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Escom's Statistical Yearbook

Escom is one of the world's leading energy utilities. In many fields of technology, it is an acclaimed leader. Our achievements are renowned and respected worldwide.

Consequently a yearbook which contains statistical and technical data relating both to Escom itself and its role in Southern Africa is long overdue.

We believe that the Yearbook will provide valuable reference material for investors, suppliers, researchers and engineers both locally and internationally.

This first edition also constitutes a statement of our confidence in the future of South Africa and Escom's role in the country's development. We see Escom as responding not only to South Africa's growing energy requirements, but continuing to play a vital part in the development of neighbouring States such as Lesotho, Swaziland, Mocambique and Botswana.

I.C. McRAE

Senior General Manager
Chairman of Escom Management Board
16 July 1986

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Escom Statistics – 1985

Highlights of Escom's year

	1985	1984	1983	1982	1981	1980	Change 1984-85 %	Average yearly increase 1980-85 %
Financial								
Revenue (R million)	4 625	3 832	3 302	2 695	2 141	1 772	20,7	21,2
Charges against revenue (R million)	4 585	3 995	3 405	2 753	2 218	1 870	14,8	19,6
Net expenditure on fixed assets (R million)	4 757	3 719	2 757	2 741	1 951	1 447	27,9	26,9
Fixed assets at 31 December (R million)	23 969	19 261	15 591	12 858	10 144	8 219	24,4	23,9
Average price per kW.h sold (cents)	4,12	3,58	3,36	2,80	2,28	2,02	14,9	15,3
Average cost per kW.h sold (cents)	4,08	3,74	3,47	2,86	2,36	2,14	9,1	13,8
Average coal cost per ton (Rand)	13,25	12,55	12,44	11,75	9,71	8,12	5,6	10,3
Electricity sold by Escom (mill kW.h)	112 306	106 904	98 251	96 136	93 844	87 539	5,1	5,1
Operating statistics								
Total electricity sent out by Escom (mill kW.h)	122 494	117 086	108 321	104 920	100 425	93 021	4,6	5,7
Electricity consumed by Escom (mill kW.h)	3 265	3 188	2 917	2 404	712	71	2,4	NA
Electricity available for distribution (mill kW.h)	119 229	113 898	105 404	102 516	99 713	92 950	4,7	5,1
Coal burnt in Escom power stations (Mt)	59,5	58,7	55,0	55,2	53,9	46,8	1,4	4,9
Water consumed in Escom power stations (Ml)	275 716	269 868	255 654	265 933	235 138	214 813	2,2	5,1
Peak demand on integrated Escom system (MW)	17 852 (12/7/85)	17 296 (15/6/84)	15 639 (10/8/83)	15 532 (2/7/82)	14 674 (12/6/81)	13 668 (18/7/80)	3,2	5,5
Escom plant in service at 31 December								
Installed capacity (MW)	25 716	24 514	22 949	21 749	20 049	18 349	4,9	7,0
Assigned sent-out rating (MW)	24 359	23 168	21 673	20 523	18 989	17 339	5,1	7,0
Transmission lines:								
533 kV (DC)(km)	1 030	1 030	1 030	1 030	1 030	1 030	—	—
400-220 kV (km)	17 488	16 842	16 017	15 251	14 998	14 557	3,8	3,7
165 kV and below (km)	142 528	130 425	121 343	111 535	105 344	99 840	9,3	7,4
Underground cables:								
132 kV and below (km)	8 378	8 024	7 596	7 319	7 191	7 687	4,4	1,7
Capacity of transformers (MVA)	169 112	156 198	143 590	136 131	126 638	122 825	8,3	6,6
Staff employed at 31 December								
	66 000	64 560	62 420	58 850	52 080	47 490	2,2	6,8

Financial statistics

	1980	1981	1982	1983	1984	1985
Electricity sold						
Electricity sold GW.h	87 539	93 844	96 136	98 251	106 904	1 12 306
Annual increase – units	6 956	6 305	2 292	2 115	8 653	5 402
Annual increase – %	8,63	7,20	2,44	2,20	8,81	5,05
Revenue R'000	1 772 000	2 140 689	2 695 422	3 301 905	3 831 713	4 624 672
Annual increase – %	15,86	20,81	25,91	22,50	16,05	20,69
Cents per kW.h	2,02	2,28	2,80	3,36	3,58	4,12
Annual Increase – %	6,65	12,69	22,91	19,86	6,65	14,89
Charges against revenue R'000						
OPERATING EXPENDITURE	836 306	1 061 051	1 400 636	1 691 317	1 909 097	2 143 520
Annual increase – %	25,15	26,87	32,00	20,75	12,88	12,28
Cost of fuel	405 630	569 949	693 979	726 534	852 591	893 102
Annual Increase – %	26,99	40,51	21,76	4,69	17,35	4,75
LOAN CHARGES	606 361	720 634	876 706	1 213 580	1 565 472	2 291 182
Annual increase of loan charges %	31,10	18,85	21,66	38,42	29,00	46,36
Interest and finance charges	504 732	603 546	721 948	939 553	1 283 742	1 922 053
Redemption of loans	101 629	117 088	154 758	274 027	281 730	369 129
Interest charges capitalised	204 378	295 768	583 098	725 778	1 056 308	1 235 222
Operating surplus R'000	329 333	359 004	418 080	397 007	357 144	189 970
APPROPRIATION TO FUNDS	427 300	436 378	476 000	500 000	520 000	150 000
Capital Development Fund	426 400	435 478	450 000	450 000	450 000	0
Reserve Fund	900	900	26 000	50 000	70 000	150 000
SURPLUS OR DEFICIT	-97 967	-77 374	-57 920	-102 993	-162 856	39 970
Ratio surplus before interest: interest	1,54	1,50	1,48	1,33	1,23	1,08
Total assets R'000	8 955 005	11 021 011	14 698 322	18 974 536	24 413 565	31 251 586
FIXED ASSETS	8 219 195	10 143 668	12 858 462	15 590 919	19 261 310	23 969 263
Assets in commission at cost	5 604 038	6 323 048	7 689 399	9 218 946	12 058 241	15 496 953
Works under construction	2 544 790	3 720 640	5 016 580	6 209 611	7 028 217	8 277 729
Equipment at book value	70 367	99 980	152 483	162 362	174 852	194 581
STORES MATERIALS AND FUEL	245 147	306 079	447 615	671 812	713 507	867 551
OTHER NON-CURRENT ASSETS	294 780	362 401	1 082 212	2 352 072	3 836 582	5 855 748
CURRENT ASSETS	195 883	208 863	310 033	359 733	602 166	559 024
Financed by R'000						
CURRENT LIABILITIES	437 352	490 532	640 121	866 016	1 147 167	1 441 149
BORROWINGS	5 329 790	6 715 459	8 944 235	11 340 230	14 813 518	19 032 996
STATUTORY FUNDS AND RESERVES	3 187 863	3 815 020	5 113 966	6 768 290	8 452 880	10 777 441
Ratio borrowings: Equity	1,67	1,76	1,75	1,68	1,75	1,77
Growth in key statistics						
Electricity sold GW.h	100	107	110	112	122	128
Revenue	100	121	152	186	216	261
Operating expenditure	100	127	167	202	228	256
Cost of fuel	100	141	171	179	210	220
Loan charges	100	119	145	200	258	378
Interest and finance charges	100	120	143	186	254	381
Redemption of loans	100	115	152	270	277	363
Interest charges capitalised	100	145	285	355	517	604
Operating surplus	100	109	127	121	108	58
Total assets	100	123	164	212	273	349
Fixed assets	100	123	156	190	234	292
Assets in commission at cost	100	113	137	165	215	277
Works under construction	100	146	197	244	276	325
Equipment, vehicles, etc.	100	142	217	231	248	277
Stores material and fuel	100	125	183	274	291	354
Current assets	100	107	158	184	307	285
Current liabilities	100	112	146	198	262	330
Borrowings	100	126	168	213	278	357
Statutory funds and reserves	100	120	160	212	265	338

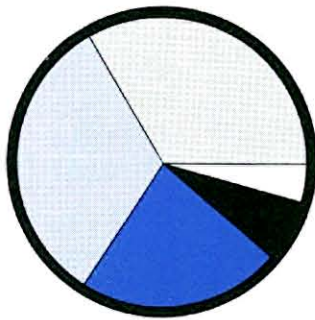
Table 2

Source and application of funds

	1980	1981	1982	1983	1984	1985
Source of funds						
Internal funds generated	671 404	813 614	1 046 573	1 277 472	1 266 141	1 497 338
External finance	788 341	1 198 885	1 969 179	2 236 565	3 003 420	3 677 259
Change in working capital	73 060	40 200	48 419	165 812	38 718	337 124
Other	3 028	50 130	10 265	12 066	18 731	14 295
TOTAL	1 535 833	21 028 856	3 074 436	3 691 915	4 327 010	5 526 016
Application of funds						
Fixed assets	1 446 928	1 950 645	2 741 167	2 757 108	3 719 159	4 756 911
Stores, material and fuel	21 421	60 932	141 536	224 197	41 695	72 609
Non-current assets	41 465	40 373	91 103	446 300	135 857	438 095
Housing loans	6 626	19 690	40 668	41 366	33 087	55 431
Other	19 393	31 216	59 962	222 944	397 212	202 970
TOTAL	1 535 833	2 102 856	3 074 436	3 691 915	4 327 010	5 526 016

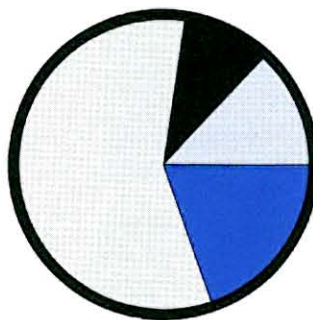
Financial highlights of Escom's year

1980 – Actual costs



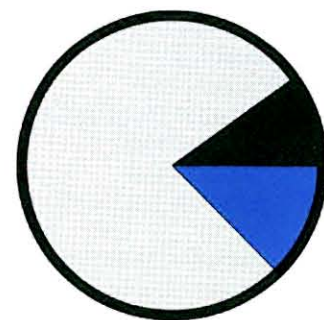
- Generation costs **33,5%**
- Distribution costs **6,7%**
- Loan charges **32,4%**
- Contribution to funds **22,9%**
- Other **4,5%**

Source of funds



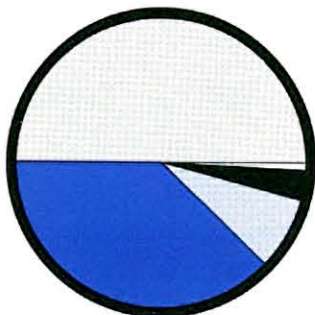
- Local borrowings **57,7%**
- Import financing facilities **9,7%**
- Other foreign finance **13,0%**
- Funds generated internally **19,6%**

Type of debt



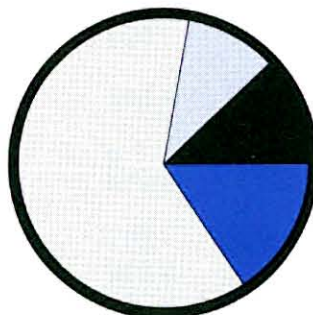
- Import financing and extended credit facilities **10,0%**
- Revolving credits and short-term advances **12,6%**
- Local and foreign loans **77,4%**

1985 – Actual costs



- Generation costs **37,8%**
- Distribution costs **8,1%**
- Loan charges **50,0%**
- Contribution to funds **3,3%**
- Other **0,8%**

Application of funds



- Expenditure on fixed assets **62,3%**
- Repayments of local loans **15,6%**
- Repayments of foreign loans **11,9%**
- Other **10,2%**

Table 3

Escom operating statistics

	1985	1984	1983	1982	1981
Plant performance					
Total power station capacity, installed rating, MW	25 716	25 514	22 949	21 749	20 049
Total power station capacity, assigned sent-out rating, MW	24 359	23 168	21 673	20 523	18 989
Peak demand on integrated Escom system, MW	17 852	17 296	15 639	15 532	14 674
Average station availability ¹	77,5	74,9	71,9	74,3	74,2
Station load factor, per cent ²	58,0	58,1	55,6	59,3	62,2
Integrated Escom system load factor, per cent	76,2	75,0	76,9	75,3	77,6
Coal burnt, thousands of tons	59 488,6	58 703,6	55 010,2	55 198,4	53 903,7
Coal burnt, kg/kW.h sent out	0,522	0,533	0,546	0,551	0,563
Average heat rate of coal-fired station, MJ/kW.h sent out	11,26	11,45	11,57	11,82	12,01
Average heat content of coal (as received), MJ/kg	21,52	21,38	21,11	21,39	21,25
Overall thermal efficiency, sent-out basis	32,0	31,4	31,1	30,5	30,0
Average coal cost, R/ton	13,25	12,55	12,44	11,75	9,71
Average coal cost, c/kW.h sent out	0,691 6	0,669 2	0,679 3	0,647 1	0,547 3
Electricity output					
Total electricity sent out in South Africa, million kW.h ³	125 962	120 835	112 366	109 536	106 135
Escom electricity sent out as percentage of South Africa total	94,7	94,3	93,8	93,6	93,9
Total electricity sent out on Escom system (Escom stations and purchased), million kW.h ⁴	122 494	117 086	108 321	104 920	100 425
Total sent out from Escom stations, million kW.h	121 987	116 581	103 295	102 769	97 824
Sub-total, from coal-fired stations, million kW.h	113 941	110 094	100 738	100 217	95 675
Sub-total, from hydro-electric stations, million kW.h	624	560	595	1 016	1 653
Sub-total, from pumped-storage station, million kW.h	2 107	1 994	1 957	1 519	415
Sub-total, from diesel and gas-turbine stations, million kW.h	0	8	5	17	81
Sub-total, nuclear power station, million kW.h	5 315	3 925	—	—	—
Total purchased by Escom and sent out on Escom system, million kW.h	507	505	5 026	2 151	2 601
Total consumed by Escom, million kW.h ⁵	3 265	3 188	2 917	2 404	712
Total available for distribution, million kW.h	119 229	113 898	105 404	102 516	99 713
Total sold, million kW.h ⁶	112 305,9	106 904,1	98 251,1	96 135,9	93 844,0
Growth in kW.h sales, per cent	5,1	8,8	2,2	2,4	7,2
Employees					
Total number at 31 December	66 000	64 560	62 420	58 850	52 080
Ratio number/million kW.h sold	0,588	0,604	0,635	0,612	0,555
Assets					
In commission at 31 December, rand thousands	15 496 953	12 058 241	9 218 946	7 689 399	6 323 048
Ratio rand thousands/million kW.h sold	137,99	112,79	93,83	79,98	67,38

¹Capacity hours available x 100/total capacity hours in year²kW.h sent out x 100/(assigned sent-out rating x hours in year)³Electricity sent out by Escom and municipalities which generate all or part of their electricity requirement⁴Includes Escom electricity sent out to neighbouring countries⁵In respect of pumped-storage facilities and synchronous condenser mode of operation. See Table 7, Note 8.⁶Difference between electricity available for distribution and electricity sold is due to transmission losses.

continued

ESCOM

	1980	1979	1978	1977	1976	1975	1974	1973	1972	1971
	18 349	15 974	14 434	13 556	12 444	11 242	10 692	10 142	9 551	9 013
	17 339	15 056	13 595	12 756	11 688	10 522	10 002	9 482	8 849	8 373
	13 668	12 855	11 490	10 735	10 085	9 185	8 552	7 350	6 630	6 115
	74,7	78,8	77,4	78,5	82,3	85,0	83,7	82,5		
	57,8	60,9	60,7	61,9	66,8	68,6	66,3	62,6	59,6	61,3
	77,5	76,4	77,3	75,8	76,1	76,5	75,1	77,3	76,4	76,1
	46 755,0	43 264,9	39 589,5	37 505,6	37 257,4	34 231,7	30 891,4	27 907,9	24 952,8	23 416,2
	0,568	0,580	0,574	0,576	0,579	0,567	0,560	0,563	0,571	0,576
	12,16	12,33	12,44	12,55	12,66	12,59	12,56	12,65	13,07	13,42
	21,34	21,22	21,61	21,78	21,87	22,21	22,42	22,47	22,89	22,30
	29,6	29,2	28,9	28,7	28,4	28,6	28,7	28,5	27,5	26,8
	8,12	6,96	6,67	6,22	5,39	4,05	2,92	2,39	2,25	2,25
	0,461 4	0,404 5	0,382 4	0,358 2	0,312 2	0,229 5	0,163 7	0,134 8	0,128 5	0,129 7
	99 905	92 615	84 812	79 352	75 381	70 111	66 412	60 700	55 332	51 081
	93,0	92,8	91,7	89,8	89,4	87,8	84,7	82,0	80,4	79,8
	93 021	86 037	77 826	71 291	67 414	61 533	56 259	49 770	44 485	40 747
	83 362	75 643	70 902	67 050	66 188	61 498	56 251	49 759	44 475	40 739
	82 342	74 485	69 004	65 114	64 309	60 400	55 141	49 570	43 662	40 645
	992	1 144	1 887	1 924	1 853	1 098	1 110	189	813	94
	—	—	—	—	—	—	—	—	—	—
	28	14	11	12	26	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
	9 659	10 394	6 924	4 241	1 226	35	8	11	10	8
	71	58	52	27	—	—	—	—	—	—
	92 950	85 979	77 774	71 264	67 414	61 533	56 259	49 770	44 485	40 747
	87 539,3	80 582,8	72 780,4	67 125,4	63 355,7	57 869,2	52 585,1	46 578,4	41 648,9	38 040,0
	8,6	10,7	8,4	5,9	9,5	10,0	12,9	11,8	9,5	9,0
	47 490	43 690	41 040	39 112	36 915	33 999	29 891	28 559	26 937	25 050
	0,542	0,542	0,564	0,583	0,583	0,588	0,568	0,613	0,647	0,659
	5 604 038	4 255 502	3 564 600	2 851 103	2 311 725	2 008 917	1 847 484	1 699 279	1 526 697	1 390 095
	64,02	52,81	48,98	42,47	36,49	34,71	35,13	36,48	36,66	36,54

Table 4

Summary of operations

Year	Coal-fired power stations					Coal cost	
	Coal used				Overall thermal efficiency sent-out basis %	Average R/ton	c/kW.h sent out
	Thousands of tons	Average heat content (as received) MJ/kg	Consumption sent-out basis kg/kW.h	Average heat rate sent-out basis MJ/kW.h			
1950	6 323,4	22,72	0,869	19,74	18,2	0,84	0,072 9
1951	6 662,9	22,72	0,855	19,43	18,5	0,98	0,084 0
1952	7 113,4	22,75	0,865	19,68	18,3	1,20	0,103 7
1953	7 393,9	23,08	0,837	19,32	18,6	1,33	0,111 6
1954	8 024,9	23,06	0,805	18,56	19,4	1,41	0,113 6
1955	8 999,7	22,89	0,788	18,04	20,0	1,52	0,120 1
1956	9 688,5	22,96	0,765	17,56	20,5	1,62	0,123 6
1957	10 220,6	22,79	0,750	17,09	21,1	1,69	0,126 6
1958	10 784,1	22,73	0,743	16,89	21,3	1,77	0,131 2
1959	11 548,7	22,44	0,732	16,43	21,9	1,82	0,132 9
1960	12 512,6	22,52	0,723	16,28	22,1	2,03	0,146 6
1961	13 194,9	22,39	0,722	16,17	22,3	2,10	0,151 6
1962	13 955,5	22,22	0,719	15,98	22,5	2,09	0,150 7
1963	14 721,1	22,15	0,708	15,68	23,0	2,11	0,149 2
1964	15 654,7	22,15	0,692	15,33	23,5	2,07	0,143 0
1965	16 726,7	22,39	0,680	15,23	23,6	2,09	0,142 3
1966	16 982,3	22,20	0,666	14,79	24,4	2,23	0,148 6
1967	18 307,7	22,44	0,645	14,47	24,9	2,30	0,148 2
1968	19 133,9	22,63	0,620	14,03	25,6	2,33	0,144 6
1969	19 982,9	22,73	0,595	13,52	26,6	2,37	0,141 2
1970	21 630,6	22,97	0,580	13,32	27,0	2,26	0,130 8
1971	23 416,2	23,30	0,576	13,42	26,8	2,25	0,129 7
1972	24 952,8	22,89	0,571	13,07	27,5	2,25	0,128 5
1973	27 907,9	22,47	0,563	12,65	28,5	2,39	0,134 8
1974	30 891,4	22,42	0,560	12,56	28,7	2,92	0,163 7
1975	34 231,7	22,21	0,567	12,59	28,6	4,05	0,229 5
1976	37 257,4	21,87	0,579	12,66	28,4	5,39	0,312 2
1977	37 505,6	21,78	0,576	12,55	28,7	6,22	0,358 2
1978	39 589,5	21,61	0,574	12,44	28,9	6,67	0,382 4
1979	43 264,9	21,22	0,580	12,33	29,2	6,96	0,404 5
1980	46 755,0	21,34	0,568	12,16	29,6	8,12	0,461 4
1981	53 903,7	21,25	0,563	12,01	30,0	9,71	0,547 3
1982	55 198,4	21,39	0,551	11,82	30,5	11,75	0,647 1
1983	55 010,2	21,11	0,546	11,57	31,1	12,44	0,679 3
1984	58 703,6	21,38	0,533	11,45	31,4	12,55	0,669 2
1985	59 488,6	21,52	0,522	11,26	32,0	13,25	0,691 6

continued

ESCOM

Power station output (sent-out basis)						Total power station capacity assigned sent-out rating at 31 December MW	Average power station plant load factor sent-out basis %
Coal-fired stations GW.h	Hydro-electric stations GW.h	Pumped-storage station GW.h	Diesel and gas-turbine stations GW.h	Nuclear station GW.h	Total power station output GW.h		
7 276	7	—	4	—	7 287	1 290	64,7
7 797	6	—	3	—	7 806	1 361	66,1
8 220	6	—	1	—	8 227	1 454	66,9
8 838	7	—	—	—	8 845	1 635	65,5
9 971	6	—	—	—	9 977	1 846	66,4
11 419	6	—	—	—	11 425	2 145	65,9
12 663	7	—	—	—	12 670	2 498	61,2
13 634	6	—	—	—	13 640	2 555	61,1
14 511	5	—	—	—	14 516	2 748	62,0
15 774	3	—	—	—	15 777	2 983	62,6
17 306	2	—	—	—	17 308	3 091	65,2
18 282	2	—	—	—	18 284	3 226	66,2
19 401	3	—	—	—	19 404	3 406	65,8
20 789	4	—	—	—	20 793	3 788	65,7
22 634	5	—	—	—	22 639	4 077	65,2
24 583	—	—	—	—	24 583	4 181	67,4
25 504	—	—	—	—	25 504	4 377	67,1
28 371	—	—	—	—	28 371	5 328	66,8
30 843	—	—	—	—	30 843	5 800	62,9
33 598	—	—	—	—	33 598	6 441	62,1
37 321	—	—	—	—	37 321	7 060	62,9
40 645	94	—	—	—	40 739	8 373	61,3
43 662	813	—	—	—	44 475	8 849	59,6
49 570	189	—	—	—	49 759	9 482	62,5
55 141	1 110	—	—	—	56 251	10 002	66,3
60 400	1 098	—	—	—	61 498	10 522	68,6
64 309	1 853	—	26	—	66 188	11 688	66,8
65 114	1 924	—	12	—	67 050	12 756	61,9
69 004	1 887	—	11	—	70 902	13 595	60,7
74 485	1 144	—	14	—	75 643	15 056	60,9
82 342	992	—	28	—	83 362	17 339	57,8
95 675	1 653	415	81	—	97 824	18 989	62,2
100 217	1 016	1 519	17	—	102 769	20 523	59,3
100 738	595	1 957	5	—	103 295	21 673	55,6
110 094	560	1 994	8	3 925	116 581	23 168	58,1
113 941	624	2 107	0	5 315	121 987	24 359	58,0

Table 5

Power station operating statistics as at 31 December 1985

Power station	Sent-out rating on 31 December 1985 MW	Energy sent out million kW.h	Maximum demands 1 hour sent out MW	Station load factor ¹ %
Coal-fired stations				
Arnot	1 980	11 208	1 934	64,6
Camden	1 520	8 558	1 483	64,3
Colenso (decommissioned, September 1985)	²	31	73	7,7
Duvha	3 450	23 328	3 472	77,2
Grootvlei	1 130	5 133	932	51,9
Hendrina	1 900	11 950	1 960	71,8
Hex River	111	40	101	4,1
Highveld	412	947	362	26,2
Ingagane	465	1 931	439	47,4
Klip	81 ²	348	225	17,7
Komati	906	4 222	766	53,2
Kriel	2 850	17 950	2 915	71,9
Lethabo (commercial service, January 1986)	—	415	599	37,9
Matla	3 450	20 415	3 545	67,6
Salt River	228	175	213	8,8
Taaibos	440	1 312	458	34,0
Tutuka	585 ²	2 381	593	55,4
Umgeni	222	319	229	16,4
Vaal	270	1 107	236	46,8
Vierfontein	336	801	335	27,2
West Bank	80	100	81	14,3
Wilge	221	1 270	217	65,6
Sub-total for coal-fired stations	20 637	113 941		62,5
Gas-turbine stations				
Acacia	171	— ⁶	104	0,1
Port Rex	171	— ⁶	141	0,1
Sub-total for gas-turbine stations	342	—		0,1
Hydro-electric stations				
Hendrik Verwoerd	320	306	396	10,7
Vanderkloof	220	318	280	16,5
Sub-total for hydro stations	540	624		13,2
Pumped-storage station				
Drakensberg	1 000	2 107	1 163	24,0
Sub-total for pumped-storage station	1 000	2 107		24,0
Nuclear station				
Koeberg	1 840 ³	5 315	1 888	45,9
Sub-total for nuclear station	1 840	5 315		45,9
Total/weighted average all Escom	24 359	121 987		58,0
Other power sources				
Cahora Bassa	1 355	141	897	1,2
Other		366		
Sub-total for other power sources	1 355	507		1,2
Total/weighted average	25 714	122 494		55,0

