs.

2 - Operating costs exclude cost of sales

3 - Depreciation includes DMS

4 - DMS represents the 1998 opening of the market costs

Rates

The level of formula rates to be paid by SWEB and other utilities from April 2000 is likely to increase significantly due to changes in methodology currently being considered. An initial valuation from the Valuation Office indicates that this will more than double the rates bill from £15m in 1997/98 to £35m in 2000/01.

We are vigorously challenging this and making all endeavours to reduce the cost liability on SWEB. However the rates methodology is largely beyond SWEB's control.

Euro

We have assumed a total cost of £40m for the EURO based on the costs of the millennium anticipated to be in excess of £15m. Experts anticipate that the cost of the EURO will be around three times the cost of the millennium.

SWEB enjoys the benefit of having an integrated IT department servicing both supply and distribution. We consider that the costs should be charged equally to the two businesses.

These costs fall primarily within the first three years of the new control which means that the total costs for these years are relatively higher in real terms than the last two years.

Metering Cost Pressures

In respect of metering, the extent of the periodic meter change programme for the review period - driven by the certification life of the meters - will mean a significant increase in costs. For example, the number of changes required in 2004/05 is estimated at 114,000. This compares to 40,700 changes made in 1997/98.

Quality of Supply Case

SWEB's Quality of Supply case involves the following the targets:

A 10% reduction in interruptions from the 1997/98 level by 2004/05 (Target of 80 interruptions per 100 customers).

A 10% reduction in minutes lost from the 1997/98 level by 2004/05 (Target of 65 minutes lost per customer).

To complete 200 worst performing circuit improvement schemes over the 5 year period.

65% of customers to be restored within 1 hour for the HV system.

The main "driver" of operating costs in the quality measures case is the need to provide quick restorative action as near as possible to the occurrence of the fault. Bearing in mind that normal working hours only account for about 22% of the total hours in a week it is considered that this quick response can only be achieved by increasing staff numbers and running a full shift system. For the south west with its long length of network and long travel distances this is estimated to cost around £5m per year and this has been costed into the quality measures case.

SWEB - TABLE 14.2 SUPPLEMENTARY ANALYSIS OF DISTRIBUTION BUSINESS HCA COSTS - BASE CASE IN 1997/98 PRICES

DESCRIPTION	ACTUAL				FORECAST						
	1994/95 £m	1995/96 £m	1996/97 £m	1997/98 £m	1998/99 £m	1999/00 £m	2000/01 £m	2001/02 £m	2002/03 £m	2003/04 £m	2004/05 £m
NGC exit charges	12.1	11.3	10.5	7.4	10.9	10.3	10.5	10.2	9.9	9.6	9.6
Rates on distribution system	14.1	14.2	14.5	14.3	14.6	14.8	31.3	31.3	31.3	31.3	31.3
Depreciation on distribution system	23.2	23.1	23.9	23.3	24.3	26.8	28.8	30.6	32.1	33.8	34.0
Payroll costs	48.1	41.7	33.4	33.0	33.5	35.2	35.3	35.4	35.6	35.8	36.1
Non payroll IT costs	17.8	10.3	8.9	7.9	13.3	14.1	11.4	11.8	11.3	11.2	11.2
Premises costs	5.5	5.3	3.8	4.0	3.9	3.9	4.1	4.0	4.0	3.9	3.9
Insurance	4.0	4.2	3.1	2.7	2.7	2.6	2.6	2.6	2.6	2.5	2.5
Materials & services	68.5	76.7	31.8	32.9	31.3	35.5	42.5	42.8	39.9	29.9	30.0
Redundancy provision release	0.0	0.0	0.0	0.0	-8.3	0.0	0.0	0.0	0.0	0.0	0.0
Total Costs	193.2	186.8	129.8	125.4	126.1	143.3	166.4	168.6	166.6	158.2	158.6

SWEB - TABLE 14.4 SUPPLEMENTARY ANALYSIS OF DISTRIBUTION BUSINESS HCA COSTS - QUALITY OF SUPPLY SCENARIO IN 1997/98 PRICES

DESCRIPTION	ACTUAL				FORECAST						
	1994/95 £m	1995/96 £m	1996/97 £m	1997/98 £m	1998/99 £m	1999/00 £m	2000/01 £m	2001/02 £m	2002/03 £m	2003/04 £m	2004/05 £m
NGC exit charges	12.1	11.3	10.5	7.4	10.9	10.3	10.5	10.2	9.9	9.6	9.6
Rates on distribution system	14.1	14.2	14.5	14.3	14.6	14.8	31.3	31.3	31.3	31.3	31.3
Depreciation on distribution system	23.2	23.1	23.9	23.3	24.3	26.8	28.8	30.9	32.7	34.7	35.2
Payroll costs	48.1	41.7	33.4	33.0	33.5	35.2	39.0	39.2	39.4	39.6	39.9
Non payroll IT costs	17.8	10.3	8.9	7.9	13.3	14.1	11.4	11.8	11.3	11.2	11.2
Premises costs	5.5	5.3	3.8	4.0	3.9	3.9	4.1	4.0	4.0	3.9	3.9
Insurance	4.0	4.2	3.1	2.7	2.7	2.6	2.6	2.6	2.6	2.5	2.5
Materials & services	68.5	76.7	31.8	32.9	31.3	35.5	43.7	43.9	41.2	31.2	31.2
Redundancy provision release	0.0	0.0	0.0	0.0	-8.3	0.0	0.0	0.0	0.0	0.0	0.0
Total Costs	193.2	186.8	129.8	125.4	126.1	143.3	171.4	173.9	172.2	164.1	164.8

SWEB - TABLE 14.6 SUPPLEMENTARY ANALYSIS OF DISTRIBUTION BUSINESS CAPITAL EXPENDITURE - BASE CASE SCENARIO IN 1997/98 PRICES

DESCRIPTION	ACTUAL				FORECAST						
	1994/95 £m	1995/96 £m	1996/97 £m	1997/98 £m	1998/99 £m	1999/00 £m	2000/01 £m	2001/02 £m	2002/03 £m	2003/04 £m	2004/05 £m
Capital expenditure - load related	24.8	23.7	29.1	33.5	33.0	33.4	30.0	30.3	30.7	31.0	31.4
- non load related	40.1	40.1	44.4	44.6	44.8	42.9	40.1	40.7	39.0	38.2	38.5
- non operational	5.6	4.5	8.1	15.0	10.2	10.0	5.6	4.6	4.1	4.0	4.0
-customer contributions	-11.9	-10.4	-9.9	-12.9	-16.3	-13.6	-8.3	-8.4	-8.5	-8.6	-8.9
Net Capital Expenditure	58.6	58.0	71.7	80.2	71.7	72.7	67.4	67.0	65.4	64.6	64.9

SWEB - TABLE 14.8 SUPPLEMENTARY ANALYSIS OF DISTRIBUTION BUSINESS CAPITAL EXPENDITURE - QUALITY OF SUPPLY SCENARIO IN 1997/98 PRICES

DESCRIPTION	ACTUAL				FORECAST						
	1994/95 £m	1995/96 £m	1996/97 £m	1997/98 £m	1998/99 £m	1999/00 £m	2000/01 £m	2001/02 £m	2002/03 £m	2003/04 £m	2004/05 £m
Capital expenditure - load related	24.8	23.7	29.1	33.5	33.0	33.4	30.0	30.3	30.7	31.0	31.4
- non load related	40.1	40.1	44.4	44.6	44.8	42.9	51.5	50.5	49.8	49.0	49.1
- non operational	5.6	4.5	8.1	15.0	10.2	10.0	5.6	4.4	4.1	4.0	4.0
- customer contributions	-11.9	-10.4	-9.9	-12.9	-16.3	-13.6	-8.3	-8.4	-8.5	-8.6	-8.9
Net Capital Expenditure	58.6	58.0	71.7	80.2	71.7	72.7	78.7	76.8	76.2	75.4	75.5

RPI INDEX TO 1997/98 PRICES (future values assume 3% inflation)	1994/95	1995/96	1996/97	1997/98	1998/99	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05
	145.35	150.08	153.73	158.78	163.54	168.45	173.53	178.74	184.10	189.63	195.31

12. YORKSHIRE

PART B

SECTION 8: INFORMATION FOR PUBLICATION

A summary narrative (maximum 3,000 words) of the response to paragraph 7.3.2 and an explanation of the levels and trends in the information contained in tables 14.2, 14.4, 14.6 and 14.8). This should highlight the efficiency improvements to date, how these benchmark nationally and internationally, and the efficiency targets proposed for the future. It should also provide an explanation of the key factors underlying the quality of supply scenario and the sensitivity analysis described in the “Overview Of Investment Programme” subsection of chapter 4 of the guidance notes.

INTRODUCTION

1. At the time of the last price control review, Yorkshire Electricity was completing the transition from nationalised industry to private sector company and were in the early stages of developing our organisation and our systems to deliver value for money in quality of supply and customer service.
2. Since then we have restructured our Distribution Business into divisions with defined responsibilities and, by separating responsibility for managing the network from that of providing resources, we have been able to drive in major efficiencies. This can be seen in the reduction in operating costs that took place in the years immediately following this restructuring. We have continued to make improvements to our structures to respond to changing external conditions.
3. Our success in reducing our controllable costs over the current period has also reduced the proportion of total costs which are within the direct control of the Distribution Business. Turning to the future, we expect that further efficiency initiatives will be largely offset by external cost pressures, as the influence of non-controllable costs on our total costs become increasingly significant. For instance, NGC exit charges, rates and depreciation have increased from 38% of total costs in 1994/95 to 48% in 1997/98, and will be further increased in the review period to 50% in 2004/05.
4. The underlying theme for the post millennium years is uncertainty. We face business separation, changes to the regulatory and governmental framework and restructuring of the rating system, together with increasing impacts of European health and safety and social legislation. This uncertainty has now reached a level where UK Electricity Distribution is regarded as a business area with increasing risk compared with the last review period. It is important that all these factors are taken

into account in the Review, in addition to the quality and efficiency achievements to date.

