Electricity Supply Commission

Megawatt Park, Maxwell Drive, Sandton

The Minister of
Mineral and Energy Affairs
House of Parliament
Cape Town

29 April 1983

Sir

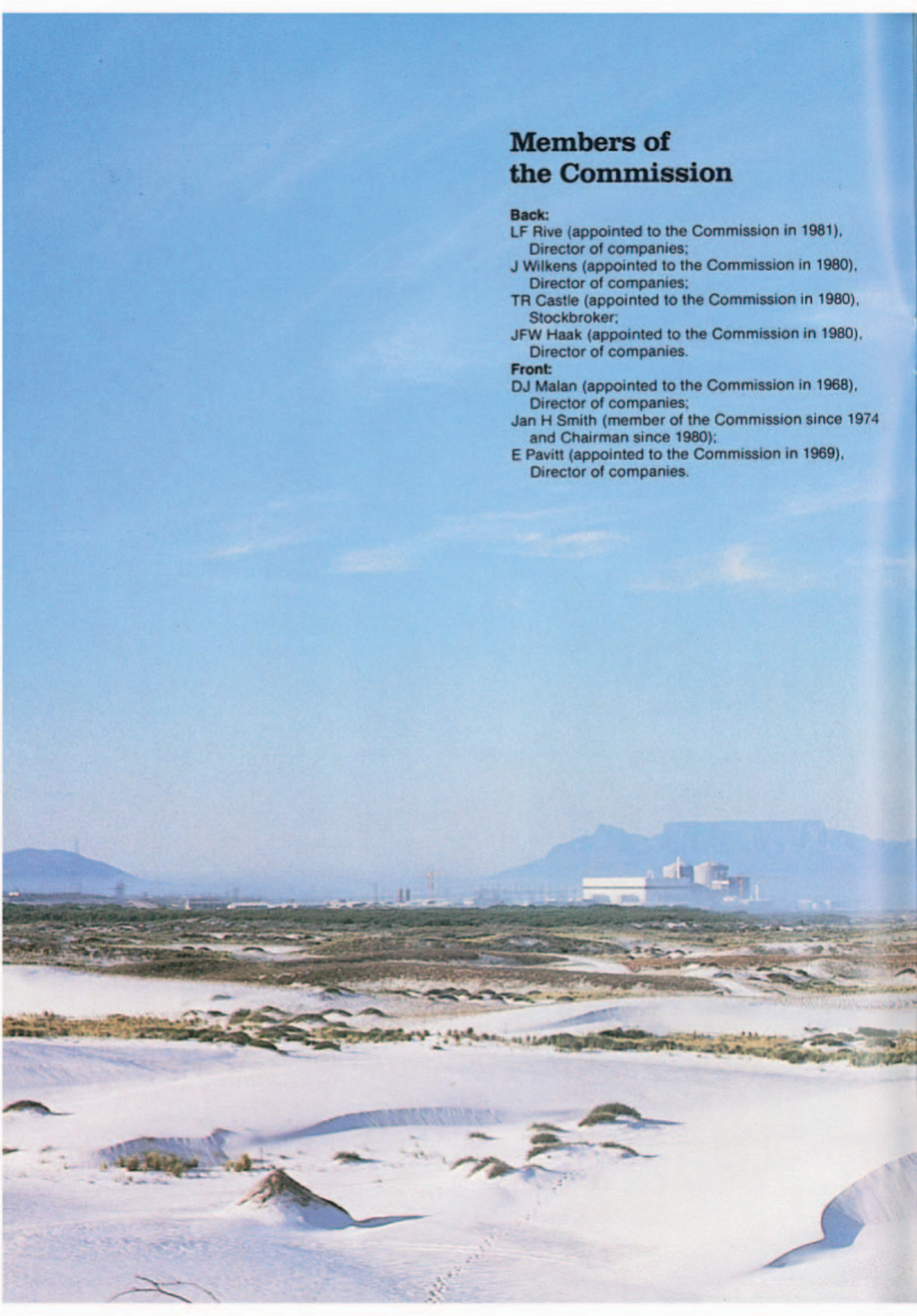
As required by Section 19 of the Electricity Act, 1958, the Commission has the honour of presenting its sixtieth Annual Report and Financial Statements covering its work for the financial year ended 31 December 1982.

Chairman

Contents

Members of the Commission

Back:
LF Rive (appointed to the Commission in 1981), Director of companies;
J Wilkens (appointed to the Commission in 1980), Director of companies;
TR Castle (appointed to the Commission in 1980), Stockbroker;
JFW Haak (appointed to the Commission in 1980), Director of companies.
Front:
DJ Malan (appointed to the Commission in 1968), Director of companies;
Jan H Smith (member of the Commission since 1974 and Chairman since 1980);
E Pavitt (appointed to the Commission in 1969), Director of companies.



Members of the management committee

Back:

Assistant General Manager (Operations): JS Els, Pr Eng, BSc (Eng) (US), BSc (Hons) (SA), GDE (Wits). Joined Escom in 1953 and appointed to management committee in 1982;

Personnel Manager: GF Lindeque, DPhil (PU for CHE), MA (Soc) (UP). Joined Escom in 1975 and appointed to management committee in 1982;

Assistant General Manager (New Works): EH Ralph, Pr Eng, BSc (Eng) (Natal). Joined Escom in 1955 and appointed to management committee in 1982;

Assistant General Manager (Finance): RA Forbes, Pr Eng, BSc (Eng) (Wits), MBL (SA). Joined Escom in 1949 and appointed to management committee in 1982;

Legal Manager: PJT Oosthuizen, BA, LLB (UOFS). Joined Escom in 1959 and appointed to management committee in 1966;

Production Assets Manager: GA Park, Pr Eng, BSc (Eng) (Wits). Joined Escom in 1969 and appointed to management committee in 1978.

Front:

General Manager (Operations): IC McRae, Pr Eng, BSc (Eng) (Wits). Joined Escom in 1947 and appointed to management committee in 1976;

General Manager (New Works): JL Rothman, Pr Eng, BSc, BSc (Eng) (US). Joined Escom in 1955 and appointed to management committee in 1975;

Senior General Manager: ID van der Walt, Pr Eng, BSc (Elec Eng), BSc (Mech Eng) (Wits). Joined Escom in 1948 and appointed to management committee in 1971;

General Manager (Finance): L te Groen, BCom (Wits), CA (SA). Joined Escom in 1975 and appointed to management committee in 1976;

General Manager (Services): FJW Barnard, Pr Eng, BSc (Eng) (US), MBL (SA). Joined Escom in 1960 and appointed to management committee in 1979.

Regional managers

1. Rand and Orange Free State Region: MW Walter, Pr Eng, BSc (Eng) (Natal). Joined Escom in 1949 and appointed Regional Manager in 1979.
2. Eastern Transvaal Region: TP O'Connor, Pr Eng, BSc (Eng) (Natal). Joined Escom in 1947 and appointed Regional Manager in 1975.
3. Eastern Cape Region (including Border and Orange River Undertakings): EF Otten, Pr Eng, BSc (Eng) (Wits). Joined Escom in 1958 and appointed Regional Manager in 1978.
4. Northern Cape Region: JP Rodger, Pr Eng, BSc (Eng) (UCT). Joined Escom in 1955 and appointed Regional Manager in 1978.
5. Natal Region: HE Wohlberg, Pr Eng, BSc (Eng) (US). Joined Escom in 1951 and appointed Regional Manager in 1976.
6. Western Cape Region: GF Hellstrom, Pr Eng, BSc (Eng), BCom (US). Joined Escom in 1957 and appointed Regional Manager in 1981.

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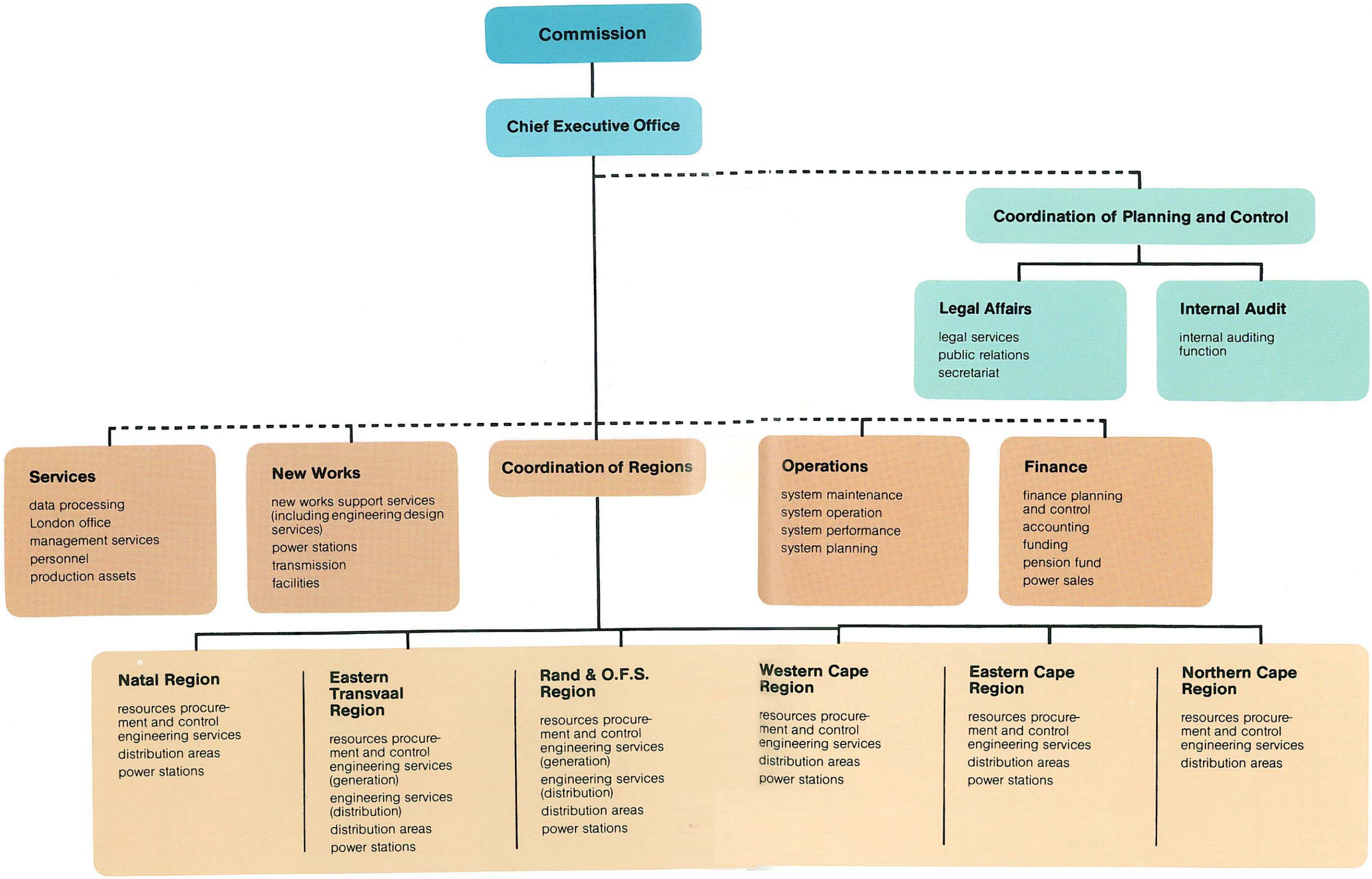
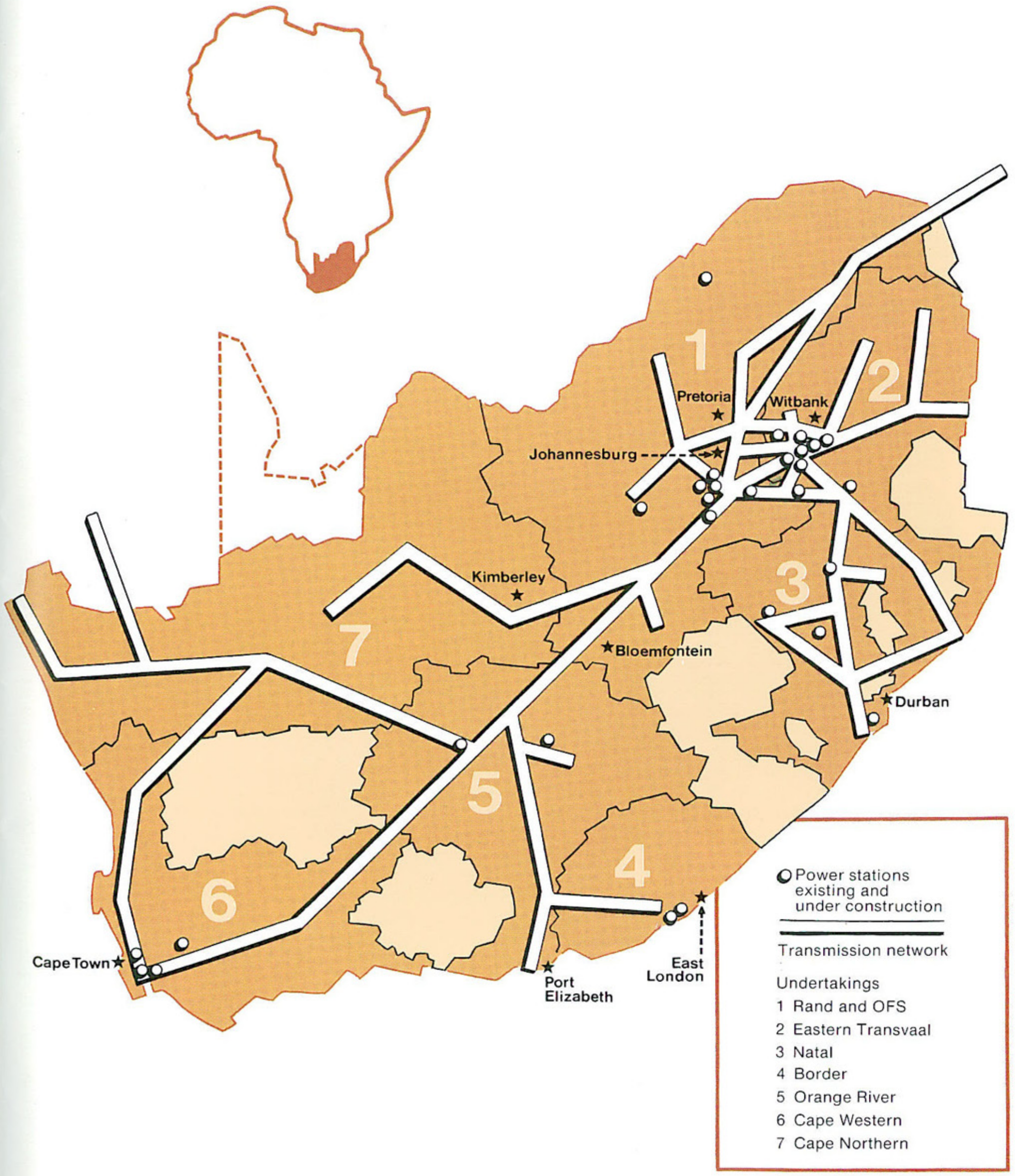
Functional chart



Statistical highlights

		1982	1981	% change
Financial				
Revenue	R(million)	2 695	2 141	25,9
Charges against revenue	R(million)	2 753	2 218	24,1
Net expenditure on fixed assets	R(million)	2 741	1 951	40,5
Fixed assets at 31 December	R(million)	12 858	10 144	26,8
Average cost per kW.h sold	cents	2,864	2,364	21,2
Average price per kW.h sold	cents	2,804	2,281	22,9
Average coal cost per ton	Rand	11,75	9,71	21,0
Electricity sold by Escom	million kW.h	96 136	93 844	2,4
Operating statistics				
Escom's share of electricity sent out in RSA and national states	%	93,6	93,9	—
Net electricity sent out by Escom	million kW.h	102 516	99 713	2,8
From Escom power stations	million kW.h	102 769	97 824	5,1
From other sources	million kW.h	2 151	2 601	—17,3
Coal burnt in Escom power stations	million tons	55,2	53,9	2,4
Water consumed in Escom power stations	megalitres	251 532	235 138	7,0
Maximum demand on integrated Escom system	MW	15 532	14 674	5,8
Escom plant in service at 31 December				
Installed capacity	MW	21 749	20 049	8,5
Assigned sent-out rating	MW	20 523	18 989	8,1
Major overhead transmission lines:				
Direct current:				
533 kV (monopolar)	km	1 030	1 030	—
Alternating current:				
400-220 kV	km	16 632	14 998	10,9
165 kV and below	km	111 535	105 344	5,9
Underground cables:				
132 kV and below	km	7 319	7 191	1,8
Capacity of transformers	MVA	136 131	126 638	7,5
Staff employed at 31 December		58 850	52 080	13,0

Escom's undertakings and national grid



Electricity Supply Commission

Profile

Escom was established as an electricity utility in terms of the Electricity Act No. 42 of 1922.

The organisation is directed by a chairman and six other commissioners, all appointed by the State President for their knowledge of and experience in the various sectors of the economy and in electricity supply.

Management vests in the chairman, who is assisted by a senior general manager and corporate and regional management teams. The corporate head office is at Megawatt Park, Sandton.

For administrative purposes, Escom is divided into six regions, each headed by a regional manager, who is responsible for the operation of power stations and the distribution system in his region. There are regional head offices in Cape Town, East London, Durban, Witbank, Johannesburg and Kimberley. For accounting purposes, Escom is divided into seven distribution undertakings and one generation undertaking.

The management structure of Escom is illustrated in the accompanying chart.

At the end of the year under review Escom's power stations had a total sent-out capacity of 20 523 MW. In 1982 Escom's electricity sales represented more than 93 % of all the electricity sold in South Africa and about 60 % of that sold on the entire African continent.

At the end of 1982 plant with a total sent-out capacity of 21 035 MW was under construction or had been ordered. This includes the country's first nuclear power station, Koeberg, near Cape Town.

To ensure that due regard is given to environmental matters, Escom cooperates closely with governmental and other bodies.

Objectives and contribution to the economy

Escom's objective is to provide an adequate supply of electricity at cost price so that it can be used for the economic advancement of the Republic of South Africa.

Escom's performance can therefore be measured by criteria such as the amount and price of electricity provided for consumption. It is estimated that electrical energy constitutes 23 % of the total net energy usage in South Africa. It is expected that Escom will supply nearly 40 % of the country's total net energy requirements by the turn of the century.

In addition to its direct contribution to the economy, Escom indirectly promotes the level of wealth in the country by spending about 70 % of its capital expenditure on local goods and services. In so doing it acts as a stimulus to the economy during the troughs in the business cycle. This applies particularly to the civil and heavy engineering sectors which can be provided with a reasonably constant volume of work due to the long lead-times of Escom's capital projects and the requirement that short-lived economic fluctuations may not be allowed unduly to affect such projects.

Besides the obvious economic benefits of Escom's expenditure programme, employment is provided for thousands of people locally and overseas. A power station forms an important part of the country's infrastructure; it promotes the development of the economy and this again assists in raising the standard of living.

Financial policy

Escom has no share capital. Capital expenditure and loan repayments are financed from internal and external sources. The manner in which this is done is prescribed by the Electricity Act.

External finance is obtained by raising loans on local and overseas capital markets, and through trade finance arranged in conjunction with suppliers of capital equipment. While most of the external finance is used to fund capital expenditure, a portion is used to refinance loans which are of too short a duration to be amortised over their lives without undue strain being placed on electricity tariffs.

Internal finance, which is obtained by the retention of tariff income, is the other source of funds available to Escom and is controlled by the provisions of the Electricity Act.

Escom has three funds: the Redemption Fund, the Capital Development Fund and the Reserve Fund.

- Escom does not depreciate its fixed assets but instead amortises the loans used to finance them. The amortisation of local loans is achieved on a sinking fund basis through the Redemption Fund. Contributions from tariff income are credited to the fund and these ensure that finance is available for the redemption of local loans. Separate provision is made for the repayment of foreign loans.
- The Capital Development Fund is used to finance part of Escom's capital expansion and the replacement of assets taken out of service. In respect of the latter it contributes to the difference between historical cost depreciation as implied by the Redemption Fund operation and replacement cost depreciation.
- The Reserve Fund is used to finance expenditure for the betterment of plant, exceptional repairs or emergencies. It is also used to a limited extent for self-insurance purposes, thereby reducing expenditure on insurance premiums.

The moneys in these three funds are invested either in Escom stock or in other prescribed investments, and the interest earnings provide additional finance.

Escom is a major borrower in the local and foreign capital markets. It currently undertakes two local public issues a year, usually in May and October. It also makes use of foreign finance in the form of project-related facilities, direct placements and syndicated bank loans.

Over several years Escom has developed and promoted a secondary market in its local registered stock which is actively traded on the Johannesburg Stock Exchange. Because its internal funds are invested primarily in its own stock, Escom is able to buy and sell such stock on behalf of its various funds. Escom, although a buyer of last resort, aims to be a net seller of its own stock. Proceeds from sales are reinvested by Escom on behalf of its funds in new issues.

A test facility to measure corona phenomena associated with the future 800 kV transmission system.

Chairman's review

The year in brief

Escom's 1982 results reflect many of the problems which the South African economy experienced during the year. Recessionary conditions at home and abroad led to lower than expected growth in electricity sales while continued high inflation resulted in large cost increases. As growth in sales was below expectations, revenue earned did not cover all the electricity supply costs. This resulted in a deficit for the year.

Lower demand for electricity did, however, put less strain on the Escom supply system than in previous years. Escom could therefore meet the demand for electricity throughout the year and also partly reduce the backlog in maintenance work without impairing electricity supplies to the consumer.

In 1982 electricity sales grew by 2,4 % - the lowest growth rate since the 2,2 % recorded in 1947. This compares with a growth rate of 7,2 % in 1981, and an average annual growth rate of 8,6 % over the past 30 years.

Industries supplied direct by Escom - and these are mainly related to the export market - showed a negative growth rate of 0,4 % in their electricity usage (as opposed to a growth rate of 5,8 % the year before). Sales to the mining sector grew by only 0,9 % (4,8 % in 1981). Traction sales - closely associated with the transportation of minerals and other export goods - represented a negative rate of 4,8 % (4,6 % positive growth rate in 1981). Sales to municipal and other supply authorities increased by 8 %, which was also lower than the 11,3 % growth in 1981.

The deficit on the electricity supply account was R58 million for the year, resulting from revenue of R2 695 million and charges to the supply account of R2 753 million. The accumulated deficit of R154 million can be carried for a short while, but will have to be recovered in the coming years.

The average selling price of electricity was 2,80 cents per kW.h, which was 22,9 % higher than the year before. This increase arises from the two tariff increments in 1982 - 13,1 % on 1 January and 6,6 % on 1 July - as well as increases in coal costs which also have to be recovered in electricity prices. Charges to the supply account represented an average cost of 2,86 cents per kW.h, which was 21,2 % above the 1981 level.

The average cost of electricity supplied rose faster than the rate of inflation primarily because general inflation indices such as the consumer price and production price indices do not fully reflect changes in Escom's major cost components, namely interest and coal. Escom's average coal cost increased by 21 % in 1982 as a result of higher mining, transport and handling costs. Interest charged to the supply account increased by 16,8 % on an average cents per kW.h sold basis. As about 85 % of Escom's annual charges to the supply account are fixed (because electricity supply is highly capital-intensive) lower sales result in higher average cost per kW.h sold.

