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Sixty-first annual report of the Electricity Supply Commission, for the year ending 31 December 1983, submitted to the Minister of Mineral and Energy Affairs in accordance with Section 19 of the Electricity Act of 1958, as amended.

Published April 1984 by the Electricity Supply Commission, Megawatt Park, Maxwell Drive, Sandton 2199.

Additional copies of the report are obtainable from the Public Relations Division, Escom, P.O. Box 1091, Johannesburg 2000, South Africa.

Een-en-sestigste jaarverslag van die Elektrisiteitsvoorsieningskommissie vir die jaar geëindig 31 Desember 1983, voorgelê aan die Minister van Mineraal- en Energiesake soos vereis deur artikel 19 van die Elektrisiteitswet van 1958, soos gewysig.

Gepubliseer in April 1984 deur die Elektrisiteitsvoorsieningskommissie, Megawatt Park, Maxwellrylaan, Sandton 2199.

Bykomende eksemplare van die verslag is verkrybaar by die Skakelaafdeling, Evkom, Posbus 1091, Johannesburg 2000, Suid-Afrika.

ISBN 0-620-07639-9

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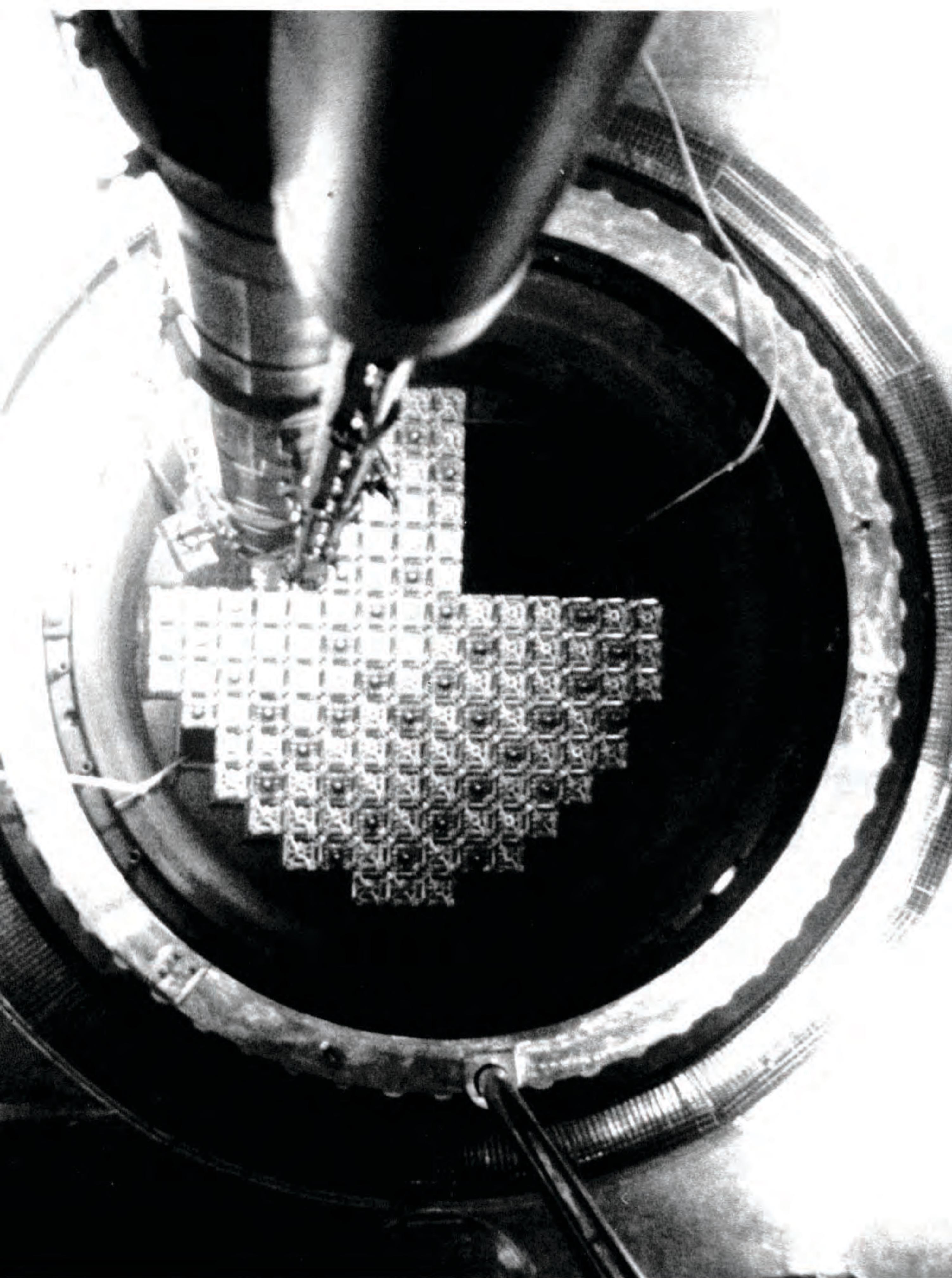
## Highlights of the year