5. Despite these uncertainties, YE will continue to concentrate on its core competencies and will strive to deliver the best quality of supply and customer service on a value for money basis.

DISTRIBUTION OPERATING COSTS 1994/95 to 2004/05

Non-Controllable Costs

6. Three types of cost are generally regarded as being outside the controls of PES's. These are
 - NGC Exit Charges
 - Rates on the Distribution System
 - Depreciation on the Distribution System

NGC Exit Charges

7. Charges from the NGC which relate to the use of their assets at the interface between the transmission and distribution networks were stable up to 1996/97 when a Transmission Price Control Review reduced them to around £21m per year, (Real). This saving was passed to customers through a reduced use of system charge. The current level of charges is likely to continue to 2005 if no action is taken by OFFER or NGC to change them.

Rates on the Distribution System

8. Rates on the distribution system, which are currently based upon transformer capacity have been stable over the current review period. However, the method of calculating rates is currently being reviewed and is likely to be changed. An estimate of the likely effect has been included in the forecast costs.

Depreciation on Distribution System

9. Depreciation has been stable over the current price review period. The increase in investment is beginning to show in the depreciation levels which will continue to rise during the next review period.

Controllable Costs

Payroll Costs

10. In 1993, just before the last price control review, YE restructured its Distribution Business to achieve a greater focus on the efficient operation and development of

the network. Initially, this resulted in the reduction in the number of managerial posts, as the new organisations had leaner, flatter structures. In subsequent years, better ways of working resulted in a reduction in the number of non-managerial posts. In addition increased use was made of contractors at market rates and some work was outsourced on a turnkey basis, with considerable savings. The result was to reduce payroll costs from £68m in 1994/95, to £58.7 in 1996/97.

11. At the beginning of 1998 a further restructuring took place, which built on the progress made in the 1993 restructuring. It was possible to further reduce the number of managers, but will not lead to the same non-managerial reductions as the previous one. In addition many of the support services were outsourced through a range of mechanisms. This further reduced the payroll costs to an expected £48.9m in the current year. Part of this reduction was due to a modification to accounting practice relating to the capitalisation of certain fault repairs. The labour content of these was transferred from staff revenue costs to the capital account.
12. YE judges that it is at minimum staffing levels for the service it provides. Whilst we will strive to develop better ways of working in order to improve efficiency, it is unlikely that further staff economies can be made. Moreover, there are upward pressures on staff numbers which are likely to lead to an increase in payroll costs, if not in actual numbers, during the next few years.
 - Working smarter has resulted in more reliance on a workforce with scarce skills, so it is likely that wage costs will increase ahead of inflation.
 - The requirements to run a registration service to facilitate competition will require increased staffing as the market is progressively opened. Staff costs in the current year already include £3.1 million for this new service.
 - Increased demands to deliver even higher levels of customer service will require extra staffing in the Trouble Call Centre and in our Field Operations Branch.
 - The European Working Time Directive will change work patterns and is likely to result in increased staff costs.
13. Against this backdrop YE will continue to drive for further efficiencies to mitigate these upward pressures on staff costs. This drive for efficiency has been taken into account in arriving at our estimate of the future trend of staff costs which is broadly level in real terms.

Non-Payroll IT Costs

14. As increased use is made of IT systems to increase efficiency and effect some of the savings described here, it is inevitable that its costs will rise. This has been the trend over the current price control review period and there is every sign that it will continue. IT systems are costly to support and inflation in the IT industry is many times that in other parts of the economy. YE have robust controls in place to ensure value for money is delivered in the commissioning of new IT systems and their subsequent operation.

Premises Costs

15. The cost of premises has reduced by £1m since the start of the current price control review period, due to depot rationalisation and other efficiencies. It is unlikely that further rationalisation can occur without affecting emergency response times and other aspects of customer service. These costs will continue at their present level of around £4m for the next period.

Insurance

16. The cost of insurance reduced over the current review period due to improved risk management. This cost will continue at the current level of around £2m during the coming price control period. This does not include increased premiums which may be payable if personal injury claims should increase. These cost are regarded as exceptional costs.

Other Costs

17. Other Costs are made up of range of items, most of which are stable over both price control periods. However the reduction over the current price control period from £43.4m in 1994/5 to £33.9m in 1996/7 and the subsequent rise to £40.3m in 1997/8 can be explained by relatively few items. These are as follows

- Data Management Services costs, which are the costs of facilitating of the competitive market, start in the current year at £4.5m and continue at around £6m into the future. The set-up charges for these services impacted in 1996/7 and in 1998/9 causing rises in Other Costs in these years. From 1999/00 amortisation of these costs results in an increase of around £6m in Other Costs which will continue until 2002/3.
- Corporate overheads have reduced over the current review period due to efficiencies brought about by restructuring. The current level of costs will continue into the future.
- Payments to landowners for their consent to having our equipment

on their land have been rising throughout the current period due to increasing demands of landowners. This trend is expected to continue and may become more pronounced in the future.

- Exceptional cost arose in 1994/95 and in 1997/98 due to radical restructuring. Looking forward, there are certain costs which could occur, but whose level is not known. These include possible claims for industrial injury, work to prepare for entering the EMU and work to rectify problems caused by the Millennium Bug which could possibly continue after 2000.

OVERVIEW OF INVESTMENT PROGRAMME - 1994/95 to 2004/05

18. Table 14.6 shows the trends in capital expenditure over the current and next review periods.

Load Related Investment

19. Expenditure on load related work is reactive. In general the pattern follows that of the local economy. This expenditure is showing a peak at the moment due to the relatively buoyant Yorkshire economy, which has been responsible for a disproportionate increase in work for business customers. It is unlikely that activity will continue at the current level so the load related expenditure for the coming price control review period has been set at around £43m per year (Real).

Non-Load Related Investment

20. Non-Load Related capital expenditure increased over the current period from £45.8m in 1994/5 to £90.6m in 1997/98. This reflected the institution of a formal asset replacement programme. The expenditure was ramped as it was necessary to get processes and plans in place to carry out the increased work demanded by the age of network components.

21. During this period we developed methods and tools to improve our management of the asset. These included a Distribution Asset Management System (DAMS), which is an integrated computer system designed to facilitate control and manage the distribution network. Much of the work in preparation for DAMS forced us to look at our philosophies and challenge long held beliefs about system management. As a result of this and other initiatives considerable savings were made during the current review period. These lessons have been applied to the projection of expenditure into the new price control period.

22. The level of expenditure for the next period is £59.5m for 2000/1 ramping to £70.1m during 2004/5. This ramp recognises the ageing nature of the distribution assets and will continue further into the next century. Our systems have given us the confidence to reject forward smoothing of investment, except in special circumstances, and we are working hard to develop age extension techniques to mitigate the effect of the “cliff face” of asset replacement which will appear in the next century.

Non- Operational Capital Investment

23. Most of the costs associated with non-operational capital expenditure related to the development, purchase and commissioning of computer systems, most notably DAMS mentioned above. Expenditure on this system commenced in 1994/5, peaked in 1996/97 and will reduce over the coming two years. Other significant changes to non-operational capital expenditure relate to:

- ongoing developments in data management services, to allow the competitive market in electricity to function correctly.
- ongoing development in other IT systems as we become increasingly dependent upon them for interaction with customers, suppliers and regulators
- expenditure on land and buildings and vehicles as the businesses of Yorkshire Electricity Group become responsible for their own operations. This increase is balanced by a reduction in charges between businesses.

Contributions

24. The level of contributions reflects the amount of new business activity. Business customers pay full cost, whilst domestic customers obtain some support from the Use of System Tariff. Contributions will therefore not reflect load related expenditure, but will depend upon the mix of business and domestic customers and system reinforcement. Contributions are likely to remain around current level during the next review period.

QUALITY OF SUPPLY

25. We were asked to submit, in addition to our proposed investment plans, additional scenarios for increased quality of supply investment. These scenarios are summarised as follows.

The Base Case

26. The base case is our current investment plan. It is primarily aimed at replacing assets at a level which will maintain quality of supply at its current level. Inherent in this case is a small improvement of around 5% in supply reliability and availability. However, by far the most important aspect of the base case is that the network should not deteriorate to a level where there would be large scale interruptions, or major incidents as occurred in Auckland, New Zealand. In addition the Network has to cope with normal load growth.

The Quality Case

27. We have also submitted a plan to improve quality further. This has a small impact on operating costs. The cost of remote controlling rural switchgear includes charges for communications channels. In addition the installation of extra sectioning points carries increased maintenance charges. These costs will rise to around £1.2m over the next review period. Further increases in quality would require a large step change upwards in operating costs due to the significant increases in staffing required to improve response times.

28. Quality improvements of around 5% are inherent in YE's base case. In addition proposals to improve quality indicators by around a further 10% have been included. This will be achieved by extending system automation and taking other actions resulting in increased capital expenditure of £29.8m over the review period.

29. Beyond this it is it will become increasingly difficult to improve quality without a step change in investment levels. YE consistently deliver supply quality comparable with the best PES's. There is a high risk that increased investment will fail to deliver the looked for improvements due to the number of external factors which affect quality of supply. There will come a time when the equipment installed to improve quality reaches a level of volume and complexity, that it begins to have a detrimental effect itself. Small gradual improvements year on year will avoid this. This has been YE's policy over the years. It has worked, and is to be commended.