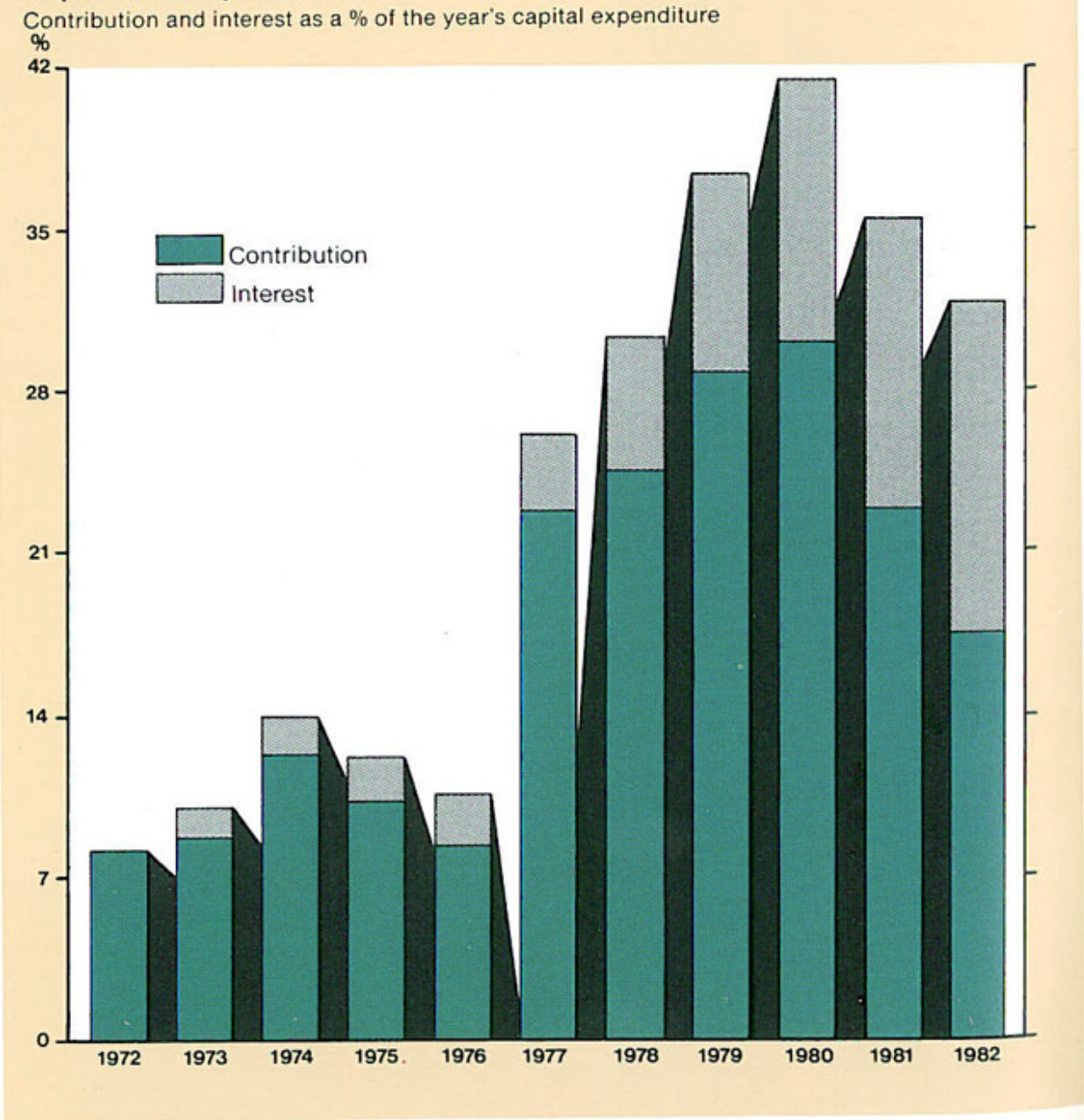
Net expenditure on fixed assets amounted to R2 741 million in 1982, an increase of 40,5 % over the 1981 figure. External finance from local and foreign financial markets satisfactorily covered Escom's financial commitments, but at a considerably increased cost.

Escom's biggest total cost increase in the year arose because of high interest rates. Interest and finance charges increased by R406 million (45,1 % above the 1981 amount). Due to Escom's policy of capitalising interest the whole increase was not passed to the consumer immediately. However, when the capital plant subject to the higher interest charges is placed in commercial service tariffs will have to take account of the higher interest burden. The further deterioration of the rand exchange rate value during 1982 also had a major effect on Escom's capital costs. As with capitalised interest this deterioration will lead to higher tariffs in the future to cover the increased capital expenditure.

Escom's goal of increasing its level of internal financing could not be pursued as before. The percentage of contribution to

Capital Development Fund

Contribution and interest as a % of the year's capital expenditure



the Capital Development Fund has been decreased, and for the second consecutive year the percentage contribution of the Fund to capital expenditure has declined.

In Escom's opinion the overall internal financing level was adequate in the light of the availability of external finance in 1982. However, Escom remains constantly alert to the ratio between external and internal financing. A weakened internal finance position could impair Escom's ability to attract capital. This would affect Escom's capital programme and consequently its ability to serve the electricity consumer.

The water shortage being experienced in South Africa as a result of the drought, is presenting Escom with serious problems in 1983. Inadequate supplies of water to power stations will lead to increased costs, and the risk of interruptions in electricity supplies during the winter months cannot be excluded.

Electricity supply in South Africa

Despite recent tariff increases South Africa enjoys one of the cheapest supplies in the world. This fortunate position is further supported by the fact that at no time has Escom held back development of the country by not being able to provide sufficient supplies of electricity.

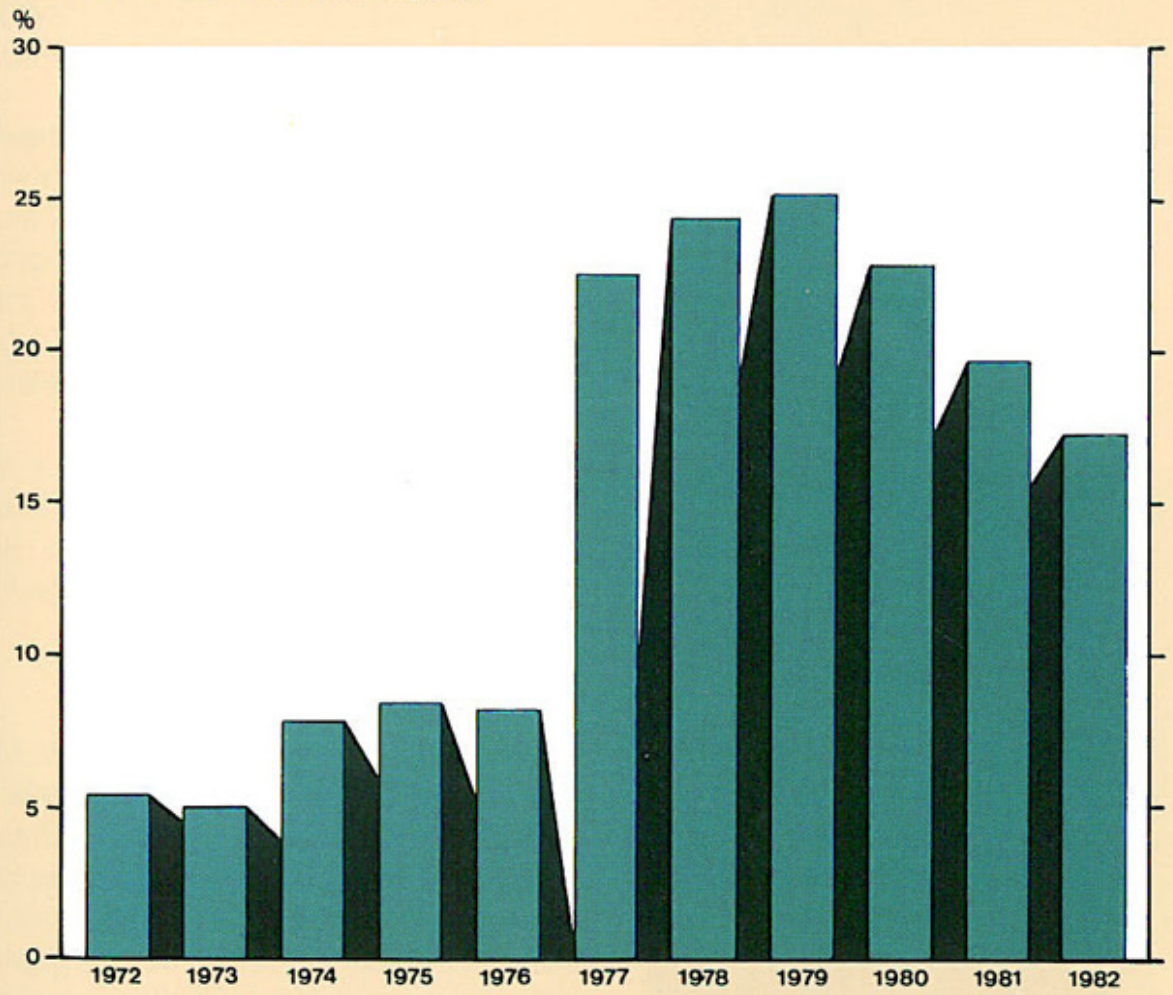
South Africa is sparsely populated by overseas standards. It has some fairly densely populated industrial areas, but on the whole its load centres are relatively small and far apart. It is a remarkable achievement that a country covering a geographic area perhaps three times larger than one of the bigger West European countries - and with a fraction of their population - could be electrified in as sophisticated a manner as in any part of the developed world.

The policies which have resulted in the favourable position in which South African electricity consumers at present find themselves should not be ignored in the light of one or two years of economic recession. Today, for example, there is concern in the United States that the expected upswing in its economy may be restricted by insufficient electricity supplies arising from the lack of generation expansion in recent years.

Of paramount importance in the analysis of electricity supply policies is the need to view economic developments in the long term. New power stations must be committed some eight years before the first electricity output is required and typically 13 years before the entire station is completed. The electricity supply industry cannot therefore be viewed in the same light as other sectors of the economy with respect to its development requirements. Capital expenditure programmes should not be altered with each relatively short-lived economic downturn or upswing when long-term plans are being implemented.

Capital Development Fund

Contribution as a % of electricity cost



Interest earned by the Capital Development Fund - and not contributions from tariff - will in the near future become the major contributor to Escom's internal financing. Unlike contributions to the fund from the tariff, the interest earned by it does not represent an additional electricity cost component. With no internal financing, external finance at the same or higher interest cost would have to be utilised.

Contributions to the fund as a percentage of total electricity costs have since 1980 declined and will become a negligible cost component once the fund balance is at a satisfactory level.

Long-term electricity requirements

The low growth rate of 2,4 % in the sales of electricity in 1982 was caused not only by the recession, but also by a very mild winter.

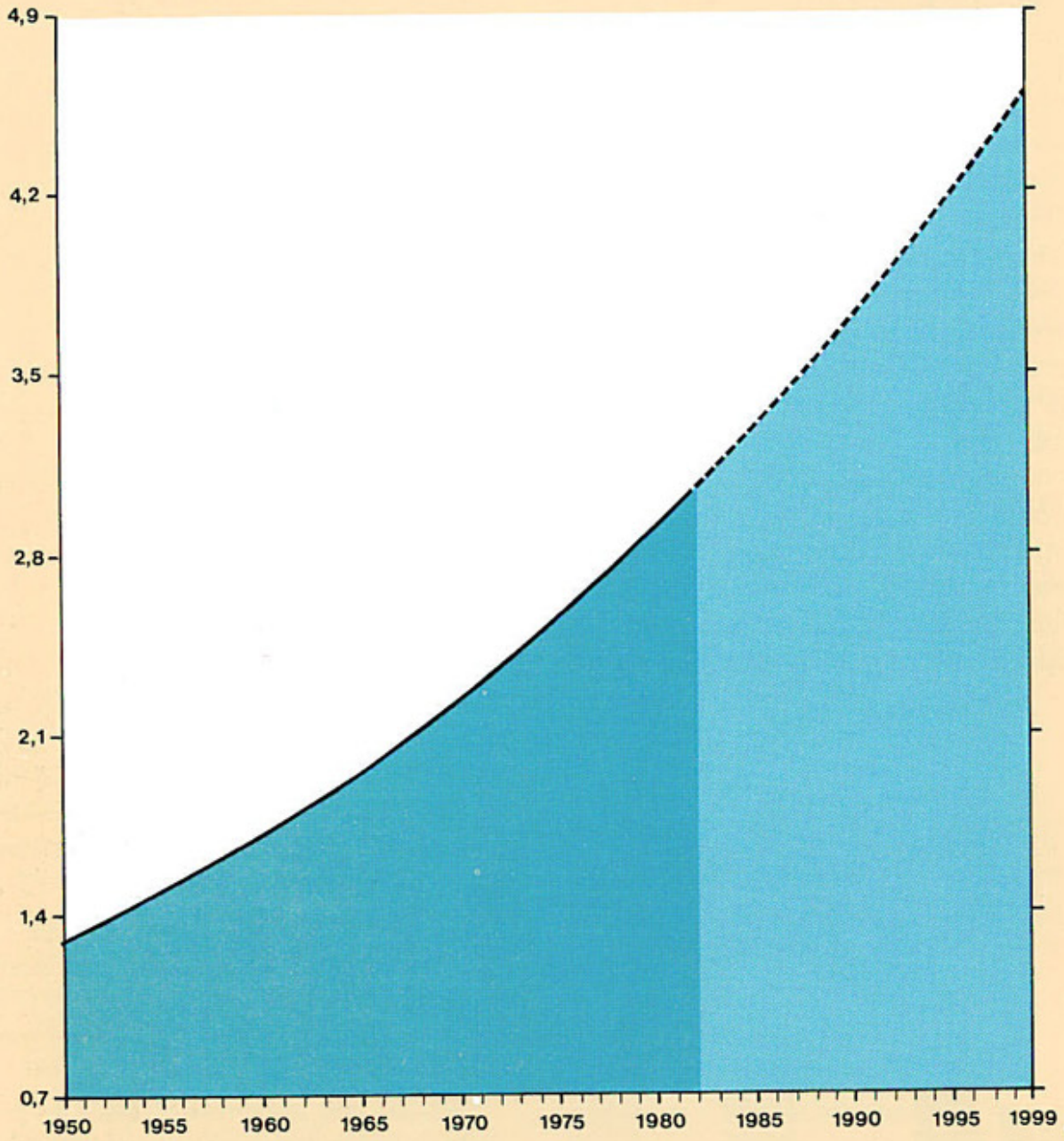
Despite this low growth rate it is important to note that the maximum demand for electric power on the Escom system in fact increased by 5,8 % (from 14 674 MW in 1981 to 15 532 MW in 1982). The significance of these two different growth rates is that an extension of only 2,4 % to Escom's generating capacity would not have coped with the increased electricity requirements, since there were periods when the demand was as high as 5,8 % above the maximum level of the previous year.

At this stage it is believed that the 1982 results will not affect South Africa's long-term electricity needs significantly, but estimates of these are reviewed and updated at least annually.

Estimates made at the beginning of 1982 indicated that the demand for electricity up to the year 2000 would grow at an average of 7,3 % per year implying a growth rate of 2 to 4 % above the expected growth rate of the gross domestic product.

The long-term projections are expected

kW.h sold per Rand of real gross domestic product for South Africa
GDP in fixed 1975 prices



This table shows that the South African economy is becoming increasingly electricity-intensive. The main reasons for this trend are:

- An acceleration in industrial development;
- swing from oil and coal to electricity as preferred energy form;
- electrification of rural areas, black townships, and the railway system, and
- the impact of high technology.

(Projection of graph based on a 4,5 % growth rate in GDP and 7 % in the demand for electricity).

to be realised once South Africa successfully reacts to its current economic problems and moves into growth once again.

Special measures

Along with every other business in South Africa Escom has to take steps to overcome the country's major economic obstacle, namely the high inflation rate. Escom's rising fuel and interest costs, the need for additional security and environmental expenditure and the replacement of Cahora Bassa power at present-day cost levels make Escom's task of overcoming inflation even more difficult.

As far as aspects over which it has control are concerned, Escom has introduced in recent years a number of strategies which should help to keep costs down:

- It has increasingly broadened its management approach to resemble that of a modern private sector business enterprise. It has extended, in 1982, its management training programme - introduced some years ago - to include advanced training with the School for Business Leadership of the University of South Africa;
- it has secured a sound financial basis for its expansion programme - one which uses internal, local and overseas financing to the best advantage of the electricity consumer;
- close attention has been given to increasing productivity through better use of manpower and resources. Despite occasional setbacks - due mainly to the impact of factors external to Escom - long-term productivity goals are being achieved;
- there has been increasing emphasis on flexibility in Escom's expansion programme. This means that despite the long lead times associated with new plant, plans can be modified at a later stage should the demand for electricity show a marked and consistent upward or downward trend;
- in 1982, Escom engaged the services of an international firm of electric utility specialists to review its financial and tariff policies and demand forecasts. This will enable Escom to examine the latest overseas experience in these fields.

There are many cost aspects over which Escom has little or no control. These are mainly associated with changes in the socio-economic environment and include factors such as cost increases in capital goods and the high cost of financing, security and pollution controls. Everything possible is being done either to prevent the cost rises or to minimise their impact on the electricity price.

Undeniably, electricity tariffs will have to rise in future. The extent of the rises will be determined by the degree of success Escom and the country have in bringing cost increases under control. The importance of the cost control task is fully recognised by all concerned with electricity supply in South Africa.

Escom will assist the Commission of Enquiry, recently requested by the Minister of Mineral and Energy Affairs, in an examination of all aspects of electricity supply in South Africa.

Management and staff

During 1982 the Personnel Manager, Mr FJW Barnard, was appointed to the newly created position of General Manager (Services). Mr Barnard is responsible for Management Services, Production Assets, Personnel, Data Processing and Escom's London Office. Dr GF Lindeque, Assistant Personnel Manager, was appointed Personnel Manager. Messrs RA Forbes, JS Els and EH Ralph, who are Assistant General Managers respectively in the Finance, Operations and New

Works departments, became members of the management committee during the year.

On behalf of the Commission I extend my sincere appreciation to Escom management and staff throughout South Africa.

Jan H Smith
Chairman

Electricity sales

Escom sold 96 136 million kW.h in 1982 compared with 93 844 million kW.h in 1981, a growth of 2,4 %. This growth rate was the lowest in 35 years.

Sales, divided into consumer categories, are set out in the accompanying table.

During the past five years, the categories mining, industry and bulk sales to municipal supply authorities have each been responsible for about a third of Escom's total sales.

Electricity sales in bulk to municipalities and neighbouring states increased by 8 %. This is fairly consistent with the average annual growth rate over the past five years of 9,2 %. This category which has made the major contribution to the growth in total sales in 1982, now constitutes 33,6 % of Escom's total sales.

A five-year review of Escom's direct sales to industrial users reflects an average yearly increase of 7,5 %. In 1982 a deviation from this trend occurred when direct sales to industrial consumers showed a negative growth rate of 0,4 % compared to 1981. This poor performance is attributed to the overseas recession, compounded by the lack of growth in the South African economy.

Electricity sales to the mining sector increased by 0,9 % compared to 1981. This indicates the difficulties experienced in the export of South-African raw materials. Over the past five years the average annual increase in mining sales was 6,3 %.

SALES EXPRESSED SECTORIALLY

Industrial

The negative growth rate in electricity sales to the industrial category can be examined more closely by looking at the major sectors of industry.

Escom's sales to the engineering, iron, steel and base metal sector declined by 3,7 % compared to 1981, while the average annual growth rate over the past five years was 4,3 %. This decline started in 1981 when a similar negative growth rate was recorded.

Electricity sales to the chemical sector grew by 0,6 % from 1981 to 1982 with an average five-year growth rate of 18,5 %. Between 1980 and 1981 the growth was 25,5 %. The bulk of this growth was due to the Sasol projects.

In another category - foodstuffs, consumer goods, commercial and other - electricity sales increased by 5,5 % from 1981 to 1982. The average annual growth rate for the past five years was 6,8 %.

Electricity sales to the paper and paper products sector declined by 2,3 % from 1981 to 1982. The five-year average annual growth rate was 5,4 %. Increased production at the Ngodwana pulp and paper plant should ensure future growth in this sector.

Bulk

Bulk sales can be divided into sales to major municipalities with partial self-generation and to other intermediary suppliers who rely entirely on Escom for their electricity supplies. Self-generating municipalities continued to meet their growth by

Sales of electricity to categories of consumers

Category of supply	1977	1978	1979	1980	1981	1982	% increase 1982/81	Average yearly increase over 5 years %
				Million kW.h				
*Sales to municipal supply authorities (bulk)	20 862	21 834	24 133	26 923	29 961	32 349	8,0	9,2
Direct supplies:								
**Domestic and street lighting	***1 039	960	940	906	1 002	1 020	1,9	—0,4
Industrial	21 577	24 182	27 475	29 373	31 091	30 959	—0,4	7,5
Mining	20 138	22 219	24 000	25 882	27 131	27 372	0,9	6,3
Traction	3 508	3 586	4 035	4 455	4 659	4 436	—4,8	4,8
Total	67 124	72 780	80 583	87 539	93 844	96 136	2,4	7,4
				% of total				
*Sales to municipal supply authorities (bulk)	31,1	30,0	29,9	30,8	31,9	33,6		
Direct supplies:								
**Domestic and street lighting	***1,6	1,4	1,2	1,0	1,1	1,1		
Industrial	32,1	33,2	34,1	33,6	33,1	32,2		
Mining	30,0	30,5	29,8	29,5	28,9	28,5		
Traction	5,2	4,9	5,0	5,1	5,0	4,6		

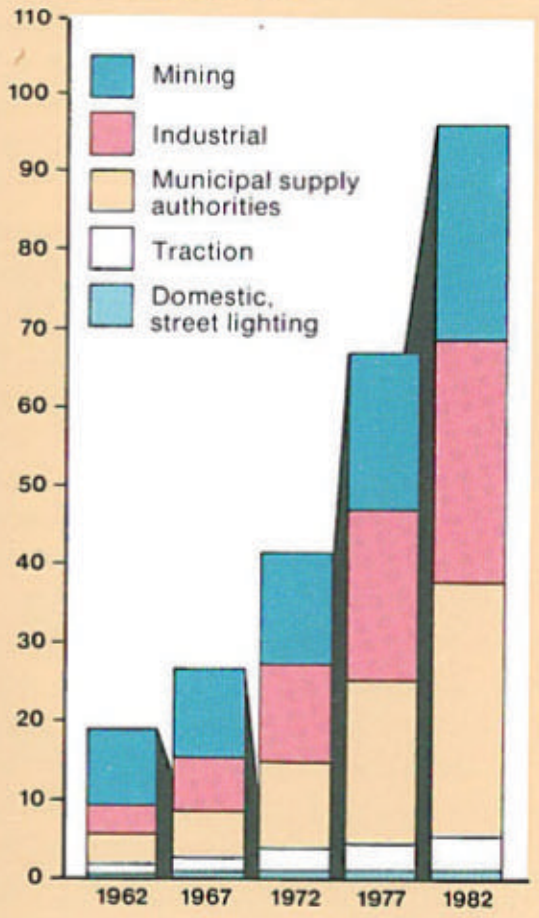
*This includes sales to electricity undertakings in neighbouring states.

**Sales in this category have declined as the result of Escom's policy to transfer reticulation systems to municipalities.

***Change in definition of domestic use.

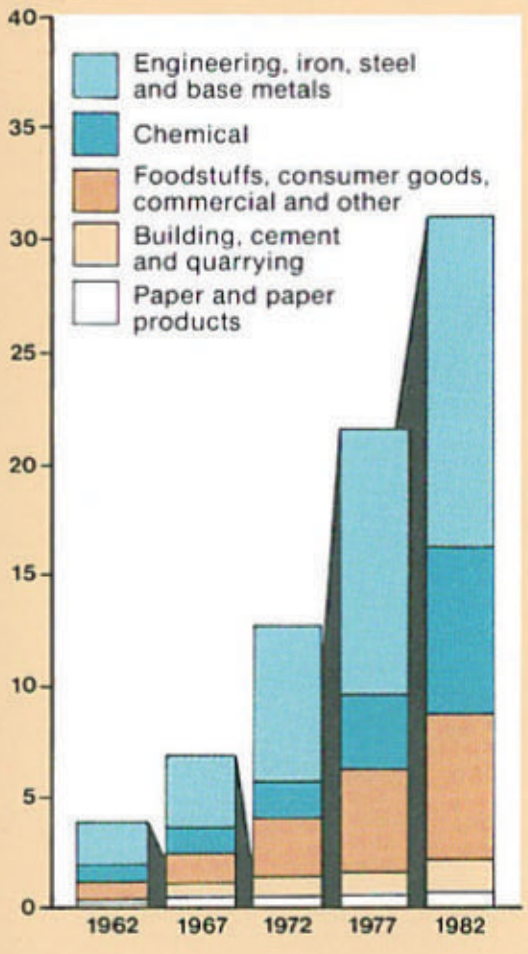
Electricity sales to different consumer categories

Thousand million kW.h



Electricity sales to sectors of industry

Thousand million kW.h



purchasing more electricity from Escom.

Sales to Durban Corporation, Escom's largest single consumer, increased by 9,4 % compared to 1981. In 1982 sales to Johannesburg and Pretoria municipalities reflected annual growth rates of 8,8 % and 9,3 % respectively. Bloemfontein generated less power and bought 46,8 % more electricity from Escom than in 1981.

In the Western Cape, the municipality of Cape Town took 6,5 % more electricity, while sales to other local authorities increased by 11,1 % largely on account of bulk users such as Atlantis, George and Oudtshoorn. In the Northern Cape sales to Kimberley and Upington municipalities grew considerably. In the Eastern Cape, Port Elizabeth municipality purchased 1,6 % less electricity from Escom, mainly through the downturn in the manufacturing industries, while East London took 2,6 % more than in 1981.

Mining

Sales to the gold and uranium sector increased by 3,4 % compared to 1981, while the five-year average annual growth rate was 6,4 %. Growth in this sector is expected to continue but the rate is dependent on the gold price as far as new mines and major capital expansion at existing mines are concerned.

Sales to platinum mines declined sharply, reflecting the difficulties experienced by the industry which is dependent on the motor industry in the USA, the jewellery trade in the far East and the use of the element in chemical processes.

Electricity sales to the coal mining sector grew by 11,1 % from 1981 to 1982 in line with the five-year annual average of 12,4 %.

Sales to the remainder of the mining sector* decreased by 1,3 % from 1981 to 1982, while the average annual growth over five years was 17,8 %. Iron and chrome in particular were adversely affected by recessionary conditions in the local and export markets.

In the Northern Cape Region, sales to mines in total declined by 3,4 % compared to 1981, mainly due to lower electricity sales to the diamond and iron ore categories. There was a slight increase in sales to the copper, lead and zinc mines.

*Among the minerals included in this sector are copper, diamonds, asbestos, antimony, iron, chrome and manganese.

During 1983 little growth is expected in the demand for additional power at existing mines.