¹Station load factor = $\frac{\text{kW.h sent out} \times 100}{(\text{assigned sent out rating}) \times \text{hours in year}}$

²Operating statistics are based on average capacity during the year

³Availability = $\frac{\text{capacity hours available} \times 100}{\text{total capacity hours in year}}$

⁴Burn-up of nuclear fuel MW.d/t

⁵Burn-up as a percentage of target burn-up for cycle

⁶Auxiliary consumption exceeded energy generated

continued

ESCOM

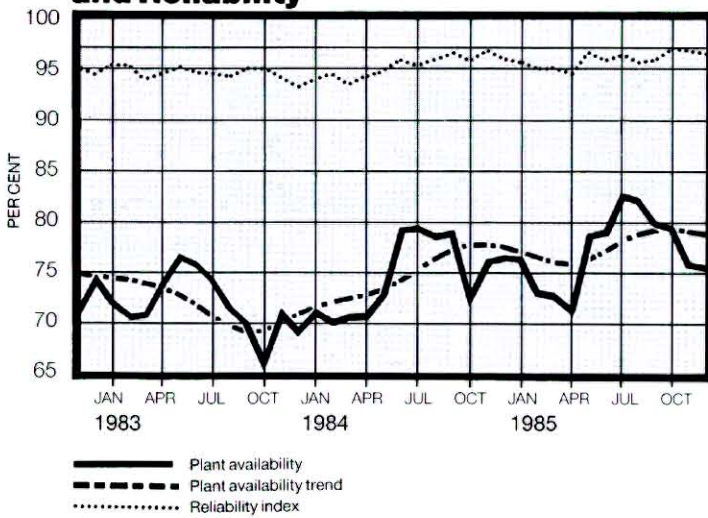
Specific water consumption €/kW.h sent out	Availability ³ %	Overall thermal efficiency % sent out	Fuel burnt tons	kg of coal/kW.h sent out	Heat content of coal (as received) MJ/kg	Station heat rate MJ/kW.h sent out
2,59	76,6	32,7	5 585 342	0,498	21,95	11,00
2,46	75,9	28,4	4 678 917	0,547	23,10	12,66
16,70	98,9	17,9	24 722	0,766	26,28	20,15
1,88	82,4	34,9	10 741 042	0,460	22,33	10,31
1,52	66,4	30,1	2 862 261	0,558	21,38	11,98
2,79	76,9	31,9	5 963 846	0,499	22,58	11,29
4,26	84,1	18,8	26 652	0,665	28,78	19,15
4,32	60,4	25,8	687 843	0,727	19,04	13,93
3,70	67,5	28,1	1 088 781	0,564	22,61	12,82
5,08	88,5	14,9	469 706	1,347	17,91	24,13
2,75	63,1	26,0	2 723 404	0,645	21,36	13,83
2,00	79,6	34,7	9 123 079	0,508	20,39	10,38
—	57,0	—	306 410	0,739	—	—
1,91	79,3	35,8	9 700 942	0,475	21,11	10,06
1,02	83,1	19,5	124 522	0,710	26,04	18,49
3,35	80,8	25,1	1 017 877	0,776	18,40	14,33
2,66	67,0	34,2	1 099 521	0,462	21,95	10,53
4,26	92,2	19,2	236 226	0,741	25,36	18,80
4,36	79,9	17,3	1 305 472	1,180	17,64	20,81
6,35	84,5	19,6	755 010	0,943	19,45	18,34
0,56	60,7	21,4	64 264	0,641	26,21	16,79
3,81	73,0	24,5	902 709	0,711	20,60	14,67
2,30	77,2	32,0	59 488 548	0,522	21,52	11,26
	89,4		325			
	96,5		358			
	93,0		683			
	91,4					
	86,0					
	89,2					
	93,2					
	93,2					
0,22	55,2		9 668 ⁴	64,6 ⁵		
0,22	55,2					
—	77,5					
	1,3					
	1,3					
	73,3					

Table 6

Coal-fired power stations: 12 with highest thermal efficiency 1985

Station	Steam conditions at turbine inlet		Assigned sent-out rating MW	Energy sent out GW.h	Station load factor %	Average heat content of all fuel burnt MJ/kg	Overall thermal efficiency sent-out basis %	Date of commercial operation	Type of steam supply
	Pressure MPa (abs)	Temperature °C							
Matla	16,1	535	3 450	20 415	67,6	21,14	35,8	1979-83	Reheat
Duvha	16,1	535	3 450	23 328	77,2	22,36	34,9	1980-84	Reheat
Kriel	16,0	510	2 850	17 950	71,9	20,41	34,7	1976-79	Reheat
Tutuka	16,1	535	585	2 381	55,4	22,37	34,2	1985	Reheat
Arnot	15,9	510	1 980	11 208	64,6	22,01	32,7	1971-75	Reheat
Hendrina	10,3	538	1 900	11 950	71,8	22,60	31,9	1970-77	Non-reheat
Grootvlei	10,3	538	1 130	5 133	51,9	21,43	30,1	1969-77	Non-reheat
Camden	10,3	538	1 520	8 558	64,3	23,13	28,4	1967-69	Non-reheat
Ingagane	8,4	510	465	1 931	47,4	22,68	28,1	1963-69	Non-reheat
Komati	8,4	510	906	4 222	53,2	21,40	26,0	1962-66	Non-reheat
Highveld	6,3	482	412	947	26,2	19,12	25,8	1959-63	Non-reheat
Taibos	4,2	441	440	1 312	34,0	18,44	25,1	1954-58	Non-reheat

Escom trends in Plant Availability and Reliability



Power stations in service as at 31 December 1985

Name of station	Type	Location	No. and rating of generator sets MW	Total installed rating MW ¹	Total sent-out rating MW ¹
Acacia	Gas-turbine	Cape Town	3 x 57	171	171
Arnot	Coal-fired	Middelburg, Tvl	6 x 350	2 100	1 980
Camden	Coal-fired	Ermelo	8 x 200	1 600	1 520
Drakensberg	Pumped-storage	Bergville	4 x 250	1 000	1 000
Duvha	Coal-fired	Witbank	6 x 600	3 600	3 450
Grootvlei	Coal-fired	Balfour	6 x 200	1 200	1 130
Hendrik Verwoerd	Hydro-electric	Norvalspont	4 x 80	320	320
Hendrina	Coal-fired	Hendrina	10 x 200	2 000	1 900
Hex River	Coal-fired	Worcester	3 x 20; 2 x 30	120	111
Highveld	Coal-fired	Sasolburg	8 x 60	480	412
Ingagane	Coal-fired	Newcastle	5 x 100	500	465
Klip ²	Coal-fired	Vereeniging	4 x 33	132	81
Koeberg	Nuclear	Cape Town	2 x 965	1 930	1 840
Komati	Coal-fired	Middelburg	5 x 100; 4 x 125	1 000	906
Kriel	Coal-fired	Bethal	6 x 500	3 000	2 850
Matla	Coal-fired	Bethal	6 x 600	3 600	3 450
Port Rex	Gas-turbine	East London	3 x 57	171	171
Salt River	Coal-fired	Cape Town	4 x 30; 2 x 60	240	228
Taaibos	Coal-fired	Sasolburg	8 x 60	480	440
Tutuka	Coal-fired	Standerton	1 x 609	609	585
Umgeni	Coal-fired	Pinetown	4 x 30; 2 x 60	240	222
Vaal ³	Coal-fired	Viljoensdrif	9 x 33	318	270
Vanderkloof	Hydro-electric	Petrusville	2 x 110	220	220
Vierfontein	Coal-fired	Viljoenskroon	12 x 30	360	336
West Bank	Coal-fired	East London	3 x 15; 2 x 20	85	80
Wilge	Coal-fired	Witbank	2 x 30; 3 x 60	240	221
Total in service, 26 Escom stations⁴				25 716	24 359
Sub-total, coal-fired (20 stations) ⁵				21 904	20 637
Sub-total, gas-turbine (2 stations) ⁶				342	342
Sub-total, hydro-electric (2 stations) ⁷				540	540
Sub-total, pumped-storage (1 station) ⁸				1 000	1 000
Sub-total, nuclear (1 station) ⁵				1 930	1 840
Total in service, 26 Escom stations				25 716	24 359

¹Differences between generator rating and total station rating, and installed and sent-out rating reflect auxiliary power consumption and reduced capacity caused by age of the plant and/or low coal quality.

²Includes four 7 MW house sets. The power station was decommissioned in March 1986.

³Includes three 7 MW house sets.

⁴In addition to its own installed capacity, Eskom also has a firm contractual capacity of 1 355 MW from Cahora Bassa, which was not available during 1985. It also has agreements to purchase electricity from Swawek and some municipalities.

Colenso power station, with a sent-out rating of 70 MW, was decommissioned in September 1985.

⁵Base-load stations, except in the case of older, uneconomical plant, which are used only for peak demands or in emergencies.

⁶Used only for peaking or in emergencies.

⁷Use restricted to peaking and emergencies and availability of water in Hendrik Verwoerd and P.K. le Roux dams.

⁸Pumped-storage facilities are net users of electricity and are used for peaking. Water is pumped during off-peak periods to generate electricity during peak periods.

Table 8

Power stations on order as at 31 December 1985

Name of station	Type	Location	No. and rating of generator sets MW	Total installed rating MW	Total sent-out rating MW	Year of completion	
						first set	last set
Kendal	Coal-fired	Kendal	6 x 686	4 116	3 780	1988	1993
Lethabo	Coal-fired	Vereeniging	6 x 618	3 708	3 558	1986	1990
Majuba	Coal-fired	Volksrust	6 x 657	3 942	3 690	1991	1995
Matimba	Coal-fired	Ellisras	6 x 665	3 990	3 690	1986	1991
Palmiet	Pumped-storage	Grabouw	2 x 200	400	400	1987	1988
Tutuka	Coal-fired	Standerton	6 x 609	3 654	3 510	1985	1990
Power stations under construction¹				19 810	18 628		
Plant on order at 31 December 1984				19 810	18 628		
Less plant taken into commercial service during 1985 ²				1 574	1 505		
Plus plant placed on order in 1985				—	—		
Total, plant on order at 31 December 1985				18 236	17 123		

¹Dates on which sets on order will be taken into commercial service may change, depending on growth in electricity demand.

²During 1985, the following plant was taken into commercial service:

	Installed rating	Sent-out rating
Koeberg, set 2:	965 MW	920 MW
Tutuka, set 1:	609 MW	585 MW
Total for 1985	1 574 MW	1 505 MW

Coal-fired power station equipment installed as at 31 December 1985

Power station	Station capacity			Boilers		Main turbo-generators		Steam conditions at turbine inlet	
	Boilers kg/s	Installed rating Generators MW	Assigned sent-out rating MW	Number	Maximum continuous rating each kg/s	Number	Nominal rating each MW	Pressure MPa (abs)	Temperature °C
Arnot	1 998,6	2 100	1 980	6	333,1	6	350	15,9/3,98	510/510
Camden	1 814,4	1 600	1 520	8	226,8	8	200	10,3	538
Duvha	3 042,0	3 600	3 450	6	507,0	6	600	16,1/3,55	535/535
Grootvlei	1 301,6	1 200	1 130	5	214,2	6	200	10,3	538
				1	230,6			10,3	538
Hendrina	2 142,0	2 000	1 900	10	214,2	10	200	10,3	538
Hex River	170,0	120	111	4	25,2	3	20	4,2	427
				2	34,6	2	30	4,2	482
Highveld	554,4	480	412	8	69,3	8	60	6,3	482
Ingagane	567,0	500	465	5	113,4	5	100	8,4	510
Klip	136,2	132	81	6	22,7	4	33	2,5	390
Komati	1 133,8	1 000	906	5	113,4	5	100	8,4	510
				4	141,7	4	125	8,4	510
Kriel	2 640,0	3 000	2 850	6	440,0	6	500	16,0/3,17	510/510
(Lethabo) ³	(508,2)	(618)	(593)	(1)	(508,2)	(1)	(618)	(16,1/3,68)	(535/535)
Matla	3 049,2	3 600	3 450	6	508,2	6	600	16,1/3,68	535/535
Salt River	328,0	240	228	10	32,8	4	30	4,2	482
						2	60	4,2	482
Taaibos	584,0	480	440	8	73,1	8	60	4,2	441
Tutuka	507,0	609	585	1	507,0	1	609	16,1/3,55	535/535
Umgeni	345,6	240	222	8	22,7	4	30	4,2	454
				5	32,8	2	60	4,2	454
Vaal	430,2	318 ²	270	18	23,9	9	33	2,5	427
Vierfontein	503,5	360	336	19	26,5	12	30	4,2	441
West Bank	138,6	85	80	4	21,4	3	15	2,9	427
				2	26,5	2	20	2,9	427
Wilge	337,5	240	221	4	15,7	2	30	4,2	454
				4	50,4	3	60	4,2	454
				1	73,1				
Total	21 723,6	21 904	20 637	166		131			

¹ Difference between installed and sent-out rating reflects auxiliary power consumption and reduced capacity caused by age of the plant and/or low coal quality.

² Includes three 7 MW house sets.

³ Set 1 placed in commercial service in January 1986.

Table 10

Pumped storage, nuclear, hydro and gas-turbine power station equipment installed

as at 31 December 1985

Power station	Station capacity			Reactors		Main turbo-generators		Steam conditions at turbine inlet	
	Reactors kg/s	Installed rating Generators MW	Assigned sent-out rating MW	Number	Maximum continuous rating each kg/s	Number	Nominal rating each MW	Pressure MPa (abs)	Temperature °C
Gas-turbine stations									
Acacia		171	171			3	57		
Port Rex		171	171			3	57		
Total, gas-turbine stations		342	342			6			
Hydro-electric stations									
Hendrik Verwoerd		320	320			4	80		
Vanderkloof		220	220			2	110		
Total, hydro-electric stations		540	540			6			
Pumped-storage station									
Drakensberg		1 000	1 000			4	250		
Total, pumped-storage station		1 000	1 000			4			
Nuclear plant									
Koeberg	3 025	1 930	1 840	2	504,2	2	965	5,5/1,1	270/252
Total, nuclear plant	3 025	1 930	1 840	2		2			
Other power sources									
Hydro-electric station									Firm contractual capacity MW
Cahora Bassa, Moçambique									1 355

Transmission and distribution equipment in service as at 31 December 1985

	Total 1984	Additions 1985	Total 1985
Overhead lines, in circuit km			
533 kV DC (monopolar)	1 030	—	1 030
400 kV	9 299	615	9 914
275 kV	6 304	30	6 334
220 kV	1 239	1	1 240
165 kV to 132 kV	13 603	640	14 243
88 kV to 33 kV	20 987	14	21 001
22 kV and below	95 835	11 449	107 284
Total	148 297	12 749	161 046
Underground cables, in circuit km			
165 kV to 132 kV	82	-2	80
88 kV to 33 kV	372	6	378
22 kV and below	7 570	350	7 920
Total	8 024	354	8 378
Transformers			
Capacity MVA	156 198	12 914	169 112
Number in service	89 545	7 753	97 298

Table 12

Transmission and distribution equipment: by Undertaking

as at 31 December 1985

Circuit kilometres (excluding service connections on reticulation systems) of lines and cables and capacity of transformers in service

Undertaking	Transmission lines								Transformers	
	533 kV DC (monopolar)	400 kV	275 kV	220 kV	165 kV to 132 kV	88 kV to 33 kV	22 kV and below	Total	Capacity MVA	Number in service
Cape Eastern		0	0	714	1 140	1 814	9 453	13 121	6 100	5 703
Cape Northern		0	813	418	2 323	1 199	7 819	12 572	5 065	6 234
Cape Western		24	0	0	1 386	2 311	14 188	17 909	6 874	18 577
Eastern Transvaal		0	1 534	0	2 757	1 592	20 101	25 984	19 665	15 394
Natal		0	1 400	0	1 395	3 721	20 540	27 056	14 881	17 445
Rand and OFS		436	2 557	0	5 242	10 307	35 155	53 697	68 159	31 929
Central Generating	1 030	9 454	30	108	0	57	28	10 707	48 368	2 016
Total	1 030	9 914	6 334	1 240	14 243	21 001	107 284	161 046	169 112	97 298

Underground cables										
Cape Eastern							203	203		
Cape Northern							42	42		
Cape Western					22	132	4 680	4 834		
Eastern Transvaal					0	0	297	297		
Natal					0	1	1 059	1 060		
Rand and OFS					58	245	1 639	1 942		
Total					80	378	7 920	8 378		
Total lines and cables								Capacity MVA	Number in service	
1985	1 030	9 914	6 334	1 240	14 323	21 379	115 204	169 424	169 112	97 298
1984	1 030	9 299	6 304	1 239	13 685	21 359	103 405	156 321	156 198	89 545
Additions	0	615	30	1	638	20	11 799	13 103	12 914	7 753

Electricity sent out, million kW.h

Undertaking	1980	1981	1982	1983	1984	1985	Increase 1984-1985 %	Average yearly increase 1980-1985 %
Cape Eastern	2 374	2 506	2 590	2 840	3 159	3 215	1,8	6,3
Cape Northern	2 883	3 032	3 010	2 949	2 921	3 175	8,7	1,9
Cape Western	6 807	7 387	7 837	8 429	8 727	8 807	0,9	5,3
Eastern Transvaal	13 346	14 765	14 589	15 582	18 530	19 696	6,3	8,1
Natal	14 812	15 901	16 885	17 294	18 674	19 703	5,5	5,9
Rand and OFS	52 728	56 122	57 605	58 310	61 887	64 633	4,4	4,2
Nett electricity sent out	92 950	99 713	102 516	105 404	113 898	119 229	4,7	5,1
Own consumption	71	712	2 404	2 917	3 188	3 265	2,4	115,0
Gross electricity sent out	93 021	100 425	104 920	108 321	117 086	122 494	4,6	5,7

Note: Nett electricity sent out monthly is plotted on graph 1 and termed total USO available for distribution.

Escom total GW.h available for distribution

Information as at October 1985

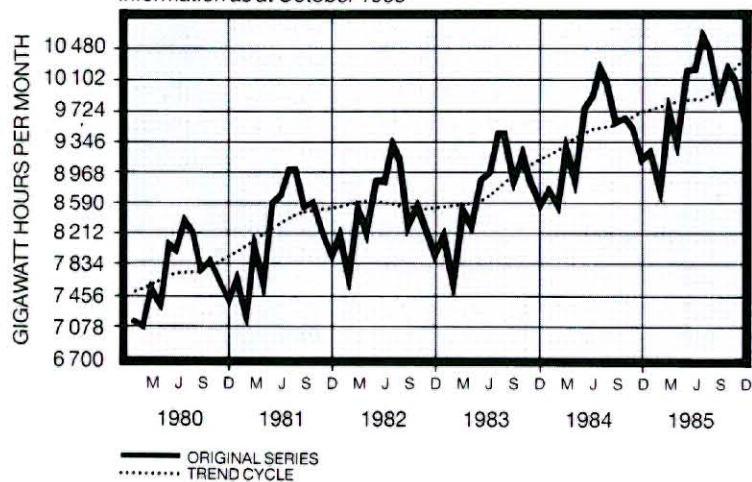
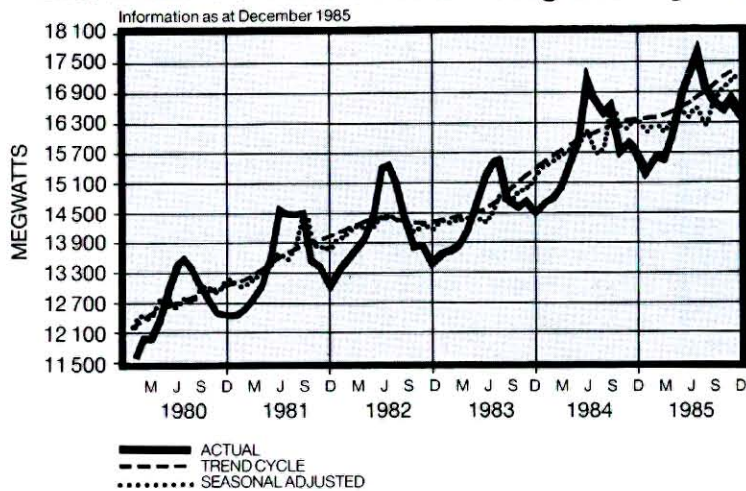


Table 14

Maximum one-hour demand, MW

Undertaking	1980	1981	1982	1983	1984	1985	Increase 1984-1985 %	Average yearly increase 1980-1985 %
Cape Eastern	385	422	451	453	540	595	10,2	9,1
Cape Northern	465	507	496	540	494	517	4,7	2,1
Cape Western	1 005	1 122	1 244	1 311	1 377	1 413	2,6	7,1
Eastern Transvaal	2 048	2 201	2 318	2 398	2 678	2 679	—	5,5
Natal	2 211	2 424	2 637	2 541	2 810	3 076	9,5	6,8
Rand and OFS	7 965	8 517	9 235	8 972	9 831	10 240	4,2	5,2
Aggregate of non-simultaneous maximum demands	14 079	15 193	16 381	16 215	17 730	18 520	4,5	5,6
Maximum simultaneous one-hour demand on total Escom system	09h00 18/7/80 13 668	09h00 12/6/81 14 674	09h00 2/7/82 15 532	09h00 10/8/83 15 639	09h00 15/6/84 17 296	11h00 12/7/85 17 852	3,2	5,5

Maximum demand on total integrated system



Electricity demand patterns

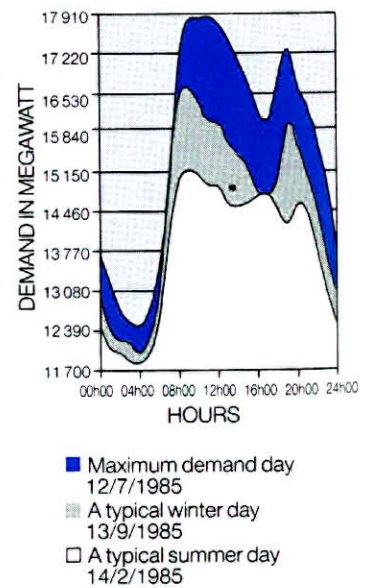


Table 15

ESCOM

Customer categories by undertaking

Undertaking and category	Number of customers	GW.h sold 1985	% of total	1984/1985	Average increase 1980-1985	Revenue R000 1985	Average price cents per kW.h sold 1984	1985
Eastern Cape								
Bulk sales	84	2 597,4	87,5	-0,9	4,7	126 267	4,379	4,861
Domestic and street lighting	4 908	29,9	1,0	-31,4	0,7	2 809	9,149	9,387
Industrial	5 664	235,9	7,9	13,6	12,8	22 229	8,634	9,423
Mining	—	—	—	—	—	—	—	—
Traction	2	105,0	3,5	74,5	100,0	10 963	7,997	10,442
Total	10 658	2 968,2	100,0	1,2	5,9	162 268	4,825	5,467
Northern and Western Cape								
Bulk sales	139	5 317,9	48,6	3,5	7,1	219 724	3,596	4,132
Domestic and street lighting	92 190	677,1	6,2	5,3	5,3	55 220	7,037	8,155
Industrial	27 675	2 644,6	24,2	5,7	6,2	162 870	5,399	6,159
Mining	81	1 439,7	13,2	1,7	-0,9	72 322	4,414	5,023
Traction	6	864,5	7,9	-4,7	-2,5	51 590	5,356	5,967
Total	120 091	10 943,8	100,0	3,2	4,6	561 726	4,490	5,133
Eastern Transvaal								
Bulk sales	60	1 994,3	10,4	9,9	12,5	85 001	3,647	4,262
Domestic and street lighting	2 037	21,8	0,1	-5,1	-5,0	1 577	6,511	7,240
Industrial	12 569	13 073,8	68,0	7,9	9,0	491 669	3,355	3,761
Mining	163	3 536,2	18,4	6,7	5,8	143 158	3,582	4,048
Traction	5	608,9	3,2	-4,2	1,1	32 103	4,470	5,272
Total	14 834	19 234,9	100,0	7,4	8,3	753 508	3,470	3,917
Natal								
Bulk sales	37	9 571,6	51,4	8,0	6,1	370 353	3 410	3,869
Domestic and street lighting	21 649	182,5	1,0	7,7	7,8	12 791	6,358	7,008
Industrial	20 274	7 179,1	38,5	5,9	7,0	276 780	3,335	3,855
Mining	52	314,4	1,7	8,2	0,1	15 778	4,507	5,018
Traction	8	1 384,0	7,4	0,2	0,7	72 616	4,697	5,247
Total	42 020	18 631,6	100,0	6,6	5,9	748 318	3,529	4,016
Rand & OFS								
Bulk sales	208	17 969,4	29,7	5,1	6,9	743 233	3,562	4,136
Domestic and street lighting	14 986	292,3	0,5	10,3	7,9	17 961	5,548	6,145
Industrial	35 064	15 082,0	24,9	3,9	2,0	620 847	3,536	4,116
Mining	228	25 559,2	42,2	4,4	3,6	937 608	3,145	3,668
Traction	162	1 624,6	2,7	0,9	0,8	79 202	4,288	4,875
Total	50 648	60 527,4	100,0	4,4	4,0	2 398 852	3,408	3,963
Total Escom								
Bulk sales	528	37 450,5	33,3	5,4	6,8	1 544 578	3,593	4,124
Domestic and street lighting	135 770	1 203,6	1,1	5,2	5,8	90 359	6,662	7,507
Industrial	101 246	38 215,4	34,0	5,8	5,4	1 574 395	3,595	4,120
Mining	524	30 849,5	27,5	4,6	3,6	1 168 866	3,268	3,789
Traction	183	4 586,9	4,1	-0,2	0,6	246 474	4,696	5,373
Total	238 251	112 305,9	100,0	5,1	5,1	4 624 672	3,584	4,118