Individual Initiatives Considered

30. A number of individual initiative have been considered at the request of OFFER

Change of Guaranteed Standard on Supply Restoration after Fault

31. The requirement to pay a penalty if customers are interrupted for more than

12 hours, rather than the current 24 hours was considered. Our current performance is that, after a fault, we restore 99.75% of our customers in less than 12 hours. Considering that many fault repairs take much longer than 12 hours this is a good performance. Those customers who are interrupted for more than 12 hours are usually directly connected to the faulty plant, which has to be switched off for safety reasons. Another reason for long interruptions is difficulty in gaining access to equipment, or to customers' premises.

32. Since these long interruptions are due to practical and safety difficulties, investment or increased expenditure on staff would not address the problem. It is not possible, therefore, to cost this proposed change to standards. However, it is possible that very large investment and increased running costs could, over the long term, reduce the number of customers affected by a small amount. During the twelve months to September 1998, 1,723 customers were affected in this way. One has to ask whether the very high cost of improving this standard is justified.

Increase in Overall Standard 1A by Three Percentage Points

33. This standard records companies' performance at restoring customers' supplies after fault and required that 85% of customers are restored in 3 hours. OFFER have asked us to consider a tightening of this standard to require 88% of customers' supplies to be restored in 3 hours. We have indicated that we would be happy to have this new target and do not see any increased costs as we are already restoring over 90% of customers within 3 hours.

New Standard of 99.5% of Customers Suffering Not More than 3 Interruptions per Year

34. This level of performance could not be guaranteed, as many situations where customers are interrupted several times in a year arise from circumstances outside our control, for example large scale building operations sometimes result in our equipment being regularly damaged by others. Our current programme of attacking circuits which deliver poor performance addresses many of the issues here. However, it is difficult to anticipate which circuits will deliver poor performance, and for what reason. Achievement of this standard, therefore, is not an investment issue.

The Answering of 90% Telephone Calls with a Substantive Response in Under 15 Seconds

35. OFFER have requested us to consider a new standard which requires 90% of telephone calls to be answer with a substantive response in 15 seconds. This is relaxed to 80% of calls within 30 seconds in exceptional

circumstances. We have carried out a great deal of work on improving our telephone response and were the first company to provide a Freephone service for supply interruptions. With our current service we are aiming to answer 80% of calls in 30 seconds. Improvement to the proposed new standard would require a technology based solution costing around £2.5 million to set up and £500,000 per year to run.

Undergrounding 5% of Overhead Lines

36. We were asked to determine the cost and quality of supply implications of undergrounding 5% of our overhead lines. The cost would be £36 million over 5 years but, due to increased repair costs of cables, there would be an increased operating cost of around £76,000 per year. Although widespread disruption of supplies due to adverse weather conditions would be avoided, the average time for which a customer would be interrupted would increase very marginally.

YORKSHIRE - TABLE 14.2 SUPPLEMENTARY ANALYSIS OF DISTRIBUTION BUSINESS HCA COSTS - BASE CASE IN 1997/98 PRICES

DESCRIPTION	ACTUAL				FORECAST						
	1994/95 £m	1995/96 £m	1996/97 £m	1997/98 £m	1998/99 £m	1999/00 £m	2000/01 £m	2001/02 £m	2002/03 £m	2003/04 £m	2004/05 £m
NGC exit charges	28.9	27.8	24.9	21.1	21.0	20.9	20.7	20.0	19.4	18.9	18.4
Rates on distribution system	20.3	20.3	20.8	20.5	20.8	20.7	25.3	25.3	25.4	25.4	25.4
Depreciation on distribution system	21.7	22.3	23.2	24.4	23.6	25.7	27.2	28.3	29.3	30.1	31.0
Payroll costs	74.3	63.6	60.6	44.5	47.5	47.0	46.6	46.9	46.1	46.5	46.8
Non payroll IT costs	4.9	5.2	11.8	6.4	11.0	11.2	11.4	12.3	13.3	13.1	13.0
Premises costs	5.7	4.5	5.2	4.4	4.1	4.1	4.1	4.2	4.1	4.2	4.1
Insurance	2.7	2.4	2.4	1.9	2.4	2.0	2.0	2.0	2.2	2.2	2.2
Materials	4.4	3.7	3.9	3.2	3.9	3.9	3.8	3.8	3.8	3.8	3.7
Other	43.4	30.4	33.9	40.3	51.6	43.2	47.1	44.9	44.3	36.7	36.0
Total Costs	206.4	180.3	186.6	166.7	185.7	178.7	188.3	187.7	187.9	180.9	180.6

YORKSHIRE - TABLE 14.4 SUPPLEMENTARY ANALYSIS OF DISTRIBUTION BUSINESS HCA COSTS - QUALITY OF SUPPLY SCENARIO IN 1997/98 PRICES

DESCRIPTION	ACTUAL				FORECAST						
	1994/95 £m	1995/96 £m	1996/97 £m	1997/98 £m	1998/99 £m	1999/00 £m	2000/01 £m	2001/02 £m	2002/03 £m	2003/04 £m	2004/05 £m
NGC exit charges	28.9	27.8	24.9	21.1	21.0	20.9	20.7	20.0	19.4	18.9	18.4
Rates on distribution system	20.3	20.3	20.8	20.5	20.8	20.7	25.3	25.3	25.4	25.4	25.4
Depreciation on distribution system	21.7	22.3	23.2	24.4	23.6	25.7	27.2	28.5	29.7	30.6	31.6
Payroll costs	74.3	63.6	60.6	44.5	47.5	47.0	46.7	47.1	46.3	46.7	47.2
Non payroll IT costs	4.9	5.2	11.8	6.4	11.0	11.2	11.4	12.3	13.3	13.2	13.1
Premises costs	5.7	4.5	5.2	4.4	4.1	4.1	4.1	4.2	4.1	4.2	4.1
Insurance	2.7	2.4	2.4	1.9	2.4	2.0	2.0	2.0	2.2	2.2	2.2
Materials	4.4	3.7	3.9	3.2	3.9	3.9	3.9	3.9	3.9	3.9	3.9
Other	43.4	30.4	33.9	40.3	51.6	43.2	47.1	44.9	44.3	36.7	36.0
Total Costs	206.4	180.3	186.6	166.7	185.7	178.7	188.5	188.1	188.5	181.9	181.9

YORKSHIRE - TABLE 14.6 SUPPLEMENTARY ANALYSIS OF DISTRIBUTION BUSINESS CAPITAL EXPENDITURE - BASE CASE SCENARIO IN 1997/98 PRICES

DESCRIPTION	ACTUAL				FORECAST						
	1994/95 £m	1995/96 £m	1996/97 £m	1997/98 £m	1998/99 £m	1999/00 £m	2000/01 £m	2001/02 £m	2002/03 £m	2003/04 £m	2004/05 £m
Capital expenditure - load related	25.9	32.5	37.5	43.7	47.8	46.9	42.2	43.2	42.7	42.7	43.9
- non load related	52.5	57.7	61.0	90.6	77.8	68.1	59.5	61.7	65.0	67.9	70.1
- non operational	6.4	10.4	19.5	15.4	18.8	14.0	11.3	11.3	12.9	13.4	11.9
-customer contributions	-24.5	-27.7	-28.2	-29.2	-31.8	-33.7	-33.6	-33.5	-33.5	-33.5	-33.6
Net Capital Expenditure	60.4	72.8	89.9	120.5	112.5	95.3	79.3	82.6	87.0	90.5	92.3

YORKSHIRE - TABLE 14.8 SUPPLEMENTARY ANALYSIS OF DISTRIBUTION BUSINESS CAPITAL EXPENDITURE - QUALITY OF SUPPLY SCENARIO IN 1997/98 PRICES

DESCRIPTION	ACTUAL				FORECAST						
	1994/95 £m	1995/96 £m	1996/97 £m	1997/98 £m	1998/99 £m	1999/00 £m	2000/01 £m	2001/02 £m	2002/03 £m	2003/04 £m	2004/05 £m
Capital expenditure - load related	25.9	32.5	37.5	43.7	47.8	46.9	42.2	43.2	42.7	42.7	43.9
- non load related	52.5	57.7	61.0	90.6	77.8	68.1	65.4	67.5	71.1	73.8	76.0
- non operational	6.4	10.4	19.5	15.4	18.8	14.0	11.3	11.3	12.9	13.4	11.9
-customer contributions	-24.5	-27.7	-28.2	-29.2	-31.8	-33.7	-33.6	-33.5	-33.5	-33.5	-33.6
Net Capital Expenditure	60.4	72.8	89.9	120.5	112.5	95.3	85.3	88.5	93.1	96.4	98.2

RPI INDEX TO 1997/98 PRICES	1994/95	1995/96	1996/97	1997/98	1998/99	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05
(future values assume 3% inflation)	145.35	150.08	153.73	158.78	163.54	168.45	173.53	178.74	184.10	189.63	195.31

13. SCOTTISH POWER

EXECUTIVE SUMMARY

Overview

Since vesting, the Electricity Supply Industry (ESI) has experienced radical transformation both in terms of efficiency and performance improvements. The UK electricity industry is now recognised world-wide as an efficient, customer oriented, industry. This is evidenced by the number of overseas companies who now use UK utilities as the target benchmark for a number of operational and customer oriented functions.

As a business, we have worked hard to reduce controllable operating costs whilst improving customer service and system performance. Over the current review period, controllable operating costs have been reduced by around 20% (£40m since vesting), whilst customer service and system performance have improved substantially. Guaranteed Standards have improved by 92% (from 1992/93 levels) and underlying Customer Minutes Lost have reduced by 14% (from 1991/92 levels).