Traction

The railways used far less electricity than the previous year. An important reason was the sharp reduction in raw-material export via the Sishen-Saldanha and Broodsnyersplaas-Richards Bay railway lines.

Senior general manager's report

FINANCIAL

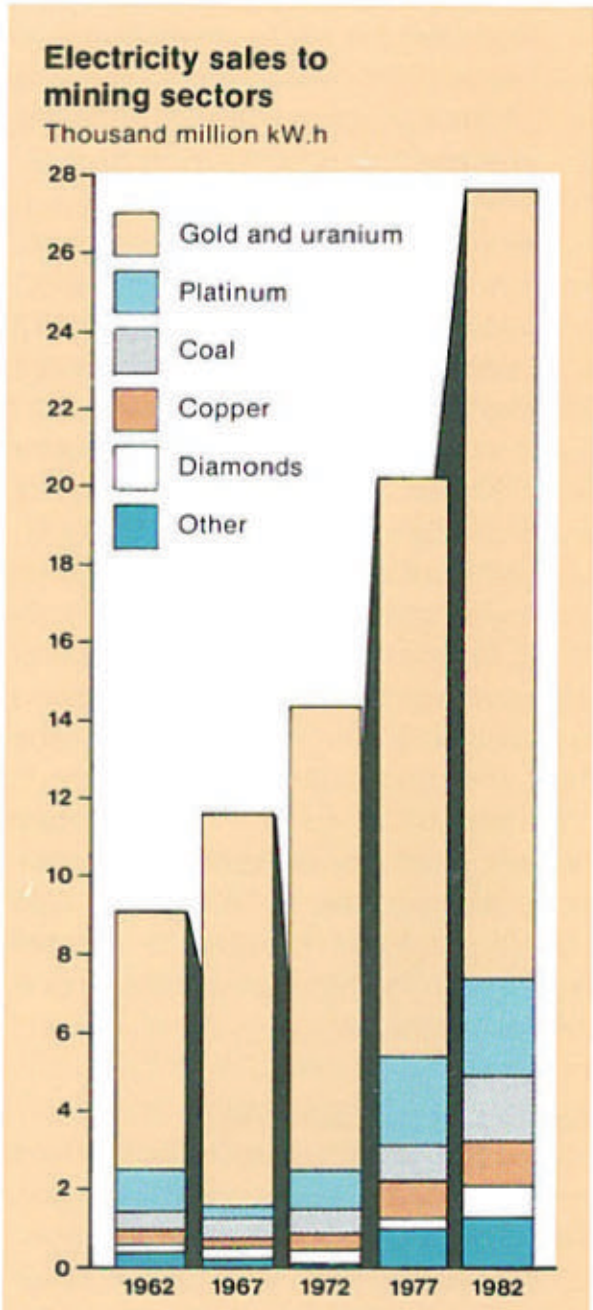
Results for the year

Revenue for the year amounted to R2 695 million, R554 million more than in 1981. Total charges to the supply account were however greater at R2 753 million (1981: R2 218 million), resulting in a deficit for the year of R58 million. The accumulated deficit at the end of 1982 was therefore R154 million.

The total charges debited to the supply account amounted to 2,86 cents per kW.h sold (1981: 2,36 cents per kW.h sold).

Electricity sales to mining sectors

Thousand million kW.h



Operating charges accounted for 1,44 cents per kW.h sold, 27,4 % higher than the 1981 figure, primarily due to the coal cost debit which rose by 19,8 % and other power station operation and maintenance costs which rose by 50 %. Maintenance delayed from previous years when capacity was fully utilized could be undertaken during the year.

Capital charges represented 1,42 cents per kW.h sold which was 15,4 % above the 1981 value. Interest, the major capital charge, increased by 16,8 %.

Charges to the supply account include contributions to the Capital Development Fund of R450 million (1981: R435 million) and to the Reserve Fund of R26 million (1981: R0,9 million). The aggregate contributions to the funds at 3,8 % of unredeemed loans falls far short of the 6 % allowed in terms of Section 13 of the Electricity Act, 1958, as amended. Since external finance was available the contribution to the Capital Development Fund can be regarded as satisfactory although it represents only an insignificant absolute increase over the 1981 contribution. The increased contribution to the Reserve Fund reflects provisions for self-insurance, modernisation of existing plant and abnormal maintenance.

Annually the internal financing generated during the year is compared to projected results based on replacement cost depreciation policies. Had Escom followed replacement cost depreciation policies using a straight-line depreciation basis, 30-year asset life and replacement value of R921 (1981: R815) per kW installed (generation, transmission and distribution), tariffs would have had to be raised slightly to yield the required depreciation provisions. Straight-line depreciation is used in the analyses as it is the most common depreciation practice in business. Using Escom's sinking-fund basis to determine a depreciation provision the amount would be lower than the straight-line basis allowing for a small contribution to the internal financing of capital expansion.

Loans and capital market

The past year was characterised by high interest rates and stringent monetary policies. Foreign interest rates continued to fluctuate widely while local rates reached record levels. On the local market, the prime bank rate climbed to 20 % per annum while the sensitive 90 day bankers' acceptance rate approached a record of 19 %. The long-term rate on Escom stock continued its upward movement, which started in 1981, to reach a peak of 14,75 % by August 1982. Since then long-term rates declined significantly closing at 11,65 % at the end of the year.

The decline in interest rates, together with a dramatic reversal in South Africa's balance of payments position, created a heavy demand for Escom stock. In the local secondary capital market new records were set in the selling of stocks during the year.

Net sales of Escom stock for the year amounted to R1 173 million (1981: R553 million). Close to 70 % of the total sales were negotiated during the second half of the year. This represented an unusual position in the market where expectations of lower interest rates brought forth a flood of money. Escom cannot rely on raising this amount of finance from the local market regularly.

The buoyant local market in Escom stock enabled Escom to meet 70 % of its total external funding requirements from local financing sources. Long-term insurers continued to experience strong cash flows and consequently showed the biggest percentage increase in holdings of Escom stock.

During the year Escom continued to utilize and arrange project-related facilities. Escom also continued its policy of securing the availability of finance for projects well in advance of the actual utilization.

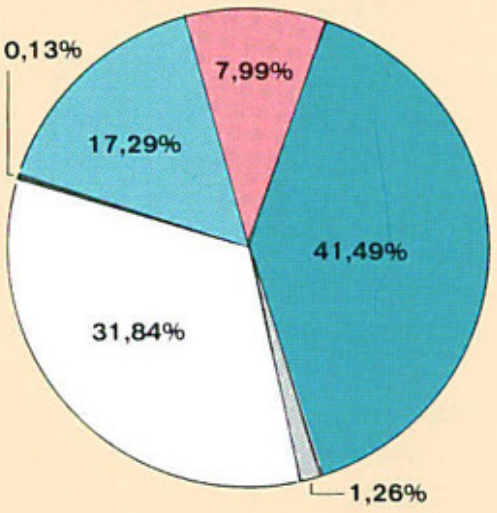
The continued popularity of the Escom capital project bill and other short-term financing instruments issued by Escom played a major role in the development of a medium-term finance market. New sources of project-related finance are continually being investigated to meet Escom's growing demands for finance. Further long-term financing arrangements with local institutions are being negotiated to secure a portion of Escom's future capital requirements.

As a result of previously arranged facilities it was possible to raise R777 million on foreign financial markets. This figure includes R258 million which was obtained by utilizing import financing facilities and project-related commercial loans totalling R345 million. Import financing facilities normally carry favourable terms and conditions and as a source of finance could become more important in future years.

Along with the high interest rates on the different foreign financial markets, Escom was also confronted with very high for-

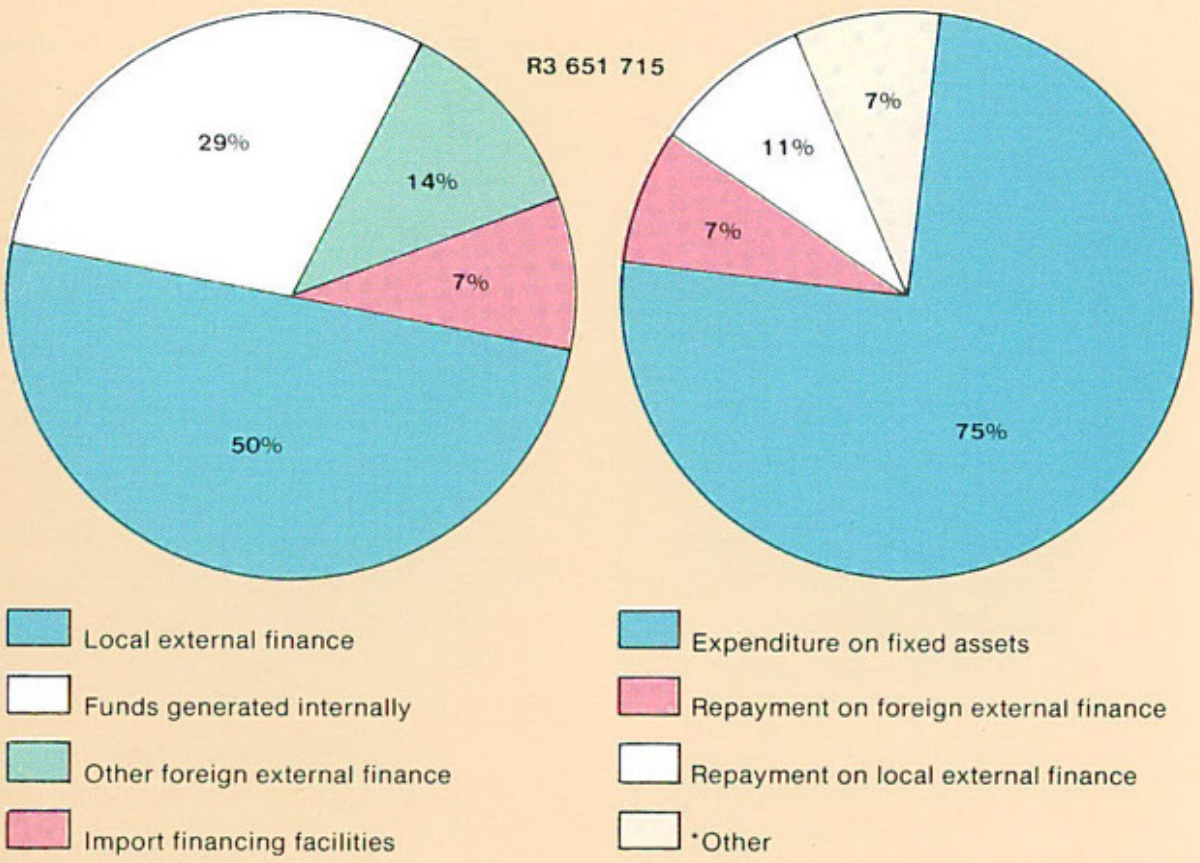
Breakdown of costs for the year

R2 753 342 000



	%
Generation costs	**41,49**
Operation:	
Coal cost	21,53
Railage on coal	2,03
Other costs	5,12
Maintenance	5,97
Administration and general	6,84
Loan charges	**31,84**
Interest:	
Generation	18,39
Distribution	7,97
Corporate services	—0,14
Redemption:	
Generation	4,73
Distribution	0,86
Corporate services	0,03
Contributions to funds	**17,29**
Capital Development Fund	16,35
Reserve Fund	0,94
Distribution costs	**7,99**
Operation	0,11
Maintenance	2,07
Administration and general	5,81
Corporate management	**1,26**
Electricity purchased	**0,13**

Source and application of funds



*Stores and materials; Future fuel supplies; Reserve Fund expenditure; Other asset expenditure.

ward cover costs. This situation has eased to a large extent with the downward movement in US interest rates during the second half of the year.

Due to the heavy emphasis placed on project-related finance in 1982 only a few direct loans were obtained from foreign markets. Two private placements of SF 30 million and SF 50 million respectively were negotiated with a consortium of Swiss Banks and a public bond issue of DM 100 million was floated on the German bond market.

The result of Escom's new money requirement, its loan raising activities and the higher financing costs was an increase in Escom's total interest and finance costs to R1 305 million in 1982 from R899 million in 1981. This R406 million increase in interest and finance charges arose from an increase in Escom's gross debt of R2 810 million and higher finance cost rates which at times reached above 20 % per annum during 1982.

At present many foreign banks are still being confronted with debt rescheduling problems, the inability of some Latin American and Third-World borrowers to meet loan repayment commitments, an over-exposure in certain developing countries and a spate of financial failures amongst corporate borrowers. With the modest recovery in the industrialised countries expected to gain momentum in 1983 the demand for credit should increase and place further strains on an already over-extended financial system.

However, due to careful planning and conservative financial policies, Escom is in a better position than many other international borrowers to continue to attract an adequate share from the foreign financial markets.

Tariffs

The average price of electricity rose by 22,9 % in 1982. This was made up by an average increase of 13,1 % in January and a second increase of 6,6 % in July towards meeting costs caused by the unavailability of Cahora Bassa, as well as the adjustments necessary to provide for the rise in the cost of coal.

Despite these increases, total revenue for the year was insufficient to cover higher costs, caused mainly by the decline in sales growth in the latter half of 1982. To

meet costs and to eliminate the accumulated deficit a tariff increase of about 20 % would have been necessary in 1983.

In response to a direct government appeal intended to reduce inflation, Escom lowered its tariff increase from 16,3 to 14,5 %. Every attempt is being made to keep costs as low as possible.

If no significant decrease in the escalation of Escom's costs can be achieved and the decline in the growth of electricity sales continues in 1983, a higher accumulated deficit might result affecting future tariff increases. A positive factor is that the revival of the economies of those countries which receive South African exports, should start having an effect on Escom's electricity sales in the year ahead.

SYSTEM OPERATION

Plant capability and loading

The sent-out capacity of Escom's 25 power stations increased from 18 989 MW in 1981 to 20 523 MW in 1982, excluding the 1 373 MW contractual firm capacity from Cahora Bassa. During the year, new plant with a total sent-out capacity of 1 650 MW was taken into service. This figure includes 500 MW of pumped-storage plant installed at Drakensberg, which contributes to peaking plant capacity but is in actual fact a net user of electricity. The assigned sent-out rating of stations was reduced by a total of 116 MW as a result of ageing plant coupled with a reduction in the quality of coal.

Details of Escom's power station equipment and countrywide transmission system are shown in statements 1 and 3, pages 52, 53 and 55.

During the year, 102 769 million kW.h of energy was sent out by Escom power stations, while only 2 151 million kW.h (2 % of the total) was imported from Cahora Bassa and other sources. Of the total sent-out energy, 102 516 million kW.h was available for distribution - the bulk of the difference being absorbed by the Drakensberg pumped-storage scheme.

The reliability of supply from Cahora Bassa continued to be unsatisfactory during 1982. The supply is still being hampered by damage to the transmission lines in Mozambique and conditions there have delayed maintenance and repair work considerably. Escom has implemented plans to meet the demand even if no supply is received from Cahora Bassa.

The quality of supply to consumers improved substantially compared to 1981 despite the curtailment of the supply from Cahora Bassa and the poor initial performance of the large new 600 MW sets. The performance enhancement programme which was initiated some time ago has, however, resulted in an improvement in both the availability and reliability of these generating sets.

The one-hour maximum supplied demand on the interconnected Escom system was 15 532 MW, which was 858 MW (5,8 %) higher than the maximum demand for 1981. This growth is lower than the increase of 7,4 % from 1980 to 1981, and is well below the average yearly increase of 7,7 % over the last five years (Table 13, page 66).

Plant performance and maintenance

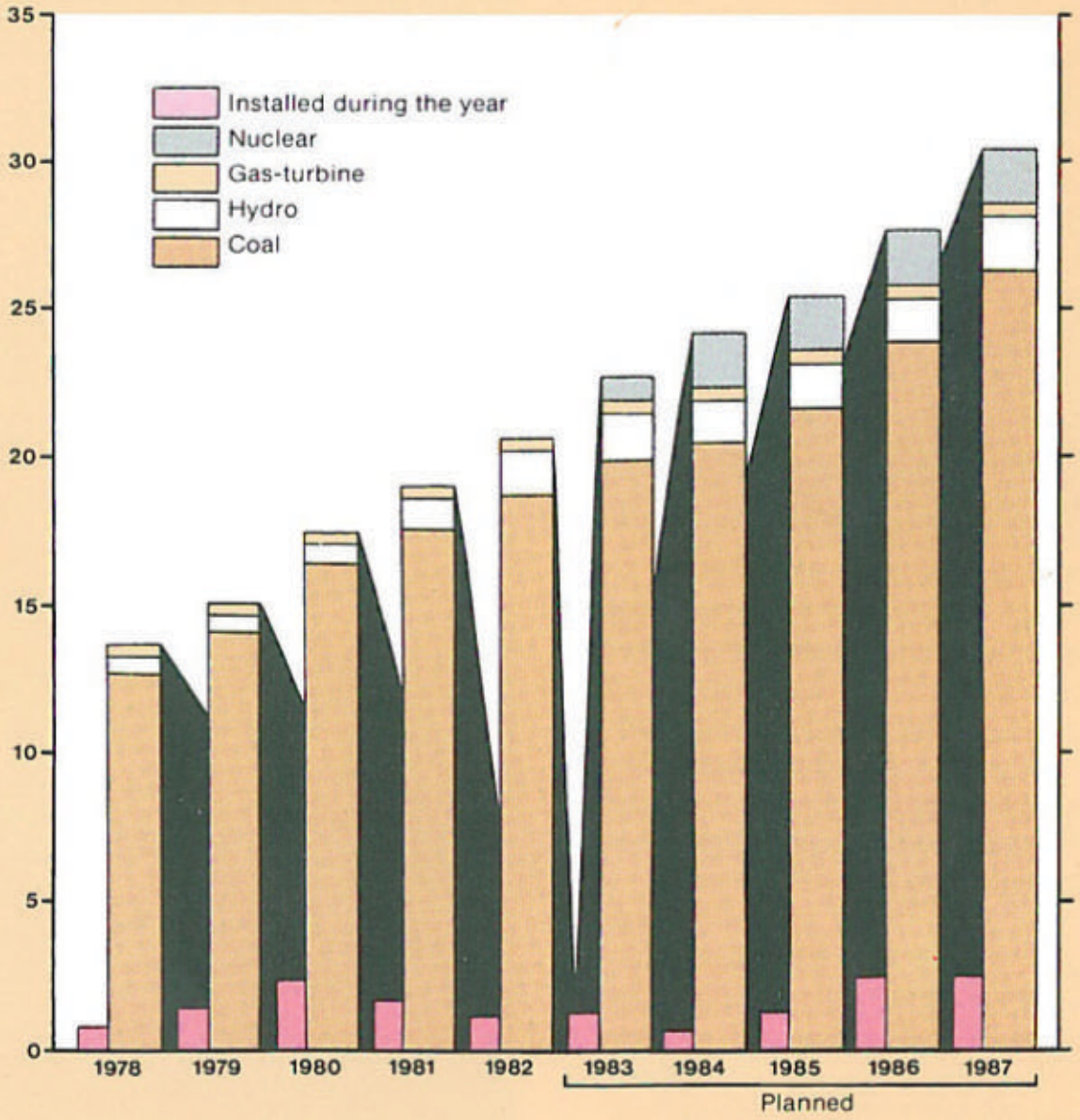
The average availability of Escom's generating plant increased marginally from 74,2 % in 1981 to 74,3 % in 1982. This improvement is mainly the result of better reserve margins during the latter half of the year.

Maintenance outages for the earlier part of 1982 had to be curtailed because of the unreliable supply from Cahora Bassa over critical periods. During the second half of the year the performance enhancement programme was accelerated and a great deal more maintenance work was initiated. The situation was complicated by a continued skilled manpower shortage in certain critical categories. To overcome these problems, Escom shortened maintenance periods as far as possible through increased use of double shift work using contract labour.

The overall thermal efficiency of Escom's coal-fired power stations was 30,5 % in 1982 compared to 30 % in 1981.

Sent-out capacity of Escom power stations

Thousand MW



Coal

More than 95 % of Escom's electricity is generated by means of coal and in the year under review 55,2 million tons of coal was burnt in Escom power stations. This represents a 2,4 % increase compared to 1981 and is lower than the average annual increase of 8 % over the last five years.

The supply of coal to Escom's power stations passed through two distinct phases during the year:

During the first half of the year coal supply imbalances existed with surpluses at some stations and shortages at others. This was brought about by unplanned outages at certain power stations (resulting in surpluses) and colliery production problems (causing shortages). Escom therefore had to transport large quantities of coal, by rail and road, to certain power stations. This transport added to the total coal cost.

In the latter half of the year, Escom started to experience coal surpluses as a result of the low growth rate in electricity sold. Production costs of mining operations are largely fixed. By decreasing their output, the productivity of the coal mines was adversely affected resulting in a higher cost per ton produced. Escom therefore had to pay relatively more for its coal.

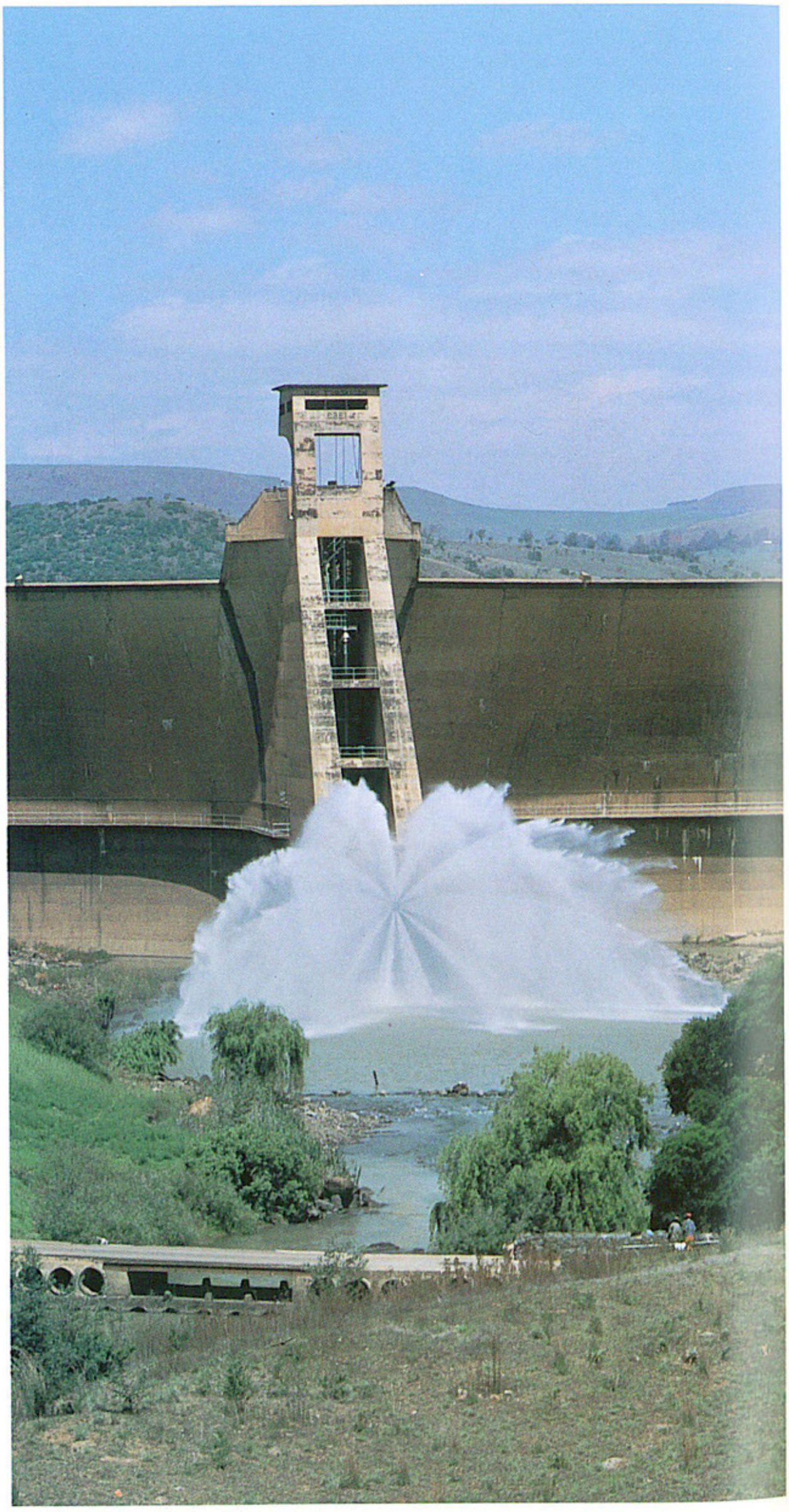
During 1982 the average cost of coal burnt in Escom power stations therefore increased to R11,75 per ton, i.e. by 21 % compared with 1981.

At certain collieries performance was not satisfactory and steps have been taken to improve the situation. On a broader front Escom continued with its efforts to optimise the usage of coal, at present the most important source of prime energy in the country.

During 1982 Escom contracted a new coal supply which is based on an average heat content of 17 MJ/kg. This contrasts with practice over the recent past when a heat content of 24 MJ/kg would have been the norm and reflects Escom's effort to encourage the effective use of coal resources.

Water

Constant efforts are made to use water more efficiently, particularly in view of the need to expand Escom's generation capacity.