Table 16

Electricity sent out and sold

Year	Electricity sent out							
	South Africa total sent out GW.h	Escom electricity sent out as % of South African total ¹	Electricity sent out from Escom power stations GW.h	Electricity purchased from other sources GW.h	Own consumption GW.h	Available for distribution GW.h	Peak demand on integrated Escom system MW	Integrated Escom system load factor %
1950	10 437 ²	71,1	7 287	131	—	7 418	1 182 ²	71,6
1951	11 098 ²	72,1	7 806	195	—	8 001	1 212 ²	75,4
1952	11 678 ²	74,1	8 227	424	—	8 651	1 265 ²	77,9
1953	12 823 ²	73,3	8 845	550	—	9 395	1 394 ²	76,9
1954	14 167 ²	73,5	9 977	437	—	10 414	1 570 ²	75,7
1955	16 021 ²	73,4	11 425	339	—	11 764	1 806 ²	74,4
1956	17 293 ²	74,8	12 670	257	—	12 927	2 001 ²	73,5
1957	18 720	73,7	13 640	163	—	13 803	2 151 ²	73,3
1958	19 765	74,3	14 516	164	—	14 680	2 249 ²	74,5
1959	21 051	75,4	15 777	94	—	15 871	2 429 ²	74,6
1960	22 717	76,3	17 308	15	—	17 323	2 605 ²	75,7
1961	23 760	77,0	18 284	8	—	18 292	2 733 ²	76,4
1962	25 599	75,8	19 404	13	—	19 417	2 925 ²	75,3
1963	27 335	76,1	20 793	19	—	20 812	3 183 ²	74,6
1964	29 547 ²	76,8	22 639	41	—	22 680	3 460 ²	74,6
1965	31 939	77,4	24 583	126	—	24 709	3 669	76,9
1966	33 929 ²	77,0	25 504	630 ³	—	26 134	3 906	76,4
1967	36 897	77,1	28 371	70	—	28 441	4 227	76,8
1968	39 761	77,6	30 843	8	—	30 851	4 658	75,4
1969	42 847	78,4	33 598	8	—	33 606	5 055	75,9
1970	47 456	77,7	37 321	7	—	37 328	5 622	75,8
1971	51 081	79,8	40 739	8	—	40 747	6 115	76,1
1972	55 332	80,4	44 475	10	—	44 485	6 630	76,4
1973	60 700	82,0	49 759	11	—	49 770	7 350	77,3
1974	66 412 ²	84,7	56 251	8	—	56 259	8 552	75,1
1975	70 111	87,8	61 498	35	—	61 533	9 185	76,5
1976	75 381	89,4	66 188	1 226	—	67 414	10 085	76,1
1977	79 352	89,8	67 050	4 241	27	71 264	10 735	75,8
1978	84 812	91,7	70 902	6 924	52	77 774	11 490	77,3
1979	92 615	92,8	75 643	10 394	58	85 979	12 855	76,4
1980	99 905	93,0	83 362	9 659	71	92 950	13 668	77,5
1981	106 135	93,9	97 824	2 601	712	99 713	14 674	77,6
1982	109 536	93,6	102 769	2 151	2 404	102 516	15 532	75,3
1983	112 366	93,8	103 295	5 026	2 917	105 404	15 639	76,9
1984	120 835	94,3	116 581	505	3 188	113 898	17 296	75,0
1985	125 962	94,7	121 987	507	3 265	119 229	17 852	76,2

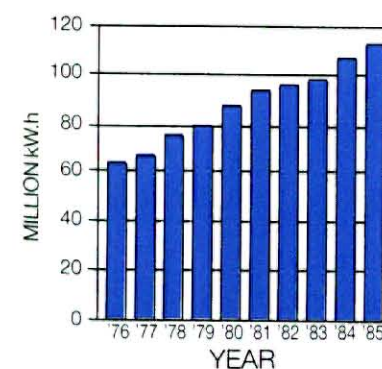
¹Includes Escom electricity sent out to neighbouring territories.²Estimates based on limited information.³Includes purchases from City of Johannesburg during serious drought.⁴Figures not available.

continued

ESCOM

Electricity sales				Employees		Assets in commission at 31 December	
Ratio GW.h sold/ GW.h sent out	Electricity sold GW.h	Growth for the year %	Average selling price c/kW.h	Total number at 31 December	Ratio number/ GW.h sold	R000	Ratio R000/ GW.h sold
0,932	6 910,6	11,1	0,274 1	9 352	1,353	— ⁴	— ⁴
0,932	7 456,5	7,9	0,292 2	10 336	1,386	— ⁴	— ⁴
0,934	8 080,6	8,4	0,311 5	10 889	1,348	— ⁴	— ⁴
0,929	8 732,2	8,1	0,354 2	11 518	1,319	— ⁴	— ⁴
0,929	9 676,6	10,8	0,380 8	12 317	1,273	— ⁴	— ⁴
0,932	10 964,0	13,3	0,413 9	12 490	1,139	— ⁴	— ⁴
0,930	12 019,5	9,6	0,428 5	12 977	1,080	— ⁴	— ⁴
0,925	12 763,1	6,2	0,447 8	13 421	1,052	— ⁴	— ⁴
0,927	13 602,1	6,6	0,473,3	14 312	1,052	370 030	27,20
0,928	14 724,5	8,3	0,495 1	13 947	0,947	428 183	29,08
0,929	16 094,1	9,3	0,507 9	14 654	0,911	450 853	28,01
0,930	17 013,2	5,7	0,515 5	15 441	0,908	468 416	27,53
0,933	18 121,0	6,5	0,516 4	16 467	0,909	518 722	28,63
0,937	19 500,0	7,6	0,517 7	16 804	0,862	577 530	29,62
0,937	21 247,5	9,0	0,510 1	17 172	0,808	639 639	30,10
0,937	23 143,3	8,9	0,507 6	17 851	0,771	673 626	29,11
0,940	24 554,3	6,1	0,525 4	18 579	0,757	714 213	29,09
0,937	26 657,1	8,6	0,546 7	19 817	0,743	846 818	31,77
0,936	28 885,0	8,4	0,555 0	20 893	0,723	911 479	31,56
0,937	31 505,6	9,1	0,556 5	21 644	0,687	1 059 123	33,62
0,935	34 890,6	10,7	0,554 5	22 700	0,651	1 165 360	33,40
0,934	38 040,0	9,0	0,577 2	25 050	0,659	1 390 095	36,54
0,936	41 648,9	9,5	0,610 8	26 937	0,647	1 526 697	36,66
0,936	46 578,4	11,8	0,648 4	28 559	0,613	1 699 279	36,48
0,935	52 585,1	12,9	0,682 2	29 891	0,568	1 847 484	35,13
0,940	57 869,2	10,0	0,795 0	33 999	0,588	2 008 917	34,71
0,940	63 355,7	9,5	1,036 0	36 915	0,583	2 311 725	36,49
0,942	67 125,4	5,9	1,535 3	39 112	0,583	2 851 103	42,47
0,936	72 780,4	8,4	1,788 7	41 040	0,564	3 564 600	48,98
0,937	80 582,8	10,7	1,898 0	43 690	0,542	4 255 502	52,81
0,942	87 539,3	8,6	2,024 2	47 490	0,542	5 604 038	64,02
0,941	93 844,0	7,2	2,281 1	52 080	0,555	6 323 048	67,38
0,938	96 135,9	2,4	2,803 8	58 850	0,612	7 689 399	79,98
0,932	98 251,1	2,2	3,360 6	62 420	0,635	9 218 946	93,83
0,939	106 904,1	8,8	3,584 2	64 560	0,604	12 058 241	112,79
0,942	112 305,9	5,1	4,117 9	66 000	0,588	15 496 953	137,99

Electricity sales



Escom total GW.h sold

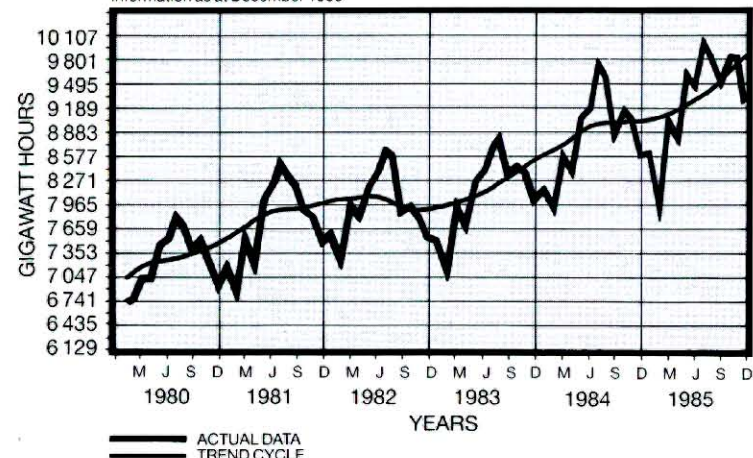
Year	Traction	Bulk supply	Mining	Air and steam	Industrial and commercial	Domestic and street lighting
1950	524	1 106	3 899	277	991	114
1951	539	1 261	4 105	268	1 150	134
1952	555	1 459	4 333	265	1 338	131
1953	584	1 640	4 736	234	1 402	135
1954	619	1 839	5 317	220	1 540	142
1955	690	2 048	5 977	212	1 881	157
1956	740	2 282	6 445	191	2 187	174
1957	753	2 540	6 790	160	2 331	190
1958	789	2 838	7 136	154	2 480	206
1959	887	3 058	7 676	138	2 737	228
1960	1 045	3 243	8 259	126	3 169	253
1961	1 178	3 368	8 626	124	3 437	279
1962	1 296	3 570	9 143	116	3 692	303
1963	1 389	3 998	9 416	115	4 253	329
1964	1 559	4 494	9 847	94	4 873	381
1965	1 763	4 921	10 271	87	5 663	439
1966	1 836	5 344	10 775	40	6 069	492
1967	1 958	5 996	11 441	Terminated	6 729	563
1968	2 181	6 628	11 995		7 439	642
1969	2 307	7 264	12 642		8 574	719
1970	2 410	8 108	13 948		9 608	817
1971	2 616	9 265	14 227		11 014	918
1972	2 782	10 716	14 509		12 642	1 000
1973	2 896	12 752	15 800		14 026	1 105
1974	3 108	15 522	16 941		16 106	909
1975	3 307	18 055	17 444		18 050	1 013
1976	3 475	20 096	18 746		19 946	1 093
1977	3 508	20 862	20 139		21 586	1 030
1978	3 586	21 834	22 219		24 181	960
1979	4 035	24 133	24 000		27 475	940
1980	4 455	26 923	25 882		29 373	906
1981	4 660	29 961	27 131		31 091	1 002
1982	4 436	32 349	27 372		30 959	1 020
1983	4 137	32 729	28 021		32 286	1 078
1984	4 595	35 541	29 506		36 119	1 144
1985	4 587	37 451	30 849		38 215	1 204

Sales as a percentage of the total GW.h sold

Total sold	Traction	Bulk supply	Mining	Air and steam	Industrial and commercial	Domestic and street lighting
6 911	7,6	16,0	56,4	4,0	14,3	1,6
7 456	7,2	16,9	55,0	3,6	15,4	1,8
8 080	6,9	18,1	53,6	3,3	16,6	1,6
8 732	6,7	18,8	54,2	2,7	16,1	1,5
9 677	6,4	19,0	54,9	2,3	15,9	1,5
10 964	6,3	18,7	54,5	1,9	17,2	1,4
12 020	6,2	19,0	53,6	1,6	18,2	1,4
12 763	5,9	19,9	53,2	1,3	18,3	1,5
13 602	5,8	20,9	52,5	1,1	18,2	1,5
14 725	6,0	20,8	52,1	0,9	18,6	1,6
16 094	6,5	20,1	51,3	0,8	19,7	1,6
17 013	6,9	19,8	50,7	0,7	20,2	1,6
18 121	7,2	19,7	50,5	0,6	20,4	1,7
19 500	7,1	20,5	48,3	0,6	21,8	1,7
21 248	7,3	21,2	46,3	0,4	22,9	1,8
23 143	7,6	21,3	44,4	0,4	24,5	1,9
24 554	7,5	21,8	43,9	0,2	24,7	2,0
26 657	7,3	22,4	42,9	—	25,2	2,1
28 885	7,5	22,9	41,5	—	25,8	2,2
31 506	7,3	23,1	40,1	—	27,2	2,3
34 891	6,9	23,2	40,0	—	27,5	2,3
38 040	6,9	24,4	37,4	—	29,0	2,4
41 649	6,7	25,7	34,8	—	30,4	2,4
46 578	6,2	27,4	33,9	—	30,1	2,4
52 585	5,9	29,5	32,2	—	30,6	1,7
57 869	5,7	31,2	30,1	—	31,2	1,8
63 356	5,5	31,7	29,6	—	31,5	1,7
67 125	5,2	31,1	30,0	—	32,2	1,5
72 780	4,9	30,0	30,5	—	33,2	1,3
80 583	5,0	29,9	29,8	—	34,1	1,2
87 539	5,1	30,8	29,6	—	33,6	1,0
93 844	5,0	31,9	28,9	—	33,1	1,1
96 136	4,6	33,6	28,5	—	32,2	1,1
98 251	4,2	33,3	28,5	—	32,9	1,1
106 904	4,3	33,2	27,6	—	33,8	1,1
112 306	4,1	33,3	27,5	—	34,0	1,1

Total Escom

Information as at December 1985



Bulk Sales

Information as at December 1985

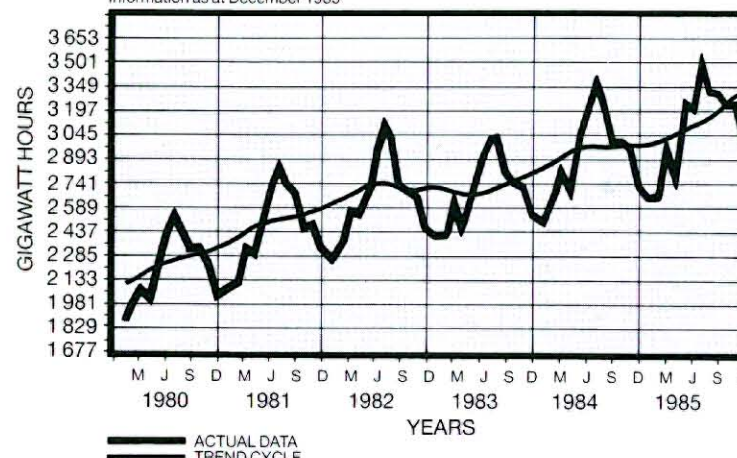


Table 18

Revenue per kW.h by category of customer (excluding air and steam)

Year	Actual price (in c/kW.h)						% Change
	Traction	Bulk municipalities	Mining	Industrial and commercial	Domestic and street lighting	Total for all categories	
1950	0,355 7	0,353 5	0,206 9	0,286 0	1,087 0	0,270 1	
1951	0,357 4	0,360 6	0,227 4	0,303 0	1,032 1	0,287 7	6,5
1952	0,381 1	0,380 7	0,245 4	0,312 8	1,063 0	0,305 5	6,2
1953	0,461 8	0,419 9	0,282 9	0,360 4	1,208 3	0,349 2	14,3
1954	0,531 8	0,463 8	0,299 2	0,388 1	1,324 7	0,376 3	7,8
1955	0,617 7	0,522 5	0,326 2	0,399 1	1,348 5	0,409 9	8,9
1956	0,634 9	0,544 8	0,334 4	0,399 2	1,362 5	0,420 9	2,7
1957	0,644 8	0,569 4	0,352 7	0,415 0	1,384 7	0,440 9	4,8
1958	0,655 7	0,586 1	0,379 0	0,440 7	1,429 4	0,466 4	5,8
1959	0,667 1	0,600 9	0,396 3	0,468 2	1,441 1	0,486 3	4,3
1960	0,664 4	0,600 9	0,414 4	0,483 3	1,449 2	0,498 7	2,5
1961	0,672 7	0,612 7	0,421 6	0,494 3	1,484 3	0,509 6	2,2
1962	0,739 8	0,609 4	0,417 4	0,487 4	1,478 4	0,510 9	0,3
1963	0,728 3	0,604 4	0,419 2	0,487 8	1,476 1	0,512 5	0,3
1964	0,691 0	0,591 2	0,412 1	0,490 2	1,442 9	0,507 3	-1,0
1965	0,696 3	0,591 2	0,405 7	0,481 9	1,398 3	0,505 1	-0,4
1966	0,717 2	0,596 9	0,418 2	0,510 8	1,385 1	0,521 8	3,3
1967	0,752 4	0,606 3	0,444 4	0,536 8	1,393 1	0,546 6	4,8
1968	0,755 3	0,603 7	0,449 3	0,551 3	1,391 1	0,555 0	1,5
1969	0,755 0	0,598 8	0,454 5	0,549 6	1,369 5	0,556 5	0,3
1970	0,756 2	0,600 1	0,450 1	0,549 8	1,345 3	0,554 5	-0,4
1971	0,763 0	0,613 9	0,471 6	0,573 4	1,360 8	0,577 2	4,1
1972	0,791 3	0,636 6	0,510 4	0,600 8	1,415 6	0,610 8	5,8
1973	0,842 4	0,674 1	0,541 8	0,637 7	1,504 9	0,648 4	6,2
1974	0,882 8	0,703 6	0,557 2	0,705 7	1,548 0	0,682 3	5,2
1975	1,016 2	0,807 9	0,659 0	0,821 9	1,707 9	0,795 0	16,5
1976	1,326 4	1,052 9	0,872 6	1,064 1	2,091 5	1,036 0	30,3
1977	2,004 0	1,577 9	1,294 6	1,564 1	3,177 8	1,535 3	48,2
1978	2,386 8	1,778 9	1,604 4	1,798 9	3,787 5	1,788 7	16,5
1979	2,601 8	1,871 5	1,731 1	1,892 4	3,982 6	1,898 0	6,1
1980	2,676 2	2,002 7	1,854 0	2,025 6	4,275 4	2,024 2	6,7
1981	2,988 8	2,269 7	2,078 7	2,283 7	4,731 4	2,281 1	12,7
1982	3,649 5	2,807 8	2,540 5	2,825 0	5,418 2	2,803 8	22,9
1983	4,550 6	3,367 1	3,048 3	3,376 9	6,232 3	3,360 7	19,9
1984	4,695 5	3,593 4	3,268 1	3,594 7	6,661 4	3,584 2	6,7
1985	5,373 4	4,124 3	3,788 9	4,119 8	7,507 4	4,117 9	14,9

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ESCOM

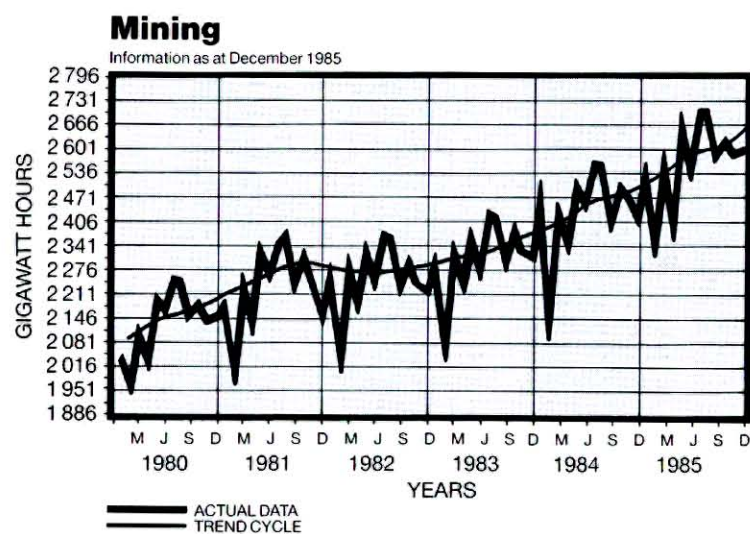
Consumer Price Index 1980 = 100	Real price (in c/kW.h)						% Change
	Traction	Bulk municipalities	Mining	Industrial and commercial	Domestic & street lighting	Total for all categories	
19,5	1,824 1	1,812 8	1,061 2	1,466 9	5,574 3	1,385 0	
20,9	1,710 2	1,725 3	1,088 0	1,449 9	4,938 3	1,376 3	-0,6
22,7	1,678 9	1,677 2	1,081 0	1,378 0	4,683 0	1,346 0	-2,2
23,5	1,965 1	1,787 0	1,204 0	1,533 5	5,141 6	1,485 8	10,4
23,9	2,225 2	1,940 6	1,251 9	1,623 7	5,542 6	1,574 6	6,0
24,7	2,500 7	2,115 5	1,320 7	1,616 0	5,459 4	1,659 7	5,4
25,2	2,519 3	2,161 7	1,326 8	1,584 1	5,406 8	1,670 1	0,6
25,9	2,489 4	2,198 6	1,361 8	1,602 4	5,346 3	1,702 3	1,9
26,8	2,446 6	2,186 9	1,414 3	1,644 4	5,333 6	1,740 3	2,2
27,2	2,452 6	2,223 7	1,457 0	1,721 2	5,298 2	1,788 0	2,7
27,5	2,416 0	2,185 2	1,506 9	1,757 5	5,270 0	1,813 5	1,4
28,1	2,394 0	2,180 3	1,500 3	1,759 2	5,282 1	1,813 5	0
28,5	2,595 7	2,138 1	1,464 7	1,710 1	5,187 3	1,792 7	-1,1
28,8	2,528 8	2,098 6	1,455 6	1,693 6	5,125 3	1,779 6	-0,7
29,5	2,342 4	2,004 0	1,397 1	1,661 8	4,891 2	1,719 5	-3,4
30,6	2,275 5	1,932 0	1,325 7	1,574 7	4,569 6	1,650 7	-4,0
31,7	2,262 6	1,882 9	1,319 2	1,611 3	4,369 3	1,646 2	-0,3
32,8	2,294 0	1,848 6	1,355 0	1,636 7	4,247 3	1,666 6	1,2
33,3	2,268 2	1,813 0	1,349 2	1,655 5	4,177 5	1,666 7	0
34,3	2,201 0	1,745 8	1,325 1	1,602 2	3,992 6	1,622 5	-2,7
36,1	2,094 8	1,662 4	1,246 7	1,523 1	3,726 5	1,536 1	-5,3
38,3	1,992 1	1,603 0	1,231 4	1,497 0	3,553 1	1,507 2	-1,9
40,8	1,939 4	1,560 3	1,250 9	1,472 5	3,469 7	1,497 1	-0,7
44,7	1,884 5	1,508 1	1,212 1	1,426 7	3,366 7	1,450 7	-3,1
49,9	1,769 1	1,410 1	1,116 6	1,414 1	3,102 2	1,367 3	-5,7
56,6	1,795 4	1,427 4	1,164 2	1,452 1	3,017 4	1,404 6	2,7
62,9	2,108 8	1,674 0	1,387 3	1,691 8	3,325 1	1,647 1	17,3
70,0	2,862 8	2,254 1	1,849 4	2,234 4	4,539 7	2,193 2	33,2
77,6	3,075 7	2,292 4	2,067 5	2,318 1	4,880 8	2,305 0	5,1
87,9	2,960 0	2,129 1	1,969 4	2,152 9	4,530 8	2,159 3	-6,3
100,0	2,676 2	2,002 7	1,854 0	2,025 6	4,275 4	2,024 2	-6,3
115,2	2,594 4	1,970 2	1,804 4	1,982 4	4,107 1	1,980 1	-2,2
132,1	2,762 7	2,125 5	1,923 2	2,138 5	4,101 6	2,122 5	7,2
148,4	3,066 4	2,268 9	2,054 1	2,275 6	4,199 7	2,264 6	6,7
165,7	2,833 8	2,168 6	1,972 3	2,169 4	4,020 2	2,163 1	-4,5
192,6	2,789 9	2,141 4	1,967 3	2,139 0	3,897 9	2,138 1	-1,2

Table 19

Sales to mining sector, million kW.h

Year	Gold and uranium	Diamond	Coal mines	Platinum	Copper	Chrome
1967	9 946	264	453	308	235	11
1968	10 339	281	480	378	256	14
1969	10 647	282	495	653	282	17
1970	11 504	288	535	941	343	20
1971	11 662	297	563	962	374	25
1972	11 773	325	589	990	422	31
1973	12 263	334	620	1 581	565	33
1974	12 803	338	648	1 978	653	52
1975	13 108	346	705	2 001	679	42
1976	13 918	343	812	2 184	728	61
1977	14 708	342	941	2 287	874	84
1978	16 241	497	1 078	2 388	1 023	106
1979	17 201	596	1 248	2 772	1 042	126
1980	18 477	678	1 426	2 973	1 117	127
1981	19 406	714	1 522	3 014	1 131	117
1982	20 069	656	1 691	2 466	1 178	105
1983	20 724	649	1 686	2 552	1 178	99
1984	21 427	634	1 873	3 023	1 160	106
1985	22 088	652	2 142	3 402	1 304	175

Note: Figures not available for years prior to 1967

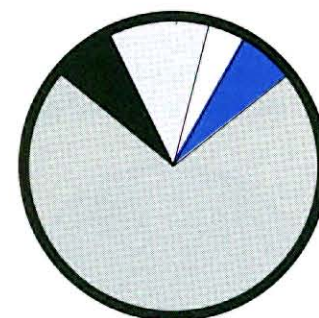


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ESCOM

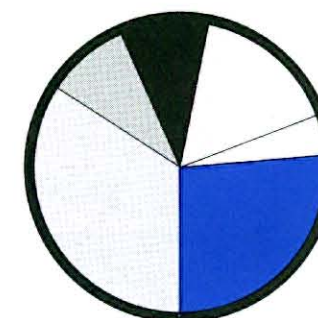
Asbestos	Iron ore and manganese	Iron	Manganese	Other	Total	% Growth
91	74			59	11 441	5,8
107	81			59	11 995	4,8
118	80			68	12 642	5,4
137	88			92	13 948	10,3
152	92			100	14 227	2,0
161	101			117	14 509	2,0
168		86	27	123	15 800	8,9
193		104	30	142	16 941	7,2
238		121	37	167	17 444	3,0
266		180	49	205	18 746	7,5
275		271	62	295	20 139	7,4
223		272	72	319	22 219	10,3
233		334	83	365	24 000	8,0
242		361	94	387	25 882	7,8
240		335	104	548	27 131	4,8
235		305	113	554	27 372	0,9
225		215	77	616	28 021	2,4
186		286	73	738	29 506	5,3
184		306	84	512	30 849	4,5