To date, the majority of cost savings have been achieved through reductions in staffing levels (37% since vesting). There is obviously a limit to which future staffing levels (hence future levels of controllable operating costs) can be further reduced. The electricity industry has reached the point where future savings are likely to be limited to small incremental improvements in productivity.

As a company we will continue to focus on being an efficient, low cost operator, however, a number of external factors will lead to future increases in distribution operating costs. These factors include increased costs for IT services, tightened safety and environmental obligations, increased formula rates and increased depreciation charges¹.

Within our investment programmes, we have embraced the philosophy of identifying and implementing optimal 'value for money' solutions. We have moved away from the traditional Electricity Supply Industry approach of routinely replacing assets on a 'like for like' basis, and have categorised expenditure on the basis of investment output.

As a business, we are on track to invest around £330m within our distribution network over the current review period. This investment is broadly in line with the allowance given by the Regulator at the last distribution price control. Our investment expenditure is projected to increase by around 14% over the next price control period, partially as a consequence of inward investment arising from the establishment of the new Scottish Parliament and the requirement to upgrade post war network assets.

Our commitment to improved performance in customer service standards is clearly demonstrated by the dramatic improvements achieved within our Guaranteed Standards (92% since vesting).

¹ As a consequence of future investment expenditure and depreciation of the 1998 systems.

1. Overview of Strategy & Key Achievements

1.1 Strategic Overview

At the last Distribution Price Review ScottishPower's Distribution business was proved to be an efficient, low cost operator. Since then, the business has continued to implement strategies aimed at minimising costs whilst continuing to improve the level and quality of service offered to customers. This strategic focus will continue into the next price control period.

As a business we are on track to invest around £330m² over the current price control period. We focused on achieving the best value solutions for our network and for our customers.

Our investment requirements will increase by around 14% over the next price control period. This is as a consequence of the establishment of the Scottish Parliament, projected increase of Generation sites and the requirement to upgrade and reinforce post war network assets.

Clearly a key factor in the investment appraisal process is the value of the investment to both customers and shareholders. We welcome the opportunity to participate in the cost of capital debate and will be responding separately to the Regulator on this issue.

Our future investment strategy will continue to focus on investing prudently to ensure the implementation of optimal value for money solutions.

As a long-term player within the utility sector, we take our public responsibilities very seriously. Our future strategy includes a continuation of our commitment to achieve safety and environmental improvements.

We have vigorously supported the development of competition in Supply and will continue to actively support any practical developments which are consistent with economic and business logic, create the right environment for investment, and result in customer benefits.

In summary, our strategic objectives will continue to focus on:

- Identifying and implementing efficiency improvements.
- Delivering the optimal level of service quality (as determined in consultation with our customers).
- Investing prudently in our network to ensure optimal safety and performance at minimal cost.
- Delivering safety and environmental improvements.
- Supporting and facilitating the development of competition (where appropriate).
- Actively participating within the competitive markets for new connections and metering.

² 1997/8 Prices

1.2 Summary of Key Achievements

- Productivity improvements have resulted in controllable operating costs falling by 20% and meter reading costs by 26% over the review period.
- System performance and customer service improvements have been made with reductions in customer minutes lost (14% since 1991/92), and improvements in Guaranteed Standard (92% since 1992/93).
- ScottishPower has vigorously supported the development of competition in Electricity Supply and was the first PES within the UK (with Manweb) to deliver systems and processes for full competition.
- The business has continued to encourage inward investment within the local economy and has established close working relationships with Locate in Scotland, Scottish Enterprise, Local Development Agencies, Major builders and Local Council Authorities.
- Twelve gold awards for safety improvements have been awarded by the Royal Society for the Prevention of Accidents (RoSPA).

1.3 Environmental Scan

The industry has experienced significant change since the last distribution price review. A summary of the main factors likely to influence the current price review process is given below.

Changing Industry Structure

The industry has witnessed substantial take-over activity since the last price review. The subsequent restructuring has resulted in cost savings being achieved within many companies. The Regulator will have to give careful consideration to the treatment of such savings if the discipline of the capital market is not to be suppressed over future years.

Government & EU Reviews

The Government is currently undertaking policy reviews of utility regulation. The outcome of these reviews, in particular business separation, will impact on the ability of companies to accept new price controls which are intended to provide finance for functions which are as yet undefined.

Changes to Legislation & Tightening Performance Standards

A number of recent changes have been made to safety legislation, environmental obligations and performance standards. These changes will result in increased costs over the current and future price review periods.

1.4 Strategic Response

The correct response to these external challenges is to ensure that value for money customer services is the priority for all activities. Whilst cost reductions have always been a priority, plans are being validated to ensure a clear focus on outputs. This strategy will serve the business well throughout the next price control period and beyond.

1.5 Quality of Supply Scenario

Recent research shows that although the majority of customers would be willing to forego some reduction in the price of electricity for improvements in Quality of Supply, they would be unwilling to see price increases, as recently proposed by OFWAT. One of the key areas for debate in this Review will be the extent to which customers are willing to pay for the additional costs associated with the Quality of Supply Scenario included in our attachments.

1.6 Key Financial Assumptions

Our attached schedules assume the continuation of the existing price control formula. However the rate at which further cost reductions can be made is decreasing. This factor, combined with externally driven cost increases, would make a continuation of the current price controls unsustainable.

2. Continued Focus On Efficiency

Over the current price review period, the business has worked hard to deliver further cost savings whilst maintaining performance standards.

The controllable operating costs, have reduced in real terms by 20% over the last three years (£40m since vesting) as a result of a focussed and co-ordinated drive to improve efficiency and productivity.

3. Continued Focus On Customers

ScottishPower's Distribution business is committed to providing a reliable, safe and low-cost service to its customers. In parallel with implementing cost saving initiatives, the business has also worked hard to maintain and improve its customer service and performance standards.

A summary of our achievements to date and future objectives is given below.

3.1 System Performance and Reliability

To date, we have reduced underlying Customer Minutes Lost (CML) by 14% from 1991/92 levels. Our future objective is to reduce CML by around 20% by the year 2000. We are confident of meeting, or exceeding, our target.

Investment in quality of supply initiatives includes programmes, which specifically target system performance, in areas such as overhead protection, automation and outage free working. The limited level of CAPEX allowed at the last review (£3.5m per year) has been focussed on areas where CML could be most effectively reduced. Quality of supply investments will continue to be targeted at worst served customers.

The extreme winter storm experienced in 1996/7 created an unprecedented level of disruption and damage to both our system and the service we provide to our customers in the Scottish Borders. We committed all available resources to correcting the situation as quickly as possible and during the repair process the opportunity was taken to replace the damaged apparatus with more robust plant, which is more capable of withstanding severe weather.

3.2 Guaranteed Standards and Customer Service

The business has delivered significant improvements in the Guaranteed Standards of Performance with just 117 failures in 1997/98, compared to 1,500 in 1992/93. Complaints to OFFER have also reduced by around 30% over the same period. In addition, we retained the Government Charter Mark for service excellence, which was first awarded to the business in 1994.

3.3 Social Action Plan

ScottishPower welcomes the Government's proposals to construct an action plan to deal with socially disadvantaged groups. We are currently proactive with a variety of agencies to identify and implement workable energy solutions.

The Distribution business has strong working relationships with:

- Locate in Scotland
- Scottish Enterprise
- Local Development Agencies
- Major Builders, and;
- Local Council Authorities

We currently have a small, dedicated, team to meet with these agencies, discuss future commercial opportunities, and develop customer driven, value for money solutions.

4. Commitment to Safety & the Environment

ScottishPower's Distribution business continues to demonstrate a high level of commitment to safety and the environment.

4.1 Focus on Safety

In 1997/98 the business received 12 gold awards for safety improvements from the Royal Society for the Prevention of Accidents (RoSPA), and contributed towards the development of a Child Safety Centre.

Regrettably, the business experienced a fatal accident at Barrhead substation in 1997. Extensive investigations were carried out and a number of new measures, including a revised specification for test rods, were implemented throughout the business.

Our future strategy includes increasing our focus on public and employee safety.

4.2 Focus on the Environment

ScottishPower is committed to sustainable development and achieving environmental improvements, using legislation as a minimum standard.

The Distribution business has achieved the following environmental achievements during the review period:

- Achieving ISO 14001 Accreditation (Forth Region)
- Introduction of recycling schemes for SF6 gas and excavation spoil.
- Increasing the use of trenchless technology for cable laying.
- Implementing oil containment schemes for 181 transformers.
- Training staff to be EMF specialists in each region to deal with enquiries and customer visits.
- Incorporating environmental improvements during asset replacement.
- Introduction of two environmentally friendly cars into the Company's transport fleet.

The increased interest in environmental issues is likely to continue into the new millennium, especially with the new Labour Administration's drive to integrate social and environmental matters. The quality of the environment, particularly with respect to visual intrusion from the Company's asset in the landscape will also be a key factor for the business for the next review period. Our investment plans reflect some allowance for additional investment associated with this factor.

It is also likely the Government will continue the use of Market Instruments to add to the Company's tax burden, e.g. review of the Landfill Tax, introduction of an aggregate Tax and implementation of the European Directive on Waste Electrical and Electronic Equipment.

5. Commitment to Prudent Investment

Our investment strategy is focussed on investing prudently, and aims to meet legal and licence requirements and customer expectations in a cost-effective manner.

Over the current price control period, the distribution business has successfully managed to improve global network performance, maintain safety & security standards and achieve substantial efficiency savings whilst delivering overall programme outputs.