During the past five years overall specific water consumption in Escom's coal-fired power stations decreased by more than 16 % (from 2,99 litres per kW.h sent out in 1977 to 2,51 litres in 1982), mainly as a result of the recirculation of cooling water and the economies of scale brought about by the large sets. Specific consumption in 1982 as against 1981 deviated slightly from the above trend when a 2 % increase was recorded. This is largely attributable to the forced uneconomic use of older power stations (with less efficient water consumption rates) because of the shortfall in peaking energy and the unreliability of the Cahora Bassa supply.

Generation from the Orange River hydro-electric power stations (total sent-out capacity of 540 MW) was restricted in 1982 because dam levels were generally lower than during 1981.

Matimba, Kendal and Majuba power stations will be dry cooled, thus each saving some two-thirds of the water consumed in a comparable size wet-cooled power station. With the important role that dry cooling has to play in water conservation Escom, in collaboration with the Water Research Commission and the Council for Scientific and Industrial Research, instituted an intensive research programme into the performance of dry-cooling systems and their inter-relationship with the atmosphere.

Investigations are also under way between Escom and the Water Research Commission for the economical re-use of system water within the power station cycle. A research pilot plant for the recovery of water has been installed at Grootvlei power station to determine the technical and economic possibilities of the system.

After an evaluation of different water treatment systems, the ion-exchange demineralisation plant at Vierfontein power station was equipped with a reverse-osmosis plant. This plant is the largest of its kind in southern Africa and 12 months' operating experience has revealed it to be a very satisfactory technological choice.

As a result of the severe drought dam levels at the end of 1982 were much lower than in previous years. Plans for the conservation of water stock were considered should the drought persist in 1983, and close liaison is being maintained with the Department of Environment Affairs. A shortage of water supplies to power stations poses serious problems for Escom; it may lead to uneconomic operation with significant cost increases. The risk of load shedding can become very real by mid-1983 if the drought persists and steps to ensure water supplies to power stations are not taken timeously.

POWER STATIONS UNDER CONSTRUCTION

Plant with a sent-out capacity of 1 650 MW was taken into service during 1982. At the

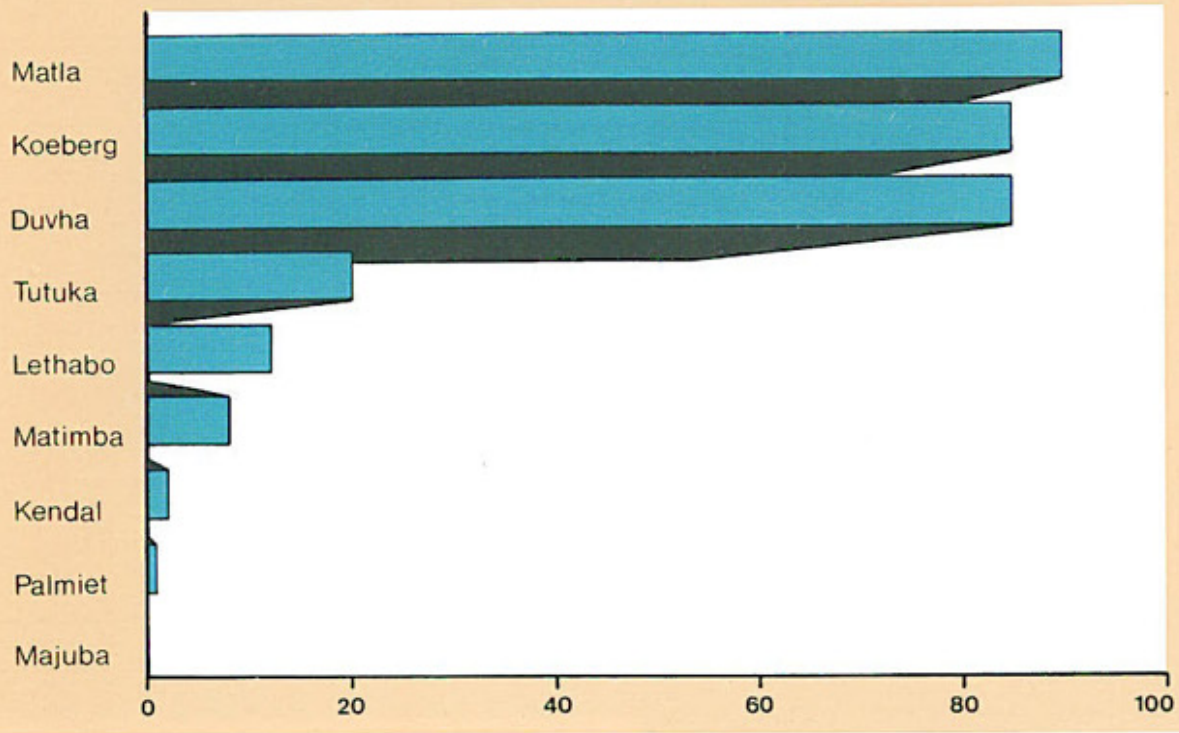
Matla power station

Matla is in the Bethal area near Kriel power station and will ultimately comprise six sets in the 600 MW class. Construction began in October 1974.

Coal is obtained from General Mining's Matla colliery and water is supplied from the Usutu River and the Usutu-Vaal water scheme.

By the end of 1982 five sets were in

Power stations under construction
% of construction completed



service, one of which was taken into commercial operation during the year. The last set is expected to be completed by June 1983, three months ahead of the original completion date.

Duvha power station
Duvha is in the Witbank area and will eventually contain six sets in the 600 MW class. Construction started in November 1975.

Coal is obtained from Rand Mines' Duvha open-cast colliery and water is supplied from the Komati River water scheme and the Witbank Dam.

By the end of 1982 four sets were in

Drakensberg pumped-storage scheme
This 1 000 MW underground power station in the Drakensberg mountains near Bergville in Natal provides peaking and standby power for the Escom system.

It forms part of a joint scheme with the Department of Environment Affairs to pump water from the Tugela River in Natal over the escarpment to supplement water requirements in the Witwatersrand area.

During 1982 the remaining two 250 MW reversible pump-generator sets were put into commercial operation.

Now that the scheme is essentially complete, work on environmental restoration of the site is actively being pursued.

Koeberg nuclear power station
The programme for Koeberg nuclear power station (1 844 MW) was disrupted by acts of sabotage at the end of the year and the completion dates for both sets have been delayed. The plan is such that the power station will be completed in a safe and secure manner. Physical security measures for the completed power station have been accelerated at extra cost and continuous upgrading has taken place.

Due to contractual and other problems with enriched uranium, Escom was obliged to obtain alternative supplies for Koeberg on the open world market. These nuclear materials as well as the power station have always been and continue to be subject to regular safeguard inspections by the International Atomic Energy Agency. During the year several such inspections were performed.

In 1982 the Nuclear Energy Act was promulgated replacing previous legislation concerning nuclear matters. The Act provides for the establishment of the Atomic Energy Corporation and the Council for Nuclear Safety. Escom must now satisfy both these statutory bodies on safety matters at Koeberg. The Council for Nuclear Safety has already influenced many activities and the requirements of the Council were taken into account in the licensing of reactor operators. The nuclear licence is subject to strict controls and as work proceeds, Escom applies for variations to the licence to permit the execution of key steps in the start-up of the power station.

A hot functional test of the nuclear steam supply for the first set was successfully carried out. The second set was prepared for a similar test. Further functional tests on the steam turbines and alternators await the availability of steam supplies from the nuclear plant.

During 1982 a Regional Liaison Committee was formed in the Western Cape with members from the town councils and other representative groups from the communities near to the power station. The Committee's purpose is to provide a forum for the exchange of information on the power station and nuclear power. This committee is part of Escom's continuing and growing information programme to foster public awareness of nuclear power. It should also assist Escom and the Cape Divisional Council in implementing and managing an effective plan to deal with emergencies involving radiation, no matter how remote the possibility of the postulated accidents may be.

Tutuka power station
This station, north of Standerton, is designed for six sets in the 600 MW class. The first set is scheduled for commercial operation in March 1985 and in accordance with the original programme other sets were to follow at nine-monthly intervals. The programme may be adjusted in terms of the flexibility provided for in the various contracts to allow for sets 5 and 6 to follow at yearly intervals after set 4.

Coal will be supplied from Anglo-American Corporation's New Denmark colliery and water from the Grootdraai Dam on the Vaal River.

Construction started in August 1980. During 1982 good progress was made with the civil works for the first three sets. Erection of the steelwork for the first set was practically complete in preparation for the arrival of plant components early in 1983. Excavations for foundations of sets 4 to 6 were started in November 1982.

Lethabo power station

Lethabo, near Deneysville in the Orange Free State, is designed for six sets in the 600 MW class. Coal will be supplied from Anglo-American Corporation's New Vaal colliery and water will be pumped from the Vaal River.

The first set is scheduled for commercial operation in September 1985 and in accordance with the original programme the other sets were to follow at nine-monthly intervals. This programme may be adjusted for sets 4, 5 and 6 to follow at yearly intervals after set 3 in accordance with provision made in various contracts.

Construction started in 1981. During the rainy season in 1981-82, upwards movement of the ground surface at the site was observed. Investigation showed this was due to the natural ingress of water into ground previously dewatered by the plantation which existed on the site. This required special designs of piled foundations and modification of some already completed. Despite this setback, progress has been considerable and the concrete structures for the boiler house of the first set were completed. The structure for the first set is expected to be largely completed by mid-1984, ready for the erection of plant.

Electrostatic precipitators, needed to remove dust from the flue gases, were ordered during the year. The performance of these precipitators had to be improved to meet the stringent requirements for atmospheric emissions in this area.

Matimba power station

This station, near Ellisras in the north-western Transvaal, is planned initially for four sets, but can readily be extended to six sets. These sets are of the 600 MW class, but are capable of operating at a nominal 665 MW. Coal will be supplied by Iscor from the Grootegeluk mine after extraction of the coking coal component required for steel production.

Because of the lack of adequate water resources in the area, Matimba will be dry cooled. The contract for the direct-system dry-cooling plant has been placed and Matimba will have the largest dry-cooled sets in the world. A limited quantity of water will be supplied from the Strydom Dam.

Terracing work was completed in the

last half of 1982, at which stage the main civil works for the boiler and turbine houses was started.

The commissioning date for the first set is September 1986 and the subsequent three sets are planned to follow at yearly intervals.

Kendal power station

This station was previously known as Khutala.

The power station is situated south of Kendal on the Eastern Transvaal Highveld. Construction commenced in 1982 and the first of its six sets is due for commercial service in September 1987; the rest will follow at yearly intervals. These sets are of the 600 MW class, but are capable of operating at a nominal 672 MW. Some flexibility has been provided for in the programme of installing sets 4, 5 and 6 and the intervals between these sets can, within limits, be increased or decreased.

This will be Escom's second power station to be entirely dry-cooled. Although thermal efficiency will be lower, water consumption will be two-thirds less than that of a power station with a conventional evaporative cooling system. In addition it would be costly to pump water over considerable distances from sources far away from the coalfield.

Coal for the station will be supplied from the nearby Bombardie-Cologne coalfield operated by Transvaal Consolidated Land and Exploration Company.

Palmiet pumped-storage scheme

This hydro-electric dual purpose scheme, similar to the one at Drakensberg will have a generating capacity of 400 MW. In 1987 the power station will start feeding power into Escom's national grid during peak and emergency periods. This station will also serve as a pumping station to transfer water from the Palmiet River to the Steenbras Dam and augment water supplies to the Cape Town metropolitan area.

Exploratory drilling and tunneling on the power station site near Grabouw was completed during 1982. Permanent access roads to the upper and lower works are now under construction.

Tenders for the pump-turbines were invited with a closing date early in 1983.

Majuba power station

During the year, Escom announced its plans for a third dry-cooled power station. This station, with a nominal capacity of about 3 600 MW, will receive coal from the Amersfoort coalfield, north-west of Volksrust. The turbine and boiler contracts have been awarded and site work will start in 1983. The same flexibility in the programme of installation as for Kendal has been provided for Majuba.

TRANSMISSION

Rand and OFS Region

The quality of supply on certain major networks in the region was improved with the installation of capacitor banks for voltage and power-factor control at various substations.

Supplies to the Vereeniging industrial area were enhanced with the completion of Verdun substation. Work has also commenced on the Rigi substation which will augment the power supply to Iscor and the industrial area of Vanderbijlpark.

Generation at Matla power station was further integrated into the system by way of 275 kV line changes at Nevis, Benburg and Esselen substations.

The 132 kV traction lines between Witkop substation as well as Nirvana and Pietersburg substations were completed to strengthen supplies to this Northern Transvaal town.

To meet Lesotho's increased demand for power, an 88 kV line was completed between its border and Tweespruit substation in the Orange Free State.

Eastern Transvaal Region

Extensions to Sol substation and the associated 400 kV and 132 kV transmission lines were completed to establish the major 132 kV supply to Sasol 3. This project was completed ahead of schedule to meet Sasol's critical programme.

A 400 kV line from Kriel power station to Zeus substation was completed to reinforce the system feeding from the Eastern Transvaal power stations to the Vereeniging area and the south.

An automatic control system was installed at a substation near Witbank to assist with underfrequency load-shedding and, in case of larger disturbances, islanding of the main interconnected power system.

Construction work has commenced on a 275 kV transmission line between Steelpoort and Phalaborwa to reinforce the existing system supplying these, as well as the Nelspruit areas.

Western Cape Region

The necessary transmission projects required to integrate Koeberg power station into the 400 kV and 132 kV systems were completed.

The 400 kV transmission lines required to connect the Palmiet pumped-storage station to the Cape transmission system, also form part of a scheme to give future supplies to the Hex River area. These lines have been planned, taking into account various environmental conditions.

Work is progressing on a project to reinforce the 132 kV Botrivier system and provide electricity supplies for the construction of the Palmiet scheme. The above project will be completed by 1984.

Natal Region

Attention is being given to the possible introduction of an 800 kV transmission system in Natal, but in the meantime the existing 400 kV network is to be reinforced and extended.

Supplies in the Richards Bay area will be improved by a 400 kV line from Dundee to Ulundi and from there to the Richards Bay area. This will also improve the load sharing on the 400 kV lines from the Eastern Transvaal.

Supplies to the Durban and Pietermaritzburg area were strengthened with the commissioning of a third 800 MVA transformer at Mersey substation during the year. A second 132 kV capacitor bank at Klaarwater substation was taken into service while Avon, a new 275/132 kV substation north of Durban, is nearing completion. This latter substation will reinforce the 132 kV system and form the basis of a northern infeed for Durban Corporation.

Natal Region also continued with the development of supplies in independent states.

Northern Cape Region

A second 275 kV transmission line from Kimberley to Sishen was completed during the year. This will improve the reliability of power supplies to the mining industry in the Sishen and Hotazel areas.

A project to provide a transmission link with a throughput of 200 MW between the Escom system at Aggeneis and the Swawek (South West African Water and Electricity Corporation) system at their

Van Eck power station (near Windhoek) was completed in a record time and put into service in 1982. This supply is furnished over a 220 kV double circuit line which is about 800 km in length. Escom managed the whole project on behalf of Swawek using local construction resources where possible. Swawek undertook the substation construction work in SWA/Namibia.

The performance of the 220 kV power line between Gromis and Oranjemund on the West Coast was deteriorating due to contamination caused by salt seaspray, sand, wind and the excessive heat. To improve performance it was necessary to spraywash the complete line. This appears to be necessary at least once a year.

Eastern Cape Region

Between De Aar and Beaufort West a 132 kV transmission line (about 280 km in length) for the electrification of the railway system is nearing completion. Regional staff from the Western Cape were in part responsible for the construction of this line.

During the next few years more supplies will be made available for electrification of the railway lines between De Aar and Port Elizabeth as well as between Springfontein and East London.

Rural electrification

After the liquid fuel price rises in 1973-74 and 1978-79, small rural consumers found their diesel generators to be uneconomical and Escom was inundated with applications to supply them with electricity. Escom felt that this matter should enjoy priority although the programme is labour and materials-intensive.

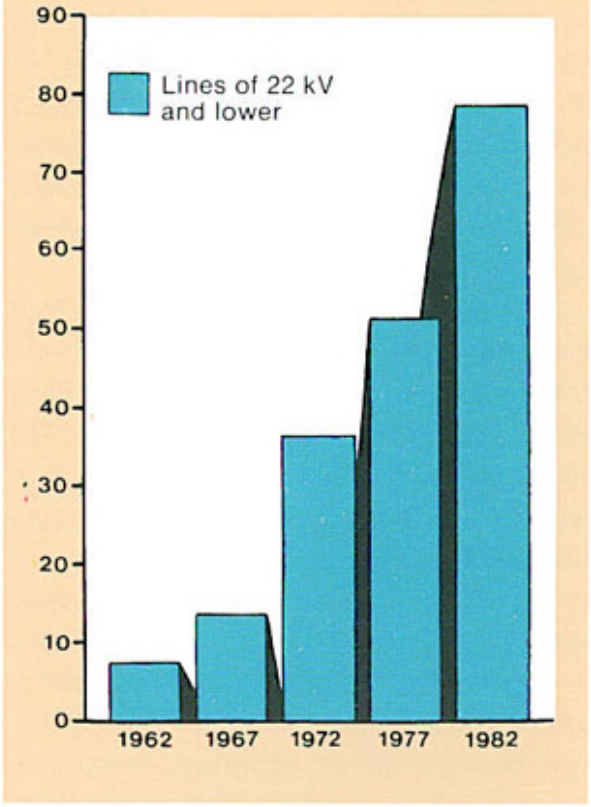
As a result, there are construction delays of up to 48 months in extreme cases. Despite these constraints Escom intensified its programme and the number of new farm supplies provided in 1982 was 4 400, an increase of 8,6 % over the 1981 figure. To assist small rural users, Escom has amended its tariff structure to reduce certain monthly extension charges.

Rand and OFS Region

More than 1 200 supplies were made available in this region last year. This figure includes about 500 points of supply associated with the 13 new rural supply schemes completed during the year.

The demand for supply points remains high. Five schemes were still under construction (more than 400 supply points), while Escom accepted a further 31 schemes involving some 3 000 supply points. In addition 23 schemes were under negotiation, involving a further 3 000 supply points; 42 schemes remained to be investigated, involving 2 500 supply points.

Growth in rural electrification



The length of power lines with a voltage of 22 kV and lower is one of the criteria that could be used to determine the extent of rural electrification. From the graph it can be seen that since the 1970's, Escom has accelerated its programme. This was in response to farmers and other rural consumers who had found it more economic to purchase electricity from Escom than to generate it with their own diesel plant.

Eastern Transvaal Region

In this region about 1 100 new farm supplies were connected in 1982, of which 133 were within the five rural schemes completed during the year.

Five schemes were under construction, involving 330 points of supply, of which 160 had been made available. A further five schemes were approved.

With the improvement of irrigation systems, farmers - particularly in the Groblersdal, Marble Hall and Lowveld areas - have applied for extensions to their existing supply points.

About 1 500 supply points still have to be connected. This may take two years.

Western Cape Region

Approximately 600 new farming supplies were made available in this region during the year.

Two new schemes were completed for 96 supplies, and 17 schemes were approved or were under construction.

Worcester also received a supply and Sedgefield, Calvinia and Nyanga Extension were connected as bulk users. Additional transformer capacity was installed to cater for increased demand at Riversdale, Plettenberg Bay and Vredendal.

Nieuwoudtville, Williston and Fraserburg should receive supplies towards the end of 1983.

Natal Region

During 1982 more than 800 farm supplies were connected in this region. In addition, 28 new schemes involving 320 supplies were completed; 16 schemes were under

construction, involving 430 supplies of which 20 were connected during the year.

A further 79 schemes (700 supplies) were approved but were not yet under construction; 51 schemes were being investigated (1 000 supplies) and 18 schemes (660 supplies) remained to be investigated.

The rate of construction has increased rapidly. However, as the more outlying areas are being electrified, the 64 % increase in kilometres of low-voltage lines erected only produced a 7,6 % rise in the number of supplies over 1981.

Northern Cape Region

More than 300 farm supplies were made available in this region. Of these, 169 were in 10 schemes completed during the year.

Two new schemes were under construction and 24 of the 60 supplies had been provided. Five schemes (70 supplies) were approved and 13 schemes with a further 270 supplies were under negotiation. A single large scheme of 150 supplies is awaiting investigation.

A large number of farmers consolidated multiple points of supply on their farms into single points.This reduced the total number of farm supplies to 4 487 at the end of 1982.

Eastern Cape Region

New supplies to the towns of Paradise Beach, Tarkastad, Transriviere and Phakamisa and 392 rural consumers - which include 12 farmers' schemes - were completed during the year. This necessitated the erection of 615 km of 22 kV lines. The number of consumers in the Orange River Undertaking increased by 29 % due mainly to the extension of Escom's network into the Langkloof.

In 1983 new supplies will be furnished to three small towns and about 400 rural consumers, which will include 15 farmers' schemes. This will require the erection of about 1 000 km of 22 kV lines.

PERSONNEL

Manpower

The number of employees increased by 13 % to 58 850 in 1982. This increase is higher than the normal average annual figure of about 6 %. The favourable market for recruitment (caused by the world-wide recession) and the decreased labour turnover enabled Escom to reduce its man-

power shortage in certain categories. Technical and other specialised skills, however, still present a problem.

The exceptional increase of 7 % above the average annual figure includes 2,7 % for employees in certain critical categories who will reduce Escom's dependence on contract labour, 2,6 % for trainees who will be trained to meet future requirements and 1,7 % for enhanced security.

A fully integrated approach towards manpower needs was adopted. Escom has now consolidated its manpower forecast on a national basis. Formal career path and succession planning was intensified to optimise the utilisation of existing manpower.

Escom again enjoyed a year of labour peace and stability which can be ascribed to sound relations with organised labour and the emphasis placed on employees' well-being and their quality of life.

To maintain a productive and stable labour force and to ensure that it remains competitive in the labour market, Escom provides a range of employee benefits:

Training

With the emphasis on labour quality and because of Escom's specialised manpower needs, training continued to be a priority. The programme included the intake and training of operating staff, apprentices, pupil technicians, graduates-in-training and the awarding of bursaries in engineering and scientific disciplines. To comply with statutory and Escom's own security requirements, the procurement and training of security staff was intensified. Training of existing staff also continued over a broad spectrum.

Escom expanded its management training through the conclusion of an agreement with the School of Business Leadership of the University of South Africa, and the construction of a management training centre at the site of the Escom Training Centre near Halfway House.

Housing

Escom assists some employees to purchase their own housing units; at remote sites they are provided with accommodation at a subsidised rent.

During 1982 Escom awarded many contracts to the private sector for the provision of housing facilities. The two main advantages of this step were that on the one hand it prevented prices of existing local housing from soaring and on the other hand it served as an incentive for the building sector. In 1982 almost 1 300 housing units were established throughout the country.

The shortage of housing in the lower income groups received close attention.

Pension benefits

All employees belong to Escom's pension fund whose assets exceed R500 million. At present the Fund has about 3 500 beneficiaries.

Other benefits

These benefits include aid for continued study, medical aid, a provident fund, a staff insurance scheme and accident insurance.

Occupational accident prevention

Various direct and indirect measures are applied, often in conjunction with national organisations, to prevent occupational accidents.

The disabling injury frequency rate for all Escom employees rose slightly from 2,5 per million man-hours worked in 1981 to 2,8 in 1982. This still compares extremely well with the national average of about 9. The fatal accident frequency rate increased from 0,4 per five million man-hours worked in 1981 to 0,7 in 1982. The occupational accident rate for contractors' construction personnel on sites supervised by Escom was 2,6 lost time injuries per million man-hours worked - more than seven times better than the national average for construction work.