Major mining sectors



- Gold 72%
- Coal 7%
- Platinum 11%
- Copper 4%
- Smaller mining sectors 6%

Smaller mining sector (6%)



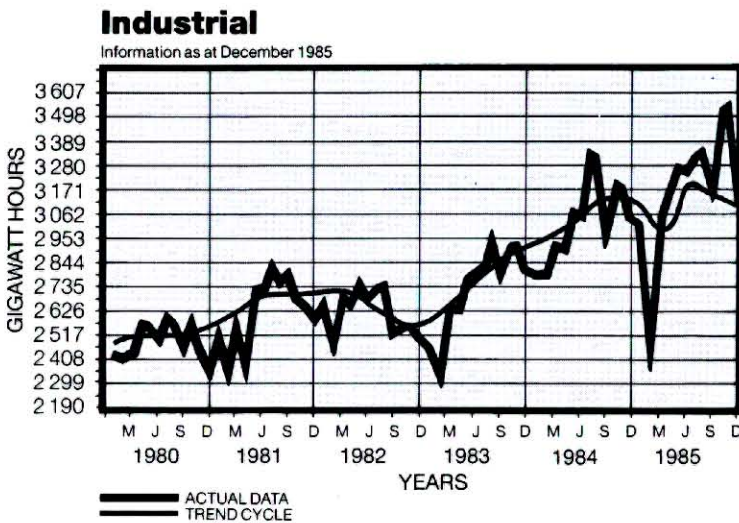
- Diamonds 34%
- Chrome 9%
- Asbestos 10%
- Iron 16%
- Manganese 4%
- Other 27%

Table 20

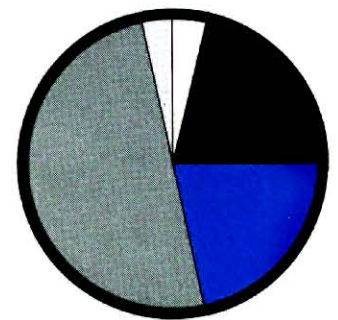
Sales to industry, million kW.h

Year	Building, cement and quarrying	Chemical	Engineering, iron, steel and base metals	Foodstuffs, cons. goods, commercial and other	Paper and paper products	Other	Total	% growth
1966	530	1 098	2 850	935	416	240	6 069	
1967	562	1 214	3 224	1 022	469	238	6 729	10,9
1968	646	1 241	3 529	1 111	493	419	7 439	10,6
1969	716	1 272	4 207	1 088	542	749	8 574	15,3
1970	782	1 376	4 683	1 407	485	875	9 608	12,1
1971	824	1 444	5 652	1 673	494	927	11 014	14,6
1972	878	1 639	6 864	1 852	520	889	12 642	14,8
1973	1 096	1 921	7 687	2 747	575		14 026	10,9
1974	1 148	2 160	8 835	3 359	604		16 106	14,8
1975	1 115	2 382	10 180	3 790	583		18 050	12,1
1976	1 068	2 655	11 173	4 389	661		19 946	10,5
1977	1 087	3 103	11 927	4 819	650		21 586	8,2
1978	1 198	4 117	13 338	4 916	612		24 181	12,1
1979	1 121	4 657	15 600	5 378	719		27 475	13,6
1980	1 194	5 751	15 900	5 688	840		29 373	6,9
1981	1 353	7 215	15 316	6 341	866		31 091	5,8
1982	1 413	7 258	14 754	6 688	846		30 959	-0,4
1983	1 375	7 645	15 348	6 965	953		32 286	4,3
1984	1 480	8 051	17 025	8 385	1 178		36 119	11,9
1985	1 247	8 149	19 117	8 262	1 440		38 215	5,8

Note: Figures not available for years prior to 1966



Electricity sales to sectors of industry



- Engineering, iron, steel, base metals **50,1%**
- Building, cement, quarrying **3,3%**
- Paper, paper products **3,8%**
- Chemical **21,4%**
- Food, consumer goods, commerce, other **21,4%**

Table 21

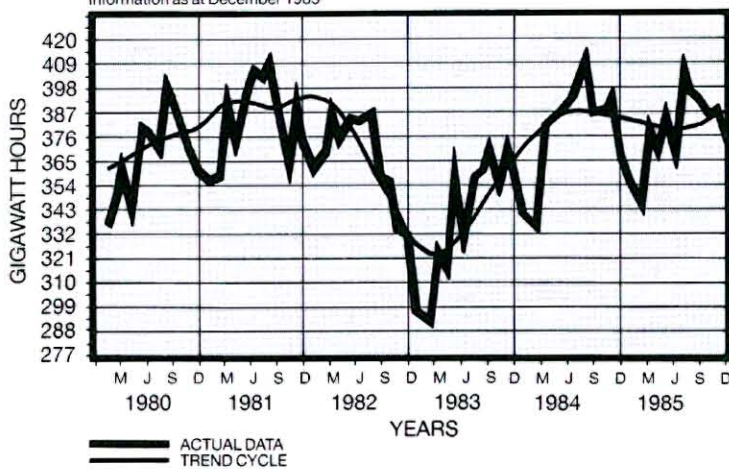
Total number of farm supplies

Farm supplies include supplies which are furnished to agricultural and small holdings and which are primarily used for farming purposes.

Year	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Number	34 661	38 010	39 787	41 605	45 156	49 238	53 467	59 098	65 018	70 364
% growth		9,7	4,7	4,6	8,5	9,0	8,6	10,5	10,0	8,2
Annual average growth	8,2%									

Traction

Information as at December 1985



Domestic and street lighting

Information as at December 1985

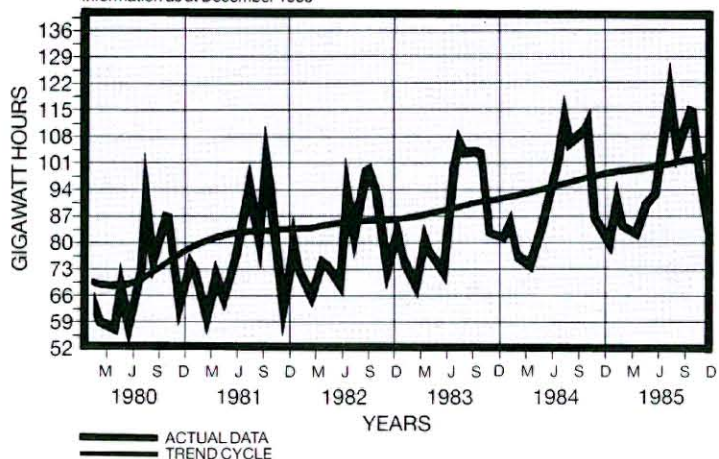
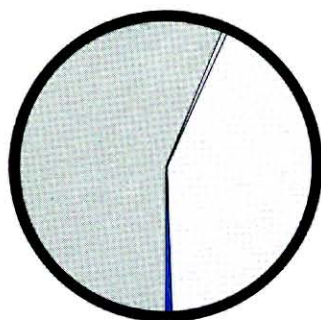


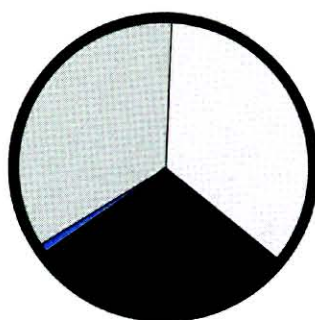
Table 22

Number of customers by category (excluding Traction, air and steam)

Year	Bulk S.A. municipalities	Mining	Industrial and commercial	Domestic and street lighting	Total for all categories	% Change
1950	70	133	2 759	35 090	38 052	
1951	79	138	3 023	37 937	41 177	8,2
1952	96	141	2 839	30 691	33 767	-18,0
1953	100	144	3 015	33 063	36 322	7,6
1954	108	145	3 089	33 877	37 219	2,5
1955	115	151	3 274	36 452	39 992	7,5
1956	125	166	3 490	38 944	42 725	6,8
1957	134	170	3 551	41 113	44 968	5,2
1958	137	174	4 216	43 665	48 192	7,2
1959	146	177	4 593	46 437	51 353	6,6
1960	155	183	5 039	49 968	55 345	7,8
1961	168	192	5 453	53 908	59 721	7,9
1962	179	209	6 410	56 456	63 254	5,9
1963	186	230	7 128	61 093	68 637	8,5
1964	187	240	7 782	66 397	74 606	8,7
1965	203	251	9 051	71 517	81 022	8,6
1966	208	259	10 278	77 121	87 866	8,4
1967	220	267	11 435	83 189	95 111	8,2
1968	233	276	13 540	85 227	99 276	4,4
1969	249	289	14 978	91 999	107 515	8,3
1970	265	294	16 336	98 155	115 050	7,0
1971	289	297	16 927	106 684	124 197	8,0
1972	310	299	18 500	108 517	127 626	2,8
1973	326	302	20 049	117 034	137 711	7,9
1974	332	314	41 647	106 857	149 150	8,3
1975	353	325	43 598	109 029	153 305	2,8
1976	365	333	61 142	105 482	167 322	9,1
1977	368	340	62 507	106 743	169 958	1,6
1978	386	354	65 797	109 317	175 854	3,5
1979	404	357	65 656	101 792	168 209	-4,3
1980	419	386	69 479	109 558	179 842	6,9
1981	434	403	77 722	113 552	192 111	6,8
1982	453	418	82 801	119 889	203 561	6,0
1983	468	421	89 439	124 433	214 761	5,5
1984	487	410	94 863	130 471	226 231	5,3
1985	528	524	101 246	135 770	238 068	5,2

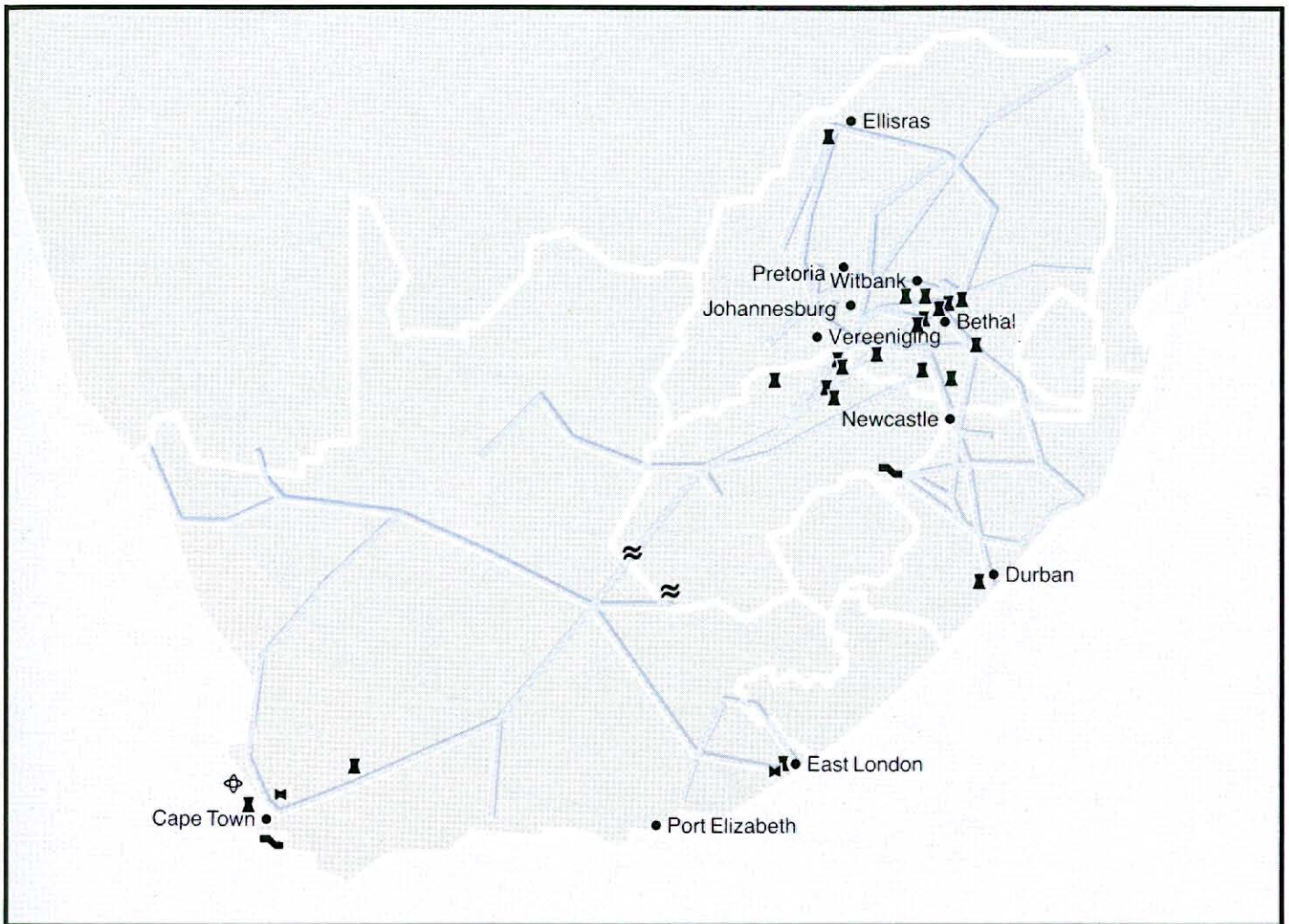
Number of customers by category

■ Domestic **56%**
■ Mining **1%**
■ Industrial **42%**
■ Bulk **1%**

Electricity sales to different customer categories

■ Domestic and Street lighting **1,1%**
■ Mining **28,6%**
■ Industrial **35,5%**
■ Bulk sales **34,8%**

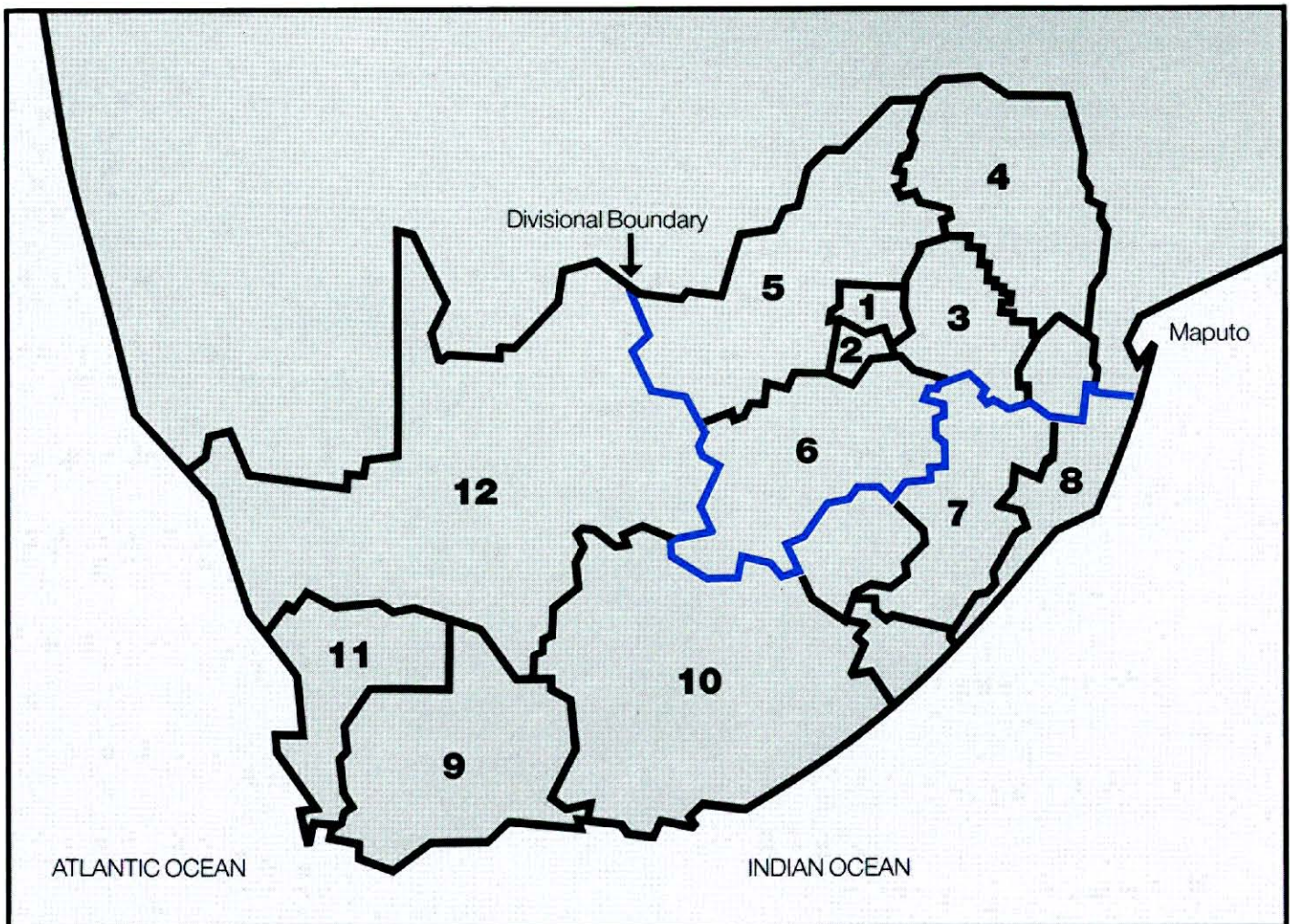
Escom's interconnected generation system



Reference

- ▲ Coal
- ⊕ Nuclear
- ≈ Hydro
- ▤ Pumped storage
- ◼ Gas-turbine

Escom's distribution regions in the RSA as at 31 December 1985



Transvaal and OFS Division

- 1. Central Transvaal – Pretoria
- 2. Southern Transvaal – Johannesburg
- 3. Eastern Transvaal – Witbank
- 4. North-Eastern Transvaal – Nelspruit
- 5. Western Transvaal – Klerksdorp
- 6. Orange Free State – Bloemfontein, Welkom

Cape and Natal Division

- 7. Western Natal – Pietermaritzburg
- 8. Eastern Natal – Durban
- 9. Southern Cape – Worcester
- 10. Eastern Cape – East London
- 11. Western Cape – Bellville
- 12. Northern Cape – Kimberley, Walvis Bay

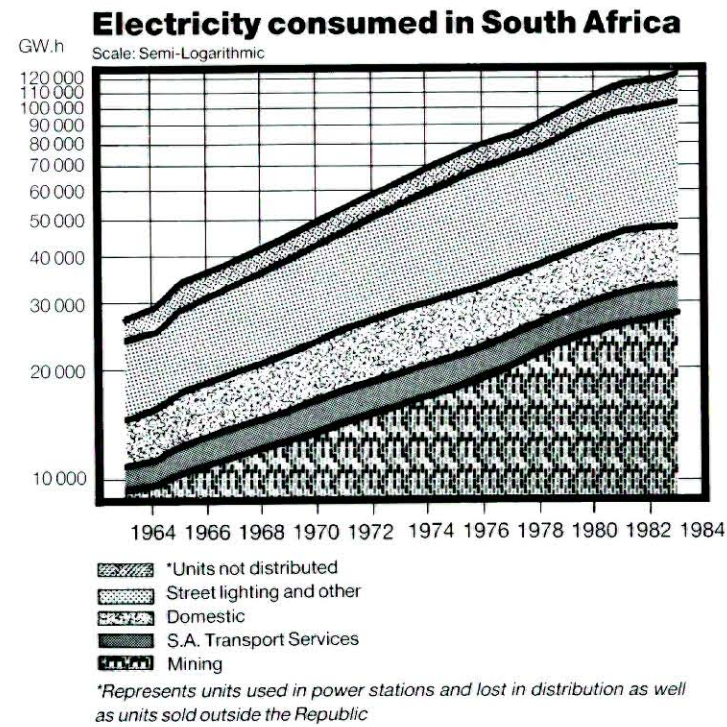
South African and Municipal Statistics

Table 23

Production and consumption of electricity in the Republic of South Africa*

Year	Gross production of electricity GW.h	Purchases outside Republic GW.h	Used in power stations and lost in distribution GW.h	Sales outside Republic GW.h	Total number of units consumed in South Africa GW.h
1961	24 299	—	3 401	—	20 902
1962	25 699	—	3 633	—	22 066
1963	27 457	—	3 263	—	24 194
1964	29 399	—	4 142	—	25 213
1965	34 423	—	5 346	—	29 077
1967	39 636	—	5 599	—	34 037
1969	45 968	—	6 359	—	39 610
1971	54 647	—	7 417	14	47 216
1973	64 390	—	8 441	194	55 755
1975	74 894	25	10 121	283	64 514
1976	79 358	1 214	10 559	327	69 686
1977	80 323	4 288	10 547	417	73 648
1978	84 496	6 973	11 837	1 441	78 190
1979	89 748	10 356	12 571	1 795	85 739
1980	98 951	9 645	14 079	1 871	92 646
1981	113 656	2 660	15 894	2 232	98 190
1982	119 012	2 167	18 542	2 406	100 230
1983	121 122	5 084	20 367	2 875	102 965

*Reprinted from Central Statistical Services Report No. 15-01-10, census of Electricity, Gas and Steam 1983.



continued

Electricity supplied for consumption							
By mining GW.h	S.A. Transport Services		For domestic purposes GW.h	Manufacturing commerce, etc. GW.h	For other purposes GW.h	Consumption per capita kW.h	
	Traction GW.h	Other GW.h					
8 796	1 033	214	3 538	6 764	557	1 189	
9 121	1 181	223	3 469	7 087	985	1 223	
9 524	1 296	249	3 724	8 316	1 085	1 034	
9 758	1 389	277	4 221	8 617	951	1 322	
10 482	1 676	347	4 960	10 251	1 428	1 483	
11 759	1 913	409	5 682	12 464	1 810	1 642	
12 882	2 142	535	6 714	15 246	2 091	1 810	
14 457	2 676	602	8 088	19 282	2 111	2 086	
16 102	2 904	616	9 265	24 408	2 461	2 327	
17 749	3 159	696	9 991	29 784	3 136	2 546	
18 994	3 356	735	10 474	32 558	3 569	2 920	
20 318	3 538	775	11 302	33 615	4 099	3 000	
22 400	3 517	796	11 718	35 427	4 332	3 256	
23 939	3 730	915	12 330	40 101	4 723	3 524	
25 260	4 323	989	13 522	43 049	5 502	3 708	
26 311	4 652	999	14 738	45 735	5 755	3 837	
27 166	4 883	1 115	14 618	45 691	6 757	3 931	
28 336	4 339	921	14 490	49 232	6 177	3 941	

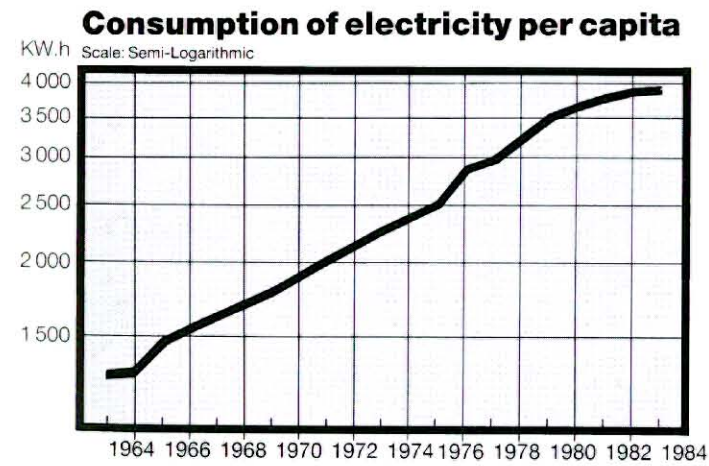


Table 24

Motive power employed – electricity Kilowatt*

Ownership and group	Steam turbines	Gas turbines	Steam reciprocating engines	Diesel and heavy oil engines	Petrol, paraffin and other light oil engines	Gas engines	Water turbines and water wheels	Total
Public supply undertakings								
Electricity generating stations								
Private undertakings and Escom								
	19 791 000	342 000	—	120	—	320	1 540 325	21 673 765
Local authorities	1 421 500	201 000	—	4 695	—	—	3 000	1 630 195
All undertakings	21 212 500	543 000	—	4 815	—	320	1 543 325	23 303 960
Electricity distributing stations								
Private undertakings and Escom								
	—	—	—	—	—	—	250	250
Local authorities	541 280	144 000	—	23 442	665	—	187 150	896 537
All undertakings	541 280	144 000	—	23 442	665	—	187 400	896 787
Total								
All undertakings	21 753 780	687 000	—	28 257	665	320	1 730 725	24 200 747
Self-producers								
Electricity generating stations	571 713	—	3 260	11 802	300	—	200	587 275
Electricity distributing stations	492 876	14 500	3 137	71 474	3	—	375	582 365
Total – All undertakings	1 064 589	14 500	6 397	83 276	303	—	575	1 169 640
Grand total								
All undertakings	22 818 369	701 500	6 397	111 533	968	320	1 731 300	25 370 387

*Reprinted from Central Statistical Services Report No. 15 – 01 – 10, census of Electricity, Gas and Steam 1983.