5.1 Management Initiatives

Cost saving initiatives have been successfully implemented in several areas, including:

- network & equipment design,
- improved working practices,
- project management, and;
- procurement.

Substantial investment has been made in improved network control equipment, enabling more effective asset management and prioritisation of expenditure.

It has also been possible to obtain synergy benefits from the acquisition of Manweb. (Although further cost reductions from synergies is likely to be limited.)

5.2 Load Related Expenditure

More than half the capital expenditure programme is load-related, and covers the investment requirements associated with new connections and increased load.

Within the competitive market, we have been very successful in winning major connection projects. **This reflects our ability to deliver projects efficiently and cost effectively.**

In 1996 the domestic market for new connections in Scotland experienced a downturn, however market conditions now appear to have stabilised and we anticipate a recovery of expenditure levels over the remainder of the current price control period.

Record levels of inward investment have led to increased expenditure within the industrial and commercial markets. As a business, we have worked closely with local authorities in Scotland, Scottish Enterprise, local development agencies and councils to provide tailored solutions for major inward investors.

Future investment plans are based on an assessment of the prevailing economic conditions (supported by external consultant reports), local regional knowledge, discussion with planning authorities and development agencies and known customer requirements.

Capital expenditure is split into the following categories: industrial, commercial, generation, new housing and reinforcement.

- ScottishPower's capital expenditure for industrial and commercial use is significantly driven by both manufacturing and services output and is forecast to rise and then remain relatively constant. This is consistent with output growth in service and manufacturing sectors of the economy. Expenditure is expected to be highest in the Forth Region, which also has the highest forecast growth rate.
- Capital expenditure on generation connections is dependent on the timing and allocation of the third tranche of Scottish Renewable Order (SRO) contracts and approval of Section 36 planning applications. The recent Government moratorium on CCGT Power Stations has prompted some customers to review their proposed developments.
- Capital expenditure for new housing is driven by housing starts and completions in the ScottishPower area and is forecast to rise and then remain at a relatively constant level for the remainder of the Price Control period. The upward rise is associated with expected increases in housing starts and completions.
- Reinforcement investment is necessary to accommodate demand growth or movement (churn) and to ensure that network fault levels and loading do not exceed equipment ratings. The ScottishPower franchise area is prone to business change, which is reflected in the movement of load centres. This trend is expected to continue into the future.

5.3 Non-Load Related Expenditure

The majority of non-load related investment is directed towards maintaining the integrity, safety and performance of the distribution network.

Expenditure is categorised on the basis of investment output (i.e. replacement of inadequate assets, quality etc) and this approach reflects a very important principle behind our asset replacement policy. **A clear focus on output from investment means that we do not routinely replace assets on a 'like for like' basis and each project is considered on individual merit.**

Our investment in network control equipment has provided information enabling the business to prioritise non-load related investment plans. In certain instances we have been able to improve capital efficiency and network performance by adoption of new technologies, alternative designs and construction standards.

Our investment strategy includes initiatives focussed on deriving maximum performance benefits from expenditure. Much of this investment is targeted towards our customers in the rural areas.

Future plans involve higher levels of investment necessary to address a number of key issues;

- Replacement of 'inadequate' equipment which has been identified as either unsafe or unfit for purpose.
- Pressure from safety legislation, legal judgements and public expectations has driven a requirement for increased investment on measures to safeguard our installations from unauthorised interference.
- Oil filled switchgear is now reaching the end of its safe operational life and a prioritised replacement programme will be introduced to minimise risk to staff and public.
- Public concern regarding the performance of rural networks during extreme weather conditions has increased in the last two years. Additional investment will be targeted toward the upgrading of inadequate post-war overhead line designs.
- Wayleave terminations & the cost of obtaining planning consents has risen significantly in recent years with increased pressure to divert or underground overhead lines as commercial and housing developments encroach into urban fringe areas around cities & towns. A programme has been established to convert wayleaves to servitudes in order to secure our position against loss of essential network infrastructure.
- Enhanced environmental awareness and associated legislation places additional emphasis on the need to conduct our work in an environmentally sensitive manner. There is a notable upward trend in the costs of managing public inquiries and compensation payments to developers/landowners. These costs are shown in the business plan schedules.

Quality of Supply Improvement Plan

Significant performance improvements have been achieved in global network measures during the current price control period and the majority of our customers have not experienced a supply interruption during the past 12 months.

Since our research confirms that the majority of our customers are satisfied with their quality of supply we intend to target performance improvement investment in specific areas benefiting those customers who are least well served. Our objective is to ensure that no community experiences more than 4 supply interruptions per annum and to develop cost-effective improvements for those individual customers who currently experience more than 7 supply interruptions per annum.

Non-Rechargeable Diversions

Expenditure on non-rechargeable diversions and environmental activities is currently about 50%, of the level anticipated in our Price Review Submission.

This is partly due to our improved approach to management of consents and environmental issues but also illustrates the difficulty in predicting expenditure associated with third party decisions. We have prepared our revised expenditure forecast for the present price control period on the basis of current legislation, although we anticipate greater environmental pressures on the Distribution business in future years

8. CONCLUSIONS

The evidence clearly shows that we have managed our business in an efficient and prudent manner. Substantial savings have been made within our distribution operating costs, whilst customer service and system performance have seen significant improvements.

We are confident that, on a like for like basis, regulatory comparisons of PES distribution operating costs will show ScottishPower to be an efficient operator.

The industry has achieved substantial cost reductions since vesting. These savings have been achieved predominately as a result of reductions in staffing levels. It is unlikely that cost savings of a similar magnitude will be achievable in the future, particularly in the light of Government reviews of utilities (especially business separation), tightened performance standards, and higher levels of external operating costs.

Corporate activity within the capital market has resulted in further cost savings being achieved through take-overs and acquisitions. This avenue is thought to be one of the principal remaining drivers for extracting further savings within distribution costs. Careful consideration will have to be given to the treatment of such costs if the capital market is not to be dissuaded from embarking upon future mergers and acquisitions.

Within ScottishPower, we have implemented an innovative approach to system investment. In contrast to traditional investment policies, adopted by the Electricity Supply Industry, we do not replace assets routinely on a 'like for like basis' but appraise and prioritise investment projects based on expected outputs. This approach yields maximum value for money benefits.

A key factor in the investment appraisal process is the value of investment to both customers and shareholders. The Regulator will have to give careful consideration to the appropriate pre-tax cost of capital required to incentivise companies to commit to investment programmes over future review periods.

SCOTTISH POWER - TABLE 14.2 SUPPLEMENTARY ANALYSIS OF DISTRIBUTION BUSINESS HCA COSTS - BASE CASE IN 1997/98 PRICES

DESCRIPTION	ACTUAL				FORECAST						
	1994/95 £m	1995/96 £m	1996/97 £m	1997/98 £m	1998/99 £m	1999/00 £m	2000/01 £m	2001/02 £m	2002/03 £m	2003/04 £m	2004/05 £m
NGC exit charges	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rates on distribution system	15.6	15.0	15.2	15.2	15.1	15.2	19.0	19.0	19.0	19.0	19.0
Depreciation on distribution system	23.4	26.4	29.6	28.4	32.7	40.1	42.2	44.1	44.4	44.0	44.1
Payroll costs	43.6	41.7	37.6	32.5	30.4	30.3	29.8	29.2	29.1	29.1	28.9
Non payroll IT costs	7.6	8.6	9.4	10.4	15.1	17.0	17.5	17.7	17.2	16.8	16.5
Premises costs	0.0	0.0	4.1	4.2	4.1	4.1	4.0	4.1	4.1	4.0	4.1
Insurance	3.4	2.9	3.5	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Materials, Goods & Services	54.3	54.6	58.3	51.0	47.7	49.0	48.0	48.0	48.2	48.2	48.0
1998 Depreciation costs	0.0	0.0	0.0	0.0	4.8	8.0	7.8	7.5	7.3	2.9	0.0
Total Costs	147.9	149.2	157.7	144.0	152.2	165.8	170.6	171.9	171.6	166.4	162.8

SCOTTISH POWER -TABLE 14.4 SUPPLEMENTARY ANALYSIS OF DISTRIBUTION BUSINESS HCA COSTS - QUALITY OF SUPPLY SCENARIO IN 1997/98 PRICES

DESCRIPTION	ACTUAL				FORECAST						
	1994/95 £m	1995/96 £m	1996/97 £m	1997/98 £m	1998/99 £m	1999/00 £m	2000/01 £m	2001/02 £m	2002/03 £m	2003/04 £m	2004/05 £m
NGC exit charges	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rates on distribution system	15.6	15.0	15.2	15.2	15.1	15.2	19.0	19.0	19.0	19.0	19.0
Depreciation on distribution system	23.4	26.4	29.6	28.4	32.7	40.1	42.2	44.3	44.7	44.3	44.5
Payroll costs	43.6	41.7	37.6	32.5	30.4	30.3	29.8	29.2	29.1	29.1	28.9
Non payroll IT costs	7.6	8.6	9.4	10.4	15.1	17.0	17.5	17.7	17.2	16.8	16.5
Premises costs	0.0	0.0	4.1	4.2	4.1	4.1	4.0	4.1	4.1	4.0	4.1
Insurance	3.4	2.9	3.5	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Materials, Goods & Services	54.3	54.6	58.3	51.0	47.7	49.0	48.1	48.1	48.4	48.5	48.3
1998 Depreciation costs	0.0	0.0	0.0	0.0	4.8	8.0	7.8	7.5	7.3	2.9	0.0
Total Costs	147.9	149.2	157.7	144.0	152.2	165.8	170.7	172.2	172.1	167.0	163.6