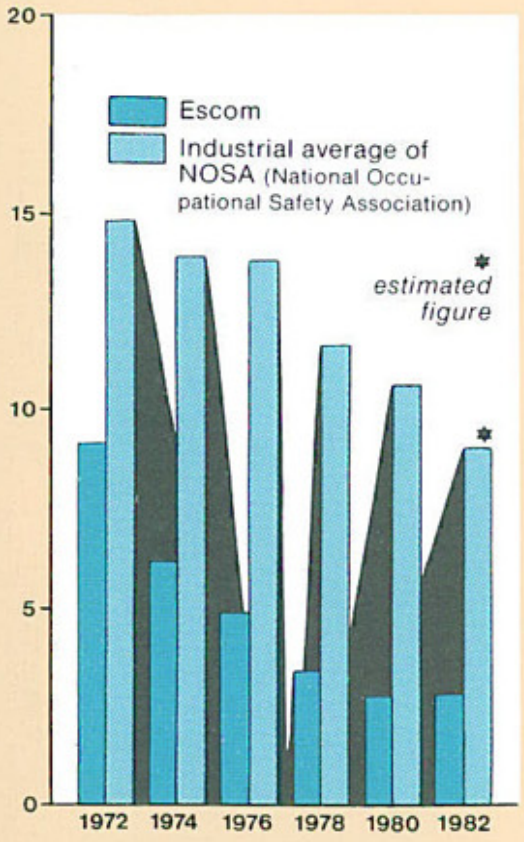
ENVIRONMENT AND RESEARCH

Environment affairs

At Matimba power station in the Northern Transvaal, measures to preserve the indigenous bushveld were introduced even before construction started. Escom also cooperates with the Transvaal Department of Nature Conservation to restrict the impact of the future Majuba power station on the girdled lizard or ouvolk *(cordylus giganteus)*, as the Volksrust area contains apparently one of its last remaining colonies. Attention is being given to the resettlement of this colony. In the Western Cape, a team of consultants

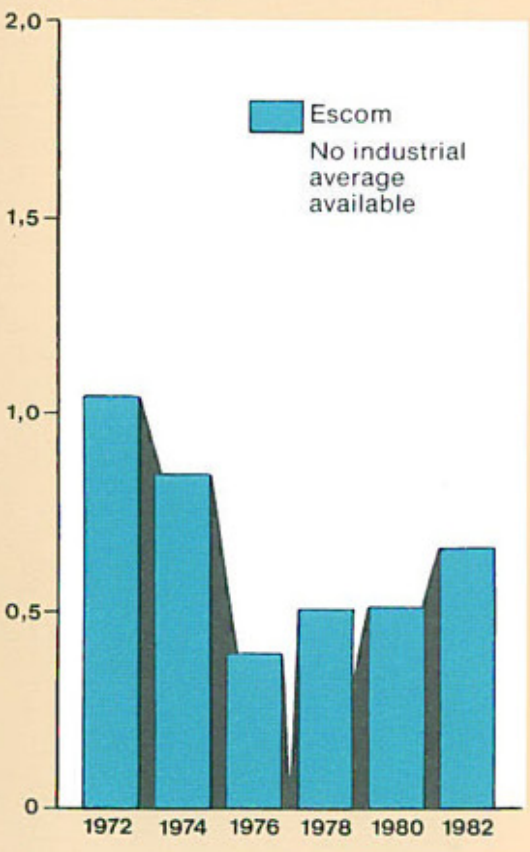
Disabling injuries

Disabling injuries per million man-hours worked



Fatal accidents

Fatal accidents per five million man-hours worked



has been appointed to prepare an environmental impact control plan for the Palmiet pumped-storage scheme near Grabouw. The area is particularly sensitive regarding an endangered plant species (fynbos).

Drakensberg is a good example of the application of such a plan.

Escom has been working closely with the chief air pollution control officer to establish emission criteria on which to base the design performance of new fly ash control equipment. While moving towards the desirable requirement of no visible emission from the stack, it is recognised that the attainment of this objective will add substantially to the cost of a power station. However, Escom is continually investigating the use of new technology and this will have a positive effect on the cost of controlling air pollution. For instance, in 1982, investigations into the use of bag filtration were carried out and successful experiments were initiated to improve the efficiency of electrostatic precipitators by flue-gas conditioning.

Investigation into the environmental problems associated with the removal, transport and disposal of large quantities of ash as well as its secondary use continued during 1982. Escom is hopeful that methods will be found to increase its present limited application. Ash is used in road construction and as a cement extender. The lack of water and land restrictions at future power station sites stimulated continuing research into the handling of fly-ash on a semi-dry basis.

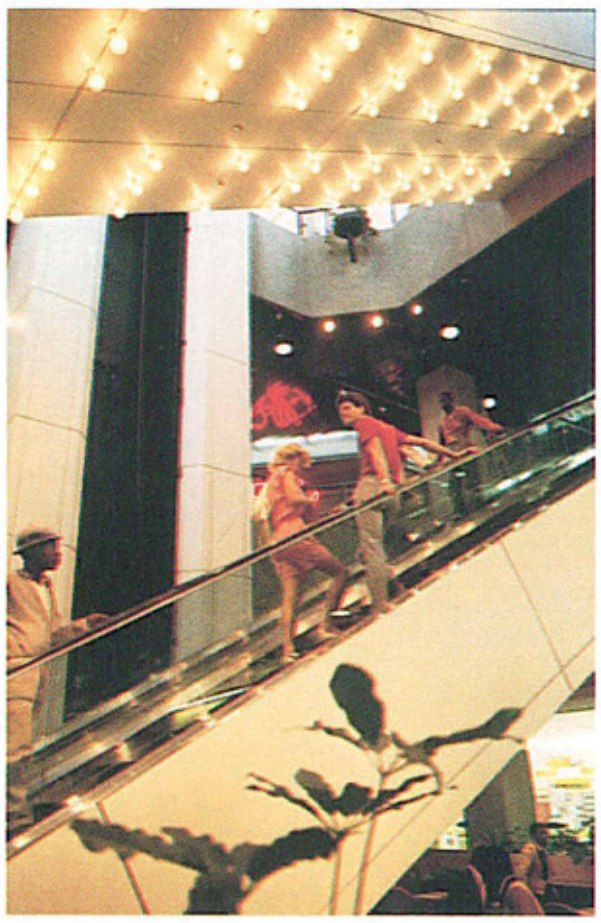
Escom is aware that acid rain is a problem in industrialized countries. In view of Escom's generation expansion a study group in the environmental section is at present doing research on this subject. An automated pollution monitoring system has been in operation for a number of years in the Eastern Transvaal and this has been extended to include the Orange Free State. Instrumented aircraft is also used for pollution research.

Technical advancements

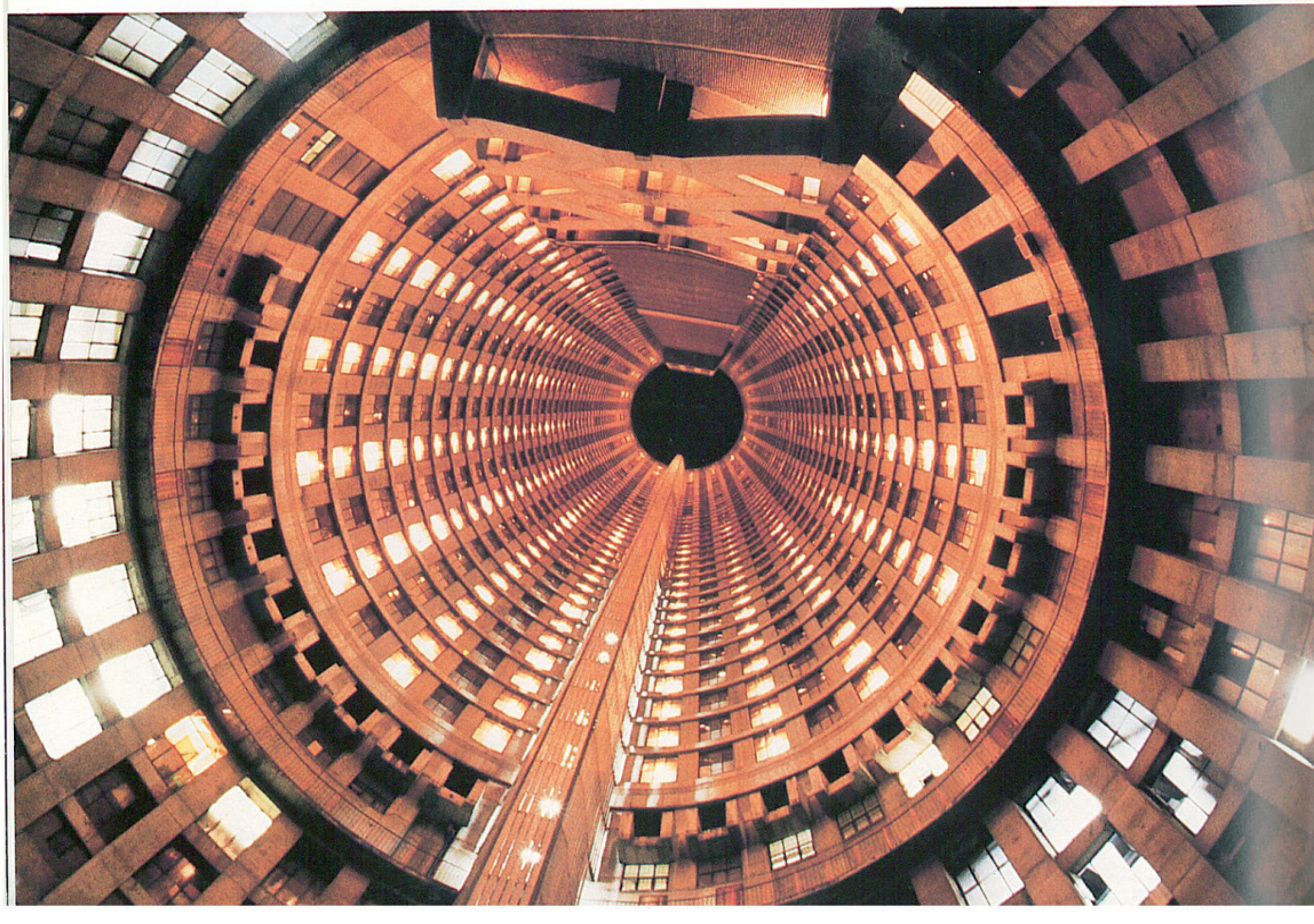
Feasibility studies on the 800 kV transmission system reached an advanced stage. Approval for the first stage of the test project was granted and contracts were awarded for the 800 kV switchgear at the terminal stations.

Lightning is one of the largest single factors causing interruptions in Escom's power supply. Smaller businesses, farms and domestic consumers who are to a large extent supplied exclusively by means of overhead lines are the most vulnerable. In 1982 Escom therefore concentrated in its lightning research on improved insulation of rural distribution lines.

ID van der Walt
Senior General Manager




METROPOLITAN



Auditors' report and financial statements

The Chairman and Members
Electricity Supply Commission
Sandton

We have examined the financial statements of the Commission set out on pages 32 to 38 and 50. Our examination was made in accordance with generally accepted auditing standards and, accordingly, included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

In our opinion, the financial statements fairly present the financial position of the Electricity Supply Commission at 31 December 1982 and the results of its operations for the year then ended in conformity with generally accepted accounting principles applied on a consistent basis, except as disclosed in note 2.2 of the financial statements, and in the manner required by the Electricity Act of 1958.

We further report that, in terms of the Electricity Act:

(i) due provision has been made for the redemption and repayment of moneys borrowed by or advanced to the Commission and the Redemption Fund has been properly maintained, and

(ii) sums fixed by the Commission have been set aside to the Reserve Fund and Capital Development Fund.

Alex. Aiken & Carter
Deloitte Haskins & Sells
Chartered Accountants (S.A.)

Johannesburg
24 March 1983

Electricity Supply Commission

Balance sheet

at 31 December 1982

	Notes	1982	R000 1981
Fixed assets	3	12 858 462	10 143 668
Stores, materials and fuel	4	447 615	306 079
Other non-current assets	5	1 082 212	645 926
Current assets		310 033	208 863
Accounts receivable and payments in advance		275 333	198 863
Moneys at call		34 700	10 000
		14 698 322	11 304 536
Financed by			
Loans and extended credit	6	8 944 235	6 715 459
Local registered stock, bond issues and direct placings (Schedule 2)		10 625 205	8 155 498
less Escom stock held internally	9	3 794 647	3 212 764
		6 830 558	4 942 734
Import financing facilities and extended credit		1 547 234	1 427 380
Revolving credits and short-term advances		566 443	345 345
Current liabilities		640 121	490 532
Creditors and accrued liabilities		393 139	326 743
Interest accrued		209 192	160 961
Bank overdrafts		37 790	2 828
Total net debt		9 584 356	7 205 991
Statutory funds	8	4 292 921	3 432 673
Capital Development Fund (Schedule 7)		3 357 023	2 556 860
Reserve Fund (Schedule 8)		218 410	213 731
Redemption Fund (Schedule 9)		717 488	662 082
Other reserves		821 045	665 872
Capital reserve	7	637 201	504 611
Provision for repayment of foreign loans		148 737	118 724
Other reserves	10	188 766	138 276
Accumulated deficit	11	(153 659)	(95 739)
		14 698 322	11 304 536

Income statement

for the year ended 31 December 1982

	Notes	1982	1981
		R000	
Sales of electricity		2 695 422	2 140 689
Operating expenditure	12	1 400 636	1 061 051
Net operating income		1 294 786	1 079 638
less: Loan charges		876 706	720 634
Interest and finance	2	721 948	603 546
Contributions - Redemption of local loans		106 714	70 493
- Redemption of foreign loans		48 044	46 595
		418 080	359 004
Amount set aside to Capital Development and Reserve Funds in terms of Section 13 of the Electricity Act, 1958		476 000	436 378
Net deficit for the year as shown in the Electricity Supply Account	2.2, 11	57 920	77 374
Accumulated deficit at beginning of year		95 739	18 365
Accumulated deficit at end of year	11	153 659	95 739

Statement of source and application of funds

for the year ended 31 December 1982

	R000	
	1982	1981
Source of funds		
Funds generated internally	1 046 573	814 451
Net deficit	(57 920)	(77 374)
Add Items not affecting the flow of funds		
Depreciation on equipment, vehicles and furniture	34 371	21 931
Future fuel supplies	(2 331)	810
Written off to coal costs	7 089	853
Interest capitalised on fuel funding	(9 420)	(43)
Loan amortisation charges	231 074	181 863
Repayment of foreign loans	48 044	46 595
Redemption of local loans	106 714	70 493
Interest credited to the Redemption Fund	76 316	64 775
Amounts credited to Capital Development and Reserve Funds	841 379	687 221
Contributions	476 000	436 378
Interest credited	365 379	250 843
Net proceeds of external finance	1 969 179	1 198 885
Loans and extended credit	1 432 195	1 250 427
Repayments	(635 963)	(604 929)
Sale of Escom Stock on secondary market	1 630 490	932 808
Purchase of Escom Stock on secondary market	(457 543)	(379 421)
Refund on expenditure to secure future fuel supplies	2 722	43 556
Increase in net current liabilities	48 419	40 200
Other	7 543	6 574
	3 074 436	2 103 666
Application of funds		
Fixed assets, net	2 741 167	1 950 645
Increase in stores and materials	141 536	60 932
Expenditure to secure future fuel supplies	91 103	41 183
Increase in housing loans to employees	40 668	19 690
Deferred expenditure	23 425	—
Reserve Fund expenditure	36 537	31 216
	3 074 436	2 103 666

Notes to the financial statements

for the year ended 31 December 1982

1. Accounting policies

The principal accounting policies adopted by the Commission are:

1.1 Fixed assets

(a) Fixed assets in commission

Fixed assets in commission are not depreciated but are reflected at historical cost. Long-term loans are raised to finance these assets. Because of the correlation between the loans so raised and fixed assets, the charge to revenue for loan amortisation takes the place of depreciation.

(b) Works under construction

Interest and a charge for corporate overhead expenses are capitalised during the period of construction.

(c) Equipment, vehicles and furniture

Equipment, vehicles and furniture are depreciated at rates considered appropriate to reduce original cost to estimated residual value over the useful lives of the assets.

Certain expenditure on fixed assets as provided for in Section 13(1)(a) of the Electricity Act, 1958 is written off in full against the Reserve Fund.

1.2 Stores, materials and fuel

The basis of valuation of stores and materials excluding coal is the lower of cost, determined on the last-in-first-out-basis, and replacement value. A provision for obsolescence is made where appropriate. Coal stocks are valued at the three-monthly moving average delivered cost.

1.3 Foreign currencies

Foreign currency liabilities covered by forward exchange contracts are translated to Rand at the protected rates of exchange. Liabilities not covered by forward exchange contracts and foreign assets are translated to Rand at the rates of exchange ruling at the balance sheet date. The currencies most favourable to bondholders are used to translate loans raised in European Units of Account.

Net gains or losses arising from the translation of uncovered foreign loan balances at the rates of exchange ruling at the balance sheet date are deferred and accounted for over the remaining periods of the loans by way of a charge or credit to the income statement, whereas gains or losses on the translation of other uncovered liabilities and assets are recognised immediately as income or expense.

Premiums, net of discounts, on forward exchange cover are deferred and accounted for over the periods of the cover.

1.4 Deferred expenditure

Discount on loans is amortised on a sinking fund basis over the period of each loan through the full provision for redemption of the relevant loans. The amortised portion of the discount is set off against the Redemption Fund and is transferred to the Capital Reserve on repayment of the loans.

Expenditure incurred to secure future fuel supplies is accumulated for amortisation once deliveries commence.

The difference between the book value and the proceeds of stock sold is written off over the remaining life of the original investment in terms of the interest recovery procedure.

1.5 Amortisation of borrowings

A Redemption Fund has been established in terms of the Electricity Act, 1958 and provision for the redemption of local loans is made over periods not exceeding 25 years.

The State President, in terms of Section 10(2) of the Act, has directed that the provisions relating to the establishment of the Redemption Fund should not apply to foreign loans. Provision for repayment of such loans is made over periods not exceeding 25 years.

The Redemption Fund provisions are not applied to revolving credits and short-term advances, as these are made under the provisions of paragraph 1(3) of the Schedule to the Act.

1.6 Operating revenue and expenses

Meters are read on a cyclical basis and sales of electricity are accounted for concurrently. The revenue related to supplies between the date of the last reading and the end of the accounting period is not included in sales, whereas the related expenses are charged as incurred.

1.7 Capitalisation of interest and financing costs

Interest on funds applied in the financing of expenditure and deposits to secure future fuel supplies and construction material is capitalised.

2. Changes in the bases of accounting

2.1 Effective 1 January 1982, it is considered that the difference between the book values and the proceeds of internally held stock sold is a cost of raising external finance and is no longer for the account of the Funds. Such costs are deferred and accounted for as described in Note 1.4.

2.2 From 1 January 1982 the cost of issuing loans and the cost of funds provided for works under construction by way of short term finance has been included in the cost of construction instead of being allocated, in part, to loan charges and has had the effect of decreasing the deficit for the current year by approximately R90 million.

Notes (continued)

	R000			
3. Fixed assets		1982		1981
Assets in commission, at cost				
Land and rights	107 557		84 648	
Buildings and facilities	625 143		509 494	
Production plant	6 956 699		5 728 906	
Total in commission	7 689 399		6 323 048	
Works under construction	5 016 580	12 705 979	3 720 640	10 043 688
Equipment, vehicles and furniture, at cost	263 023		179 892	
less Accumulated depreciation	110 540	152 483	79 912	99 980
		12 858 462		10 143 668
4. Stores, materials and fuel				
Construction material		181 771		133 982
Maintenance and consumable stores		117 004		88 449
Fuel		148 840		83 648
		447 615		306 079
5. Other non-current assets				
Unamortised portion of loan discount		208 905		112 334
Expenditure and deposits to secure future fuel supplies		267 526		176 814
Difference between book value and proceeds of Escom stock sold		468 638		283 525
Other deferred charges		23 425		—
Deferred expenditure		968 494		572 673
Listed investments held for				
Reserve Fund	2 948		3 546	
Redemption Fund	306	3 254	301	3 847
Housing loans to employees secured by first mortgage		106 117		65 449
Amounts owing in respect of reticulation systems sold		4 347		3 957
		1 082 212		645 926
6. Loans and extended credit				
The current portion (excluding revolving credits) included in loans and extended credit amounts to approximately		410 000		381 000

Borrowings in the following currencies are not covered by forward exchange contracts:

	1982	1981
European units of account	5 370 000	6 700 000
Deutsche Marks	3 072 000	6 839 000
Pounds Sterling	1 995 000	3 280 000
US Dollars	90 495 000	14 924 000
French Francs	2 189 000	524 000
Swiss Francs	519 000	1 683 000

In accordance with the provisions of the Electricity Act, stock issued in respect of loans raised, together with interest thereon has a first charge on all the assets of the Commission.

7. Capital reserve		
Loans repaid	745 420	602 196
Production plant financed from Reserve Fund	10 360	10 360
	755 780	612 556
less Cost of commissioned assets scrapped or sold	118 579	107 945
	637 201	504 611

8. Statutory funds

8.1 The statutory funds are credited with amounts as provided for in the Electricity Act. These amounts are invested mainly in Escom Stock and the interest accrues to the respective funds.

The Redemption Fund provides, on a sinking fund basis, for the repayment of local loans.

The Reserve Fund is used, when required, for the replacement of obsolete machinery or plant and generally for the betterment of plant or for or in lieu of insurance, or for exceptional repairs or emergencies.

The Capital Development Fund provides internal financing for capital expansion.

	R000	
	1982	1981
8.2 The Redemption Fund at the year-end is stated as follows:		
Redemption Fund (Schedule 9)	744 696	683 052
Amortised portion of discount on loans	27 208	20 970
	717 488	662 082

		1982		1981	
9. Escom Stock held for	Schedule	Book Value	Nominal Value	Book Value	Nominal Value
Capital Development Fund	3	2 922 914	3 003 907	2 243 244	2 291 488
Reserve Fund	4	124 997	137 927	225 784	248 581
Redemption Fund	5	595 592	647 763	619 743	664 171
Repayment of foreign loans	6	5 060	5 050	8 498	8 524
		3 648 563	3 794 647	3 097 269	3 212 764
Excess of nominal over book value			146 084		115 495

10. Other reserves

	1982	1981
Difference between nominal and book values of Escom Stock held internally	146 084	115 495
Deferred proceeds of reticulation systems sold	4 347	3 957
Unrealised exchange profits on foreign liabilities	38 335	18 824
	188 766	138 276

11. Accumulated surplus/(deficit)

In terms of the Electricity Act, 1958, electricity is supplied at prices calculated to cover operating expenditure, loan amortisation charges and amounts to be set aside to the Capital Development and Reserve Funds. The surplus or deficit in any financial year is carried forward and taken into account when charges are adjusted from time to time.

A detailed analysis of the revenue and charges for each undertaking of the Commission is given in the Electricity Supply Account (Schedule 1).

	R000	
	1982	1981
12. Supplementary information		
Total interest and finance costs	1 305 046	899 314
Amounts capitalised and charged to Redemption Fund (in respect of assets sold)	583 098	295 768
	721 948	603 546
Leasing charges on equipment	9 200	6 000
Commitment fees with regard to overdrafts and other credit facilities	8 100	5 700
Depreciation of equipment, vehicles and furniture	34 000	22 000

	R000	
	1982	1981
13. Commitments		
The Commission is committed for		
13.1 Capital expenditure contracted for, excluding contract price adjustments and general sales tax, amounting to approximately	5 303 000	2 830 000
This expenditure will be financed from external borrowings and from cash generated internally, and is expected to be incurred, as follows:-		
13.2 Payment in respect of housing loans granted to employees of approximately	5 600	3 600
13.3 Payment to the Electricity Supply Commission Pension and Provident Fund, in addition to the normal contributions, of R191 000 p.a. to 1985	573	764
13.4 The purchase of R2 000 000 - 6,75 per cent 1991 Electricity Supply Commission Local Registered Stock at the option of the stockholder for	1 940	1 940

	R000
1983	894 000
1984	885 000
1985	799 000
1986	771 000
1987	661 000
1988 onwards	1 293 000

14. Contingent liabilities

The Commission has indemnified the Electricity Supply Commission Pension and Provident Fund against any loss resulting from the negligence, dishonesty or fraud of the Fund's officers or of the Trustees.