Electricity available for distribution

Scale: Semi-Logarithmic

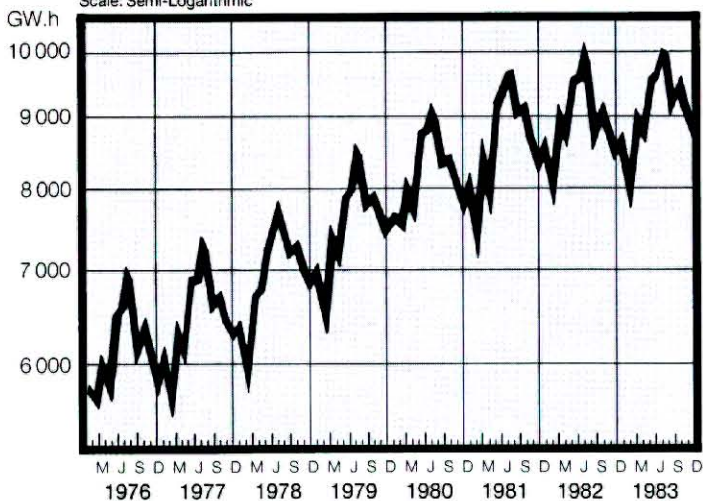


Table 25

SOUTH AFRICA

Installed capacities and gross production of electricity by type of motive power employed*

Undertaking	Fuel operated plants									
	From coal		From liquid or gaseous fuels		All fuel operated plants		Hydro-electric plants		All plants	
	Installed capacities	Gross production	Installed capacities	Gross production	Installed capacities	Gross production	Installed capacities	Gross production	Installed capacities	Gross production
	kW	MW.h	kW	MW.h	kW	MW.h	kW	MW.h	kW	MW.h
All undertakings	22 824 766	121 077 002	814 321	30 232	23 639 087	121 107 234	1 731 300	15 230	25 370 387	121 122 464
Public supply undertakings	21 753 780	115 837 745	716 242	10 336	22 470 022	115 848 081	1 730 725	13 479	24 200 747	115 861 560
Self-producers – Total	1 070 986	5 239 257	98 079	19 896	1 169 065	5 259 153	575	1 751	1 169 640	5 260 904
Mining										
Gold mines	—	—	49 317	4	49 317	4	—	—	49 317	4
Coal mines	6 500	24 063	4 800	—	11 300	24 063	—	—	11 300	24 063
Other mines	24 710	38 475	28 727	19 345	53 437	57 820	—	—	53 437	57 820
Total – Mining	31 210	62 538	82 844	19 349	114 054	81 887	—	—	114 054	81 887
Manufacturing undertakings	1 009 176	5 110 300	14 885	286	1 024 061	5 110 586	375	210	1 024 436	5 110 796
Miscellaneous industries	30 600	66 419	—	—	30 600	66 419	200	1 541	30 800	67 960
S.A. Transport Services	—	—	350	261	350	261	—	—	350	261

*Reprinted from Central Statistical Services Report No. 15 – 01 – 10, census of Electricity, Gas and Steam 1983.

Table 26

SOUTH AFRICA

Supply available for consumption and number of undertakings*

Undertaking	Generating undertakings	Distributing undertakings	Gross production of electricity	Purchases outside the Republic	Units consumed by	Units lost in	Sales outside the Republic	Supply
					auxiliary installations and lost in station transformers	transmission and transformers		available for consumption in South Africa
					MW.h	MW.h		MW.h
	No.	No.	MW.h	MW.h	MW.h	MW.h	MW.h	MW.h
Public supply undertakings								
Private undertakings and ESCOM	4	4	109 251 748	5 022 791	8 875 760	7 156 486	2 867 130	95 375 163
Local authorities	12	314	6 609 812	60 748	806 301	2 034 214	7 407	3 822 638
All undertakings	16	318	115 861 560	5 083 539	9 682 061	9 190 700	2 874 537	99 197 801
Self-producers								
Mining ¹	1	53	81 887	—	8 521	110 364	—	36 998 ⁽¹⁾
Manufacturing	26	27	5 110 796	—	1 303 122	71 728	—	3 735 946
S.A. Transport Services	—	1	261	—	4	11	—	246
Other	2	2	67 960	—	3	41	—	67 916
Total	29	83	5 260 904	—	1 311 650	182 144	—	3 767 110
All undertakings	45	401	121 122 464	5 083 539	10 993 711	9 372 844	2 874 537	102 964 911

Note 1: Negative number of units for mining is caused by transmission losses on the total number of units generated and the number of units bought exceeding units generated.

*Reprinted from Central Statistical Services Report No. 15 – 01 – 10, census of Electricity, Gas and Steam 1983.

Table 27

Consumption of electricity in South Africa*

	MW.h
Units consumed by	
Mining	
Gold and uranium mines	20 458 365
Coal mines	1 831 101
Other mines	5 516 951
S.A. Transport Services	
Traction	4 338 658
Other	920 556
Own local authority departments	
Water departments	251 906
Public lighting (street, etc.)	607 697
Other purpose	701 577
Rand Water Board and Regional Water Supply Commissions	1 710 910
Government Departments, Provincial Administrations, etc.	2 904 442
Other Private Businesses (manufacturing, commerce, etc.)	49 232 316
Domestic use	14 490 432
Other	—
Total	102 964 911

*Reprinted from Central Statistical Services Report No. 15 – 01 – 10, census of Electricity, Gas and Steam 1983.

Municipal supplies: general*

Town	Year ended	Year of start	Source of Supply (See Note 1)	Maximum Demand (kVA) (See Note 2)	Annual Load Factor % (See Note 3)
Alberton	30.6.84	1928	A	134 376B	42,09
Alexandria	1982	1958	A	1 220	50,3
Amalia H.C.	—	1985	A		
Barberton	30.6.84	—	A	5 000A	53
Beaufort-West	30.6.84	1925	A	6 080A	38,544
Benoni	30.6.84	1906	A	158 992B	49
Bethal	30.6.84	1983	A	11 250	60,54
Bethlehem	31.12.83	1904	A	23 280A	54,60
Bethulie	30.6.84	1939	A	960	39,51
Bitterfontein	30.6.84	—	A	—	—
Bloemfontein	30.6.84	1902	AB	160 000	47,78
Bloemhof	30.6.84	1961	A	2 208,90	62,75
Boksburg	1984	1905	A	159 650B	48,85
Bothaville	30.6.84	1934	A	5 900	42,38
Brakpan	1984	1919	A	50 000B	52
Brandfort	1983	1960	A	1 920	50,38
Bredasdorp	30.6.84	1929	A	2 020A	48
Brits	30.6.84	1938	A	36 010,96B	45,30
Cape Town	1983/84	1895	AB	667 000A	54,42
Cape Div. Council (Atlantis)	30.6.84	1975	A	34 320	44
Carletonville	1.11.84	—	A	22 484,88	45,017
Carolina	30.6.84	1927	A	3 300	40,95
Ceres	1983	1910	AB	13 440A	41,375
Christiana	30.6.84	1937	A	3 500	39,1
Clocolan	30.6.84	1920	A	1 800	62,5
Colenso	30.6.84	1927	A	1 728A	38
Cradock	30.6.84	—	A	5 648	40,77
De Aar	30.6.84	—	A	—	—
Delareyville	30.6.84	—	A	2 500B	41,67
Delmas	30.6.84	—	A	6 800	46,69
Despatch	31.12.83	1952	A	7 800	43,7
Dewetsdorp	30.6.84	1931	A	1 068B	39,96
Dordrecht	30.6.84	1930	AB	590	—
Douglas	30.6.84	—	A	1 744A	46,6
Durban	30.6.84	1897	A	1 060 522A	66,3
East London	30.6.84	1899	A	126 163	57,66
Edenburg	30.6.84	—	A	602	38,41
Edenvale	30.6.84	1928	A	41 780	46,66
Empangeni	30.6.84	—	A	18 000	52,2
Ermelo	30.6.84	1914	A	19 250A	39,16
Eshowe	1983	—	A	4 640A	46,64
Estcourt	30.6.84	1921	A	24 240	67,56
Fauresmith	30.6.84	1930	A	500A	36,57
Ficksburg	30.6.84	1983	A	6 300	31,08
Fochville	30.6.84	1952	A	6 951,94B	39,83
Fort-Beaufort	30.6.84	—	A	—	—
Frankfort	30.6.84	—	A	—	—
Fraserburg	30.6.84	1983	A	380B	35,85

Notes:

1 A - Bulk ex Eskom
B - Own Generation

2 Maximum Demand: (A) is placed against the figure if maximum demand is measured in kVA and (B) if it is in kW.

3. Annual Load Factor = $\frac{\text{Total units sent out} \times 100}{\text{Maximum Demand} \times 8\,760 \text{ (8\,784 if Leap Year)}}$

*Reprinted from the Official South African Municipal Yearbook, 1985 edition

Table 28 continued

Town	Year ended	Year of start	Source of Supply (See Note 1)	Maximum Demand (kVA) (See Note 2)	Annual Load Factor % (See Note 3)
Galeshewe	31.12.83	—	A	5 900A	50
George	1983	1922	AB	23 100A	50,70
Germiston	30.6.84	1952	—		
Germiston	30.6.84	1952	A	220 560A	47,9
Glencoe	30.6.84	—	A	4 140A	37,53
Gordon's Bay	30.6.83	1932	A	1 900	—
Graaff-Reinet	30.6.84	1924	A	6 048	47
Grahamstown	30.6.84	—	A	14 360	50,49
Groot Brakrivier	30.6.84	1981	A	1 200	30,8
Greyton	1983	1974	A	—	—
Greytown	30.9.84	1906	A	4 579	55,9
Griekwastad	30.6.1984	1966	A	450A	—
Harrismith	30.6.84	—	A	10 000B	50,71
Hartswater	31.12.83	1983	A	4 000A	34,39
Heidelberg K.P.	30.6.84	1931	A	—	—
Heidelberg Tvl	1983/84	—	A	18 000B	55,43
Hennenman	30.6.84	1952	A	5 170,32B	49,68
Hermanus	1983/84	—	A	5 640A	40,46
Hertzogville	1983/84	1972	A	680	31,44
Hobhouse	30.6.84	1965	A	—	—
Hofmeyr	30.6.84	1952	A	250	34,72
Hopefield	30.6.84	1934	A	580A	47
Hopetown	31.6.84	1927	A	700A	50,61
Howick	—	—	A	6 900A	45,2
Humansdorp	30.6.84	1977	A	—	44,06
Jan Kempdorp	1983	1974	A	3 120	38,83
Jansenville	30.6.84	—	C	360	42,5
Johannesburg	30.6.84	1891	AB	1 265 400B	47,99
Kakamas	30.6.84	—	A	2 000	37,3
Keetmanshoop	30.6.84	1984	D	—	—
Kei Road	30.6.84	1959	E	—	—
Keimoes	1983	1951	A	1 560	40
Kempton Park	30.6.84	1937	A	102 600	47,07
Kimberley	30.6.84	1882	A	61 140A	52,3
King William's Town	31.12.83	1903	A	11 640	50,75
Kirkwood	30.6.84	1964	A	1 152A	35,07
Kleinmond	30.6.83	1952	A	1 500	33,3
Klerksdorp	30.6.84	1911	A	5 104B	48,45
Knysna	30.6.84	1928	A	6 560A	43,5
Koppies	30.6.84	1926	A	1 961,87B	48,3
Kroonstad	30.6.84	1904	AB	33 100B	45,42
Krugersdorp	30.6.84	1908	A	100 102,95B	46,55
Kwa-Thema T.C.	30.6.84	—	—	—	—
Ladismith	—	—	A	2 000A	20,9
Ladysmith	30.6.83	—	A	40 586A	55,8

Notes:

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 B – Own Generation
 C – Other
 D – SWAWEK
 E – Supplied direct by Eskom

2 Maximum Demand: (A) is placed against the figure if maximum demand is measured in kVA and (B) if it is in kW.

$$3. \text{ Annual Load Factor} = \frac{\text{Total units sent out} \times 100}{\text{Maximum Demand} \times 8\,760 \text{ (8\,784 if Leap Year)}}$$

Table 28 continued

SOUTH AFRICA

Town	Year ended	Year of start	Source of Supply (See Note 1)	Maximum Demand (kVA) (See Note 2)	Annual Load Factor % (See Note 3)
Langebaan	—	1984	A	—	—
Leeudoringstad	30.6.84	1952	A	1 645B	43,3
Lichtenburg	30.6.84	1936	A	13 161A	40,4
Lindley	31.7.84	1956	A	900	37,83
Louis Trichardt	30.6.84	1963	A	32	50,71
Lydenburg	30.6.84	1983	AB	5 280A	51,50
Makwassie H.C.	30.6.84	1958	A	—	—
Malmesbury	30.6.84	1926	A	9 000A	46
Marble Hall	—	1983	A	5 000	—
Mariental	30.6.84	1983	D	1 120B	62,5
Meyerton	30.6.84	1983	A	192 095,71B	55,11
Middelburg K.P.	30.6.83	1929	A	4 200	41,21
Middelburg Tvl	30.6.84	1921	A	36 000A	43,3
Midrand	30.6.84	1983	A	5,471MW	35,9
Messina	30.6.84	—	A	1 200	81
Montagu	30.6.84	—	A	3 160A	46,93
Mooi River	30.6.84	—	A	5 960	56,64
Mossel Bay	1983	—	A	10 000A	59,16
Moorreesburg	30.6.84	1949	A	2 400	39,32
Mmabatho	31.12.84	1949	—	8 534,5B	49,32
Naboomspruit	—	—	—	3 121B	46,1
Nelspruit	30.6.84	1945	A	27 240A	51
Nieuwoudtville	30.6.84	—	A	150A	—
Nigel	30.6.84	—	A	33 840B	44,67
Noupoort	30.6.84	—	A	1 250	39,89
Nylstroom	—	—	A	4 320B	49,9
Okahandja	30.6.84	—	D	2 920	47,37
Olifantshoek	30.6.84	1965	A	950	35,68
Oranjeville	30.6.84	—	A	258B	37,8
Orkney	30.6.84	1942	A	11 928,06A	42,7
Otavi	30.6.84	1978	D	530B	28,97
Otjiwarongo	30.6.84	1950	D	2 040	51,9
Oudtshoorn	30.7.84	—	AB	17 200	42,02
Paarl	31.12.84	1927	A	44 628	65,34
Parys	30.6.84	1912	A	11 424B	46,78
Petrusburg	30.6.84	—	A	—	—
Petrus Steyn	30.6.84	1927	A	1 050	44,6
Phalaborwa	30.6.84	—	A	13 920A	51,05
Philippolis	30.6.84	1965	A	500	—
Pietersburg	30.6.84	1917	A	52 178B	49,6
Pietermaritzburg	30.6.84	1899	A	173 486,0A	48,94
Piketberg	30.6.84	—	A	2 500A	29,18
Plettenberg Bay	30.6.84	1964	A	5 200A	—
Port Elizabeth	30.6.84	1905	AB	374 000	56,40
Port Nolloth	30.6.84	1955	A	400A	46,45

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$$3. \text{ Annual Load Factor} = \frac{\text{Total units sent out} \times 100}{\text{Maximum Demand} \times 8\,760 \text{ (8\,784 if Leap Year)}}$$

Table 28 continued

Town	Year ended	Year of start	Source of Supply (See Note 1)	Maximum Demand (kVA) (See Note 2)	Annual Load Factor % (See Note 3)
Port Shepstone	30.6.84	1959	A	9 300	60
Potchefstroom	30.6.84	1912	—	56 334B	47,1
Potgietersrus	30.6.84	—	A	21 741	46,72
Pretoria	30.6.84	1892	AB	820 800B	53,20
Prieska	1983	1935	A	4 400A	38,54
Randburg	30.6.84	1979	A	106 800B	37,54
Reitz	31.3.84	—	A	3 500	35,08
Richards Bay	30.6.84	1983	A	48 960A	59,36
Rini T.C.	1983	—	F	—	—
Robertson	1983	1923	A	14 550A	49,13
Roodepoort	30.6.84	1911	A	142 880	47,15
Rustenburg	30.6.84	1923	A	45 297,40B	57,08
Sabie	1984	1984	A	7 600	47,2
Sandton	30.6.84	1976	AE	28 160B	34,45
Sasolburg	30.6.84	1957	A	28 420B	39,1
Schweizer-Reneke	30.6.84	1964	A	2 610B	55,16
Senekal	30.6.84	1915	A	5 186	49,7
Sishen-Kathu	30.6.84	1980	A	8 000	58,9
Somerset West	30.6.84	1916	A	17 680A	47,35
Springs	1983/84	1912	A	126 142,72B	52,83
Standerton	30.6.84	1924	A	26 700B	48
Stanford	30.6.84	1970	A	—	—
Stanger	30.6.84	1911	A	33 120	60,74
Stellenbosch	30.6.84	1914	A	37 440	48,40
Steynsburg	30.6.84	1976	A	760A	37,68
Stilfontein	30.6.84	1953	A	9 800B	60
Strand	30.6.84	1921	A	16 400A	48,24
Strydenburg	30.6.84	1965	A	1 92A	32
Swakopmund	31.12.83	1973	D	6 240B	49,88
Swellendam	30.6.84	1928	A	3 000A	47,10
Thabazimbi	1983/84	1983	A	—	—
Tvl Board for the Development of Peri-urban Areas			AD	43 246,81	34,49
Tsumeb	31.12.83	1968	D	2 700B	63,04
Tzaneen	30.6.84	1958	A	41 000	58,95
Uitenhage	1983	1909	G	66 650A	53,57
Upington	30.6.84	1929	A	16 320A	47,8
Umtata	1983	1921	H	19 200	50,66
Utrecht	30.6.84	1925	A	3 000	34,7
Vanderbijlpark	30.6.84	1947	A	55 845,00B	47,48
Ventersdorp	1984	1933	A	2 700	58,30
Vereeniging	30.6.84	1927	A	83 997,36B	45,83

Notes:

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 E – Supplied direct by Escom
 F – Grahamstown Municipality
 G – P.E. Municipality
 H – Transkei Electricity Supply Corp.

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Table 28 continued

SOUTH AFRICA

Town	Year ended	Year of start	Source of Supply (See Note 1)	Maximum Demand (kVA) (See Note 2)	Annual Load Factor % (See Note 3)
Verwoerdburg	1983	1973	A	63 352,8A	41,18
Viljoenskroon	30.6.84	—	A	2 865,2B	42,81
Villiers	30.6.84	1942	A	1 433B	37
Villiersdorp	30.6.84	1923	A	1 500	38,8
Virginia	30.6.84	1953	A	21 080B	44,7
Vosloorus	30.6.84	1963	A	5 760A	51,54
Vrede	30.6.84	1919	A	1 740A	68,15
Vredendal	1983	1955	A	2 500A	42,5
Vredenburg-Saldanha	30.6.84	1984	A	13 920	53,78
Vryburg	1983	1962	A	8 438A	65,6
Vryheid	1984	1918	A	133 66A	37,9
Walvis Bay	30.6.84	—	E	13 472	50,55
Warrenton	1984	1948	A	2 200	54,4
Welkom	30.6.84	1947	A	65 600	45,16
Wellington	30.6.84	1914	A	10 560	53,23
Westonaria	83/84	1946	A	13 688B	39,72
Winburg	30.6.84	1928	A	1 373	60,46
Windhoek	30.6.83	1948	E	40 704	53,84
Witbank	30.6.84	1954	A	65 980	47,92
Witriver	30.6.84	1953	A	5 460	47,3
Wolmaransstad	30.6.84	1956	A	2 900	43,5
Worcester	1983	1916	A	23 040	55,26
Zastron	1983/84	1928	A	1 760A	42,98

Notes:

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 H – Transkei Electricity Supply Corp.

2 Maximum Demand: (A) is placed against the figure if maximum demand is measured in kVA and (B) if it is in kW.

$$3. \text{ Annual Load Factor} = \frac{\text{Total units sent out} \times 100}{\text{Maximum Demand} \times 8\,760 \text{ (8\,784 if Leap Year)}}$$

Municipal supplies: financial*

Town	Expenditure			Total Expenditure (R)	Per unit sold (cents)
	Cost of Energy Purchased (R)	Generation (R)	Distribution (R)		
		Working expenses include provision for renewals			
Alberton	18 789 846	—	1 496 780	22 177 972	4,648
Alexandria	222 000	—	22 204	264 849	—
Barberton	1 136 265	—	9 970	1 659 634	5,474
Beaufort-West	958 393	—	399 864	1 800 274	8,75
Benoni	23 975 830	—	1 900 790	29 462 475	4,50
Bethal	1 685 653	—	177 820	2 237 048	4,25
Bethulie	163 764	—	3 780	206 040	7,66
Bitterfontein	11 048	—	4 194	21 663	8,33
Bloemfontein	17 644 856	1 583 574	2 560 666	26 738 149	4,16
Bloemhof	422 900	—	53 815	532 684	4,7409
Boksburg	24 043 650	—	3 301 409	33 201 597	5,078
Bothaville	786 086	—	72 462	1 082 168	6,05
Brakpan	6 076 976	—	577 043	9 235 307	7,32
Brandfort	271 058	—	32 711	406 682	6,44
Bredasdorp	352 803	—	215 987	584 359	7,51
Brits	6 069 263	—	729 948	7 901 807	5,94
Cape Town	79 759 833	26 099 499	25 471 738	164 015 542	5,52
Cape Div Council	5 641 760	439 349	—	6 477 970	5,15
Carolina	461 676	—	66 736	677 835	—
Ceres	1 984 463	49 911	262 823	2 701 018	6,14
Christiana	624 514	—	14 871	741 831	6,19
Clocolan	284 397	—	49 271	383 752	4,89
Colenso	229 310	—	62 695	360 848	6,94
Colesberg	347 496	—	—	420 525	—
Cradock	1 118 883	—	197 477	1 446 674	7,92
De Aar	1 312 184	—	121 329	1 777 022	—
Delareyville	375 412	—	29 184	485 883	6,075
Delmas	1 004 153	—	148 357	1 534 817	6,24
Despatch	1 490 368	—	168 217	1 911 390	6,5
Dewetsdorp	155 135	—	31 868	214 555	6,1
Douglas	312 000	25 878	42 370	538 378	8,2
Durban	184 697 000	—	33 421 930	242 395 990	4,46
East London	28 743 423	—	815 799	32 039 428	5,739
Edenburg	119 000	—	23 358	188 629	10,32
Edenvale	6 028 298	—	—	7 543 589	4,51
Ermelo	2 468 365	—	108 552	3 451 371	5,21
Eshowe	720 452	—	36 486	1 225 193	6,925
Estcourt	4 303 911	—	199 923	4 766 811	3,74
Evander	1 224 831	—	14 764	1 538 696	5,04
Fauresmith	100 634	—	8 304	115 536	7,59
Ficksburg	761 797	—	104 661	1 055 902	6,2
Fochville	893 980	—	21 290	1 356 198	6,38
Fort Beaufort	591 762	—	126 619	780 815	7,53
Frankfort	631 623	—	96 118	757 621	4,58
Fraserburg	167 913	22 713	11 390	243 717	22,69
Germiston	32 621 460	—	6 027 381	44 041 245	4,88
Glencoe	418 688	—	67 689	592 646	4,75
Gobabis	400 000	—	46 000	520 000	0,10
Graaff-Reinet	1 620 336	—	241 810	2 339 376	13,22
Groot Brakrivier	168 426	—	19 356	334 422	11,17
Greyton	34 784	—	1 569	75 911	12,38
Griekwastad	78 293	—	15 196	127 618	45
Harrismith	1 753 025	—	152 781	2 212 337	5,38
Hartswater	605 376	—	69 119	829 528	6,9
Heidelberg Tvl	3 206 410	—	514 528	3 892 706	4,44
Hennenman	810 462	—	253 611	1 172 186	5,97
Hermanus	906 304	—	—	1 156 728	6,2
Hertzogville	84 853	—	29 623	119 475	8,62
Hofmeyr	77 736	—	10 500	106 759	18,44
Hopefield	101 569	—	—	155 298	7,39
Hopetown	132 665	—	52 420	201 400	7,82
Howick	1 157 475	—	30 840	1 705 387	6,09
Humansdorp	992 000	—	96 000	1 168 000	6,05
Jan Kempdorp	466 792	—	57 921	741 844	7,32
Jansenville	115 703	—	2 384	146 232	12,22
Johannesburg	89 056 786	69 681 614	22 458 841	220 403 805	4,384
Kakamas	331 216	—	46 094	508 496	5,1
Keetmanshoop	819 560	—	9 023	124 404	0,78
Kempton Park	14 525 565	—	967 533	18 733 420	4,68