SCOTTISH POWER - TABLE 14.6 SUPPLEMENTARY ANALYSIS OF DISTRIBUTION BUSINESS CAPITAL EXPENDITURE - BASE CASE SCENARIO IN 1997/98 PRICES

DESCRIPTION	ACTUAL				FORECAST						
	1994/95 £m	1995/96 £m	1996/97 £m	1997/98 £m	1998/99 £m	1999/00 £m	2000/01 £m	2001/02 £m	2002/03 £m	2003/04 £m	2004/05 £m
Capital expenditure - load related	46.0	46.6	43.4	42.6	42.2	47.5	49.5	51.4	51.7	52.0	52.3
- non load related	34.3	39.7	38.7	44.5	41.7	39.3	42.3	47.8	47.8	47.7	47.7
- non operational	11.9	14.1	19.9	37.7	29.1	14.0	10.4	10.3	9.9	9.9	10.5
- customer contributions	-15.2	-15.6	-20.2	-18.5	-16.5	-19.1	-20.0	-20.4	-21.2	-20.7	-19.7
Net Capital Expenditure	77.0	84.7	81.8	106.3	96.6	81.7	82.2	89.1	88.2	88.9	90.8

SCOTTISH POWER - TABLE 14.8 SUPPLEMENTARY ANALYSIS OF DISTRIBUTION BUSINESS CAPITAL EXPENDITURE - QUALITY OF SUPPLY SCENARIO 2 IN 1997/98 PRICES

DESCRIPTION	ACTUAL				FORECAST						
	1994/95 £m	1995/96 £m	1996/97 £m	1997/98 £m	1998/99 £m	1999/00 £m	2000/01 £m	2001/02 £m	2002/03 £m	2003/04 £m	2004/05 £m
Capital expenditure - load related	46.0	46.6	43.4	42.6	42.2	47.5	49.5	51.4	51.7	52.0	52.3
- non load related	34.3	39.7	38.7	44.5	41.7	39.3	47.3	52.8	52.8	52.8	52.8
- non operational	11.9	14.1	19.9	37.7	29.1	14.0	10.4	10.3	9.9	9.9	10.5
- customer contributions	-15.2	-15.6	-20.2	-18.5	-16.5	-19.1	-20.0	-20.4	-21.2	-20.7	-19.7
Net Capital Expenditure	77.0	84.7	81.8	106.3	96.6	81.7	87.2	94.1	93.2	93.9	95.8

RPI INDEX TO 1997/98 PRICES	1994/95	1995/96	1996/97	1997/98	1998/99	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05
(future values assume 3% inflation)	145.35	150.08	153.73	158.78	163.54	168.45	173.53	178.74	184.10	189.63	195.31

14. SCOTTISH HYDRO-ELECTRIC

Introduction

Scottish Hydro-Electric is pleased to provide the following summary of its Distribution Operating Costs to highlight the efficiency improvements achieved and what the likelihood is for future improvement. The summary also contains analysis of the five Quality of Supply Scenarios which all PESs were requested to cost out and an illustration of the trends shown in the tables which accompany this section.. Scottish Hydro-Electric hopes that the inclusion of this summary in OFFER's Consultation paper will allow an informed public debate on all the Electricity companies on the same basis.

Contents:

Part A - Trends and levels of Operating costs in the current period 1995/96 to 1999/00

Part B - Initiatives

Part C - Cost Patterns, outline policies and initiatives by overhead category

Part D - Quality of Supply Scenarios

Part E - Quality Measures Scenario and Sensitivity Analysis

Part F - Supplementary Analysis of Distribution Capital Expenditure

Scottish Hydro-Electric operates in a unique territory - 2% of the UK population with an authorised area covering 25% of the land mass. This has an inevitable impact on its ability to continue to achieve high levels of efficiency improvements. The information detailed below illustrates the achievements made and future projections of operating costs.

A: TRENDS AND LEVELS OF OPERATING COSTS IN CURRENT PERIOD 1995/96 to 1999/00

Scottish Hydro-Electric's distribution opex targets were set by the MMC in the summer of 1995. These targets were tougher than those proposed by OFFER in 1994. During the time the MMC was inquiring into Scottish Hydro-Electric, the Price Controls for the RECs were re-opened by OFFER following the Trafalgar House / Northern Electric takeover battle. The MMC largely set aside the comparative analysis done by OFFER and set an opex target for Scottish Hydro-Electric by removing all non-recurring expenditure from the base year, creating a "normal" level of cost and then applying a testing efficiency driver.

Distribution Regulatory overheads excluding depreciation have been marginally below target, out-turning in nominal terms at a level of approximately £63M p.a. The cumulative overheads are less than those allowed for by the MMC by £0.8M in real terms.

It is anticipated that this close matching of cost performance to Regulatory targets will continue in the remainder of the current price review, as further cost reduction efforts are offset by the pressure of new costs and inflationary pressure.

Customer Service improvements

As a result of the considerable refurbishment work carried out, Distribution Customer Service has improved from the start to the end of the 1995-98 baseline. Key headlines are:

- Customer Minutes Lost/ customer p.a. from all causes leading to loss of supply has fallen from 233 in 94/95 to 219 in 97/98. (Since 93/94 the reduction has been nearly 14%.)
- The number of customer supply interruptions from all causes per 100 customers fell by 13%
- The number of customers with supplies not restored within 3 hours has fallen by 32%
- The number of verified voltage complaints per 10,000 connected customers has fallen by 28%

Efficiency improvements

The following efficiency improvements have been achieved over the five year period:-

- Net Labour & salary costs/ employee have fallen from £18.1k in 94/95 to £17.6k in 97/98 - all expressed in real Oct 98 terms. This reflects a real terms fall in costs per employee of £3.8M (14.4%) at a time when headcount reduced by nearly 180 (12.2%).
- Overall, Distribution Opex including recharges/ employee has fallen from £52.1k in 94/95 to £49.6k in 97/98 - all expressed in real Oct 98 terms. This is a fall of 4.7%.

These reductions can partly be seen as driven by the Distribution network becoming more capital intensive, in line with the agreed refurbishment requirements of the last Price Review.

- Fixed Assets per employee have risen from £355k in 94/95, to £481k in 97/98.

International benchmarking

Scottish Hydro-Electric was the only British company invited to participate in an international benchmarking exercise. AT Kearney, Dusseldorf, carried out a study in March 1998 on behalf of 12 German combined Distribution & Supply (D&S) companies. This showed that, against a range of 18 northern European D&S companies, Scottish Hydro-Electric ranked as follows:-

- i. Real cost of D&S activities - pence/kWh, Scottish Hydro-Electric ranked 7th best out of 18.
- ii. Real electricity distribution costs alone including depreciation, Scottish Hydro-Electric ranked 3rd best out of 18.
- iii. Real depreciation costs alone, Scottish Hydro-Electric again ranked 3rd best out of 18.

In international terms, Scottish Hydro-Electric is a low cost Distributor.

B. INITIATIVES

The Power Systems Business has introduced a number of initiatives over recent years, including:

- (i) Team Working where, across operations this has brought focus to the work group, greater involvement and empowerment and reduced overheads.
- (ii) Re-organisation of System Management which reduced the number of Control Rooms and introduced new Asset Management priorities and techniques. Supported by new IT systems,

this has led to a review of maintenance policy and will allow the future introduction of Reliability Centred Maintenance.

(iii) A small dedicated Distribution Call Centre (Service Management Centre) which has been established to deal with customers' more complex distribution issues and to provide a registration service for the open supply market. This initiative, combined with a freephone telephone number to allow easy access to specialised assistance, will ensure that Scottish Hydro-Electric remain at the forefront of customer service.

(iv) A major drive to improve safety performance during the last five years with a target to achieve zero lost time accidents. This has had a significant effect upon attitudes and has resulted in a culture shift across the business with many spin-off benefits.

(v) A similar initiative has now been introduced in the area of environmental awareness and environmental risk management.

C. COST PATTERNS, OUTLINE POLICIES AND INITIATIVES BY OVERHEAD CATEGORY

1) Wages/ Salaries

The Power Systems (PS) Business of Scottish Hydro-Electric - comprising Distribution and Transmission - has progressed in the period since privatisation to having all staff employed on revised evaluated agreements. The key objective of Scottish Hydro-Electric Salary Policy is to develop and maintain the prosperity of the business, the company and the staff.

Overall Headcount Analysis/ Trends

The average number of people employed by the Distribution business in the year to March '98 was 1,279 out of a total company figure of 3,245. The Distribution figure is 12% (178) below the level at March '95, and is as a result of ongoing initiatives to improve productivity throughout the business. However, headcount reductions in line with the 95/00 review period are unlikely to be repeated. For Distribution to continue to achieve 2% savings p.a. is therefore doubtful, particularly given heightening customer service expectations.

The total of Staff costs and Revenue projects (Network Repair & Maintenance comprising labour and services) has out-turned £0.7M above the cumulative MMC target (£11.8M) in the three years to March '98.

2) Training

Training and development for the Distribution Business are addressed as integral parts of Scottish Hydro-Electric's business strategy meaning that individual development needs are matched to those of the business as a whole. Distribution Training costs were £0.4M in 97/98 compared with £0.5M in 95/96. Further pressure to make cost savings in this area could prejudice the ability of Scottish Hydro-Electric to adapt to the operational and organisational changes which are proposed by the Regulator.

3) Travel, Accommodation & Meals

Scottish Hydro-Electric has an up-to-date, comprehensive system which is 'cost-reflective' in the sense that its structure incorporates the minimum of flat-rate allowances. Distribution costs were £0.9M in 97/98 - the same nominal level as in 94/95. Further pursuit of 'savings' in a small company with geographical factors unique to the UK, would cause costs to rise elsewhere. Air travel and car costs in general have also been an area of increasing government taxation since the last review.