15. Comparative figures have been reclassified to conform with current year classification.

Schedules to the financial statements

Electricity supply account

for the year ended 31 December 1982

Schedule 1

1981		R000			1982				
					Distribution				
Total		Total	Corporate Services	Central Gene-rating	Total	Cape Western	Cape Northern	Border	Orange River
2 140 689	**Electricity sold**	2 695 422	—	—	2 695 422	253 513	102 970	44 728	48 038
710 025	Industrial	874 582	—	—	874 582	83 648	12 484	6 090	3 942
680 031	Bulk	908 289	—	—	908 289	109 341	18 315	36 287	43 875
563 983	Mining	695 392	—	—	695 392	—	56 089	—	—
139 261	Traction	161 893	—	—	161 893	27 208	15 680	—	—
47 389	Domestic and lighting	55 266	—	—	55 266	33 316	402	2 351	221
1 061 051	**Operating expenditure**	1 400 636	34 789	1 145 972	219 875	39 516	13 016	8 425	7 686
645 270	Operations	793 387	1 084	789 466	2 837	346	284	88	88
137 919	Maintenance	222 286	810	164 461	57 015	8 393	2 895	2 221	2 092
4 106	Electricity purchased	3 615	—	3 615	—	—	—	—	—
273 756	Administration and general expenses	381 348	32 895	188 430	160 023	30 777	9 837	6 116	5 506
720 634	**Loan charges**	876 706	(3 269)	636 888	243 087	31 379	19 154	5 040	9 223
603 546	Interest and finance charges	721 948	(3 948)	506 456	219 440	28 936	17 644	4 656	7 805
70 493	Redemption of local loans	106 714	679	82 538	23 497	2 443	1 510	384	1 418
46 595	Repayment of foreign loans	48 044	—	47 894	150	—	—	—	—
900	**Contribution to Reserve Fund**	26 000	—	26 000	—	—	—	—	—
—	**Distribution of costs**	—	(31 520)	(1 808 860)	1 840 380	156 167	63 506	23 693	25 525
—	Corporate burden	—	(31 520)	23 753	7 767	1 072	684	189	205
—	Interconnectors	—	—	2 821	(2 821)	—	—	—	(1 178)
—	Use of circuits	—	—	—	—	—	178	91	(91)
—	Transmission costs	—	—	(38 292)	38 292	17 324	7 508	1 180	1 824
—	Pooled generation	—	—	(1 797 142)	1 797 142	137 771	55 136	22 233	24 765
1 782 585	**Total charges against revenue**	2 303 342	—	—	2 303 342	227 062	95 676	37 158	42 434
358 104	**Operating surplus for the year**	392 080	—	—	392 080	26 451	7 294	7 570	5 604
435 478	**Amount set aside to Capital Development Fund**	450 000	—	—	450 000	32 836	12 486	4 843	6 467
(77 374)	**Surplus/(Deficit) for the year**	(57 920)	—	—	(57 920)	(6 385)	(5 192)	2 727	(863)
(18 365)	**Accumulated surplus/(deficit) at beginning of year**	(95 739)	—	—	(95 739)	(14 072)	764	2 126	(7 919)
(95 739)	**Accumulated surplus/(deficit) at end of year**	(153 659)	—	—	(153 659)	(20 457)	(4 428)	4 853	(8 782)

Undertakings			R000		1981							
					Distribution Undertakings							
Natal	Eastern Transvaal	Rand and O.F.S.	Corporate Services	Central Gene-rating	Total	Cape Western	Cape Northern	Border	Orange River	Natal	Eastern Transvaal	Rand and O.F.S.
435 154	388 255	1 422 764	—	—	2 140 689	197 005	92 637	35 277	38 740	325 615	316 915	1 134 500
149 980	238 540	379 898	—	—	710 025	66 708	9 370	4 754	3 478	111 002	205 032	309 681
219 437	47 241	433 793	—	—	680 031	79 211	14 149	28 729	35 045	161 621	32 314	328 962
10 938	80 332	548 033	—	—	563 983	—	51 189	—	—	9 003	62 020	441 771
47 750	20 649	50 606	—	—	139 261	22 913	16 717	—	—	37 921	16 369	45 341
7 049	1 493	10 434	—	—	47 389	28 173	1 212	1 794	217	6 068	1 180	8 745
37 120	31 436	82 676	14 419	879 750	166 882	30 727	10 991	6 191	5 484	29 950	22 699	60 840
283	486	1 262	782	642 225	2 263	233	199	74	74	416	355	912
9 310	11 720	20 384	712	96 436	40 771	6 637	2 378	1 606	1 363	6 261	7 973	14 553
—	—	—	—	4 106	—	—	—	—	—	—	—	—
27 527	19 230	61 030	12 925	136 983	123 848	23 857	8 414	4 511	4 047	23 273	14 371	45 375
27 101	38 318	112 872	8 738	494 800	217 096	28 475	19 938	5 744	5 714	27 727	35 277	94 221
24 715	35 421	100 263	7 869	399 834	195 843	25 558	18 014	5 261	5 168	24 938	31 700	85 204
2 236	2 897	12 609	869	48 522	21 102	2 917	1 924	483	546	2 638	3 577	9 017
150	—	—	—	46 444	151	—	—	—	—	151	—	—
—	—	—	—	900	—	—	—	—	—	—	—	—
308 385	252 543	1 010 561	(23 157)	(1 375 450)	1 398 607	115 933	51 807	17 739	19 715	229 079	199 078	765 256
949	1 223	3 445	(23 157)	17 051	6 106	854	565	158	169	757	933	2 670
—	(171)	(1 472)	—	2 970	(2 970)	—	—	—	(1 202)	—	(182)	(1 586)
—	(223)	45	—	—	—	—	296	91	(91)	—	—	(296)
9 826	84	546	—	(35 254)	35 254	15 408	7 451	1 011	1 813	8 951	33	587
297 610	251 630	1 007 997	—	(1 360 217)	1 360 217	99 671	43 495	16 479	19 026	219 371	198 294	763 881
372 606	322 297	1 206 109	—	—	1 782 585	175 135	82 736	29 674	30 913	286 756	257 054	920 317
62 548	65 958	216 655	—	—	358 104	21 870	9 901	5 603	7 827	38 859	59 861	214 183
74 768	65 781	252 819	—	—	435 478	30 986	12 667	4 507	6 346	69 073	67 678	244 221
(12 220)	177	(36 164)	—	—	(77 374)	(9 116)	(2 766)	1 096	1 481	(30 214)	(7 817)	(30 038)
(2 393)	(15 348)	(58 897)	—	—	(18 365)	(4 956)	3 530	1 030	(9 400)	27 821	(7 531)	(28 859)
(14 613)	(15 171)	(95 061)	—	—	(95 739)	(14 072)	764	2 126	(7 919)	(2 393)	(15 348)	(58 897)

Borrowings

at 31 December 1982

Schedule 2

Loan	R000	Per cent	Repayment date/s	R000 Out-standing	1981
Internal registered stock					
36	20 000	5,125	1977/82	—	20 000
37	22 000	5,125	1976/82	—	22 000
38	24 000	5,125	1977/83	24 000	24 000
39	24 000	5,375	1978/83	24 000	24 000
40	22 000	5,625	1979/84	22 000	22 000
42	20 000	5,375	1979/84	20 000	20 000
43	16 000	5,375	1979/85	16 000	16 000
44	16 000	5,375	1980/85	16 000	16 000
45	17 000	5,5	1980/86	17 000	17 000
46	16 000	5,875	1981/86	16 000	16 000
47	18 000	6,25	1981/86	18 000	18 000
49	18 000	6,125	1982/87	18 000	18 000
50	22 000	5,25	1982/87	22 000	22 000
51	29 000	5	1983/88	29 000	29 000
52	40 000	5	1980/83	40 000	40 000
53	20 000	5	1982/84	20 000	20 000
54	20 000	5,5	1982/84	20 000	20 000
55	32 000	5,875	1983/85	32 000	32 000
56	38 000	6,5	1983/85	38 000	38 000
58	30 000	6,5	1989/91	30 000	30 000
60	35 000	6,75	1991	35 000	35 000
61	35 000	6,875	1992	35 000	35 000
64	12 000	6,5	1992	12 000	12 000
65	37 000	6,875	1992	37 000	37 000
70	10 000	6,5	1993	10 000	10 000
71	70 000	6,875	1993	70 000	70 000
75	22 000	6,5	1993	22 000	22 000
76	48 000	6,875	1993	48 000	48 000
78	20 000	6,5	1994	20 000	20 000
79	30 000	6,875	1994	30 000	30 000
81	10 000	6,5	1994	10 000	10 000
82	25 000	6,875	1994	25 000	25 000
83	18 000	7,5	1995	18 000	18 000
84	3 000	7	1995	3 000	3 000
85	35 000	8,75	1995	35 000	35 000
86	10 000	8,5	1995	10 000	10 000
87	45 000	9,25	1996	45 000	45 000
88	10 000	8,75	1996	10 000	10 000
89	20 000	9,25	1996	20 000	20 000
90	30 000	9,25	1996	30 000	30 000
91	10 000	8,75	1996	10 000	10 000
92	20 000	9,25	1997	20 000	20 000
93	22 000	9,125	1997	22 000	22 000
94	5 000	8,75	1997	5 000	5 000
95	25 000	8,5	1997	25 000	25 000
96	28 000	8,25	1997	28 000	28 000
97	7 000	8	1997	7 000	7 000
98	45 000	8,25	1997	45 000	45 000
99	30 000	8,25	1998	30 000	30 000
100	20 000	8,375	1998	20 000	20 000
101	5 000	8	1998	5 000	5 000
103	24 000	8	1998	24 000	24 000
104	6 000	7,625	1998	6 000	6 000
106	45 000	8	1998	45 000	45 000
107	27 000	9	1999	27 000	27 000
108	3 000	8,5	1999	3 000	3 000
110	30 000	9,5	1999	30 000	30 000
111	11 000	10,75	2000	8 527	11 000
Carried forward				1 307 527	1 352 000

Loan	R000	Per cent	Repayment date/s	R000 Out-standing	1981
Brought forward				1 307 527	1 352 000
112	29 000	10,75	2000	29 000	29 000
113	40 000	10,75	2000	40 000	40 000
114	25 000	10,75	2000	25 000	25 000
115	5 000	10,25	2000	5 000	5 000
116	30 000	10,75	2000	30 000	30 000
117	5 000	10,875	1985	5 000	5 000
118	55 000	11	2000	55 000	55 000
119	10 000	10,75	1980/95	9 614	10 000
120	4 000	11	1986	4 000	4 000
121	40 000	11,4	2001	40 000	40 000
122	6 000	11,1	1981/96	3 299	6 000
123	40 000	12,75	1996	40 000	40 000
124	10 000	12,65	1986	10 000	10 000
126	40 000	12,5	2001	40 000	40 000
127	150 000	12,6	1999	150 000	150 000
128	20 000	12,45	1987	20 000	20 000
129	80 000	12,15	1982	—	80 000
130	50 000	11,5	1989	50 000	50 000
131	250 000	11,15	2002	250 000	250 000
132	250 000	11,75	2002	250 000	250 000
133	60 000	10,9	1988	60 000	60 000
134	170 000	10,75	2003	170 000	170 000
135	270 000	11,3	2003	270 000	270 000
136	7 800	7,25	1985/87	7 800	7 800
137	60 000	9,7	1986	60 000	60 000
138	150 000	9,7	2003	150 000	150 000
139	340 000	10,25	2003	340 000	340 000
140	120 000	8	1986	120 000	120 000
141	130 000	8,65	2004	130 000	130 000
142	350 000	9,15	2004	350 000	350 000
143	50 000	7,55	1985	50 000	50 000
144	130 000	9,05	2005	130 000	130 000
145	270 000	9,55	2005	270 000	270 000
146	70 000	8,1	1987	70 000	70 000
147	100 000	9,05	1992	100 000	100 000
148	100 000	9,05	2005	100 000	100 000
149	230 000	9,55	2005	230 000	230 000
150	150 000	10,25	1990	150 000	150 000
151	275 000	10,95	2004	275 000	275 000
152	100 000	12,8	1993	100 000	100 000
153	400 000	12,95	2006	400 000	400 000
154	250 000	10	2007	250 000	250 000 (a)
154b	250 000	10	2007	250 000	—
155	700 000	13,2	2007	700 000	700 000 (b)
156	300 000	15,15	1987	300 000	—
157	650 000	14,25	2008	650 000	—
158	250 000	9,25	1994	250 000 (c)	—
159	800 000	12	2008	800 000 (d)	—
				9 096 240	6 973 800
Less payable by stockholders				53 459	31 136
(a) 154 not later than 15 January 1982				—	28 860
(b) 155 not later than 15 January 1982				—	2 276
(c) 158 not later than 13 January 1983				46 792	—
(d) 159 not later than 13 January 1983				6 667	—
Carried forward				9 042 781	6 942 664

Borrowings (continued)

Loan	Foreign currency		R000	Per cent	Repayment date/s	R000 Out-standing	1981
Brought forward						9 042 781	6 942 664
Foreign bond issues							
004	DM	100 000 000	(18 034)	6,5	1974/83	1 803	3 607
005	DM	100 000 000	(19 583)	8,5	1976/85	5 875	7 833
007	DM	100 000 000	(19 556)	8	1977/86	7 822	9 778
009	UA	20 000 000	(14 210)	8,25	1972/86	11 764	14 522
013	US$	20 000 000	(14 304)	8,5	1974/86	4 649	5 722
017	DM	100 000 000	(25 132)	6,25	1977/87	12 566	15 079
020	SF	50 000 000	(8 293)	6,5	1979/88	7 765	8 293
023	DM	100 000 000	(24 975)	7	1979/88	15 139	17 636
027	US$	15 000 000	(10 080)	9,25	1975/89	6 720	7 392
037	US$	30 000 000	(26 119)	10,25	1979/83	535	4 453
123	DM	50 000 000	(24 102)	9	1984/87	23 805	21 407
129	DM	100 000 000	(37 682)	9,25	1987	45 482	38 695
148	DM	100 000 000	(47 330)	9,5	1990	48 783	—
Direct placings							
008	DM	10 000 000	(2 054)	8	1977/86	822	1 027
010	DM	20 000 000	(3 644)	8,5	1977/86	1 457	1 822
011	DM	20 000 000	(4 016)	8,5	1977/86	1 607	2 008
012	DM	40 000 000	(9 437)	8,5	1976/83	1 180	2 359
029	US$	35 000 000	(23 839)	17,4375	1975/82	—	12 062
032	SF	30 000 000	(8 003)	9	1982	—	8 003
082	DM	101 500 000	(41 648)	7,6875	1983	41 648	41 648
088/01	SF	5 000 000	(2 648)	5	1980/83	760	1 520
088/02	SF	4 500 000	(2 191)	5,5	1981/84	1 088	1 783
090	SF	120 000 000	(68 278)	6,25	1982	—	68 650
091	DM	40 000 000	(20 192)	8,75	1981/84	20 192	20 192
092	DM	20 000 000	(10 096)	8	1984	10 096	10 096
093	DM	68 500 000	(30 690)	7,9375	1983	30 690	30 690
094	SF	9 000 000	(4 616)	5	1983	5 262	5 262
094A	DM	17 000 000	(7 747)	10,3750	1983	8 559	8 559
095	DM	40 000 000	(18 687)	7,7	1982/83	9 374	18 748
096	SF	9 000 000	(4 644)	4,25	1982	—	4 661
097	DM	60 000 000	(27 641)	9,6250	1985	31 481	31 481
098	SF	60 000 000	(30 071)	5,5	1984	35 457	35 457
099	DM	23 000 000	(11 087)	8	1984/85	15 816	13 199
100	DM	13 144 937	(5 894)	9,375	1984	6 549	6 549
102	SF	8 500 000	(4 163)	4,25	1983	4 741	4 741
105	SF	9 000 000	(5 230)	5	1983	5 229	5 229
106	SF	9 000 000	(5 003)	5	1982	—	5 003
107	DM	20 000 000	(10 215)	8,75	1984	10 214	10 214
108	DM	20 000 000	(10 160)	8,75	1984	10 160	10 160
Carried forward						9 487 871	7 458 204

Borrowings (continued)

Loan	Foreign currency		R000	Per cent	Repayment date/s	Out-standing	R000 1981
Brought forward						9 487 871	7 458 204
Direct placings (continued)							
110	US$	33 000 000	(30 231)	13,75	1983/84	24 450	24 450
111A	US$	13 000 000	(11 845)	11,0625	1983/84	14 728	12 896
111B	US$	5 000 000	(4 648)	11,3125	1983/86	5 664	4 960
112	US$	12 000 000	(10 097)	16,25	1982	—	11 272
113	SF	9 500 000	(5 601)	5,25	1983	5 601	5 601
116	SF	100 000 000	(47 590)	6,75	1984	53 845	48 508
119	US$	25 000 000	(16 716)	11	1984/85	16 716	16 716
120	US$	200 000 000	(188 044)	13,75	1984/87	173 050	173 050
122	DM	80 000 000	(34 312)	11	1985/87	29 908	34 312
124	SF	28 500 000	(14 867)	6,5	1983	12 031	10 746
124B	SF	21 500 000	(11 215)	6,5	1983	12 080	10 239
125	US$	50 000 000	(34 648)	13,75	1985	34 106	33 829
127	US$	150 000 000	(132 478)	10,6875	1985/87	132 478	88 331
128	SF	50 000 000	(26 082)	6,125	1983	27 420	23 772
130	US$	35 000 000	(30 783)	15,3125	1984/87	30 783	—
131	US$	25 000 000	(21 779)	10,875	1986/87	21 779	—
132	US$	50 000 000	(33 463)	11	1984/85	33 463	33 463
133	SF	50 000 000	(24 048)	6,5	1984	28 234	25 952
135	US$	30 000 000	(21 873)	11,25	1985/86	21 873	21 873
137	SF	100 000 000	(48 092)	6,75	1985	48 092	48 092
138	US$	100 000 000	(69 232)	12,125	1987/88	69 232	69 232
139	DM	100 000 000	(46 315)	7,75	1986/88	46 702	—
140	US$	20 000 000	(18 759)	10,6875	1986/88	18 759	—
141	US$	50 000 000	(51 104)	10,5	1987/89	51 104	—
143	US$	100 000 000	(103 050)	14,1875	1987/89	103 050	—
144	SF	30 000 000	(17 259)	8,25	1985	18 181	—
152	SF	60 000 000	(33 188)	7,625	1986	33 188	—
153	US$	65 796 000	(76 179)	11	1989	70 817	—
Total borrowings						10 625 205	8 155 498

Investments of the Capital Development Fund

at 31 December 1982 — Schedule 3

Description	Loan	R000 Nominal value	R000 Book value
Escom internal registered stock			
5,125 per cent	1977/83	38	1 488	1 480
5,375 per cent	1978/83	39	5 053	4 824
5,625 per cent	1979/84	40	1 699	1 626
5,375 per cent	1979/84	42	1 306	1 218
5,375 per cent	1979/85	43	647	560
5,375 per cent	1980/85	44	1 083	939
5,500 per cent	1980/86	45	612	556
5,875 per cent	1981/86	46	333	290
6,250 per cent	1981/86	47	2 199	1 896
6,125 per cent	1982/87	49	325	275
5,250 per cent	1982/87	50	73	58
5,000 per cent	1980/83	52	1 888	1 861
5,000 per cent	1982/84	53	1 233	1 163
5,875 per cent	1983/85	55	1 893	1 697
6,500 per cent	1983/85	56	12 730	11 286
6,750 per cent	1991	60	515	330
6,875 per cent	1992	61	1 179	789
6,500 per cent	1993	70	617	418
6,875 per cent	1993	71	603	397
6,500 per cent	1993	75	1 402	877
6,875 per cent	1993	76	1 736	1 153
6,500 per cent	1994	78	385	259
6,875 per cent	1994	79	1 314	867
6,875 per cent	1994	82	195	160
7,500 per cent	1995	83	988	756
8,750 per cent	1995	85	6 294	4 583
8,500 per cent	1995	86	715	573
9,250 per cent	1996	87	5 600	4 236
8,750 per cent	1996	88	850	602
9,250 per cent	1996	89	1 893	1 394
9,250 per cent	1996	90	3 591	2 711
8,750 per cent	1996	91	2 212	1 696
9,250 per cent	1997	92	3 480	2 710
9,125 per cent	1997	93	1 628	1 500
8,750 per cent	1997	94	254	214
8,500 per cent	1997	95	8 631	6 167
8,250 per cent	1997	96	5 120	3 566
8,000 per cent	1997	97	502	316
8,250 per cent	1997	98	2 016	1 751
8,375 per cent	1998	100	769	679
8,000 per cent	1998	101	30	24
8,000 per cent	1998	103	1 222	788
8,000 per cent	1998	106	332	281
9,000 per cent	1999	107	748	625
8,500 per cent	1999	108	575	471
9,500 per cent	1999	110	2 111	1 808
10,750 per cent	2000	111	2 956	2 897
10,750 per cent	2000	112	4 683	3 766
Carried forward			97 708	79 093

Description	Loan		R000 Nominal value	R000 Book value
Brought forward			97 708	79 093
10,750 per cent	2000	113	1 525	1 438
10,750 per cent	2000	114	3 734	3 103
10,250 per cent	2000	115	18	17
10,750 per cent	2000	116	11 240	9 266
10,875 per cent	1985	117	265	270
11,000 per cent	2000	118	1 267	1 143
10,750 per cent	1995	119	2 963	2 832
11,000 per cent	1986	120	100	100
11,400 per cent	2001	121	1 195	1 152
11,100 per cent	1996	122	60	60
12,750 per cent	1996	123	173	183
12,500 per cent	2001	126	2 458	2 291
12,600 per cent	1999	127	10 399	9 692
12,450 per cent	1987	128	3	3
11,150 per cent	2002	131	129 610	123 417
11,750 per cent	2002	132	59 511	58 343
10,900 per cent	1988	133	6 771	7 167
10,750 per cent	2003	134	9 039	7 183
11,300 per cent	2003	135	165 158	162 865
9,700 per cent	2003	137	17 708	17 910
9,700 per cent	2003	138	7 018	6 063
10,250 per cent	2003	139	81 414	77 335
8,000 per cent	1986	140	22 446	21 170
8,650 per cent	2004	141	2 996	2 049
9,150 per cent	2004	142	3 366	2 706
7,550 per cent	1985	143	14 315	13 106
9,050 per cent	2005	144	6 973	5 607
9,550 per cent	2005	145	6 102	4 711
8,100 per cent	1987	146	6 060	6 015
9,050 per cent	1992	147	4 100	3 519
9,050 per cent	2005	148	286	199
9,550 per cent	2005	149	14 236	11 840
10,250 per cent	1990	150	13 521	12 595
10,950 per cent	2004	151	203 709	202 631
12,950 per cent	2006	153	85 788	85 853
10,000 per cent	2007	154	139 374	120 457
13,200 per cent	2007	155	564 150	564 148
15,150 per cent	1987	156	128 637	129 380
14,250 per cent	2008	157	596 584	596 586
9,250 per cent	1994	158	10 000	8 179
12,000 per cent	2008	159	571 927	561 237
Total (Note 9)			3 003 907	2 922 914
Interest accrued				61 464
				2 984 378
Market value			3 139 651	

Investments of the Reserve Fund

at 31 December 1982

Schedule 4

Description		Loan	Nominal value R000	Book value R000
Escom internal registered stock				
5,125 per cent	1977/83	38	8 005	7 965
5,375 per cent	1978/83	39	8 989	8 763
5,625 per cent	1979/84	40	10 617	10 264
5,375 per cent	1979/84	42	6 455	6 174
5,375 per cent	1979/85	43	4 835	4 507
5,375 per cent	1980/85	44	1 884	1 700
5,875 per cent	1981/86	46	362	321
6,250 per cent	1981/86	47	112	96
6,125 per cent	1982/87	49	126	105
5,250 per cent	1982/87	50	488	392
5,000 per cent	1980/83	52	17 350	17 144
5,000 per cent	1982/84	53	4 220	3 965
5,500 per cent	1982/84	54	4 056	3 790
6,500 per cent	1983/85	56	1 933	1 780
6,500 per cent	1989/91	58	149	129
6,750 per cent	1991	60	13	11
6,500 per cent	1992	64	17	12
6,875 per cent	1992	65	512	491
6,500 per cent	1993	70	24	16
6,875 per cent	1993	71	561	526
6,500 per cent	1993	75	46	29
6,875 per cent	1993	76	99	83
6,875 per cent	1994	79	31	23
6,500 per cent	1994	81	42	31
6,875 per cent	1994	82	37	26
7,500 per cent	1995	83	515	510
7,000 per cent	1995	84	28	22
8,750 per cent	1995	85	975	952
8,750 per cent	1996	88	4	3
8,750 per cent	1996	91	9	6
9,250 per cent	1997	92	2	1
9,125 per cent	1997	93	65	51
8,750 per cent	1997	94	57	55
8,500 per cent	1997	95	49	37
8,250 per cent	1997	96	33	24
8,000 per cent	1998	103	11	8
9,500 per cent	1999	110	14	11
10,250 per cent	2000	115	13	11
10,750 per cent	2000	116	16	14
10,875 per cent	1985	117	155	162
Carried forward			72 909	70 210

Description		Loan	Nominal value R000	Book value R000
Brought forward			72 909	70 210
11,000 per cent	2000	118	2	2
10,750 per cent	1995	119	2	2
11,000 per cent	1986	120	379	365
11,100 per cent	1996	122	174	174
11,500 per cent	1989	130	347	329
9,700 per cent	1986	137	634	615
8,000 per cent	1986	140	1 579	1 412
7,550 per cent	1985	143	8 164	8 155
8,100 per cent	1987	146	3 156	2 365
9,250 per cent	1994	158	50 581	41 368
Total (Note 9)			137 927	124 997
Municipal stock				
Cape Town				
5,375 per cent	1980/85	203	600	575
5,500 per cent	1981/86	208	850	800
5,500 per cent	1983/88	219	610	555
Durban				
5,000 per cent	1984	84	500	481
Germiston				
5,375 per cent	1985	16	150	142
Pretoria				
5,500 per cent	1980/83	56	200	198
6,500 per cent	1981/84	59	200	197
External investments			3 110	2 948
				127 945
Interest accrued				2 073
				130 018
Market value			126 812	