*Reprinted from the Official South African Municipal Yearbook, 1985 edition

Town	Revenue				Surplus or Deficit S or D (R)	Capital Expenditure (R)
	From Sale of electrical energy (R)	From other sources (R)	Total Revenue (R)	Per Unit sold (cents)		
Alberton	23 487 481	1 410 902	24 898 383	5,218	2 720 411 (S)	59 875
Alexandria	280 000	24 130	304 130	—	39 081 (S)	—
Barberton	1 679 235	3 867	1 683 102	5,556	24 846 (S)	1 378
Beaufort-West	1 827 631	92 485	1 920 116	9,33	119 842 (S)	8 695
Benoni	31 923 741	551 933	32 475 674	4,88	3 013 199 (S)	—
Bethal	2 351 069	130 212	2 481 281	4,7	244 233 (S)	—
Bethulie	202 834	17 678	220 512	0,0766	14 472 (S)	—
Bitterfontein	25 864	2 307	28 171	10,84	6 508 (S)	—
Bloemfontein	32 030 482	79 415	32 660 231	5,08	5 634 409 (S)	152 111
Bloemhof	601 443	41 183	642 626	5,4141	109 942 (S)	8 498
Boksburg	32 957 443	895 717	33 853 160	5,220	651 563 (S)	—
Bothaville	1 247 103	30 629	1 277 732	7,14	195 564 (S)	—
Brakpan	9 927 010	431 178	10 358 188	8,21	1 122 881 (S)	—
Brandfort	412 510	—	412 510	6,53	5 828 (S)	—
Bredasdorp	—	—	641 358	8,24	56 999 (S)	46 492
Brits	9 286 299	154 886	9 441 185	6,85	1 539 378 (S)	215 218
Cape Town	185 446 559	6 590 383	192 036 942	6,46	28 021 400 (S)	4 660 700
Cape Div Council	7 229 850	150 000	7 379 850	5,74	901 880 (S)	901 880
Carolina	818 305	8 550	826 855	7,92	149 020 (S)	19 870
Ceres	2 802 717	98 027	2 900 744	6,6	199 726 (S)	—
Christiana	842 466	—	842 466	7,03	100 635 (S)	—
Clocolan	421 387	4 574	425 961	5,42	42 209 (S)	—
Colenso	351 307	20 174	371 481	7,85	10 633 (S)	6 000
Colesberg	470 876	2 725	473 601	—	53 076 (S)	—
Cradock	1 509 592	299 607	1 809 199	9,91	362 525 (S)	—
De Aar	1 771 748	27 189	1 798 938	8,048	21 916 (S)	—
Delareyville	646 859	5 638	652 497	8,157	166 614 (S)	2 001
Delmas	1 629 930	138 516	1 831 446	7,44	296 629 (S)	1 300
Despatch	2 016 383	19 127	2 035 510	6,85	124 120 (S)	168 633
Dewetsdorp	229 064	—	229 064	6,5	14 509 (S)	—
Douglas	553 348	15 403	568 751	8,7	—	—
Durban	274 500 000	7 926 820	282 426 820	5,196	40 030 830 (S)	—
East London	34 659 645	36 516	34 696 161	6,215	2 656 734 (S)	—
Edenburg	210 409	6 980	217 389	11,9	28 760 (S)	—
Edenvale	9 897 925	233 591	10 131 516	6,06	2 587 927 (S)	11 290
Ermelo	4 088 902	102 738	4 191 640	6,33	740 269 (S)	90 829
Eshowe	1 338 146	61 632	1 399 778	7,912	174 585 (S)	70 009
Estcourt	5 282 697	57 751	5 340 448	4,20	573 637 (S)	315
Evander	1 860 182	22 336	1 882 518	6,20	343 822 (S)	—
Fauresmith	138 045	5 218	143 263	8,942	27 727 (S)	—
Ficksburg	1 116 927	17 239	1 134 166	6,6	78 264 (S)	—
Fochville	1 317 967	223 896	1 541 863	7,25	185 665 (S)	—
Fort Beaufort	708 846	125 864	834 710	8,05	53 895 (S)	—
Frankfort	851 798	38 693	890 291	5,38	132 670 (S)	—
Fraserburg	203 439	81 511	284 950	26,5	41 232 (S)	—
Germiston	46 249 781	2 815 029	49 064 810	5,43	5 023 565 (S)	—
Glencoe	694 815	47 819	742 634	5,96	149 988 (S)	—
Gobabis	532 000	34 000	566 000	0,11	46 000 (S)	—
Graaff-Reinet	2 697 671	58 953	2 756 624	15,58	417 248 (S)	—
Groot Brakrivier	354 888	60 940	415 828	13,89	81 406 (S)	—
Greyton	67 392	6 588	73 980	12,07	1 931 (D)	—
Griekwastad	115 653	25 811	141 464	50	13 846 (S)	—
Harrismith	2 288 949	48 209	2 337 158	5,68	124 821 (S)	24 153
Hartswater	980 648	54 997	1 035 645	8,6	206 117 (S)	50 000
Heidelberg Tvl	4 278 347	12 762	4 372 382	4,99	479 676 (S)	4 520
Hennenman	1 201 747	70 700	1 272 447	6,48	100 261 (S)	—
Hermanus	1 281 562	86 175	1 367 737	7,4	211 009 (S)	—
Hertzogville	121 118	52 205	173 323	12,5	53 848 (S)	—
Hofmeyr	106 814	—	106 814	18,44	55 (S)	—
Hopefield	171 244	7 601	178 845	8,5	23 547 (S)	—
Hopetown	226 418	9 638	236 056	9,17	34 656 (S)	—
Howick	1 685 444	83 792	1 769 236	6,32	63 849 (S)	—
Humansdorp	1 262 500	22 000	1 284 500	6,65	116 500 (S)	2 000
Jan Kempdorp	820 344	58 172	878 516	8,66	136 672 (S)	—
Jansenville	168 353	5 696	174 049	14,54	27 817 (S)	—
Johannesburg	244 523 355	3 854 385	248 377 740	4,941	27 973 935 (S)	—
Kakamas	499 666	44 679	544 344	7,7	—	—
Keetmanshoop	1 771 581	12 289	1 783 870	11,24	539 827 (S)	—
Kempton Park	19 812 469	797 427	20 609 896	4,790	1 876 476 (S)	379 344

Town	Expenditure				
	Cost of Energy Purchased (R)	Generation (R)	Distribution (R)	Total Expenditure (R)	Per unit sold (cents)
		Working expenses include provision for renewals			
Kimberley	10 471 528	—	457 719	13 668 834	5,19
King William's Town	2 649 628	—	249 652	3 582 559	7,35
Kleinmond	259 895	—	64 370	414 101	9,44
Klerksdorp	7 774 844	—	604 361	10 136 505	4,64
Knysna	1 128 600	1 152 471	660 533	1 090 131	8,36
Koppies	306 532	—	19 938	420 711	5,42
Kroonstad	2 438 774	432 424	330 364	6 357 233	5,19
Kwa-Thema T.C.	1 209 392	84 970	—	1 384 762	—
Ladysmith	6 574 420	—	455 380	8 961 480	4,6345
Leeudoringstad	248 140	—	7 900	415 847	7,05
Lindley	117 790	—	—	177 432	7,38
Louis Trichardt	5 911 536	—	734 379	8 326 392	6,18
Lydenburg	781 230	—	215 012	1 479 858	7,05
Makwassie H.C.	117 421	—	3 842	182 741	5,99
Malmesbury	1 334 195	—	93 825	1 623 774	5,09
Meyerton	3 237 361	—	3 577 897	4 559 148	4,80
Middelburg K.P.	830 698	—	113 383	1 029 152	7,5
Middelburg Tvl	4 862 191	—	672 745	6 611 375	5,02
Midrand	747 819	—	—	1 358 748	8,888
Messina	306 000	—	33 922	389 922	5,44
Montagu	520 083	—	57 597	786 560	6,58
Mossel Bay	2 048 500	—	433 612	2 886 527	5,62
Moorreesburg	371 747	—	34 713	529 065	6,40
Mmabatho	1 129 600	—	234 300	1 647 000	—
Nelspruit	3 915 251	—	254 398	5 532 851	5,87
Nieuwoudtville	63 161	2 282	6 594	85 054	—
Nigel	5 043 775	—	—	6 290 554	—
Noupoort	279 291	—	18 145	396 501	10,17
Nylstroom	727 068	—	54 545	1 191 843	7
Okahandja	797 834	—	147 857	1 089 194	7,06
Olifantshoek	134 251	—	12 068	205 455	7,98
Oranjeville	39 474	—	11 636	70 155	9,81
Orkney	1 547 190	—	399 164	2 090 559	4,93
Otavi	68 571	—	8 189	100 346	11,95
Otiwarongo	428 163	—	18 406	537 836	6,84
Oudtshoorn	2 089 272	909 411	430 273	3 783 077	6,41
Paarl	10 450 414	1 515 761	—	13 227 591	—
Parys	1 847 700	94 110	17 900	2 389 220	5,14
Petrusburg	158 836	—	17 918	198 877	7,97
Petrus Steyn	130 000	—	6 600	170 261	4,73
Phalaborwa	2 748 074	—	55 484	300 124	4,96
Philippolis	100 195	—	—	101 102	—
Pietersburg	6 666 275	—	1 080 730	8 352 241	4
Pietermaritzburg	25 616 880	—	2 417 236	33 281 281	4,711
Piketberg	263 457	—	45 916	468 075	—
Plettenberg Bay	872 548	—	384 158	1 407 646	—
Port Elizabeth	46 931 943	24 277 701	4 228 091	86 258 004	4,866
Port Nolloth	106 154	3 016	27 114	167 090	14,6
Port Shepstone	1 384 360	—	90 276	1 799 153	24,8
Potchefstroom	7 972 718	—	467 063	10 003 611	—
Potgietersrus	3 563 850	—	585 499	5 203 565	6,76
Pretoria	63 290 115	34 745 655	17 288 939	132 380 384	3,60
Prieska	746 454	—	89 081	972 773	5,75
Randburg	13 375 516	—	—	17 408 892	5,13
Reitz	471 789	—	34 397	707 375	6,43
Richards Bay	8 540 201	—	362 245	9 670 273	3,95
Rodepoort	18 750 000	—	2 905 836	28 664 241	5,51
Rustenburg	8 386 054	—	736 624	11 657 454	5,413
Sandton	3 359 000	—	627 600	4 454 500	5,39
Sasolburg	3 516 793	—	640 046	9 767 540	5,39
Schweizer-Reneke	510 585	—	49 912	702 549	6,4
Senekal	821 453	—	66 257	1 043 846	5,15
Sishen-Kathu	1 308 753	—	—	2 039 751	5,05
Somerset West	3 008 515	—	465 353	4 027 636	5,75
Springs	19 448 116	—	242 213	24 564 610	4,4
Standerton	4 186 959	—	640 471	5 536 009	5,66
Stanford	56 208	—	22 358	89 929	8,0
Stellenbosch	6 292 356	—	490 890	8 894 451	5,95
Steynsburg	155 878	—	14 801	187 762	7,8

Town	Revenue					Surplus or Deficit S or D (R)	Capital Expenditure (R)
	From Sale of electrical energy (R)	From other sources (R)	Total Revenue (R)	Per Unit sold (cents)			
Kimberley	17 137 461	56 434	17 193 895	6,52	3 525 061 (S)	689 081	
King William's Town	3 646 943	102 232	3 749 175	7,7	166 616 (S)	—	
Kleinmond	321 123	107 441	428 565	9,77	14 464 (S)	—	
Klerksdorp	10 650 301	909 828	11 560 129	5,347	1 423 624 (S)	—	
Knysna	—	—	2 612 062	11,44	—	—	
Koppies	532 061	30 591	562 652	7,25	141 941 (S)	—	
Kroonstad	6 484 444	92 708	6 577 152	5,36	219 919 (S)	2 615	
Kwa-Thema T.C.	1 335 066	—	1 355 066	—	—	—	
Ladysmith	6 932 713	85 010	7 017 723	—	248 264 (S)	400 000	
Leeudoringstad	424 264	62 009	486 273	8,24	70 426 (S)	—	
Lindley	199 911	1 186	201 097	8,36	23 665 (S)	—	
Louis Trichardt	8 004 300	790 035	8 794 335	6,5305	467 943 (S)	168 931	
Lydenburg	1 426 941	57 442	1 484 383	7,07	4 525 (S)	—	
Makwassie H.C.	201 671	4 432	206 103	6,76	23 361 (S)	3 203	
Malmesbury	1 872 709	29 960	1 902 669	5,96	278 894 (S)	—	
Meyerton	5 074 571	6 265	5 080 836	5,35	521 688 (S)	—	
Middelburg K.P.	971 325	18 508	989 833	7,21	39 319 (D)	—	
Middelburg Tvl	6 880 546	258 785	7 139 331	5,224	527 956 (S)	55 584	
Midrand	1 100 750	114 034	1 214 784	7,944	143 964 (D)	—	
Messina	382 200	14 250	396 450	5,53	6 528 (S)	—	
Montagu	844 998	40 345	885 343	7,41	98 783 (S)	—	
Mossel Bay	2 825 870	551 495	3 377 365	6,6	490 838 (S)	—	
Moorreesburg	629 155	36 015	665 170	8,05	136 104 (S)	—	
Mmabatho	1 825 100	496 900	2 322 000	—	675 000 (S)	406 300	
Nelspruit	5 465 527	775 819	6 241 346	6,62	708 495 (S)	28 688	
Nieuwoudtville	82 293	41 244	123 537	—	38 483 (S)	38 483	
Nigel	7 198 710	201 364	7 400 074	5,499	1 109 520 (S)	—	
Noupoort	412 962	2 816	415 778	10,66	19 277 (S)	—	
Nylstroom	1 453 218	4 412	1 457 630	8	265 787 (S)	—	
Okahandja	1 367 510	—	1 367 510	8,86	278 316 (S)	—	
Olifantshoek	265 594	4 035	269 629	10,47	64 174 (S)	—	
Oranjeville	53 591	5 700	59 291	8,29	10 914 (D)	—	
Orkney	2 465 098	18 133	2 483 231	5,8094	392 672	—	
Otavi	128 101	415	128 516	15,30	28 170 (S)	—	
Otiwarongo	670 298	3 127	673 426	7,69	13 590 (S)	—	
Oudtshoorn	3 533 077	—	—	6,83	250 000 (S)	—	
Paarl	14 088 548	404 516	14 482 064	—	1 254 473 (S)	—	
Parys	2 898 100	98 560	2 996 660	6,0	607 440 (S)	—	
Petrusburg	213 936	15 986	229 922	8,58	31 045 (S)	—	
Petrus Steyn	183 550	1 350	184 900	5,14	14 204 (S)	—	
Phalaborwa	3 362 674	42 563	3 405 237	6,22	688 159 (S)	30 996	
Philippolis	101 572	—	101 572	—	9 530 (D)	—	
Pietersburg	9 487 533	752 053	10 239 586	5,53	1 887 345 (S)	602 229	
Pietermaritzburg	39 975 652	1 322 702	41 298 354	5,846	8 017 073 (S)	—	
Piketberg	451 758	85 451	537 209	—	69 134 (S)	—	
Plettenberg Bay	1 413 900	243 346	1 657 246	—	—	—	
Port Elizabeth	99 277 000	2 187 053	101 464 053	5,7238	15 206 049 (S)	—	
Port Nolloth	133 007	9 113	142 120	12,42	24 969 (D)	—	
Port Shepstone	1 732 686	7 590	1 740 276	25,68	58 877 (D)	—	
Potchefstroom	12 241 132	166 327	12 407 459	—	—	93 817	
Potgietersrus	5 307 778	715 945	6 023 723	6,89	820 158 (S)	—	
Pretoria	153 106 148	5 660 323	158 766 471	4,32	26 386 087 (D)	—	
Prieska	1 128 669	18 693	1 147 362	6,78	174 589 (S)	—	
Randburg	18 008 591	385 692	18 394 283	5,43	985 391 (S)	—	
Reitz	774 101	13 627	787 728	7,72	80 353 (S)	—	
Richards Bay	11 599 172	242 732	11 841 904	4,83	2 171 631 (S)	281 349	
Rodepoort	26 560 000	4 481 844	31 041 844	5,97	23 776 (S)	—	
Rustenburg	12 782 585	324 820	13 107 405	6,056	1 449 951 (S)	—	
Sandton	4 227 100	368 700	4 595 800	5,56	141 300 (S)	—	
Sasolburg	5 192 711	220 016	5 412 727	6,13	645 187 (S)	—	
Schweizer-Reneke	759 488	12 916	772 404	7,01	69 885 (S)	—	
Senekal	1 140 731	5 508	1 146 239	5,65	102 393 (S)	—	
Sishen-Kathu	2 332 975	1 918	2 334 893	5,79	295 142 (S)	—	
Somerset West	4 105 301	181 740	4 320 657	6,35	293 020 (S)	—	
Springs	27 688 391	403 275	28 091 666	5	3 527 056 (S)	—	
Standerton	5 991 738	96 889	6 088 627	6,23	552 618 (S)	54 275	
Stanford	93 627	15 494	109 121	8,2	19 192 (S)	—	
Stellenbosch	9 390 520	237 603	9 628 123	6,44	733 672 (S)	—	
Steynsburg	194 533	8 121	202 654	8,48	14 893 (S)	—	

Table 29 continued

Town	Expenditure			Total Expenditure (R)	Per unit sold (cents)
	Cost of Energy Purchased (R)	Generation (R)	Distribution (R)		
		Working expenses include provision for renewals			
Stilfontein	1 916 053	—	180 604	2 248 623	4,30
Strand	2 767 206	—	248 303	3 479 133	5,41
Strydenburg	74 979	—	—	81 979	16,5
Swakopmund	1 424 302	—	366 308	2 257 890	8,737
Swellendam	519 427	—	21 471	723 588	6,28
Thabazimbi	840 000	—	72 790	1 327 061	—
Transvaal Board for the Development of Peri-urban Areas	5 532 283	—	1 225 858	8 225 077	6,9
Tsumeb	771 735	—	114 504	1 063 757	7,24
Tzaneen	6 897 679	—	1 179 773	9 203 533	4,61
Uitenhage	16 150 026	—	1 089 905	18 149 783	5,71
Umtata	3 370 656	120 267	337 848	4 227 917	6,31
Utrecht	366 486	—	23 805	599 782	8
Vanderbijlpark	7 882 470	—	789 083	11 932 798	5,12
Ventersdorp	506 574	—	—	837 700	6,81
Viljoenskroon	421 491	—	59 680	562 228	6,45
Villiers	199 014	—	57 204	270 872	5,81
Villiersdorp	230 194	—	20 952	350 258	6,87
Virginia	2 829 000	—	488 000	3 949 000	4,78
Vosloosrus	969 750	—	43 455	1 089 966	—
Vrede	400 091	—	125 800	570 582	5,95
Vredendal	441 860	—	129 481	605 927	7,2
Vredenburg-Saldanha	2 528 636	—	433 800	3 265 622	5,49
Vryburg	1 734 346	—	—	2 633 642	6,24
Vryheid	2 452 487	—	192 909	3 614 880	6,1
Walvis Bay	3 019 590	—	649 239	4 499 732	7,92
Wellington	1 946 516	—	81 346	2 604 324	5,53
Westonaria	1 720 072	—	463 140	2 447 283	5,472
Winburg	273 412	—	70 126	387 874	5,37
Windhoek	9 866 342	—	461 647	12 053 450	6,68
Witbank	8 152 509	—	1 530 590	10 534 917	4,19
Witrivier	799 992	—	106 628	1 063 100	5,27
Wolmaransstad	448 133	—	17 720	599 668	5,99
Worcester	4 456 018	—	516 964	6 790 292	6,35
Zastron	—	—	—	422 488	7,87

continued

SOUTH AFRICA

Town	Revenue			Total Revenue (R)	Per Unit sold (cents)	Surplus or Deficit S or D (R)	Capital Expenditure (R)
	From Sale of electrical energy (R)	From other sources (R)					
Stilfontein	2 508 895	75 829		2 584 724	4,94	336 101 (S)	—
Strand	3 913 366	79 123		3 992 489	6,21	513 356 (S)	—
Strydenburg	67 479	15 000		82 479	16,56	500 (S)	—
Swakopmund	2 757 853	71 235		2 829 088	10,672	571 198 (S)	—
Swellendam	753 598	11 954		765 553	6,64	41 964 (S)	—
Thabazimbi	1 736 800	6 190		1 742 990	—	415 929 (S)	2 250
Transvaal Board for the Development of Peri-urban Areas	7 874 066	1 137 490		9 011 557	7,6	786 479 (S)	—
Tsumeb	1 219 739	12 681		1 232 420	7,3	168 663 (S)	—
Tzaneen	10 149 941	71 631		10 221 572	5,12	1 018 039 (S)	—
Uitenhage	20 734 963	232 082		20 967 045	6,59	2 817 262 (S)	371 254
Umtata	4 975 393	131 086		5 106 479	6,51	878 562 (S)	15 581
Utrecht	662 912	11 600		674 512	9	74 730 (S)	5 959
Vanderbijlpark	10 353 833	1 975 145		12 328 978	5,29	396 180 (S)	—
Ventersdorp	820 797	87 918		908 715	7,39	71 015 (S)	—
Viljoenskroon	647 036	20 249		667 285	7,65	105 057 (S)	—
Villiers	331 543	10 463		342 006	7,1	71 134 (S)	—
Villiersdorp	337 168	20 219		357 387	7,0	7 128 (S)	—
Virginia	4 268 000	126 000		4 394 000	5,32	445 000 (S)	—
Vosloosrus	1 151 802	4 354		1 156 156	—	66 190 (S)	—
Vrede	582 972	27 019		610 271	6,37	39 689 (S)	—
Vredendal	633 444	47 183		680 627	8,1	74 700 (S)	—
Vredenburg-Saldanha	3 250 280	546 715		3 796 995	6,38	531 373 (S)	—
Vryburg	3 516 280	75 756		3 592 036	8,51	958 394 (S)	—
Vryheid	3 926 101	64 929		3 991 030	6,7	376 149 (S)	—
Walvis Bay	5 369 550	239 333		5 608 883	9,87	1 109 151 (S)	—
Wellington	3 232 467	75 476		3 307 943	7,02	703 619 (S)	—
Westonaria	3 272 348	—		3 272 348	7,358	825 065 (S)	—
Winburg	441 702	11 303		453 005	6,21	65 131 (S)	8 676
Windhoek	14 844 109	29 795		14 873 904	8,20	2 820 454 (S)	59 648
Witbank	11 957 704	128 181		12 085 885	4,81	—	—
Witrivier	1 373 199	35 061		1 408 260	6,98	34 (S)	—
Wolmaransstad	669 390	23 667		693 057	6,17	93 389 (S)	17 415
Worcester	7 285 282	189 776		7 475 059	6,98	684 766 (S)	2 789
Zastron	—	—		466 080	8,68	43 592 (S)	—

Municipal supplies: distribution*

Town	Units sold (kW.h)				Number of consumers			
	Domestic (See Note 1)	Business (See Note 1)	Industrial	Other	Domestic (See Note 1)	Business (See Note 1)	Industrial	Other
Alberton	—	178 319 060	291 576 415	69 670 126	—	14 083	747	—
Alexandria	2 473 551	—	1 582 255	984 194	260	50	3	20
Barberton	—	—	—	—	1 685	—	254	—
Beaufort-Wes	9 612 493	9 969 488	—	1 002 972	—	—	—	—
Benoni	187 060 631	49 896 927	300 362 548	117 645 525	18 565	1 539	254	—
Bethal	49 112 000	—	—	3 481 000	1 881	263	8	—
Bethlehem	2 748 190	10 277 620	30 710 220	7 323 850	3 344	562	48	1
Bethulie	2 707 430	147 000	24 000	—	365A	49A	1A	—
Bitterfontein	150 000	110 000	—	—	65	18	—	—
Bloemfontein	216 000 000	47 900 000	305 800 000	32 100 000	24 652	2 397	316	110
Bloemhof	3 988 809	1 754 800	3 863 000	1 000 692	485	122	6	6
Boksburg	208 944 022C	54 818 226C	375 351 966C	32 706 402	17 800A	883A	252A	200
Bothaville	11 160 451	2 807 256	3 881 889	53 313	1 045	171	36	16
Brakpan	119 347 000	—	17 805 000	79 006 000	10 271	—	1 264B	76A
Brandfort	5 212 000	1 106 000	—	—	657	147	—	—
Bredasdorp	5 685 460	1 666 000	431 640	—	—	19	4	1 342
Brits	18 746 036	13 949 619	96 926 403	8 605 064	2 244B	453B	87B	182B
Cape Town	1 372 269 864	482 057 859	960 493 659	158 988 035	195 550	14 547	432	1 404
Cape Div. Council	22 320 769	—	103 552 951	—	5 335	—	199	—
Carletonville	76 282 878	12 914 302	—	3 162 429	5 360	772	—	—
Carolina	10 440 271	—	—	—	—	—	720	—
Ceres	12 363 938	7 143 764	24 047 194	454 640	1 882B	342B	42B	19B
Christiana	7 772 452	1 297 293	2 906 964	—	699	86	8	—
Clocolan	5 657 456	628 606	1 569 258	—	473	92	15	—
Colenso	3 936 546	730 091	523 392	7 606	404	57	3	16
Cradock	7 718 155	7 509 831	—	3 037 014	1 448C	299C	—	249C
De Aar	10 797 019	4 036 027	2 631 750	4 887 442	1 646C	312C	23B	70B
Delareyville	—	—	—	—	—	—	—	—
Delmas	13 336 850	3 984 128	6 070 419	12 15 849	1 361B	151	17	—
Despatch	26 576 135	2 839 672	—	—	3 547	139	—	—
Dewetsdorp	2 823 597	379 545	162 101	126 606	360B/C	—	—	—
Dordrecht	432 700	198 900	146 400	1 171 381	355	31	1	72
Douglas	2 541 000	724 000	1 715 000	107 3 000	304	55	9	19
Durban	1 334 550 398	909 909 833	3 129 815 642	61 105 569	191 591	22 084	420	—
East London	123 516 980	47 199 791	308 040 985	79 431 525	19 300	2 037	210	357
Edenburg	1 370 799	456 288	—	—	246	42	—	—
Edenvale	86 818 964	5 154 418	71 126 764	4 131 651	7 327C	215C	265C	—
Empangeni	—	—	—	—	—	—	—	—
Ermelo	30 316 694	8 375 487	22 870 838	4 669 880	3 079C	418B	60	1
Eshowe	7 773 097	2 740 389	—	7 177 976	857B	163B	—	43A
Estcourt	16 848 262	6 383 108	100 499 884	3 587 361	2 013	359	25	160
Fauresmith	1 114 000	152 000	7 496	120 404	185	22	2	—
Ficksburg	7 358 408	9 794 058	—	—	851	202	—	—
Fochville	17 324 242	3 290 006	11 780	632 108	1 923	166	9	19
Frankfort	15 486 247	—	—	1 070 537	669	152	11	—
Fraserburg	1 073 919	—	—	—	—	505	—	—
Galeshewe T.C.	—	—	—	—	6 200	200	1	1
George	36 143 816	56 077 589	—	—	6 811A	1 177C	—	—
Germiston	265 956 731	50 885 628	560 386 953	25 914 923	—	26 935C	821C	100
Glencoe	7 436 779	898 896	2 858 765	402 695	1 051C	89C	11C	15
Graaff-Reinet	8 581 743	6 719 148	2 387 958	—	2 700	200	15	50
Grahamstown	23 485 499	6 088 114	24 977 073	2 787 433	4 084	238	37	65
Groot Brakrivier	2 993 930	—	—	—	1 299	—	—	—
Greytown	10 476 012	3 146 655	4 221 534	2 357 892	1 070	274	15	127
Griekwastad	258 800	18 000	7 200	—	231	30	2	—
Harding T.B.	—	—	—	—	270	70	4	52
Harrismith	11 831 171	6 607 673	16 937 120	5 783 001	1 252	299	9	98
Hartswater	3 885 139B	3 273 933B	3 402 005B	244 102	499	192	9	—
Heidelberg Cape	1 900 709	1 135 432	52 823	556 436	519B	66B	4B	—
Heidelberg Tvl.	21 656 538	14 604 078	45 013 208	6 359 306	2 825	285	37	83

*Reprinted from the Official South African Municipal Yearbook, 1985 edition.