4) Transport

Since 1995, the move towards a leasing based fleet for operational vehicles has continued and the Scottish Hydro-Electric company car policy has recently been revised (Jan '98). There has been a tightening in the control over the types of vehicles that are offered.

Operations business strategy drives the future requirements for operational transport but given the restructure, since 1994 most of the organisational savings have already been made. Distribution Transport costs rose from £2.5M in 94/95 to £2.7M in 97/98. Contract Hire costs for Distribution were £1.3M in 97/98 compared with £1.2M in 94/95.

5) Rates

The Rates burden for the core Regulated businesses has risen in real terms in the past few years, due to increases in rateable values. Cumulative Distribution Rates are £0.9M above MMC targets for the three years to March '98. Any increase beyond the level recognised in setting the Price Control ought to be passed through to customers. In the price control settlement, provision must be made for such a pass through.

6) Insurance

Scottish Hydro-Electric Insurance policies are reviewed annually, and have been subject to formal independent review. Our Insurance cover is reviewed on an annual basis, and economies of scale are sought by taking out policies at a company rather than individual business level. Cumulative Distribution Insurance costs are £1.5M below MMC targets for the three years to March '98.

7) Wayleaves

Wayleave costs have out-turned £2.0M above MMC targets due to renegotiation of the underlying agreements following pressure from organised landowners and environmental groups. This process is likely to continue into the next review period. Environmental and other considerations will bring about upward pressure on costs in the next few years. The forecast real terms reduction of 0.6% p.a. from 2000/01 to 2004/05 reflects this.

8) IS/ IT

Until 1995, most IS/ IT and Telecommunications services were provided to all Scottish Hydro-Electric businesses by a centralised Corporate unit. In 1995, Scottish Hydro-Electric made each business responsible for its own IS and IT and the strategy is now to focus all effort

on four core applications rather than developing new ones. Systems integration between these applications will provide future benefits to the business. IT/ IS support/ maintenance; agency; PC and mainframe opex costs were £0.8M in 97/98, and are expected to grow in real terms in the years to 2004/05.

Conclusion

The continuation of the present efficiency control (X = 2% p.a. cost reduction) is an onerous target for the core Distribution Business of Scottish Hydro-Electric.

D: QUALITY OF SUPPLY SCENARIOS

The information below details the effects on network and non-operational capital expenditure and on operating costs of the following scenarios posed by OFFER:-

Scenarios 1 & 2

- 12 Hour Restoration time (rather than 24 hour restoration), and new Overall Standard on a Maximum of 3 interruptions per year for 99.5% of customers.

Capex implications

In order to meet these targets, duplication of primary substations and circuit-breakers would be necessary along with reinforcement of radial EHV and HV lines (with pole-mounted reclosers and circuit-breakers). This would require a significant investment in the rural network in opex as well as capex terms.

The total capex required to upgrade circuits and add further assets such as transformers and circuit breakers to strengthen the network is **£221M** for reducing the maximum number of interruptions per customer to three per year. The total capex required to meet a target restoration time of 12 hours following a fault would be **£629M**.

However, these two improvement measures are not mutually exclusive. Undertaking the work to meet a target of restoration within 12 hours takes us part of the way along the process necessary to achieve a maximum of 3 interruptions per customer per year.

Conclusion

Total capex costs of achieving the two Quality of Supply scenarios:-

Capex required at EHV - = £174M

Capex required at HV - = £483M

TOTAL - £657M

Opex implications

There is a significant additional fault restoration opex cost which can be conservatively estimated at **£0.50M p.a.**

The ongoing opex costs associated with the new assets required to meet the targets set in scenarios 1 and 2 can be summarised as follows:-

Opex impacts of additional assets	£ impact p.a.
Duplication of Primary substations	25,000
Additional Secondary substations	12,000
Increase in EHV line length	91,000
Increase in HV line length	609,000
TOTAL DIRECT MAINTENANCE COST	737,000

Scenario 3

- Overall Standard 1a to be increased by 3%

Scottish Hydro-Electric has not traditionally used the 3 hour restoration time as a specific company target because:-

- i. This overlaps with other targets such as 24 hour restoration and reduction in Customer Minutes Lost (CMLs), which generally have priority.
- ii. There is a recognition by the Electricity Consumers' Committees that further improvement in 3 hour restoration performance is not a realistic target in the most remote parts of the UK.
- iii. Scottish Hydro-Electric would need to be resourced to an unrealistic level e.g. owning and running its own fleet of helicopters.

The costs required to improve performance under OS 1a by a further 3% would be in excess of those incurred in achieving the improvement over the past three years, both because the incremental improvement is greater, and because further improvement would require Scottish Hydro-Electric to engage in new more costly initiatives.

The cost of meeting this requirement, assuming simple extrapolation of the £1.5M cost of improvement in fault restoration activity between 94/95 and 97/98, would be approx. £2.0M p.a. Due to the step changes likely in activity patterns to produce a further 3% improvement, the required opex is more likely to be **£2.5M p.a.**

The proposed OS1a increase would also have capex implications. In particular, the requirement for additional network automation, remote end generation and increased circuit security would drive significant capex costs. For remote areas, these solutions would need to be balanced against options for providing high speed response such as the use of helicopters.

Scenario 4

- New overall standard for telephone answering with information on loss of supply

Developments in Scottish Hydro-Electric's communications systems and its constantly reviewed Emergency Plans mean that Scottish Hydro-Electric is very well equipped to maintain contact with customers in the event of a widespread supply breakdown or other emergency. This is in addition to the service which is provided under normal circumstances.

Scottish Hydro-Electric is therefore willing to discuss the introduction of a new Overall Standard requiring a quick and substantive response to customer telephone calls for information on loss of supply in a minimum percentage of cases. Scottish Hydro-Electric is concerned, however, that the Standard should be firmly set and clearly defined with no prospects for alteration or tightening during the forthcoming price review period.

Communications Centre staffing costs would be affected if such a target was imposed. For example - handling calls at a constant rate of 90% in ten seconds would require a 17% increase in staffing levels. This also means that call agents will not be fully occupied during periods of normal activity. This is not an acceptable or economic use of resource. A more realistic target in the Call Centre industry is accepted as being 80% of calls within 30 seconds.

It will be essential to reach agreement on the target for this Standard and to ensure that it is clearly defined.

Scenario 5

- Undergrounding 5% of the HV network by 2004/05

Based on the length of the HV network, which comprises 20,793 km of overhead lines, a target of 5% undergrounding equals 208 kms p.a. over a five year period. This would involve undergrounding almost 196 kms of line p.a. more than Scottish Hydro-Electric has undertaken historically and this is far in excess of future forecasts.

Over and above current plans to underground 12.4 km p.a., the net result of undergrounding 5% of the HV overhead line network, would be **£7.6M p.a.** as detailed below:

Impacts of 5% UG of HV OH lines	Capex £k p.a. (5 years)	Opex £k p.a. (ongoing)
Underground 196 kms	8,800	
Less avoided OH refurbishment	1,200	
Increased fault restoration		1
Reduced network maintenance		-11
	7,600	-10

Quality of Supply Scenarios Conclusion

The costs to Scottish Hydro-Electric in both capex and opex terms, in October '98 prices, of implementing the quality of supply scenarios proposed in the Distribution Business Plan Questionnaire would be as follows:-

- 1) Restoration of customer supplies within 12 hours rather than 24
- 2) A new Overall Standard requiring not more than 3 interruptions per customer per year

**TOTAL FOR 1 and 2 £131.4M p.a. in capex
+ £1.24M opex p.a.**

- 3) An increase in Overall Standard OS1a (restoration of supply within 3 hours) to 88%

TOTAL £2.5M p.a. in opex
CAPEX costs not established but likely to be high

4) New overall Standard on telephone calls from customers querying loss of supply
 Scottish Hydro-Electric has not fully costed this scenario because of the uncertainties surrounding the definition of “exceptional circumstances” and the possibility that OFFER may increase the initial target from 90%, however, as indicated above, imposition of such a target is likely to lead to uneconomic use of call centre resources and a 17% increase in staffing costs.

5) Undergrounding 5% of HV network by 2004/05
TOTAL £7.6M p.a. in capex (see Section 5 above)
less £0.01M p.a. in opex

TOTAL CAPEX 1 to 5 £139M p.a. (Oct 98 terms)
(equating to £134.9M p.a. in Oct 97 terms as per Pro Forma Questionnaire Table 14.8)

In simple terms, this would result in a level of capex roughly triple that currently prevailing for the Distribution business. Scottish Hydro-Electric does not believe that the price implications of these suggested initiatives would represent good value for money for north of Scotland customers.

TOTAL OPEX for Scenarios 1 to 5 including depreciation and rates not included above:-

(A 2% efficiency saving has been assumed per annum in opex costs.)

Total opex implications	00/01	01/02	02/03	03/04	04/05
1 to 5 above - Oct 97 terms	3.48	3.44	3.41	3.35	3.25
depreciation - Oct 97 terms		3.5	6.8	10.1	13.3
rates - Oct 97 terms	0.9	1.8	2.8	3.8	4.9
Total as per Table 14.4 (Oct 97 terms)	4.38	8.74	13.01	17.25	21.45

Currently prevailing levels of opex including depreciation are roughly £80M p.a.