Investments of the Redemption Fund

at 31 December 1982

Schedule 5

Description		Loan	R000 Nominal value	R000 Book value
Escom internal registered stock				
5,125 per cent	1977/83	38	2 629	2 613
5,375 per cent	1978/83	39	158	154
5,625 per cent	1979/84	40	1 627	1 582
5,375 per cent	1979/84	42	3 986	3 806
5,375 per cent	1979/85	43	6 140	5 780
5,375 per cent	1980/85	44	5 392	4 799
5,500 per cent	1980/86	45	8 241	7 174
5,875 per cent	1981/86	46	6 638	5 711
6,250 per cent	1981/86	47	3 030	2 625
6,125 per cent	1982/87	49	704	568
5,250 per cent	1982/87	50	24	17
5,000 per cent	1983/88	51	5 592	4 272
5,000 per cent	1980/83	52	1 421	1 405
5,000 per cent	1982/84	53	3 951	3 699
5,500 per cent	1982/84	54	435	393
5,875 per cent	1983/85	55	3 547	3 309
6,500 per cent	1983/85	56	1 567	1 487
6,500 per cent	1989/91	58	688	483
6,750 per cent	1991	60	874	597
6,875 per cent	1992	61	6	4
6,500 per cent	1992	64	436	356
6,875 per cent	1992	65	413	282
6,875 per cent	1993	71	14	10
6,500 per cent	1993	75	1	—
6,500 per cent	1994	78	682	556
6,875 per cent	1994	79	549	429
6,500 per cent	1994	81	1 339	1 102
6,875 per cent	1994	82	3 238	1 835
7,500 per cent	1995	83	1 711	1 206
7,000 per cent	1995	84	1 712	1 146
8,750 per cent	1995	85	7 765	6 992
8,500 per cent	1995	86	3 007	2 702
9,250 per cent	1996	87	1 036	782
8,750 per cent	1996	88	1 659	1 462
9,250 per cent	1996	89	5 676	4 550
9,250 per cent	1996	90	1 806	1 568
8,750 per cent	1996	91	4 713	4 005
9,250 per cent	1997	92	461	360
9,125 per cent	1997	93	3 888	3 026
8,750 per cent	1997	94	1 793	1 392
8,500 per cent	1997	95	864	676
8,250 per cent	1997	96	731	568
8,000 per cent	1997	97	1 041	663
8,250 per cent	1997	98	1 837	1 294
8,250 per cent	1998	99	1 849	1 269
8,375 per cent	1998	100	2 534	2 059
8,000 per cent	1998	101	1 065	783
8,000 per cent	1998	103	25	13
7,625 per cent	1998	104	1 953	1 338
8,000 per cent	1998	106	3 658	2 404
9,000 per cent	1999	107	2 696	2 178
8,500 per cent	1999	108	1 263	1 026
9,500 per cent	1999	110	7 770	5 912
10,750 per cent	2000	111	1 620	1 767
10,750 per cent	2000	112	565	506
10,750 per cent	2000	113	9 034	7 542
10,750 per cent	2000	114	633	514
10,250 per cent	2000	115	1 241	1 058
Carried forward			138 928	115 809

Description		Loan	R000 Nominal value	R000 Book value
Brought forward			138 928	115 809
10,750 per cent	2000	116	2 612	2 269
10,875 per cent	1985	117	59	58
11,000 per cent	2000	118	6 167	5 481
10,750 per cent	1995	119	1 569	1 508
11,000 per cent	1986	120	195	184
11,400 per cent	2001	121	4 345	4 206
11,100 per cent	1996	122	649	643
12,750 per cent	1996	123	1 224	1 218
12,650 per cent	1986	124	211	206
12,500 per cent	2001	126	7	10
12,600 per cent	1999	127	15 950	15 263
12,450 per cent	1987	128	633	637
11,500 per cent	1989	130	9 893	9 289
11,150 per cent	2002	131	26 179	27 125
11,750 per cent	2002	132	63	63
10,900 per cent	1988	133	569	528
10,750 per cent	2003	134	9 385	8 002
11,300 per cent	2003	135	3 905	3 882
9,700 per cent	2003	137	813	768
9,700 per cent	2003	138	13 610	11 220
10,250 per cent	2003	139	55	47
8,000 per cent	1986	140	61 928	58 068
8,650 per cent	2004	141	95	77
9,150 per cent	2004	142	14	9
7,550 per cent	1985	143	9 923	9 803
9,050 per cent	2005	144	88	73
9,550 per cent	2005	145	92	70
8,100 per cent	1987	146	6 737	6 061
9,050 per cent	1992	147	22	18
9,050 per cent	2005	148	2 174	1 881
10,250 per cent	1990	150	1 667	1 619
10,950 per cent	2004	151	13 613	13 586
12,800 per cent	1993	152	18 868	18 572
12,950 per cent	2006	153	30	27
10,000 per cent	2007	154	24	18
15,150 per cent	1987	156	241	241
9,250 per cent	1994	158	77 419	63 317
12,000 per cent	2008	159	217 807	213 736
Total (Note 9)			647 763	595 592
Municipal stock				
Cape Town				
5,375 per cent	1980/85	203	300	287
Germiston				
5,375 per cent	1985	16	20	19
External investments			320	306
				595 898
Interest accrued				13 058
				608 956
Market value			606 047	

Investments in Escom foreign loan bonds

at 31 December 1982 — Schedule 6

Description			Loan	Foreign currency		R000 Nominal value	R000 Book value
German	6,5 per cent	1968/83	FF004	DM	604 000	109	97
German	8,5 per cent	1970/85	FF005	DM	635 000	124	115
German	8 per cent	1971/86	FF007	DM	2 618 000	512	451
German	6,25per cent	1972/87	FF017	DM	3 559 000	894	737
Swiss	6,5 per cent	1973/88	FF020	SF	2 900 000	481	479
German	7 per cent	1973/88	FF023	DM	4 041 000	1 009	842
Euro-dollar	9,25per cent	1974/89	FF027	$	804 000	540	469
Euro-dollar	10,25per cent	1975/83	FF037	$	20 000	18	17
German	8 per cent	1978/84	FF092	DM	135 000	68	65
German	8,75per cent	1979/84	FF108	DM	145 000	74	72
German	9,25per cent	1980/87	FF129	DM	2 750 000	1 221	1 716
Total (Note 9)						5 050	5 060
Interest accrued							184
							5 244
Market value					5 116		

Capital Development Fund account

for the year ended 31 December 1982 — Schedule 7

	R000			
	1982		1981	
Amounts set aside		450 000		435 478
Cape Western Undertaking	32 836		30 986	
Cape Northern Undertaking	12 486		12 667	
Border Undertaking	4 843		4 507	
Orange River Undertaking	6 467		6 346	
Natal Undertaking	74 768		69 073	
Eastern Transvaal Undertaking	65 781		67 678	
Rand and Orange Free State Undertaking	252 819		244 221	
Central Generating Undertaking	—		—	
Investment income		350 163		235 049
Interest earned	350 163		233 720	
Adjustments of investment values (see Note 2)	—		1 329	
Balance at beginning of year		2 556 860		1 886 333
Balance at end of year		3 357 023		2 556 860

Reserve Fund account

for the year ended 31 December 1982 — Schedule 8

	R000			
	1982		1981	
Amounts set aside		26 000		900
Cape Western Undertaking	—		—	
Cape Northern Undertaking	—		—	
Border Undertaking	—		—	
Orange River Undertaking	—		—	
Natal Undertaking	—		—	
Eastern Transvaal Undertaking	—		—	
Rand and Orange Free State Undertaking	—		—	
Central Generating Undertaking	26 000		900	
Investment income		15 216		19 966
Interest earned	15 216		15 424	
Adjustments of investment values (see Note 2)	—		4 542	
		41 216		20 866
Expenditure		36 537		31 216
Cape Western Undertaking	101		916	
Cape Northern Undertaking	615		346	
Border Undertaking	(5)		24	
Orange River Undertaking	21		236	
Natal Undertaking	117		(108)	
Eastern Transvaal Undertaking	469		255	
Rand and Orange Free State Undertaking	211		648	
Central Generating Undertaking	35 008		28 899	
		4 679		(10 350)
Balance at beginning of year		213 731		224 081
Balance at end of year		218 410		213 731

Redemption Fund account

for the year ended 31 December 1982

Schedule 9

	R000			
	1982		1981	
Amounts contributed		106 036		69 624
Cape Western Undertaking	2 443		2 917	
Cape Northern Undertaking	1 510		1 924	
Border Undertaking	384		483	
Orange River Undertaking	1 418		546	
Natal Undertaking	2 236		2 638	
Eastern Transvaal Undertaking	2 897		3 577	
Rand and Orange Free State Undertaking	12 609		9 017	
Central Generating Undertaking	82 539		48 522	
Other contributions		679		869
Proceeds of sales of fixed property		6 174		2 758
Investment income		76 315		62 510
Interest earned	76 315		60 415	
Adjustments of investment values (see Note 2)	—		2 095	
		189 204		135 761
Repayment of internal registered stock		127 560		36 500
5,125 per cent 1981 (Loan 35)	—		16 500	
12,450 per cent 1981 (Loan 125)	—		20 000	
5,125 per cent 1982 (Loan 36)	20 000		—	
5,125 per cent 1982 (Loan 37)	22 000		—	
10,750 per cent 2000 (Loan 111)	2 473		—	
10,750 per cent 1980/95 (Loan 119)	386		—	
11,100 per cent 1981/96 (Loan 122)	2 701		—	
12,150 per cent 1982 (Loan 129)	80 000		—	
		61 644		99 261
Balance at beginning of year		683 052		583 791
Balance at end of year (Note 8.2)		744 696		683 052

Statistics

1. Power stations: principal equipment installed

at 31 December 1982

Power station	*Station capacity			Boilers		Main turbo-generators		Steam conditions at turbine inlet	
	Installed rating		Assigned sent-out rating MW	No.	Maximum continuous rating each kg/s	No.	Nominal rating each MW	Pressure MPa (abs)	Temperature °C
	Boilers kg/s	Generators MW							
Coal-fired stations									
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
Colenso	90,8	50		4	22,7	2	25	2,0	385
	50,4	30		2	25,2	1	30	2,0	385
	141,2	80	70	6		3			
Duvha	2 028,0	2 400	2 300	4	507,0	4	600	16,1/3,55	535/535
Grootvlei	1 071,0	1 200		5	214,2	6	200	10,3	538
	230,6			1	230,6			10,3	538
	1 301,6	1 200	1 130	6		6			
Hendrina	2 142,0	2 000	1 900	10	214,2	10	200	10,3	538
Hex River	100,8	60		4	25,2	3	20	4,2	427
	69,2	60		2	34,6	2	30	4,2	482
	170,0	120	111	6		5			
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	544,8	396		24	22,7	12	33	2,5	390
		**28							
	544,8	424	325	24		12			
Komati	567,0	500		5	113,4	5	100	8,4	510
	566,8	500		4	141,7	4	125	8,4	510
	1 133,8	1 000	906	9		9			
Kriel	2 640,0	3 000	2 850	6	440,0	6	500	16,0/3,17	510/510
Matla	2 541,0	3 000	2 875	5	508,2	5	600	16,1/3,68	535/535
Salt River	328,0	120		10	32,8	4	30	4,2	482
		120				2	60	4,2	482
	328,0	240	228	10		6			
Taaibos	584,0	480	440	8	73,1	8	60	4,2	441
Umgeni	181,6	120		8	22,7	4	30	4,2	454
	164,0	120		5	32,8	2	60	4,2	454
	345,6	240	222	13		6			
Vaal	430,2	297		18	23,9	9	33	2,5	427
		***21							
	430,2	318	270	18		9			
Vierfontein	503,5	360	336	19	26,5	12	30	4,2	441
West Bank	85,6	45		4	21,4	3	15	2,9	427
	53,0	40		2	26,5	2	20	2,9	427
	138,6	85	80	6		5			
Wilge	62,8			4	15,7				
	201,6	60		4	50,4	2	30	4,2	454
	73,1	180		1	73,1	3	60	4,2	454
	337,5	240	221	9		5			

Power station	Station capacity			Boilers		Main turbo-generators		Steam conditions at turbine inlet	
	Installed rating		Assigned sent-out rating MW	No.	Maximum continuous rating each kg/s	No.	Nominal rating each MW	Pressure MPa (abs)	Temperature °C
	Boilers kg/s	Generators MW							
Total, coal-fired stations	20 244,2	19 867	18 641	186		138			
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 stations		540	540			6			
Pumped-storage station									
Drakensberg		1 000	1 000			4	250		
Total, pumped-storage station		1 000	1 000			4			
Total, all Escom	20 244,2	21 749	20 523	186		154			

Other power sources

	Firm contractual capacity MW
Cahora Bassa	1 373

*Difference between installed and sent-out rating reflects the auxiliary power consumption.
**Four 7 MW house sets installed at Klip.
***Three 7 MW house sets installed at Vaal.

2. Immovable property and rights acquired

during the year ending 31 December 1982

Undertakings	Immovable property acquired for considerations amounting to	Servitudes and other interest in or over land or other property acquired or hired
Cape Western Undertaking	R3 233 908	R464 776
Cape Northern Undertaking	R569 673	R15 629
Orange River Undertaking	R432 101	R105 127
Border Undertaking	R216 100	R52 563
Natal Undertaking	R1 230 606	R354 914
Eastern Transvaal Undertaking	R250 236	R183 609
Rand and O.F.S. Undertaking	R7 138 765	R788 364
Head Office	R52 822 506	R483 512

3. Transmission system: principal equipment installed

Circuit kilometres (excluding service connections on reticulation systems) of lines and cables and capacity of transformers in service at 31 December 1982

	Transmission lines								
Undertaking	533 kV DC (Mono-polar)	400 kV	275 kV	220 kV	165 kV to 132 kV	88 kV to 33 kV	22 kV and below	Total	Capacity of transformers MVA
Border				160	169	905	3 190	4 424	1 717
Cape Northern		196	580	361	2 442	1 134	5 716	10 429	4 208
Cape Western		24			1 378	2 370	12 282	16 054	6 600
Eastern Transvaal			1 405		2 395	1 631	16 444	21 875	15 050
Natal		194	1 459		1 328	3 621	14 103	20 705	12 344
Orange River				495	196	869	2 726	4 286	3 884
Rand and O.F.S.		436	2 473		4 549	10 044	23 904	41 406	54 641
Central Generating	1 030	7 279	1 462	108	49	57	33	8 988	37 687
Total	1 030	8 129	7 379	1 124	12 506	20 631	78 398	128 167	136 131

	Underground cables						Total
Border						141	141
Cape Northern						40	40
Cape Western				22	132	4 100	4 254
Eastern Transvaal						283	283
Natal					3	881	884
Orange River						6	6
Rand and O.F.S.				56	190	1 465	1 711
Total				78	325	6 916	7 319

	Total lines and cables						Total	Total capacity of transformers MVA
1982	1 030	8 129	8 503	*12 584	*20 956	85 314	136 516	136 131
1981	1 030	7 880	7 118	12 872	21 665	77 998	128 563	126 638
Additions		249	1 385	—288	—709	7 316	7 953	9 493

*Revised figures.

4. Power station operating statistics

during the year ending 31 December 1982

Power station	Sent-out rating on 31 December 1982 MW	Energy sent out million kW.h	Maximum demands 1 hour sent out MW	Station load factors % *A	Station load factors % **B	Overall thermal efficiency % Sent out	****Availability %	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
Coal-fired stations											
Arnot	1 980	12 703	2 016	73,2	89,2	33,2	82,1	6 326 239	0,498	21,69	10,85
Camden	1 520	8 859	1 425	66,5	91,7	29,0	72,6	4 720 577	0,533	23,28	12,42
Colenso	70	188	77	30,7	33,8	18,8	90,7	141 995	0,756	25,37	19,16
Duvha	***2 300	13 885	2 358	73,4	92,9	34,1	79,0	6 375 096	0,459	22,86	10,57
Grootvlei	1 130	6 178	1 135	62,4	87,4	30,8	71,4	3 273 624	0,530	22,03	11,70
Hendrina	1 900	11 905	1 870	71,5	91,3	31,2	78,3	5 962 533	0,501	22,97	11,52
Hex River	111	259	109	26,6	38,6	21,9	68,9	162 333	0,627	26,25	16,46
Highveld	***412	2 031	417	55,3	69,0	26,8	80,2	1 465 262	0,722	18,54	13,41
Ingagane	465	2 650	440	65,1	85,2	27,0	76,4	1 551 032	0,585	22,73	13,36
Klip	***325	1 098	273	37,2	53,1	16,6	70,1	1 285 923	1,171	18,57	21,75
Komati	***906	5 316	815	66,7	96,1	26,7	69,4	3 222 788	0,606	22,22	13,50
Kriel	2 850	13 125	2 644	52,6	91,2	33,9	57,7	6 991 689	0,533	19,84	10,63
Matla	***2 875	13 843	3 084	62,2	87,4	35,1	71,2	7 053 085	0,509	20,02	10,25
Salt River	228	664	233	33,3	44,7	25,1	74,4	377 739	0,569	25,25	14,36
Taaibos	440	2 255	479	58,5	66,1	25,3	88,6	1 708 042	0,757	18,73	14,21
Umgeni	222	838	210	43,1	53,6	22,3	80,4	555 513	0,663	24,35	16,15
Vaal	***270	1 535	260	64,2	79,7	18,9	80,6	1 644 508	1,071	17,79	19,05
Vierfontein	336	1 483	329	50,4	62,5	19,3	80,7	1 431 807	0,965	19,30	18,64
West Bank	80	267	86	38,0	50,1	21,9	76,0	164 103	0,616	26,76	16,47
Wilge	221	1 135	175	58,6	97,7	24,5	60,0	784 547	0,691	21,18	14,68
Sub-total for all coal-fired stations	18 641	100 217		63,5	86,9	30,5	73,1	55 198 435	0,551	21,39	11,82
Gas-turbine stations											
Acacia	171	8	118	0,5	0,8	21,5	65,4	2 920			
Port Rex	171	9	172	0,6	0,6	21,7	93,3	3 305			
Sub-total for gas-turbine stations	342	17		0,6	0,7	21,6	79,4				
Hydro-electric stations											
Hendrik Verwoerd	320	430	363	15,3	15,7		97,5				
Vanderkloof	220	586	286	30,4	31,6		96,2				
Sub-total for hydro stations	540	1 016		21,5	22,2		97,0				
Pumped-storage station											
Drakensberg	***1 000	1 519	1 154	19,4	23,7		81,9				
Sub-total for pumped-storage station	1 000	1 519		19,4	23,7		81,9				
Total/weighted average all Escom	20 523	102 769		59,3	79,8		74,3				
Other power sources											
Cahora Bassa	1 373	2 104	829	17,5	106,7		16,4				
Other		47									
Sub-total other power sources	1 373	2 151		17,5	106,7		16,4				
Total/weighted average	21 896	104 920		56,6	80,3		70,5				

*Station load factors A = $\frac{\text{kW.h s.o. x 100}}{\text{(assigned s.o. rating) x hours in year}}$

**Station load factors B = $\frac{\text{station load factors A x 100}}{\text{availability}}$

***Operating statistics are based on average capacity during the year.

****Availability = $\frac{\text{capacity hours available x 100}}{\text{total capacity hours in year}}$

5. Summary of operating statistics

Calendar year	Coal-fired power stations: Coal used: Thousands of tons	Average heat content (as received) MJ/kg	kg/kW.h sent out	Average heat rate MJ/kW.h sent out	Overall thermal efficiency sent-out basis %	Coal cost: Total R000	Average rand/ton	Cents/ kW.h sent out	Total power stations output million kW.h sent out: Coal-fired stations	Hydro-electric stations	Pump-storage stations	Diesel and gas turbine stations	Total power station output	Total power station capacity assigned sent-out rating MW as at 31 December	Average power station plant load factor sent-out basis %
1950	6 323,4	22,72	0,869	19,74	18,2	5 302	0,84	0,072 9	7 276	7	—	4	7 287	1 290	64,7
1951	6 662,9	22,72	0,855	19,43	18,5	6 553	0,98	0,084 0	7 797	6	—	3	7 806	1 361	66,1
1952	7 113,4	22,75	0,865	19,68	18,3	8 520	1,20	0,103 7	8 220	6	—	1	8 227	1 454	66,9
1953	7 393,9	23,08	0,837	19,32	18,6	9 862	1,33	0,111 6	8 838	7	—	—	8 845	1 635	65,5
1954	8 024,9	23,06	0,805	18,56	19,4	11 329	1,41	0,113 6	9 971	6	—	—	9 977	1 846	66,4
1955	8 999,7	22,89	0,788	18,04	20,0	13 709	1,52	0,120 1	11 419	6	—	—	11 425	2 145	65,9
1956	9 688,5	22,96	0,765	17,56	20,5	13 653	1,62	0,123 6	12 663	7	—	—	12 670	2 498	61,2
1957	10 220,6	22,79	0,750	17,09	21,1	17 256	1,69	0,126 6	13 634	6	—	—	13 640	2 555	61,1
1958	10 784,1	22,73	0,743	16,89	21,3	19 039	1,77	0,131 2	14 511	5	—	—	14 516	2 748	62,0
1959	11 548,7	22,44	0,732	16,43	21,9	20 970	1,82	0,132 9	15 774	3	—	—	15 777	2 983	62,6
1960	12 512,6	22,52	0,723	16,28	22,1	25 373	2,03	0,146 6	17 306	2	—	—	17 308	3 091	65,2
1961	13 194,9	22,39	0,722	16,17	22,3	27 713	2,10	0,151 6	18 282	2	—	—	18 284	3 226	66,2
1962	13 955,5	22,22	0,719	15,98	22,5	29 230	2,09	0,150 7	19 401	3	—	—	19 404	3 406	65,8
1963	14 721,1	22,15	0,708	15,68	23,0	31 009	2,11	0,149 2	20 789	4	—	—	20 793	3 788	65,7
1964	15 654,7	22,15	0,692	15,33	23,5	32 367	2,07	0,143 0	22 634	5	—	—	22 639	4 077	65,2
1965	16 726,7	22,39	0,680	15,23	23,6	34 986	2,09	0,142 3	24 583	—	—	—	24 583	4 181	67,4
1966	16 982,3	22,20	0,666	14,79	24,4	37 901	2,23	0,148 6	25 504	—	—	—	25 504	4 377	67,1
1967	18 307,7	22,44	0,645	14,47	24,9	42 053	2,30	0,148 2	28 371	—	—	—	28 371	5 328	66,8
1968	19 133,9	22,63	0,620	14,03	25,6	44 604	2,33	0,144 6	30 843	—	—	—	30 843	5 800	62,9
1969	19 982,9	22,73	0,595	13,52	26,6	47 453	2,37	0,141 2	33 598	—	—	—	33 598	6 441	62,1
1970	21 630,6	22,97	0,580	13,32	27,0	48 807	2,26	0,130 8	37 321	—	—	—	37 321	7 060	62,9
1971	23 416,2	23,30	0,576	13,42	26,8	52 705	2,25	0,129 7	40 645	94	—	—	40 739	8 373	61,3
1972	24 952,8	22,89	0,571	13,07	27,5	56 113	2,25	0,128 5	43 662	813	—	—	44 475	8 849	59,6
1973	27 907,9	22,47	0,563	12,65	28,5	66 837	2,39	0,134 8	49 570	189	—	—	49 759	9 482	62,5
1974	30 891,4	22,42	0,560	12,56	28,7	90 269	2,92	0,163 7	55 141	1 110	—	—	56 251	10 002	66,3
1975	34 231,7	22,21	0,567	12,59	28,6	138 592	4,05	0,229 5	60 400	1 098	—	—	61 498	10 522	68,6
1976	37 257,4	21,87	0,579	12,66	28,4	200 781	5,39	0,312 2	64 309	1 853	—	26	66 188	11 688	66,8
1977	37 505,6	21,78	0,576	12,55	28,7	233 229	6,22	0,358 2	65 114	1 924	—	12	67 050	12 756	61,9
1978	39 589,5	21,61	0,574	12,44	28,9	263 880	6,67	0,382 4	69 004	1 887	—	11	70 902	13 595	60,7
1979	43 264,9	21,22	0,580	12,33	29,2	301 273	6,96	0,404 5	74 485	1 144	—	14	75 643	15 056	60,9
1980	46 755,0	21,34	0,568	12,16	29,6	379 942	8,12	0,461 4	82 342	992	—	28	83 362	17 339	57,8
1981	53 903,7	21,25	0,563	12,01	30,0	523 663	9,71	0,547 3	95 675	1 653	415	81	97 824	18 989	62,2
1982	55 198,4	21,39	0,551	11,82	30,5	648 550	11,75	0,647 1	100 217	1 016	1 519	17	102 769	20 523	59,3

6. Integrated Escom system: electricity sent out and sold

Calendar year	Escom's share in national electricity supply: Republic of S.A. total mill. kW.h sent out	Escom's share in national electricity supply: *Escom electricity sent out as % of Republic	Electricity sent out: mill. kW.h sent out from Escom power stations	Electricity sent out: mill. kW.h purchased from other sources	Electricity sent out: mill. kW.h own consumption	Electricity sent out: mill. kW.h sent out Escom system	Electricity sent out: Peak demand on integrated Escom system MW	Electricity sent out: Integrated Escom system load factor %
1950	**10 437	71,1	7 287	131	—	7 418	**1 182	71,6
1951	**11 098	72,1	7 806	195	—	8 001	**1 212	75,4
1952	**11 678	74,1	8 227	424	—	8 651	**1 265	77,9
1953	**12 823	73,3	8 845	550	—	9 395	**1 394	76,9
1954	**14 167	73,5	9 977	437	—	10 414	**1 570	75,7
1955	**16 021	73,4	11 425	339	—	11 764	**1 806	74,4
1956	**17 293	74,8	12 670	257	—	12 927	**2 001	73,5
1957	18 720	73,7	13 640	163	—	13 803	**2 151	73,3
1958	19 765	74,3	14 516	164	—	14 680	**2 249	74,5
1959	21 051	75,4	15 777	94	—	15 871	**2 429	74,6
1960	22 717	76,3	17 308	15	—	17 323	**2 605	75,7
1961	23 760	77,0	18 284	8	—	18 292	**2 733	76,4
1962	25 599	75,8	19 404	13	—	19 417	**2 925	75,3
1963	27 335	76,1	20 793	19	—	20 812	**3 183	74,6
1964	**29 547	76,8	22 639	41	—	22 680	**3 460	74,6
1965	31 939	77,4	24 583	126	—	24 709	3 669	76,9
1966	**33 929	77,0	25 504	***630	—	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	55 298	80,4	44 475	10	—	44 485	6 630	76,4
1973	60 080	82,8	49 759	11	—	49 770	7 350	77,3
1974	**65 498	85,9	56 251	8	—	56 259	8 552	75,1
1975	69 883	88,1	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	79 354	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	92 614	92,8	75 643	10 394	58	85 979	12 855	76,4
1980	99 904	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

*Includes Escom electricity sent out to neighbouring territories.
**Estimates based on limited information.
***Includes purchases from City of Johannesburg during serious drought.