*Figures rounded off to the nearest unit.

Note 1: Number of consumers: If a block of flats or a business complex is regarded as a single consumer, (A) must be placed against the relevant figure. If not, (B) is placed against the figure and (C) if both single and different individual consumers are indicated.

Distribution			Distribution transformers		Underground mains (km)		Overhead mains (km)		No. of Street lamps		
Unit loss in distribution kW.h	Loss as % of units sent out %	Total units sent out kW.h	Number	Total kVA	High Voltage	Low Voltage	High Voltage	Low Voltage	Gas discharge	Other	Total
25 095 087	4.56	574 470 513	—	313 618	447	315	23	—	8 090	379	8 469
338 940	6.3	5 378 940	12	2 530	3	—	27	30	292	—	292
2 817 413	6	—	47	14 100	—	—	—	—	1 100	—	1 100
1 850 247	8.84	20 584 954	61	11 754	37	24	33	73	551	358	909
28 586 252	4.18	683 551 883	474	184 762	400	440	40	185	9 223	2 493	11 716
6 590 926	11.14	59 183 926	65	19 700	50	30	—	66	1 049	740	1 789
2 838 000	3.5	81 093 600	89	44 500	70	—	10	80	3 300	—	3 300
172 370	5.65	3 050 800	12	1 675	8	7	14	32	287	—	287
—	—	—	1	200	—	1	—	5	—	—	—
26 600 000	3.97	669 700 000	1 430	213 507	827	559	533	457	14 200	3 000	17 200
1 567 791	12.88	12 175 092	18	3 325	14	4	4	20	56	560	616
14 509 860	2.15	683 140 530	801	216 570	480	617	57	145	13 700	—	13 700
2 176 966	11	19 790 600	52	19 310	18	12	2	23	—	758	758
12 818 000	7.6	228 976	411	115 250	545	860	46	233	7 600	300	7 900
546 000	12	6 864 000	14	2 830	6	2	25	60	55	372	427
826 500	9.6	8 609 600	12	3 100	2	2	15	45	227	220	447
5 061 123	3.66	143 288 245	125	3 909	82.56	—	5	—	1 578	—	1 578
206 131 683	6.48	3 179 941 100	2 584	2 015 894	2 475	5 577	344	3 370	88 908	2 915	91 823
6 287 080	4.6	132 160 800	250	142 000	152	722	57	—	2 863	—	2 863
6 545 448	6.58	92 946 969	217	47 061	99	227	59	26	1 187	1 687	2 874
1 430 729	12.05	11 871 000	40	8 950	16	5	4	25	255	255	510
4 703 764	9.65	48 713 300	190	18 163	20	22	91	29	342	608	950
1 315 291	9	11 976 709	21	2 640	10	—	15	35	53	194	247
2 003 744	20.32	9 859 064	—	—	—	—	—	—	—	—	—
495 285	8.7	5 197 635	24	3 565	6	5	6	6	—	244	244
1 292 000	6.61	19 557 000	54	11 320	38	20	42	57	951	—	951
4 527 762	16.8	26 880 000	—	—	—	—	—	—	—	—	—
1 151 676	12.59	9 150 002	40	6 825	12	16	27	32	169	197	366
3 279 318	11.8	27 886 564	75	21 470	14	60	10	14	524	330	854
3 676 976	11.1	33 092 782	70	17 000	30	13	12	70	757	727	1 484
242 667	6.48	3 739 116	19	2 485	8	1	43	14	—	170	170
213 000	—	2 162 381	8	950	2	3	10	20	—	295	295
606 000	8.5	7 145 000	19	5 650	2	3	12	33	50	195	245
245 605 058	4.32	5 680 986 500	7 963	8 878 498	4 251	8 592	1 043	2 785	88 749	7 089	95 838
59 072 819	9.57	617 262 100	442	140 555	—	—	—	—	11 141	2 312	13 453
198 513	9	2 025 600	7	1 263	7	1	1	15	—	175	175
4 019 940	2.35	171 251 737	—	—	—	—	—	—	—	—	—
5 488 157	7.1	76 856 543	157	49 455	85	225	12	15	—	—	2 550
6 091 101	9.19	66 232 899	134	40 355	82	52	20	69	2 433	—	2 433
—	—	—	55	7 935	21	23	33	32	60	300	360
3 363 385	2.57	130 692 000	79	18 640	54	28	9	31	980	536	1 416
80 100	5	1 602 000	6	950	4	3	4	14	75	—	75
1 983 655	10.46	17 152 466	30	8 790	5	6.58	5	80	189	450	527
3 065 309	12.60	24 323 445	75	16 765	25	25	8	58	639	291	930
744 375	4.3	17 401 159	29	9 050	14	86	11	98	50	200	250
122 823	10.26	1 196 742	9	—	1	—	7	22	14	90	104
997 119	4	25 925 118	25	7 880	16	128	—	3	34	70	104
10 375 795	10.11	102 597 200	437	53 681	95	50	110	230	640	1 350	1 990
23 918 211	2.58	927 062 446	—	—	—	—	—	—	16 833	320	17 153
1 180 642	8.65	13 648 000	40	9 880	20	8	5	30	86	768	854
1 457 747	6.2	23 421 600	109	35 800	47	59	215	143	156	1 079	1 235
4 718 546	7.4	63 693 000	134	33 885	120	45	81	150	450	2 050	2 500
344 654	10.62	3 247 900	23	3 830	5	13	25	10	—	—	261
1 936 307	8.74	22 138 400	41	13 000	26	—	2	35	600	—	—
7 000	2.5	291 000	3	—	—	—	—	—	—	—	—
—	—	—	—	—							

Municipal supplies: distribution

Town	Units sold (kW.h)				Number of consumers			
	Domestic (See Note 1)	Business (See Note 1)	Industrial	Other	Domestic (See Note 1)	Business (See Note 1)	Industrial	Other
Hennenman	6 697 628	2 389 985	9 643 320	364 093	1 110	144	5	—
Hermanus	11 664 463B	2 602 149B	3 610 367B	650 000	2 509	227	14	—
Hertzogville	1 385 375	—	—	—	216	—	—	—
Hobhouse	—	—	—	—	80	12	1	—
Hofmeyr	429 294	100 000	—	49 726	110	20	—	1
Hopefield	1 303 828	473 597	10 337	183 165	199	28	1	7
Hopetown	1 087 974	910 411	—	577 066	350	33	—	11
Howick	7 393 190	2 472 956	14 939 853	3 191 662	1 294	179	6	61
Humansdorp	4 500 000	7 000 000	300 000	7 500 000	600	120	5	1
Jan Kempdorp	3 820 164	2 079 042	4 242 620	—	592	121	8	—
Jansenville	421 187	428 145	—	347 593	196	30	—	40
Johannesburg	1 783 604 176	192 568 409	3 050 971 875	—	106 596	4 183	3 202	—
Kakamas	2 596 800	1 843 748	1 780 092	—	452	22	10	—
Keetmanshoop	—	—	—	—	1 236	164	124	48
Keimoes	—	—	1 344 690	—	—	26	8	22
Kempton Park	241 200 000	82 800 000	57 200 000	19 400 000	19 896C	938C	130	103
Kimberley	129 400 956	—	127 859 969	6 253 656	17 150	—	202	—
King William's Town	26 316 000	18 444 000	—	3 994 000	—	—	—	—
Kleinmond	3 197 000	241 000	21 000	478 000	1 003B	21B	5B	—
Klerksdorp	115 424 406	30 811 518	56 454 508	15 583 562	12 076B	11 066B/C	103A	—
Knysna	11 414 494	6 848 696	4 565 798	—	2 310	880	110	—
Koppies	2 355 734	2 233 018	2 937 092	232 421	3 948B	1 288B	3B	—
Kroonstad	—	—	—	—	5 100	818	231	—
Krugersdorp	125 189 424	28 564 140	178 090 572	1 762 824	15 480	1 277	716	225
Kwa-Thema T.C.	—	—	—	—	—	—	—	—
Ladismith	2 191 596	—	1 316 520	—	—	649	3	—
Ladysmith	45 741 545	13 381 427	134 153 893	193 360 928	4 893	722	77	5 629
Langebaan	—	—	—	—	—	—	—	—
Leeudoringstad	—	—	—	—	—	—	—	—
Lichtenburg	2 505 998	8 267 694	6 931 630	845 609	2 572B	308	128A	24
Lindley	1 118 872	588 276	83 100	614 786	252	53	3	2
Louis Trichardt	41 141 906	6 936 440	16 701 448	69 886 617	2 130	371	65	82
Lydenburg	10 377 144	—	2 999 040	7 607 326	1 285	—	185	143
Makwassie H.C.	1 179 690	1 496 180	178 000	77 198	2 52A	26A	4B	—
Malmesbury	12 269 113	3 518 514	12 103 220	858 975	2 033	196	31	76
Marble Hall	—	—	—	—	—	—	—	—
Mariental	2 700 000	1 200 000	58 801	—	—	—	—	—
Meyerton	27 114 890	6 142 277	57 553 676	1 705 457	2 747	32	235	220
Middelburg, Cape	5 747 000	3 182 000	3 083 000	1 712 000	1 050	130	20	24
Middelburg, Tvl.	131 703 289	—	—	—	4 500	—	—	—
Messina	6 796 288	191 000	65 000	109 009	511	56	7	500
Montagu	5 181 796	891 776	4 974 423	889 878	931C	81C	23C	53C
Mooi River	3 351 571	2 590 887	22 223 024	484 321	375	142	9	40
Mosselbaai	16 485 194	5 057 873	23 230 000	6 569 333	3 377	340	32	—
Morreburg	—	7 306 221	498 965	460 783	—	694 340	13B	—
Mmabatho	1 647 707	1 127 372	352 423	—	1 588	334	63	—
Naboomspruit	—	—	—	—	—	—	—	—
Nelspruit	—	—	—	—	—	—	—	—
Nieuwoudtville	—	—	—	—	101A	16A	—	—
Nigel	33 895 104	8 775 744	61 650 528	4 413 768	5 165	450	121	47
Noupoort	2 883 912	1 015 182	—	—	432B	142B	—	—
Nylstroom	—	—	—	—	1 132	187	12	—
Okahandja	3 632 438	1 967 740	9 826 625	—	1 003	105	15	—
Olifantshoek	—	—	—	—	230	52	3	—
Oranjeville	469 830	111 800	—	133 240	—	—	—	—
Orkney	28 743 390	6 660 179	1 353 447	5 676 063	3 108B	231B	67B	2C
Otavi	397 410	299 292	2 329	140 856	180	31	1	27
Otiwarongo	—	—	—	—	—	—	—	—
Oudtshoorn	—	—	—	—	—	—	—	—
Parys	16 456 915	3 386 310	22 411 392	—	—	—	—	—
Petrusburg	1 247 345	657 378	27 354	563 462	243	42	2	19
Petrus Steyn	1 862 000	992 127	—	745 000	320	37	—	3
Phalaborwa	—	47 910 613	741 312	6 099 721	3 064C	204C	92C	2
Philippolis	786 025	311 777	—	228 088	240	22	—	20
Pietersburg	71 236 700	67 672 300	47 737 400	22 215 700	—	—	—	—
Pietermaritzburg	240 545 344	65 251 432	400 635 317	7 399 149	38 572	—	318	—
Piketberg	2 804 278	1 020 534	1 350 007	530 682	600B	70	6	—
Plettenbergbaai	—	—	—	—	—	—	—	—
Port Elizabeth	426 185 983	137 157 234	788 189 760	421 138 881	54 670	5 706	348	13 969
Port Nolloth	887 096	257 543	—	—	197B	42B	—	—
Port Shepstone	15 367 255	13 834 138	15 494 234	—	2 500	380	73	—

*Figures rounded-off to the nearest unit.

Note 1: Number of consumers: If a block of flats or a business complex is regarded as a single consumer, (A) must be placed against the relevant figure. If not, (B) is placed against the figure and (C) if both single and different individual consumers are indicated.

Unit loss in distribution	Loss as % of units sent out	Total units sent out	Distribution transformers		Underground mains (km)		Overhead mains (km)		No. of Street lamps		
			Number	Total kVA	High Voltage *	Low Voltage *	High Voltage *	Low Voltage *	Gas discharge	Other	Total
2 906 736	11,44	25 406 806	30	10 325	36	40	2	16	593	—	—
1 464 121	7,42	19 991 100	42	11 020	23	4	6	95	1 155	60	1 215
487 410	26,02	1 872 785	3	1 500	—	3	4	11	—	—	—
—	—	—	4	700	—	—	4	20	—	110	110
181 380	23,8	760 400	1	—	—	—	5	10	21	54	75
288 406	12,07	2 388 800	6	1 000	1 250	—	1 087	12	—	450	450
536 549	17,00	3 112 000	9	1 700	4	1	8	36	170	180	350
1 843 385	6,5	27 997 661	37	11 480	11	3	—	38	780	140	920
—	11,00	—	10	—	2	2	51	27	—	330	330
500 174	4,7	10 642 000	36	4 750	7	11	13	15	400	175	575
147 023	10,93	1 343 948	5	800	—	—	5	40	150	80	230
307 158 377	5,76	5 334 302 837	8 175	8 402 844	232	2 108	357	1 709	64 240	—	64 240
327 402	5,00	6 548 042	15	1 750	2	10	24	30	—	400	400
—	—	—	34	—	22	7	33	77	125	830	955
762 000	13,97	5 454 000	88	4 117	4	5	60	25	80	186	266
23 600 000	5,56	424 200 000	949	262 500	393	1 727	30	67	11 027	1 750	12 777
17 114 019	6,00	280 628 600	350	610 210	385	576	65	81	7 722	12 525	10 247
2 916 000	5,64	51 670 000	75	13 400	28	19	19	38	1 528	116	1 744
449 000	10,2	438 600	18	5 395	3	4	15	60	—	320	320
10 918 658	4,83	215 092 825	395	106 945	579	325	4	223	7 830	137	7 967
2 257 812	9,00	25 086 800	102	20 300	55	175	35	40	1 360	—	1 360
566 054	6,8	8 324 319	52	5 762	5	4	49	37	66	77	143
9 087 500	6,9	131 702 800	261	53 505	117	189	116	137	—	—	2 955
29 512 206	7,23	108 190 958	629	164 315	559	991	136	604	7 270	—	7 270
—	—	—	140	3 465 000	100	500	2	4	400	1 800	2 200
161 198	4,6	3 669 314	—	—	—	—	—	—	—	—	—
5 588 772	2,81	198 949 700	226	81 676	142	125	63	95	1 389	2 379	4 868
—	—	—	18	3 385	2	7	3	3	19	56	75
353 079	5,6	6 255 695	33	5 100	14	12	—	13	130	260	390
4 148 170	8,00	46 710 137	123	33 125	62	2	44	781	2 100	1 100	3 200
277 466	9,36	2 982 500	6	965	27	—	6	15	14	149	163
20 336 869	13,13	155 003 280	—	—	28	7	1 499	119	3 000	600	3 600
2 902 870	12,15	23 886 380	145	15 638	12	33	91	43	273	134	407
378 247	11,04	3 050 398	11	2 450	1	1	4	12	50	250	300
3 159 778	9,9	31 909 600	44	17 050	41	15	—	52	696	180	876
—	—	—	33	8 000	—	—	—	—	400	—	400
993 199	16,14	6 152 000	50	2 680	10	40	70	63	280	230	510
3 949 647	3,99	94 937 077	229	45 415	112	125	48	109	1 929	—	1 929
1 440 000	9,49	15 164 000	35	7 675	20	22	55	65	620	200	820
5 119 698	3,74	136 950 480	252	54 615	89	105	32	48	2 717	—	2 717
1 374 373	16,10	8 535 670	20	4 180	2	10	20	30	—	500	500
1 088 927	9,12	13 026 800	22	7 100	1	2	82	7	130	530	660
1 004 197	3,39	29 600 000	—	8 643	17	9	70	32	40	400	440
4 620 816	9,00	51 342 400	157	46 204	47	76	71	133	1 620	—	1 620
694 340	7,75	8 960 309	18	5 500	9	11	3	61	160	513	673
284 602	9,1	—	66	17 045	47	23	10	43	1 457	—	1 457
1 889 036	13,00	12 641 991	123	10 053	3	4	155	30	495	—	495
9 786 185	9,4	104 043 600	220	70 000	95	60	8	50	875	2 625	3 500
—	—	—	—	—	—	—	—	—	—	72	72
5 652 824	4,26	132 809 562	132	68 000	156	92	—	88	506	2 864	3 370
480 906	10,98	4 380 000	15	5 200	10	11</					

Municipal supplies: distribution

Town	Units sold (kW.h)				Number of consumers			
	Domestic (See Note 1)	Business (See Note 1)	Industrial	Other	Domestic (See Note 1)	Business (See Note 1)	Industrial	Other
Potchefstroom	—	—	—	—	—	—	—	—
Potgietersrus	28 883 383	23 256 589	1 126 794	23 775 590	2 665	446	97	457
Pretoria	1 119 766 804	1 781 022 648	—	763 111 104	115 554	4 159	—	114
Prieska	3 390 000	4 755 000	—	7 998 000	700	103	—	2
Randburg	200 373 434	30 764 364	105 316 537	2 611 165	14 416	1 168	162	—
Reitz	6 045 704	2 029 445	102 428	1 840 668	—	—	—	—
Richards Bay	26 101 044B	10 363 056C	55 521 800	590 939	2 782	208	38	—
Robertson	14 503 405	21 540 451	18 331 440	1 790 263	2 916B	652	30	—
Roodoepoort	312 500 000C	85 800 000C	113 900 000	5 500 000	28 653	1 548	115	—
Rustenburg	89 563 500	33 538 649	75 949 420	12 018 369	B	B	B	A
Sabie	3 774 231C	10 368 000C	16 944 000	—	—	433	2	—
Sandton	69 835 200	12 819 800	—	—	3 700	25	—	—
Sasolburg	65 215 230	15 418 840	—	7 735 360	6 100	350C	—	25
Schweizer-Reneke	8 592 576	1 784 839	634 704	—	810	159	12	—
Senekal	5 445 219	3 007 015	9 042 572	2 788 676	—	—	5	—
Sishen-Kathu	37 197 360	—	3 166 680	—	1 906	81	3	—
Somerset West	48 158 611	19 318 346	2 532 813	—	4 878B	534C	—	—
Springs	161 277 950	42 495 903	315 301 182	38 980 154	15 356C	1 802C	275C	—
Standerton	31 231 230	19 801 526	31 985 588	5 583 160	3 316	448	8	1
Stanford	1 130 524	—	—	—	251	—	—	—
Stanger	35 519 737	12 449 936	116 197 769	54 777	5 895	818	162	15
Stellenbosch	45 432 263	22 413 577	79 069 625	2 670 813	5 939	499	42	3 380
Steynsburg	1 129 942	753 290	—	253 104	325	49	—	15
Stilfontein	43 628 263	4 547 178	292 856	3 799 937	4 050B	2 022B	30B	26
Strand	39 294 476	14 225 708	7 693 380	3 124 561	—	—	6	—
Strydenburg	373 527	124 509	—	—	129	10	—	—
Swakopmund	12 662 830	10 853 855	2 325 826	—	2 737C	552C	8C	—
Swellendam	5 501 434	2 371 736	3 083 080	568 412	986B	194C	14C	—
Tvl Peri-urban Development Council	78 294 428	13 707 516	27 214 087	—	7 460	285	52	—
Tsumeb	—	—	—	—	—	—	—	—
Tzaneen	20 931 547	42 475 938	35 341 794	55 218 007	2 236	466	25	3
Uitenhage	57 901 035	24 425 168	195 374 518	23 931 376	13 250C	1 013C	48A	2A
Upington	29 841 835	14 928 297	—	14 435 851	3 926C	3 78C	—	24C
Umtata	25 586 000	12 400 000	39 080 000	—	3 500	953	1 647	—
Utrecht	7 004 796	351 750	—	—	680	30	—	—
Vanderbijlpark	131 129 332	22 201 647	48 454 853	—	16 364	2 271	436	—
Ventersdorp	7 000 000	3 000 000	1 575 175	722 503	1 800	80	6	—
Vereeniging	139 549 257	48 564 902	17 453 911	17 463 360	18 710B	1 480B	300B	—
Verwoerdbrug	127 799 520	16 102 057	69 734 363	—	11 016	151	44	—
Viljoenskroon	4 482 877	1 961 817	1 835 802	437 728	561	127	6	30
Villiers	2 494 126	1 467 368	701 111	—	348	60	4	—
Villiersdorp	1 743 890	2 337 910	739 840	274 456	480	52	6	—
Virginia	50 060 000	14 382 000	5 484 000	3 521 000	4 465	470	31	40
Vosloorus	18 576 000	3 096 000	—	3 096 000	5 931	47	—	43
Vrede	6 328 025	2 742 144	155 325	362 423	720B	107B	2A	1
Vredendal	3 521 828	2 190 863	2 392 838	313 289	—	—	—	—
Vredenburg-Saldanha	16 548 242	7 752 938	33 536 848	1 338	3 035B	424B	43	14
Vryburg	—	—	—	—	—	—	—	—
Vryheid	29 727 882	20 385 170	9 045 857	—	2 954	330	31	—
Walvis Bay	18 082 256	5 081 113	31 256 687	2 394 882	3 709	373	77	3
Warrenton	8 297 421	100 658	916 000	—	1 200	149	14	—
Welkom	131 852 668	44 421 827	58 151 141	4 678 696	13 619	1 519	—	—
Wellington	16 931 574	5 479 400	22 736 899	1 848 913	2 985	307	29	55
Westonaria	34 698 431	7 466 751	1 756 882	—	3 749	231	9	—
Winburg	—	—	—	—	—	—	480	—
Windhoek	191 972 489	—	—	—	12 464	931	21	—
Witbank	101 849 266	30 427 766	23 475 571	49 411 047	9 424A	865C	22	23A
Witvriër	8 536 756	5 192 359	7 125 83	4 662 782	1 012	217	60	210
Wolmaransstad	4 734 019	2 474 274	2 354 786	440 832	610	155	20	—
Worcester	41 363 344	10 517 034	55 090 038	—	5 878	884	78	—
Zastron	2 519 850	1 822 342	568 940	455 928	419	76	9	—
Late entries								
Midrand	13 340 221	685 219	1 265 756	—	1 893	21	7	—
Paarl	95 454 453	5 766 535	147 539 393	7 311 909	—	—	—	—

*Figures rounded-off to the nearest unit

Note 1: Number of consumers: If a block of flats or a business complex is regarded as a single consumer, (A) must be placed against the relevant figure. If not, (B) is placed against the figure and (C) if both single and different individual consumers are indicated.