E: QUALITY MEASURES AND SENSITIVITY ANALYSIS

Quality Measures include three main elements:

- Network Automation
- Lightning Protection
- Power Quality Hardware

The proposed expenditure of £3M on these elements will build on the base case network refurbishment and reinforcement plans to deliver our 10 year 30% Customer Minutes Lost (CML) improvement target set in 1995 and hence, expenditure for these projects is included in the table 14.5 - Base Case Scenario. Detailed analysis has identified these three measures as

the most cost-effective elements in delivering performance improvements which match the special requirements of Scottish Hydro-Electric's network and customers.

In establishing requirements in these categories, sensitivity analysis has been carried out to determine the level of capex spend appropriate to match CML targets for the review period. For the first two, the variation of CML benefit against capex is inversely exponential i.e. the returns diminish rapidly as expenditure increases. For Power Quality Hardware the expenditure provides a minimum level of network monitoring to deliver a credible long term picture of whole system performance along with 'real-time' operational information to assist restoration.

F: SUPPLEMENTARY ANALYSIS OF DISTRIBUTION CAPITAL EXPENDITURE

This section outlines the trends associated with the attached tables - 14.5 and 14.6

Load related capex

The average annual actual expenditure to 1997/98 is £25.6M and exceeds the £22.1M allowed for the same period. This is due to greater than forecast customer development work and a major sub sea cable reinforcement to Orkney. Both are non optional and have been driven by a higher than forecast growth rate. The Orkney project has also been driven by failing diesel generation plant. The forecast annual average expenditure is £22.9M and shows a marked reduction. However, it is still driven by the second and final year of the Orkney project and by customer driven development work, including the Scottish Renewables Obligation, which is beginning to impact.

Efficiencies have been gained in the areas of network reinforcement and metering. Demand Side Management is helping to defer network reinforcement and improved purchasing and installation procedures are providing savings in metering.

Non load related capex

The average annual actual expenditure to 1997/98 is £33.6M and marginally exceeds the £33.4M allowed for the same period. While there were savings in metering refurbishment costs, these were offset by additional costs in HV overhead line and LV network refurbishment, and also unallocated island based diesel power station refurbishment costs at 6 sites. The forecast average annual expenditure is £36.7M. It includes diesel power station refurbishment work and recognises the need to invest more in substation plant and cables to meet performance targets. The forecast expenditure is balanced by reduced HV overhead line and LV network unit refurbishment costs, achieved by a developed and more selective range of refurbishment options and initiatives.

Efficiencies have been gained in many aspects of non load related work. Of note are more effective refurbishment and condition monitoring techniques for overhead lines and plant. Initiatives include improved condition monitoring, line strengthening, wood pole preservation, renovation, lightning protection, distribution automation, reliability centred maintenance and risk assessment. Sub sea cables are also seeing an investment reduction through lifetime extension due to improved installation and condition monitoring techniques.

Non operational

The average annual actual expenditure to 1997/98 is £11.3M. This level of expenditure has arisen over the final two years, which have averaged £15.2M and has been mainly driven by the need to fund new and improved Information System equipment and facilities, including the needs of “1998” and year 2000 compliance. The forecast average annual expenditure is £12M and reflects the early need to continue with Information System equipment needs particularly for the 1998 project. Also of note is the renewal and relocation of the Aberdeen District Depot, essential to meet longer term savings in operating costs and improvements in customer service.

Customer Contributions

In line with the increased levels of development work, customer contributions are running ahead of forecast values for the years 1995/96 to 1998/99. The capital contributions forecast includes generation connections in respect of known and future SROs and private CHPs.

Net Capital Expenditure

The net capital expenditure actuals up to and including 1997/98 have increased from £55m - £74m per annum. The main reasons for the increase have been the need to reinforce Orkney, the volume and unit cost of overhead line refurbishment & the business requirements for new and improved IS / IT & “1998” systems.

The forecast for capital expenditure will be in the range of £89m - £54m per annum. This downward trend is due to lower forecast non system, load related and non load related expenditure combined with increased forecast customer contributions.

SCOTTISH HYDRO - TABLE 14.2 SUPPLEMENTARY ANALYSIS OF DISTRIBUTION BUSINESS HCA COSTS - BASE CASE IN 1997/98 PRICES

DESCRIPTION	ACTUAL				FORECAST						
	1994/95 £m	1995/96 £m	1996/97 £m	1997/98 £m	1998/99 £m	1999/00 £m	2000/01 £m	2001/02 £m	2002/03 £m	2003/04 £m	2004/05 £m
NGC exit charges	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rates on distribution system	6.6	7.2	7.8	7.9	8.0	8.1	8.2	8.4	8.6	8.7	8.9
Depreciation on distribution system	20.0	18.7	20.8	18.4	18.6	25.0	26.0	29.0	31.9	36.0	32.0
Payroll costs	30.7	29.7	23.0	25.2	25.5	25.4	24.8	24.4	24.0	23.7	23.3
Non payroll IT costs	3.3	3.5	8.4	7.0	9.5	7.7	6.8	6.7	6.6	6.4	6.4
Premises costs	2.9	3.1	3.3	3.1	3.6	3.6	3.5	3.5	3.4	3.3	3.3
Insurance	3.3	3.0	3.4	3.7	2.1	3.0	2.8	2.9	2.9	2.9	2.8
Materials	5.5	5.8	6.1	6.4	7.2	6.7	6.5	6.4	6.3	6.1	5.9
Other	9.9	15.3	13.8	12.0	11.9	16.7	17.4	16.6	16.1	12.6	8.6
Total Costs	82.1	86.3	86.7	83.7	86.5	96.1	96.0	98.0	99.9	99.9	91.2

SCOTTISH HYDRO -TABLE 14.4 SUPPLEMENTARY ANALYSIS OF DISTRIBUTION BUSINESS HCA COSTS - QUALITY OF SUPPLY SCENARIO IN 1997/98 PRICES

DESCRIPTION	ACTUAL				FORECAST						
	1994/95 £m	1995/96 £m	1996/97 £m	1997/98 £m	1998/99 £m	1999/00 £m	2000/01 £m	2001/02 £m	2002/03 £m	2003/04 £m	2004/05 £m
NGC exit charges	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rates on distribution system	6.6	7.2	7.8	7.9	8.0	8.1	8.2	8.4	8.6	8.7	8.9
Depreciation on distribution system	20.0	18.7	20.8	18.4	18.6	25.0	26.0	29.0	31.9	36.0	32.0
Payroll costs	30.7	29.7	23.0	25.2	25.5	25.4	24.8	24.4	24.0	23.7	23.3
Non payroll IT costs	3.3	3.5	8.4	7.0	9.5	7.7	6.8	6.7	6.6	6.4	6.4
Premises costs	2.9	3.1	3.3	3.1	3.6	3.6	3.5	3.5	3.4	3.3	3.3
Insurance	3.3	3.0	3.4	3.7	2.1	3.0	2.8	2.9	2.9	2.9	2.8
Materials	5.5	5.8	6.1	6.4	7.2	6.7	6.5	6.4	6.3	6.1	5.9
Other	9.9	15.3	13.8	12.0	11.9	16.7	17.4	16.6	16.1	12.6	8.6
Total Costs	82.1	86.3	86.7	83.7	86.5	96.1	96.0	98.0	99.9	99.9	91.2

SCOTTISH HYDRO - TABLE 14.6 SUPPLEMENTARY ANALYSIS OF DISTRIBUTION BUSINESS CAPITAL EXPENDITURE - BASE CASE SCENARIO IN 1997/98 PRICES

DESCRIPTION	ACTUAL				FORECAST						
	1994/95 £m	1995/96 £m	1996/97 £m	1997/98 £m	1998/99 £m	1999/00 £m	2000/01 £m	2001/02 £m	2002/03 £m	2003/04 £m	2004/05 £m
Capital expenditure - load related	29.1	23.4	25.5	25.9	24.4	25.3	23.2	22.7	22.2	21.4	20.8
- non load related	25.7	31.3	39.9	37.5	36.4	36.4	37.7	38.1	37.7	35.5	34.8
- non operational	7.8	6.8	12.2	17.0	36.9	9.4	6.6	8.4	5.6	5.6	7.3
- customer contributions	-7.6	-5.4	-4.8	-6.1	-6.0	-6.0	-5.9	-6.0	-6.0	-5.9	-5.9
Net Capital Expenditure	54.9	56.1	72.9	74.3	91.6	65.0	61.6	63.2	59.6	56.5	57.0

SCOTTISH HYDRO - TABLE 14.8 SUPPLEMENTARY ANALYSIS OF DISTRIBUTION BUSINESS CAPITAL EXPENDITURE - QUALITY OF SUPPLY SCENARIO IN 1997/98 PRICES

DESCRIPTION	ACTUAL				FORECAST						
	1994/95 £m	1995/96 £m	1996/97 £m	1997/98 £m	1998/99 £m	1999/00 £m	2000/01 £m	2001/02 £m	2002/03 £m	2003/04 £m	2004/05 £m
Capital expenditure - load related	29.1	23.4	25.5	25.9	24.4	25.3	23.2	22.7	22.2	21.4	20.8
- non load related	25.7	31.3	39.9	37.5	36.4	36.4	37.7	38.1	37.7	35.5	34.8
- non operational	7.8	6.8	12.2	17.0	36.9	9.4	6.6	8.4	5.6	5.6	7.3
- customer contributions	-7.6	-5.4	-4.8	-6.1	-6.0	-6.0	-5.9	-6.0	-6.0	-5.9	-5.9
Net Capital Expenditure	54.9	56.1	72.9	74.3	91.6	65.0	61.6	63.2	59.6	56.5	57.0

RPI INDEX TO 1997/98 PRICES	1994/95	1995/96	1996/97	1997/98	1998/99	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05
(future values assume 3% inflation)	145.35	150.08	153.73	158.78	163.54	168.45	173.53	178.74	184.10	189.63	195.31