Calendar year	Electricity sales: Ratio mill. kW.h sold / mill. kW.h s.o.	Electricity sales: mill. kW.h sold	Electricity sales: Growth for the year %	Electricity sales: Average selling price cents/ kW.h	Employees: Total number at 31 December	Employees: Number/ mill. kW.h sold	Assets in commission at 31 December: R000	Assets in commission at 31 December: R000/ mill. kW.h sold
1950	0,932	6 910,6	11,1	0,274 1	9 352	1,353	****—	—
1951	0,932	7 456,5	7,9	0,292 2	10 336	1,386	—	—
1952	0,934	8 080,6	8,4	0,311 5	10 889	1,348	—	—
1953	0,929	8 732,2	8,1	0,354 2	11 518	1,319	—	—
1954	0,929	9 676,6	10,8	0,380 8	12 317	1,273	—	—
1955	0,932	10 964,0	13,3	0,413 9	12 490	1,139	—	—
1956	0,930	12 019,5	9,6	0,428 5	12 977	1,080	—	—
1957	0,925	12 763,1	6,2	0,447 8	13 421	1,052	—	—
1958	0,927	13 602,1	6,6	0,473 3	14 312	1,052	370 030	27,20
1959	0,928	14 724,5	8,3	0,495 1	13 947	0,947	428 183	29,08
1960	0,929	16 094,1	9,3	0,507 9	14 654	0,911	450 853	28,01
1961	0,930	17 013,2	5,7	0,515 5	15 441	0,908	468 416	27,53
1962	0,933	18 121,0	6,5	0,516 4	16 467	0,909	518 722	28,63
1963	0,937	19 500,0	7,6	0,517 7	16 804	0,862	577 530	29,62
1964	0,937	21 247,5	9,0	0,510 1	17 172	0,808	639 639	30,10
1965	0,937	23 143,3	8,9	0,507 6	17 851	0,771	673 626	29,11
1966	0,940	24 554,3	6,1	0,525 4	18 579	0,757	714 213	29,09
1967	0,937	26 657,1	8,6	0,546 7	19 817	0,743	846 818	31,77
1968	0,936	28 885,0	8,4	0,555 0	20 893	0,723	911 479	31,56
1969	0,937	31 505,6	9,1	0,556 5	21 644	0,687	1 074 503	34,11
1970	0,935	34 890,6	10,7	0,554 5	22 700	0,651	1 180 860	33,84
1971	0,934	38 040,0	9,0	0,577 2	25 050	0,659	1 390 095	36,54
1972	0,936	41 648,9	9,5	0,610 8	26 937	0,647	1 526 697	36,66
1973	0,936	46 578,4	11,8	0,648 4	28 559	0,613	1 699 279	36,48
1974	0,935	52 585,1	12,9	0,682 2	29 891	0,568	1 847 484	35,13
1975	0,940	57 869,2	10,0	0,795 0	33 999	0,588	2 008 917	34,71
1976	0,940	63 355,7	9,5	1,036 0	36 915	0,583	2 311 725	36,49
1977	0,942	67 125,4	5,9	1,535 3	39 112	0,583	2 851 103	42,47
1978	0,936	72 780,4	8,4	1,788 7	41 040	0,564	3 564 600	48,98
1979	0,937	80 582,8	10,7	1,898 0	43 690	0,542	4 255 502	52,81
1980	0,942	87 539,3	8,6	2,024 2	47 490	0,542	5 604 038	64,02
1981	0,941	93 844,0	7,2	2,281 1	52 080	0,555	6 323 048	67,38
1982	0,938	96 135,9	2,4	2,803 8	58 850	0,612	7 689 399	79,98

****Figures not available.

7. Summary of consolidated revenue and expenditure account

Year	Total Escom mill. kW.h sold		Total Escom costs: Interest	Redemption and other provision for loan repayment	Reserve Fund	Capital Development Fund	Sub-total capital related costs	Purchase of electricity	Fuel	Other power station operating and maintenance costs	Distribution operation and maintenance costs	General expenses	Total costs	Total revenue
1967	26 657,1	R(000)	37 312	24 536	9 912	—	71 760	313	42 488	14 618	7 146	10 603	146 928	146 783
		c/kW.h sold	0,140 0	0,092 0	0,037 2	—	0,269 2	0,001 2	0,159 4	0,054 8	0,026 8	0,039 8	0,551 2	0,550 6
		% of total cost	25,39	16,70	6,75	—	48,84	0,21	28,92	9,95	4,86	7,22	100,00	99,90
1968	28 885,0	R(000)	43 282	23 884	12 300	—	79 466	121	45 117	17 016	8 097	12 176	161 993	161 475
		c/kW.h sold	0,149 8	0,082 7	0,042 6	—	0,275 1	0,000 4	0,156 2	0,058 9	0,028 0	0,042 2	0,560 8	0,559 0
		% of total cost	26,72	14,74	7,59	—	49,06	0,07	27,85	10,50	5,00	7,52	100,00	99,68
1969	31 505,6	R(000)	50 943	20 809	13 605	—	85 357	102	48 035	19 038	9 264	13 578	175 374	176 106
		c/kW.h sold	0,161 7	0,066 0	0,043 2	—	0,270 9	0,000 3	0,152 5	0,060 4	0,029 4	0,043 1	0,556 6	0,559 0
		% of total cost	29,05	11,87	7,76	—	48,67	0,06	27,39	10,86	5,28	7,74	100,00	100,42
1970	34 890,6	R(000)	59 484	23 654	15 202	—	98 340	89	49 440	21 955	10 594	15 448	195 866	193 475
		c/kW.h sold	0,170 5	0,067 8	0,043 6	—	0,281 9	0,000 3	0,141 7	0,062 9	0,030 4	0,044 3	0,561 4	0,554 5
		% of total cost	30,37	12,08	7,76	—	50,21	0,05	25,24	11,21	5,41	7,89	100,00	98,78
1971	38 040,0	R(000)	70 266	30 928	8 568	—	109 762	82	53 587	26 276	11 492	18 440	219 639	219 584
		c/kW.h sold	0,184 7	0,081 3	0,022 5	—	0,288 5	0,000 2	0,140 9	0,069 1	0,030 2	0,048 5	0,577 4	0,577 2
		% of total cost	31,99	14,08	3,90	—	49,97	0,04	24,40	11,96	5,23	8,40	100,00	99,97
1972	41 648,9	R(000)	86 631	30 575	3 056	13 596	133 858	95	57 259	31 586	13 486	21 737	258 021	254 394
		c/kW.h sold	0,208 0	0,073 4	0,007 3	0,032 6	0,321 4	0,000 2	0,137 5	0,075 8	0,032 4	0,052 2	0,619 5	0,610 8
		% of total cost	33,58	11,85	1,18	5,27	51,88	0,04	22,19	12,24	5,23	8,42	100,00	98,59
1973	46 578,4	R(000)	101 858	34 200	3 760	15 366	155 184	117	68 634	38 685	17 082	26 460	306 162	302 034
		c/kW.h sold	0,218 7	0,073 4	0,008 1	0,033 0	0,333 2	0,000 3	0,147 4	0,083 1	0,036 7	0,056 8	0,657 3	0,648 4
		% of total cost	33,27	11,17	1,23	5,02	50,69	0,04	22,42	12,64	5,58	8,64	100,00	98,65
1974	52 585,1	R(000)	114 308	27 151	66	28 114	169 639	86	92 530	48 572	20 617	32 611	364 055	358 768
		c/kW.h sold	0,217 4	0,051 6	0,000 1	0,053 5	0,322 6	0,000 2	0,176 0	0,092 4	0,039 2	0,062 0	0,692 3	0,682 2
		% of total cost	31,40	7,46	0,02	7,72	46,60	0,02	25,42	13,34	5,66	8,96	100,00	98,55
1975	57 869,2	R(000)	136 963	30 814	1 400	40 730	209 907	114	141 913	*44 980	*18 477	*71 758	487 149	460 073
		c/kW.h sold	0,236 7	0,053 2	0,002 4	0,070 4	0,362 7	0,000 2	0,245 2	0,077 7	0,031 9	0,124 0	0,841 8	0,795 0
		% of total cost	28,12	6,33	0,29	8,36	43,09	0,02	29,13	9,23	3,79	14,73	100,00	94,44
1976	63 355,7	R(000)	173 829	41 470	1 700	53 584	270 583	2 399	208 316	62 477	19 712	92 835	656 322	656 381
		c/kW.h sold	0,274 4	0,065 5	0,002 7	0,084 6	0,427 1	0,003 8	0,328 8	0,098 6	0,031 1	0,146 5	1,036 0	1,036 0
		% of total cost	26,49	6,32	0,26	8,16	41,23	0,37	31,74	9,52	3,00	14,14	100,00	100,01
1977	67 125,4	R(000)	224 418	63 403	900	224 000	512 721	15 501	239 228	76 294	19 859	133 494	997 097	1 030 552
		c/kW.h sold	0,334 3	0,094 5	0,001 3	0,333 7	0,763 8	0,023 1	0,356 4	0,113 7	0,029 6	0,198 9	1,485 4	1,535 3
		% of total cost	22,51	6,36	0,09	22,47	51,42	1,55	23,99	7,65	1,99	13,39	100,00	103,36
1978	72 780,4	R(000)	308 970	76 036	900	300 000	685 906	26 364	271 222	89 193	23 677	138 106	1 234 468	1 301 829
		c/kW.h sold	0,424 5	0,104 4	0,001 2	0,412 1	0,942 4	0,036 2	0,372 6	0,122 5	0,032 5	0,189 7	1,696 1	1,788 7
		% of total cost	25,03	6,16	0,07	24,30	55,56	2,14	21,97	7,22	1,92	11,19	100,00	105,46
1979	80 582,8	R(000)	373 718	88 800	900	380 000	843 418	36 061	319 428	95 887	28 689	188 203	1 511 686	1 529 474
		c/kW.h sold	0,463 7	0,110 1	0,001 1	0,471 5	1,046 6	0,044 7	0,396 3	0,118 9	0,035 6	0,233 5	1,875 9	1,898 0
		% of total cost	24,72	5,87	0,06	25,14	55,79	2,39	21,13	6,34	1,90	12,45	100,00	101,18
1980	87 539,3	R(000)	504 732	101 629	900	426 400	1 033 661	35 806	405 630	117 968	36 824	240 078	1 869 967	1 772 000
		c/kW.h sold	0,576 6	0,116 1	0,001 0	0,487 1	1,180 8	0,040 9	0,463 3	0,134 8	0,042 1	0,274 2	2,136 1	2,024 2
		% of total cost	26,99	5,44	0,05	22,80	55,28	1,91	21,69	6,31	1,97	12,84	100,00	94,76
1981	93 844,0	R(000)	603 546	117 088	900	435 478	1 157 012	4 106	569 949	170 206	43 034	273 756	2 218 063	2 140 689
		c/kW.h sold	0,643 1	0,124 8	0,001 0	0,464 0	1,232 9	0,004 4	0,607 3	0,181 4	0,045 9	0,291 7	2,363 6	2,281 1
		% of total cost	27,21	5,28	0,04	19,63	52,16	0,19	25,70	7,67	1,94	12,34	100,00	96,51
1982	96 135,9	R(000)	721 948	154 758	26 000	450 000	1 352 706	3 615	693 979	261 842	59 852	381 348	2 753 342	2 695 422
		c/kW.h sold	0,751 0	0,161 0	0,027 0	0,468 1	1,407 1	0,003 7	0,721 9	0,272 3	0,062 3	0,396 7	2,864 0	2,803 8
		% of total cost	26,22	5,62	0,95	16,34	49,13	0,13	25,21	9,51	2,17	13,85	100,00	97,90

*Basis of allocation changed in 1975.

8. Distribution undertakings

consumer details, electricity sales

Border Undertaking

Category	No. of consumers 1982	Electricity sales: % of total 1982	mill. kW.h 1982	% yearly increase: 1982/81	% yearly increase: Average 5 years 1977-82	Revenue R000 1982	Average price in c/kW.h sold: 1981	Average price in c/kW.h sold: 1982
*Bulk supplies	26	87,4	904,3	5,8	7,0	36 287	3,361	4,013
Direct supplies: Domestic and street lighting	4 779	3,2	32,9	7,8	1,9	2 351	5,883	7,151
Industrial	2 241	9,4	97,3	13,1	12,9	6 090	5,525	6,256
Total	7 046	100,0	1 034,5	6,5	7,3	44 728	3,632	4,323

Cape Northern Undertaking

Category	No. of consumers 1982	Electricity sales: % of total 1982	mill. kW.h 1982	% yearly increase: 1982/81	% yearly increase: Average 5 years 1977-82	Revenue R000 1982	Average price in c/kW.h. sold: 1981	Average price in c/kW.h. sold: 1982
*Bulk supplies	42	19,9	531,4	7,9	7,8	18 315	2,873	3,446
Direct supplies: Domestic and street lighting	801	0,2	6,8	—70,5	—25,0	402	5,228	5,887
Industrial	5 185	9,3	246,8	15,7	15,4	12 484	4,393	5,059
Mining	91	57,7	1 538,7	—3,4	11,8	56 089	3,212	3,645
Traction	3	12,9	343,7	—15,6	4,8	15 680	4,106	4,562
Total	6 122	100,0	2 667,4	—2,3	9,8	102 970	3,394	3,860

Cape Western Undertaking

Category	No. of consumers 1982	Electricity sales: % of total 1982	mill. kW.h 1982	% yearly increase: 1982/81	% yearly increase: Average 5 years 1977-82	Revenue R000 1982	Average price in c/kW.h sold: 1981	Average price in c/kW.h sold: 1982
*Bulk supplies	76	55,6	3 899,2	8,1	8,0	109 341	2,196	2,804
Direct supplies: Domestic and street lighting	80 485	8,1	569,9	5,4	6,5	33 317	5,210	5,846
Industrial	18 583	27,7	1 941,9	2,5	5,4	83 647	3,523	4,308
Mining								
Traction	9	8,6	603,9	—5,1	5,5	27 208	3,602	4,505
Total	99 153	100,0	7 014,9	5,1	6,9	253 513	2,950	3,614

Eastern Transvaal Undertaking

Category	No. of consumers 1982	Electricity sales: % of total 1982	mill. kW.h 1982	% yearly increase: 1982/81	% yearly increase: Average 5 years 1977-82	Revenue R000 1982	Average price in c/kW.h. sold: 1981	Average price in c/kW.h. sold: 1982
*Bulk supplies	31	12,2	1 715,5	19,6	13,6	47 241	2,254	2,754
Direct supplies: Domestic and street lighting	2 954	0,2	30,9	4,1	1,2	1 493	3,987	4,840
Industrial	10 181	62,7	8 804,3	—9,5	9,6	238 541	2,107	2,709
Mining	149	20,9	2 942,0	4,8	6,7	80 332	2,210	2,731
Traction	5	4,0	560,6	—3,9	5,8	20 649	2,805	3,683
Total	13 320	100,0	14 053,3	—3,6	9,2	388 256	2,173	2,763

Natal Undertaking

Category	No. of consumers 1982	Electricity sales: % of total 1982	mill. kW.h 1982	% yearly increase: 1982/81	% yearly increase: Average 5 years 1977-82	Revenue R000 1982	Average price in c/kW.h sold: 1981	Average price in c/kW.h sold: 1982
*Bulk supplies	36	53,0	8 470,3	8,2	8,0	219 437	2,065	2,591
Direct supplies: Domestic and street lighting	18 529	0,9	148,6	7,1	3,8	7 049	4,374	4,743
Industrial	15 850	35,5	5 665,2	9,2	10,0	149 980	2,140	2,647
Mining	50	2,1	334,1	—1,8	6,3	10 938	2,646	3,274
Traction	10	8,5	1 354,9	—2,5	4,3	47 750	2,728	3,524
Total	34 475	100,0	15 973,0	7,3	8,2	435 154	2,188	2,724

Orange River Undertaking

Category	No. of consumers 1982	Electricity sales: % of total 1982	mill. kW.h 1982	% yearly increase: 1982/81	% yearly increase: Average 5 years 1977-82	Revenue R000 1982	Average price in c/kW.h. sold: 1981	Average price in c/kW.h. sold: 1982
*Bulk supplies	51	95,9	1 325,7	0,5	5,4	43 875	2,657	3,310
Direct supplies: Domestic and street lighting	568	0,2	2,4	13,9	—14,0	221	10,346	9,248
Industrial	1 493	3,9	53,6	15,5	8,6	3 942	7,497	7,356
Mining								
Traction								
Total	2 112	100,0	1 381,7	1,0	5,4	48 038	2,833	3,477

Rand and O.F.S. Undertaking

Category	No. of consumers 1982	Electricity sales: % of total 1982	mill. kW.h 1982	% yearly increase: 1982/81	% yearly increase: Average 5 years 1977-82	Revenue R000 1982	Average price in c/kW.h sold: 1981	Average price in c/kW.h sold: 1982
*Bulk supplies	191	28,7	15 502,0	7,5	10,3	433 793	2,280	2,798
Direct supplies: Domestic and street lighting	11 773	0,4	228,6	—3,1	—11,0	10 434	3,705	4,564
Industrial	29 268	26,2	14 150,2	1,6	5,6	379 898	2,223	2,685
Mining	128	41,8	22 557,3	0,7	6,0	548 033	1,973	2,430
Traction	2	2,9	1 572,9	—4,3	4,6	50 606	2,760	3,217
Total	41 362	100,0	54 011,0	2,6	6,8	1 422 764	2,156	2,634

Total Escom

Category	No. of consumers 1982	Electricity sales: % of total 1982	mill. kW.h 1982	% yearly increase: 1982/81	% yearly increase: Average 5 years 1977-82	Revenue R000 1982	Average price in c/kW.h. sold: 1981	Average price in c/kW.h. sold: 1982
*Bulk supplies	453	33,6	32 349	8,0	9,2	908 289	2,270	2,808
Direct supplies: Domestic and street lighting	119 889	1,1	1 020	1,9	—0,4	55 266	4,734	5,418
Industrial	82 801	32,2	30 959	—0,4	7,5	874 582	2,284	2,825
Mining	418	28,5	27 372	0,9	6,3	695 392	2,079	2,541
Traction	29	4,6	4 436	—4,8	4,8	161 893	2,989	3,650
Total	203 590	100,0	96 136	2,4	7,4	2 695 422	2,281	2,804

*Supplies to municipal and other supply authorities.

9. Sales of electricity to industry, million kW.h

Sector of industry	1977	1978	1979	1980	1981	1982	% increase 1982/81	Average yearly increase over 5 years %
Building cement and quarrying	1 087	1 198	1 121	1 194	1 353	1 413	4,4	5,4
Chemical	3 103	4 117	4 657	5 751	7 215	7 258	0,6	18,5
Engineering, iron, steel and base metals	11 927	13 338	15 600	15 900	15 316	14 754	−3,7	4,3
Foodstuffs, consumer goods commercial, and other	4 819	4 916	5 378	5 688	6 341	6 688	5,5	6,8
Paper and paper products	650	613	719	840	866	846	−2,3	5,4
Total	21 586	24 182	27 475	29 373	31 091	30 959	−0,4	7,5

10. Sales of electricity to mining, million kW.h

Mining category	1977	1978	1979	1980	1981	1982	% increase 1982/81	Average yearly increase over 5 years %
Gold and uranium	14 708	16 241	17 201	18 477	19 406	20 069	3,4	6,4
Platinum	2 287	2 388	2 772	2 973	3 014	2 466	—18,2	1,4
Coal	941	1 078	1 248	1 426	1 522	1 691	11,1	12,4
Copper	874	1 023	1 042	1 117	1 131	1 178	4,2	6,2
Diamonds	342	497	596	678	714	656	—8,1	13,9
Asbestos	275	223	233	242	240	235	—2,1	—3,1
Iron	271	272	334	361	335	305	—9,0	2,4
Chrome	84	106	126	127	117	105	—10,3	4,6
Antimony	76	73	67	67	58	58	—	—5,3
Manganese	62	72	83	94	104	113	8,7	12,8
Other	219	246	298	320	490	496	1,2	17,8
Total	20 139	22 219	24 000	25 882	27 131	27 372	0,9	6,3

11. Total electricity sales in Escom's undertakings, million kW.h

Undertaking	1977	1978	1979	1980	1981	1982	% increase 1982/81	Average yearly increase over 5 years %
Border	727	779	826	901	971	1 035	6,5	7,3
Cape Northern	1 668	1 937	2 368	2 577	2 730	2 667	—2,3	9,8
Cape Western	5 028	5 216	5 593	6 168	6 677	7 015	5,1	6,9
Eastern Transvaal	9 062	10 061	11 698	12 887	14 584	14 053	—3,6	9,2
Natal	10 747	11 736	12 988	13 989	14 885	15 973	7,3	8,2
Orange River	1 059	1 077	1 203	1 326	1 368	1 382	1,0	5,5
Rand and O.F.S.	38 834	41 974	45 907	49 691	52 629	54 011	2,6	6,8
Total	67 125	72 780	80 583	87 539	93 844	96 136	2,4	7,4

12. Electricity sent out to Escom's undertakings, million kW.h

Undertaking	1977	1978	1979	1980	1981	1982	% increase 1982/81	Average yearly increase over 5 years %
Border	790	845	895	968	1 052	1 128	7,2	7,4
Cape Northern	1 832	2 171	2 647	2 883	3 032	3 010	—0,7	10,4
Cape Western	5 556	5 818	6 139	6 807	7 387	7 837	6,1	7,1
Eastern Transvaal	9 400	10 358	12 190	13 346	14 765	14 589	—1,2	9,2
Natal	11 320	12 458	13 900	14 812	15 901	16 885	6,2	8,3
Orange River	1 121	1 130	1 272	1 406	1 454	1 462	0,6	5,5
Rand and O.F.S.	41 245	44 994	48 936	52 728	56 122	57 605	2,6	6,9
Net electricity sent out	71 264	77 774	85 979	92 950	99 713	102 516	2,8	7,5
Central Generating Undertaking own consumption	27	52	58	71	712	2 404	237,6	245,4
Gross electricity sent out	71 291	77 826	86 037	93 021	100 425	104 920	4,5	8,0

13. Maximum one-hour demand on the respective systems of Escom's undertakings, MW

Undertaking	1977	1978	1979	1980	1981	1982	% increase 1982/81	Average yearly increase over 5 years %
Border	152	168	175	177	213	219	2,8	7,6
Cape Northern	299	363	433	465	507	496	—2,2	10,7
Cape Western	890	943	922	1 005	1 122	1 244	10,9	6,9
Eastern Transvaal	1 316	1 465	1 716	2 048	2 201	2 318	5,3	12,0
Natal	1 761	1 962	2 167	2 211	2 429	2 637	8,6	8,4
Orange River	167	164	191	208	209	232	11,0	6,8
Rand and O.F.S.	6 363	6 720	7 468	7 965	8 517	9 235	8,4	7,7
Aggregate of non-simultaneous maximum demands	10 948	11 785	13 072	14 079	15 197	16 381	7,8	8,4
Maximum simultaneous one-hour demand on total Escom system MW	09h00 12/8/77 10 735	09h00 23/6/78 11 490	09h00 26/7/79 12 855	09h00 18/7/80 13 668	09h00 12/6/81 14 674	10h00 2/7/82 15 532	5,8	7,7

14. Total number of farm supplies

at 31 December 1982

Undertaking	1977	1978	1979	1980	1981	1982	% increase 1982/81	Average yearly increase over 5 years %
Border	940	1 000	1 054	1 135	1 244	1 427	14,7	8,7
Cape Northern	2 614	2 831	3 149	3 801	4 322	4 487	3,8	11,4
Cape Western	9 158	9 246	9 473	10 017	10 603	11 159	5,2	4,0
Eastern Transvaal	5 284	5 608	5 906	6 495	7 003	8 095	15,6	8,9
Natal	7 280	7 700	8 034	8 571	9 362	10 176	8,7	6,9
Orange River	719	746	769	889	995	1 166	17,2	10,2
Rand and O.F.S.	12 015	12 656	13 220	14 248	15 709	16 957	7,9	7,1
Total	38 010	39 787	41 605	45 156	49 238	53 467	8,6	7,1

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

15. Plant taken into commercial service and on order

Name of power station	Plant taken into commercial service in 1982		Plant under construction or on order at 31 December 1982		Year of completion	
	Boilers kg/s	Generators MW	Boilers kg/s	Generators MW	First set	Last set
Coal-fired steam plant:						
Matla	508	600	508	600	1979	1983
Duvha	507	600	1 014	1 200	1980	1984
Tutuka			3 042	3 654	1985	1988
Lethabo			3 054	3 708	1985	1989
Matimba			2 308	2 660	1986	1989
Kendal			3 462	4 032	1987	1992
Majuba			3 462	4 032	1989	1994
Pumped-storage hydro plant:						
Drakensberg		500			1981	1982
Palmiet				400	1987	1988
Nuclear plant:						
Koeberg				1 844	1983	1984