Unit loss in distribution	Loss as % of units sent out	Total units sent out	Distribution transformers		Underground mains (km)		Overhead mains (km)		No. of Street lamps		
			Number	Total kVA	High Voltage *	Low Voltage *	High Voltage *	Low Voltage *	Gas discharge	Other	Total
8 265 000	3,54	233 499 000	487	175 787	211	114	110	154	3 065	3 107	6 172
12 202 676	13,68	89 225 032	545	35 815	48	79	590	47	1 159	—	1 159
478 313 450	12,47	3 835 511 699	8 865	3 492 000	1 358	2 052	1 236	1 223	—	41 411	41 411
1 196 000	6,6	18 120 000	54	11 720	9	3	61	18	—	372	372
13 094 499	3,72	352 159 999	793	20 880	348	268	35	195	212	—	212
979 755	8,9	109 980 008	37	76 000	6	11	40	48	150	590	740
2 836 761	1,13	254 949 600	132	39 353	128	169	58	2	1 363	—	1 363
6 549 040	11,5	62 624 599	833	45 911	35	30	590	99	350	760	1 110
71 500 000	13,7	591 800 000	1 661	418 275	1 254	1 706	54	353	28 351	—	28 351
16 064 128	7,07	227 134 066	852	128 225	165	130	350	510	2 323	2 450	4 773
400 000	1,3	31 486 231	21	16 965	6	2	25	13	110	—	110
2 556 600	3,0	85 211 600	160	55 000	—	—	—	—	—	—	—
9 248 579	9,5	97 618 119	155	57 795	98	689	—	—	4 282	750	5 032
1 599 701	12,68	12 611 820	46	5 025	9	34	42	20	112	193	305
2 400 696	10,5	22 684 178	34	7 985	15	12	15	12	171	169	340
1 007 932	2,44	41 371 972	33	10 230	8	8	—	—	—	1 200	1 200
3 519 430	4,78	73 529 200	132	38 320	74	90	1	32	3 030	250	3 280
25 684 548	4,4	583 739 737	470	191 033	450	1 899	—	459	5 989	6 034	12 023
13 216 615	11,91	110 988 389	235	42 000	45	30	230	100	550	800	1 350
—	—	—	4	—	3	—	4	—	—	80	80
11 513 781	6,5	165 222 219	642	115 706	72	96	289	194	—	—	2 223
9 615 322	6,04	159 201 600	—	—	8	9	—	—	3 380	—	3 380
125 760	5,0	2 515 200	23	2 630	—	—	52	21	—	203	203
3 589 388	6,43	52 268 122	94	25 535	130	261	—	—	100	1 900	2 000
4 977 975	7,18	69 316 000	101	36 525	60	67	—	145	2 001	185	2 186
49 000	10,0	547 036	2	365	—	1	1	6	60	2	62
1 421 489	5,21	27 264 000	62	15 743	34	30	2	16	1 480	—	1 480
854 137	6,9	12 378 800	31	4 420	25	54	30	72	189	766	955
11 209 000	8,55	131 036 485	1 418	135 200	549	1 993	1 165	944	4 050	2 410	6 460
—	—	—	—	—	—	—	—	—	—	—	—
250 000	1,7	14 950 000	39	7 375	25	75	1	5	398	—	398
12 635 120	9,0	212 296 706	2 379	—	59	—	3 250	400	—	910	910
11 132 903	3,56	312 765 000	517	75 368	244	254	267	241	4 327	—	4 327
9 098 017	13,32	68 304 000	250	63 015	67	32	107	127	687	1 565	2 252
3 023 188	3,77	800 089 188	168	58 800	35	5	58	100	—	—	1 500
1 783 454	19,5	9 140 000	24	8 180	9	8	5	15	—	450	450
19 863 618	8,53	232 899 862	355	119 714	226	1 060	30	—	7 627	—	7 627
1 491 731	10,82	13 789 409	19	3 000	24	80	300	82	250	450	700
15 089 871	4,46	338 121 301	806	177 487	391	259	183	190	7 300	2 600	9 900
14 925 030	6,53	228 560 970	1 473	122 020	731	630	174	314	6 300	120	6 420
2 025 778	18,86	10 744 002	34	9 320	20	15	15	30	—	400	400
447 505	8,75	5 110 110	14	2 800	4	—	5	22	—	171	171
529 994	9,42	5 626 090	19	3 420	10	6	1	31	—	301	301
9 124 000	11,05	82 571 000	95	36 945	85	260	—	—	1 844	—	1 844
1 238 400	5,0	26 006 400	95	29 925	49	89	10	—	200	97	297
828 396	8,64	10 416 313	20	6 840	11	18	—	35	109	440	549
883 182	9,4	9 302 000	29	5 565	6	7	7	26	383	—	383
3 639 806	5,86	65 752 532	140	39 000	55	102	83	118	1 550	530	2 380
6 402 787	13,0	48 621 525	191	34 895	43	238	280	420	870	1 420	2 290
8 967 491	15,16	68 126 400	170	56 000	28	50	50	25	300	200	500
3 005											

Table 31

Municipal supplies: power stations*

Town	Boilers					Fuel		
	No.	Type	Make	Steam Pressure (kPa)	Total Evaporative Capacity (kg/h)	Price R/metric ton	Gene-rated	Sent out
Bethulie	—	—	—	—	—	—	—	—
Bloemfontein	3	Watertube	ICL	250 lb/sq inch	544 311	Coal 30,83	0,838	0,771
	4	Watertube	ICL	425 lb/sq inch	199 581			
	3	Watertube	John Brown	425 lb/sq inch	176 901			
	1	Watertube	Yarrow	425 lb/sq inch	58 967			
Cape Town	4	Watertube	John Brown	4,4 x 10 ⁶	118 000 ea.	Coal 46,39	0,5424	0,5738
	4	Watertube	John Thompson	4,4 x 10 ⁶	118 000 ea.	Oil 471,84		
Cape Div Council	—	—	—	—	—	—	—	—
Ceres	—	—	—	—	—	—	—	—
Dordrecht	—	—	—	—	—	—	—	—
George	6	Watertube	Babcock & Wilcox	13 600	53 100	—	—	—
Johannesburg	20	Watertube – single drum	Babcock & Wilcox	43,09	1 587 600	Coal 18,798	0,6489	0,7088
	11	Watertube – single drum	Babcock & Wilcox	45,5	935 550	Oil 448,90		
	4	Watertube – single drum	Babcock & Wilcox	62,1	979 776			
	3	Watertube – single drum	Mitchell Eng.	62,1	734 832			
Knysna	—	—	—	—	—	—	0,5	0,65
Kroonstad	3	Watertube	John Brown	3 034 x 10 ³	3 x 22 680	Coal 27,18	0,770	0,825
	2	Watertube	Combustion Eng.	3 034 x 10 ³	2 x 22 680			
Ladismith	—	—	—	—	—	—	—	—
Lichtenburg	—	—	—	—	—	—	—	—
Lydenburg	—	—	—	—	—	—	—	—
Oudtshoorn	2	Watertube	Babcock & Wilcox	1,5 000	5 500 ea.	Coal 50,91	—	1,47
	2	Watertube	Babcock & Wilcox	1,5 000	12 000 ea.	Oil 1,45		
	1	Watertube	Babcock & Wilcox	1,5 000	18 000	(per £)		
Port Elizabeth	12	Watertube	ICAL	4 200 000	1 140 000	Coal 42,88	0,65	0,71
Pretoria	10	Chain grate	Yarrow	4 500	95 000 x 10	Coal 19,23	0,52	0,56
	5	Pulverised fuel	Yarrow	6 600	250 000 x 5	Oil 0,48/£		
Upington	—	—	—	—	—	—	—	—
Umtata	—	—	—	—	—	Oil 569,40	0,24	0,24

*Reprinted from the Official South African Municipal Yearbook, 1985 edition.

continued

SOUTH AFRICA

Total quantity used	Generating Plant					
	Engines		Generators			
Coal (kg)	Oil (£)	No.	Type	Make	Make Voltage (V)	Total installed capacity (kW)
—	—	5	Diesel	4 x Ruston & 1 GM	2 ELIN, 1 ACEL, 1 AEG, 1 Delco power	400/220 220
161 755 x 10 ³	—	—	—	—	—	—
—	—	6	—	GEC	—	11 000 52 500
—	—	2	Steam turbine	Oerlikon	—	11 000 30 000
—	—	1	—	Stal Laval	—	11 000 20 000
307 330 240	309 072	5	Steam turbine	Oerlikon	Oerlikon	11 000 30 000 ea.
—	—	1	Steam turbine	Hitachi	Hitachi	11 000 30 000 ea.
—	—	1	Gas turbine	Curtiss-Wright	Brush	11 000 37 500 ea.
—	—	4	Gen./Pump turb.	Escher-Wyss	Siemens	12 000 45 000 ea.
—	—	1	Gas turbine	Curtiss-Wright	Brush	11 000 50 000 ea.
—	—	4	Diesel	3 Lister, 1 Rolls Royce	Blackstone	380/400 140, 200, 360, 520
—	—	1	Water turbine	Gilbert Gilkes	Garbe Lahmeyer	400 500
—	—	2	Water turbine	Gilbert Gilkes	G.E.C.	400 2 x 250
—	—	3	2 Blackstone, 1 Caterpillar	Lister	—	—
—	—	1	Turbine	Brown Boveri	Brown Boveri	11 1 500
—	—	—	—	Metrovick	Metrovick	11 1 500
—	—	—	—	Allen	Bruce Peebles	11 3 000
—	—	—	—	Oerlikon	Oerlikon	11 3 000
1 699 377 (tons)	8 465 008	16	Steam turbine	Fraser & Chalmers	B.G.E.	10 500 480 000
—	—	4	Steam turbine	Fraser & Chalmers	B.G.E.	10 500 240 000
—	—	3	Steam turbine	Escher Wyss, Oerlikon	Oerlikon	10 500 180 000
—	—	2	Gas turbine	English Electric	B.G.E.	20 500 44 000
—	—	3	Gas turbine	Curtiss Wright	Brush	11 500 132 000
—	100	2	Reciprocating Diesel (Emergency)	Hornby	Hawker Siddeley	3,3 480
53 538 000	—	3	Steam turbine	Siemens	Siemens	6 600 10 000 ea.
—	—	3	—	Lister Blackstone	—	—
—	—	2	Diesel	Caterpillar	—	380 730
—	—	—	—	—	G.E.C.	400 200
—	—	—	—	—	G.E.C.	400 240
—	—	—	—	—	Garbe Lahmeyer	11 000 750
—	—	—	—	—	Garbe Lahmeyer	11 000 2 600
14 353	840	1	Cond.	Allan	Bruce Peebles	3,3 000 1 500
—	—	1	Cond.	Met Vick	Met Vick	3,3 000 1 500
—	—	1	Cond.	Met Vick	Met Vick	3,3 000 1 000
—	—	2	Cond.	Met Vick	Met Vick	11 000 3 000 ea.
441 638 000	—	2	Diesel	Caterpillar	Kato	3 300 1 500
—	—	9	Steam turbine	6 Parsons, 3 Hitachi	Parsons, Hitachi	11 000 240 000
—	—	2	Gas turbine	Rolls Royce	Brush	11 000 52 500
1 053 111	100 000	6	Alternator	English Electric	—	11 000 30 000
—	—	5	Alternator	English Electric	—	11 60 000
—	—	1	SK 30	Rolls Royce	Brush	11 000 25 000
—	—	2	Diesel	English Electric	—	6 600 1 500
—	—	1	Diesel	Mirlees	—	6 600 666
—	12 138	1	VBCS 12E	W.H. Allen & Sons Ltd	Harland & Wolf Ltd	11 000 1 120

Some relevant comparative statistics: United Kingdom, European community and the world.

Electricity consumption by industrial consumers and transport undertakings in the United Kingdom*

Year	Iron & steel	Engineering & other metal trades	Food, drink & tobacco	Coal mining	Chemical & allied trades	Textiles leather & clothing	Paper printing & stationery	Other (inc. gas, water & sewage works)	Transport undertakings	Total
	GW.h									
1965	12 435	17 470	4 097	5 513	15 363	4 689	4 924	13 858	2 351	80 700
1966	12 108	17 760	4 277	5 499	16 116	4 678	5 058	14 401	2 467	82 364
1967	11 662	17 854	4 376	5 421	16 819	4 590	5 067	14 895	2 567	83 251
1968	12 732	18 735	4 670	5 173	18 605	5 004	5 367	16 030	2 634	88 950
1969	13 443	19 700	5 018	4 897	19 893	5 296	5 679	16 991	2 713	93 630
1970	13 463	20 235	5 312	4 802	20 443	5 465	5 796	17 414	2 734	95 664
1971	12 506	21 048	5 475	4 927	20 933	5 146	5 440	17 643	2 765	95 883
1972	12 227	21 349	5 668	4 496	21 154	5 132	5 498	17 572	2 665	95 761
1973	13 607	24 310	6 191	4 834	22 208	5 671	5 754	19 290	2 613	104 478
1974	12 884	23 005	6 362	4 434	21 759	5 172	5 517	17 663	2 713	99 509
1975	12 401	23 385	6 435	4 904	20 014	5 073	5 198	17 693	2 879	98 018
1976	13 923	24 653	7 005	5 007	22 513	5 273	5 511	18 060	2 868	104 813
1977	13 688 ^(a)	25 164	6 753	5 126	22 335	5 272	5 565	18 568	2 932	105 403 ^(b)
1978	14 384	25 542	6 856	5 188	21 878	5 351	5 776	19 148	2 971	107 094
1979	14 670	26 043	6 808	5 450	23 074	5 360	5 952	20 203	2 966	110 626
1980	10 061	25 780	6 837	5 688 ^(c)	20 699	4 416	5 682	19 293	3 040	101 496
1981	11 193	23 920	6 787	5 782	19 988	3 962	5 053	18 328	3 022	98 035
1982	10 376	21 470	6 730	5 776	18 698	3 682	4 921	18 812	2 675	93 140
1983	10 013	21 643	5 827	5 662	17 573	3 671	4 967	19 897	2 862	92 115

(a) From 1977 includes a small degree of estimation

(b) From 1977 excludes slaughter houses.

(c) From 1980 includes a small degree of estimation

Source: Department of Energy. Figures not available for years prior to 1965.

*Source: Handbook of Electricity Supply Statistics, 1984.
Issued by The Electricity Council, London, U.K.

Table 33

Number of customers, Central Electricity Generating Board, United Kingdom.*

	Domestic	Farm	Commercial	Combined domestic and commercial	Industrial	All customers*
At end of year	thousand					
1920						908
1925						1,655
1930						3,539
1935	5 976		894	—	117	6 989
1940	8 456		1 027	—	154	9 640
1945	8 804		1 029	—	160	9 996
1947/48	9 502	87	1 050	—	159	10 801
1948/49	9 877	95	1 086	—	166	11 227
1950/51	10 567	113	1 166	36	150	12 036
1955/56	12 427	175	1 139	230	171	14 146
1956/57	12 779	188	1 161	229	174	14 535
1957/58	13 087	201	1 155	250	170	14 867
1958/59	13 368	213	1 175	246	170	15 177
1959/60	13 655	225	1 199	245	171	15 500
1960/61	13 931	235	1 224	241	172	15 808
1961/62	14 195	244	1 244	238	172	16 098
1962/63	14 432	250	1 266	235	174	16 362
1963/64	14 693	256	1 286	233	175	16 648
1964/65	14 988	260	1 305	230	177	16 965
1965/66	15 262	262	1 325	228	180	17 262
1966/67	15 530	263	1 341	225	182	17 546
1967/68	15 799	263	1 351	220	183	17 821
1968/69	16 022	259	1 345	224	180	18 035
1969/70	16 247	256	1 360	220	181	18 269
1970/71	16 435	257	1 363	202	182	18 444
1971/72	16 677	256	1 379	198	184	18 699
1972/73	16 889	254	1 399	191	187	18 925
1973/74	17 064	253	1 413	186	189	19 110
1974/75	17 256	251	1 410	190	191	19 303
1975/76	17 474	249	1 421	185	192	19 526
1976/77	17 714	243	1 430	172	184	19 748
1977/78	17 953	242	1 448	168	186	20 002
1978/79	18 099	241	1 436	156	182	20 118
1979/80	18 298	239	1 464	143	185	20 334
1980/81	18 474	234	1 478	140	183	20 514
1981/82	18 637	228	1 475	136	179	20 659
1982/83	18 801	225	1 487	132	179	20 828
1983/84	18 999	223	1 510	129	181	21 047

Because of changes in classification and in bases of compilation, pre 1948/49 classified figures are only approximately comparable with those for recent years. The reduction after 1948/49 in the figure for industrial customers is due to reclassification.

*Includes Areas Board public lighting and traction customers except for 1920-1930. In 1983/84 these numbered 4,229 and 12 respectively.

*Source: Handbook of Electricity Supply Statistics, 1984.
Issued by The Electricity Council, London, U.K.

Average consumption of electricity Central Electricity Generating Board, United Kingdom*

Year	Per head of population	Per customer ^(a)			
		Domestic	Farm	Industrial	Total all classes
	kW.h				
1920	90	530	—	80 800	3 570
1925	130	520	—	61 600	3 040
1930	210	510	—	52 400	2 280
1935	320	500	—	59 300	1 890
1940	520 ^(b)	670	—	80 000	2 260
1945	660	910	—	98 100	2 810
1947/48	760	1 190	2 630	101 100	3 020
1950/51	980	1 310	4 270	140 850	3 570
1951/52	1 060	1 370	4 260	162 700	3 770
1952/53	1 100	1 350	4 850	163 640	3 800
1953/54	1 170	1 330	5 050	177 700	3 920
1954/55	1 310	1 410	5 640	175 140	4 220
1955/56	1 420	1 520	5 720	190 590	4 470
1956/57	1 510	1 610	6 200	197 180	4 650
1957/58	1 620	1 690	6 380	211 120	4 890
1958/59	1 730	1 870	7 050	223 660	5 150
1959/60	1 890	1 970	6 740	252 340	5 530
1960/61	2 100	2 270	7 620	271 660	6 080
1961/62	2 240	2 530	7 870	279 880	6 440
1962/63	2 480	3 020	8 940	286 550	7 060
1963/64	2 590	3 070	9 360	303 670	7 300
1964/65	2 740	3 150	9 260	327 100	7 660
1965/66	2 900	3 330	10 230	336 930	8 010
1966/67	2 940	3 350	10 020	337 280	8 060
1967/68	3 110	3 570	10 590	345 900	8 440
1968/69	3 300	3 710	11 390	365 130	8 890
1969/70	3 450	3 880	11 860	388 280	9 210
1970/71	3 560	4 020	11 840	397 280	9 450
1971/72	3 640	4 220	12 330	383 720	9 500
1972/73	3 900	4 540	13 190	403 370	10 110
1973/74	3 850	4 590	13 200	387 580	9 920
1974/75	3 980	4 600	13 540	397 530	10 150
1975/76	3 850	4 290	12 630	382 600	9 700
1976/77	3 910	4 050	12 980	424 680	9 720
1977/78	4 000	4 060	13 940	425 350	9 820
1978/79	4 180	4 200	14 720	451 130	10 200
1979/80	4 160	4 020	14 260	451 400	10 070
1980/81	3 990	3 900	14 290	417 820	9 580
1981/82	4 000	3 870	14 380	421 680	9 490
1982/83	3 890	3 720	14 610	410 170	9 270
1983/84	4 020 ^(c)	3 780	14 430	418 490	9 480

(a) Based on number of customers at end of year

(b) Population used for 1940 to 1950/51 includes HM Forces overseas but excludes forces in this country.

(c) Based on mid-1983 home population of 49.65 million.

*Source: Handbook of Electricity Supply Statistics, 1984.
Issued by The Electricity Council, London, U.K.

Table 35

Final consumption of electricity by industry in the European Economic Community – calendar year 1982^{(a)*}

	German FR	France	Italy	Nether- lands	Belgium	Luxem- bourg	United Kingdom	Ireland	Denmark	Greece	EEC
	GW.h										
Iron & steel	19 821	13 282	17 875	1 627	4 311	1 270	10 376	79	680	836	70 157
Non-ferrous metals	16 532	11 458	5 800	4 899	1 468	2	5 890	—	—	2 460	48 509
Ore extractions (except fuels)	1 685	1 981	1 213	—	272	29	1 812	224	40	241	7 497
Metals	230	496	—	—	—	23	—	—	—	156	—
Other minerals	1 455	1 485	—	—	—	6	—	—	—	85	—
Food, drink & tobacco	7 743	7 643	5 322	3 350	1 946	53	6 977	896	1 517	512	35 959
Textiles, leather & clothing	4 465	3 406	6 905	575	1 076	41	4 130	213	210	1 013	22 034
Textiles & clothing	4 243	3 117	6 073	540	1 064	—	—	—	—	981	—
Leather & footwear	222	289	832	35	12	—	—	—	—	32	—
Paper, print & publishing	10 956	6 484	5 339	2 160	1 226	—	4 967	78	468	432	32 110
Pulp & paper	9 668	5 775	4 695	1 523	1 066	—	—	—	—	414	—
Printing & publishing	1 288	709	644	637	160	—	—	—	—	18	—
Chemicals	37 343	19 308	16 519	8 634	7 794	497	5 517	510	1 215	1 192	108 529
Non-metallic mineral products	8 460	6 817	9 743	999	1 504	87	4 723	349	598	1 640	34 920
Glass & glassware	2 134	1 714	2 774	—	448	—	—	—	—	47	—
Cement, lime & plaster	3 660	3 583	4 319	—	700	61	—	—	—	1 484	—
Ceramic products & building materials	2 666	1 520	2 650	—	456	26	—	—	—	109	—
Engineering & other metal trades	26 015	12 630	12 816	2 691	2 345	132	15 916	346	1 010	494	74 395
Electrical engineering	5 357	2 723	1 868	916	510	—	—	76	—	158	—
Shipbuilding	429	491	241	250	—	—	—	38 ^(b)	—	97	—
Vehicles & bicycles	8 424	4 483	2 372	265	—	—	—	—	—	60	—
Other metals	11 805	4 933	8 335	1 260	—	132	—	232	—	179	—
Other non-classified	8 336	6 869	7 041	1 932	1 049	68	8 289	371	440	152	34 547
Rubber	1 581	1 667	933	689	102	47	1 250	124	40	30	—
Wood	2 456	1 569	2 083	274	400	7	908	55	} 280	99	—
Building & civil engineering	—	863	1 016	—	125	—	815	44		20	—
Others	4 299	2 830	3 009	969	422	14	5 316	148	120	3	—
Total	141 356	89 878	88 573	26 867	22 991	2 179	78 597	3 066	6 178	8 972	468 657

(a) Includes consumption from own generation. Excludes consumption by energy sector.

(b) Includes consumption by the Irish motor-vehicle and bicycle industry.

Source: Eurostat monthly bulletin on electrical energy, November 1983; Luxembourg; Statistical Office of the European Communities.

*Source: Handbook of Electricity Supply Statistics, 1984.
Issued by The Electricity Council, London, U.K.

World electricity production – Total net production^{(a)*}

	1970	1973	1975	1976	1977	1978	1979	1980	1981	1982
	TW.h ^(f)									
EEC ^(b)	816	987	989	1 069	1 091	1 143	1 200	1 209	1 206	1 203
Austria	29	30	34	34	37	37	39	41	42	42
Bulgaria	18	21	24	26	27	29	30	32	35	38
Czechoslovakia	40	48	53	58	60	64	63	67	68	70
Finland	21	25	25	28	32	34	37	39	39	39
Germany (GDR)	61	70	76	83	83	85	86	88	90	93
Hungary	13	16	19	21	21	23	24	24	24	25
Iceland	2	2	2	2	3	3	3	3	3	3
Norway	57	72	77	82	73	80	88	84	91	92
Poland	60	78	90	97	102	107	109	113	107	109
Portugal	7	10	10	9	13	14	16	15	13	14
Romania	33	44	51	54	57	60	61	63	64	67
Spain	54	74	78	86	90	95	101	105	105	108
Sweden	59	76	79	84	87	90	92	94	101	97
Switzerland	35	37	43	36	45	43	46	48	52	52
Turkey	8	12	15	17	20	21	22	23	24	26
USSR	693	854	982	1 051	1 088	1 135	1 168	1 220	1 255	1 295
Yugoslavia	25	33	38	41	46	48	51	55	56	61
Total Europe^(c)	2 036	2 491	2 686	2 880	2 980	3 114	3 241	3 326	3 379	3 438
Egypt ^(d)	8	10	12	14	14	16	17	18	19	21
Zimbabwe	6	7	6	7	5	6	7	9	10	10
Rep. of South Africa ^(d)	51	65	75	78	80	85	88	89	93	96
Total Africa^(c)	82	107	118	128	136	149	162	179	187	194
Canada	205	263	274	295	317	336	353	367	378	376
USA	1 640	1 959	2 003	2 113	2 211	2 285	2 319	2 354	2 365	2 306
Total N America^(c)	1 845	2 230	2 277	2 410	2 528	2 620	2 672	2 721	2 743	2 682
Argentina ^(d)	25	26	25	25	29	30	34	36	36	37
Brazil	46	64	78	84	98	107	113	124	137	140
Chile ^(d)	8	9	9	9	10	10	11	11	12	13
Colombia ^(d)	8	10	12	14	14	15	18	20	22	23
Mexico	28	37	43	46	50	56	59	61	69	75
Peru ^(d)	5	6	8	8	9	9	9	10	11	11
Venezuela ^(d)	12	16	20	21	22	25	28	32	37	39
Total Central & S America^(c)	150	213	209	220	274	299	326	326	380	398
China ^(d)	73	106	—	130	210	256	282	301	309	318
India ^(d)	60	69	80	89	91	100	106	108	117	129
Japan ^(e)	340	451	455	487	508	537	562	551	556	555
Taiwan ^(d)	13	18	21	23	25	28	30	31	32	34
Total Asia^(c)	600	780	—	800	850	900	1 070	1 260	1 300	1 330
Australia ^(d)	54	69	74	77	82	86	90	96	103	106
New Zealand ^(d)	14	18	21	22	21	22	24	22	23	24
Total Oceania^(c)	67	85	94	98	102	107	113	118	127	130
Total World^(c)	4 780	5 906	6 050	6 540	6 870	7 190	7 580	7 963	8 116	8 172

(a) Supplied from power stations. Includes production from private generation.

(b) German FR, France, Italy, Netherlands, Belgium, Luxembourg, U.K., Ireland, Denmark, Greece.

(c) Rounded totals – including production from unlisted countries.

(d) Gross production (units generated).

(e) Year from 1 April – 31 March.

(f) TW.h – 1 000 GW.h

Source: Eurostat monthly bulletin on electrical energy, Nov. 1977, Dec. 1980, Dec. 1982 & Dec. 1983.

Luxembourg: Statistical Office of the European Communities.

*Source: Handbook of Electricity Supply Statistics, 1984.
Issued by The Electricity Council, London, U.K.

Conversion factors and equivalents^{(a)*}

Heat/energy

1 kW.h	= 3 412,14 Btu = 3,6 MJ = 859,845 kcals
1 therm	= 29,307 1 kW.h = 100 000 Btu = 105,506 MJ = 25,199 6 Mcals
1 GJ	= 277,778 kW.h = 9,478 17 therms = 238,846 Mcals
1 CHU ^(b)	= 1,8 Btu = 1 900,4 J (approx)
1 Q	= 10 ¹⁸ Btu
1 quad	= 10 ¹⁵ Btu

Calorific value, mass basis

1 Btu/lb	= 2,326 kJ/kg
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Pressure

1 lb/in ²	= 6,894 76 kPa (or kN/m ²) = 0,070 31 kg/cm ² = 0,068 947 6 bar
1 bar	= 100 kPa = 10 ⁵ N/m ² = 14,503 68 lb/in ²

Other

1 lb	= 0,453 592 37 kg
1 gal	= 4,546 09 litres (1 litre = 1 dm ³ = 1 000 cm ³)
1 ton	= 1,016 05 tonnes
1 hp	= 745,700 W (or J/s)

Approximate equivalents

1 ft ³ natural gas	approximately equals	1,000 Btu
1 tonne gas/diesel oil	approximately equals	431 therms
1 tonne crude oil	approximately equals	7,35 barrels or 432 therms
1 tonne fuel oil	approximately equals	6,55 barrels or 406 therms
1 tonne power station oil	approximately equals	406 therms
1 tonne power station coal	approximately equals	231 therms
1 tonne industrial coal	approximately equals	261 therms

Power station equivalents

475 tonnes of coal or 160 tonnes of oil will produce about 1 GW.h (e) in a typical modern power station. One tonne of natural uranium, when used in a Magnox reactor, will supply about 30 GW.h (e).

(a) Where appropriate, conversion factors conform to 'Conversion factors and tables' BS 350: Part 1: 1974.

(b) Centigrade heat unit.

*Source: Handbook of Electricity Supply Statistics, 1984.
Issued by The Electricity Council, London, U.K.