## Hoogtepunte van die jaar

	1982	1983	Change Verandering %	
<b>Financial</b>	<b>Finansieel</b>			
Revenue R(million)	2 695	<b>3 302</b>	22,5	Inkomste R(miljoen)
Charges against revenue R(million)	2 753	<b>3 405</b>	23,7	Vorderings teen inkomste R(miljoen)
Net expenditure on fixed assets R(million)	2 741	<b>2 757</b>	0,6	Netto uitgawe aan vaste bates R(miljoen)
Accumulated deficit R(million)	154	<b>257</b>	66,9	Opgehopte tekort R(miljoen)
Fixed assets at 31 December R(million)	12 858	<b>15 591</b>	21,3	Vaste bates op 31 Desember R(miljoen)
Average cost per kWh sold (cents)	2,86	<b>3,47</b>	21,3	Gemiddelde koste per kWh verkoop (sent)
Average price per kWh sold (cents)	2,80	<b>3,36</b>	19,9	Gemiddelde prys per kWh verkoop (sent)
Average coal cost per ton (Rand)	11,75	<b>12,44</b>	5,9	Gemiddelde steenkoolkoste per ton (Rand)
Electricity sold by Escom (GWh)	96 136	<b>98 251</b>	2,2	Elektrisiteit deur Evkom verkoop (GWh)
<b>Operating statistics</b>	<b>Bedryfstatistiek</b>			
Total electricity sent out by Escom (GWh)	104 920	<b>108 321</b>	3,2	Totale elektrisiteit deur Evkom uitgestuur (GWh)
- from Escom power stations (GWh)	102 769	<b>103 295</b>	0,5	- van Evkom-kragstasies (GWh)
- from other sources (GWh)	2 151	<b>5 026</b>	133,7	- van ander bronne (GWh)
Electricity used for pumped storage (GWh)	2 404	<b>2 917</b>	21,3	Elektrisiteit gebruik vir pompopgaring (GWh)
Electricity available for distribution (GWh)	102 516	<b>105 404</b>	2,8	Elektrisiteit beskikbaar vir verspreiding (GWh)
Coal burnt in Escom power stations (Mt)	55,2	<b>55,0</b>	-0,4	Steenkool verbrand in Evkom-kragstasies (Mt)
Water consumed in Escom power stations (Ml)	251 532	<b>235 727</b>	-7,1	Water verbruik in Evkom-kragstasies (Ml)
Maximum demand on integrated Escom system (MW)	15 532	<b>15 639</b>	0,7	Maksimum aanvraag op geïntegreerde Evkom-stelsel (MW)
<b>Escom plant in service at 31 December</b>	<b>Evkom-installasies in gebruik op 31 Desember</b>			
Installed capacity (MW)	21 749	<b>22 949</b>	5,5	Geïnstalleerde vermoe (MW)
Assigned sent-out rating (MW)	20 523	<b>21 673</b>	5,6	Toegewese uitstuurvermoë (MW)
<i>Transmission lines:</i>	<i>Transmissielyne:</i>			
533 kV (DC) (km)	1 030	<b>1 030</b>	—	533 kV (GS) (km)
400–220 kV (km)	15 251	<b>16 017</b>	5,0	400–220 kV (km)
165 kV and below (km)	111 535	<b>121 343</b>	8,8	165 kV en laer (km)
<i>Underground cables:</i>	<i>Ondergrondse kabels:</i>			
132 kV and below (km)	7 319	<b>7 596</b>	3,8	132 kV en laer (km)
Capacity of transformers (MVA)	136 131	<b>143 590</b>	5,5	Vermoe van transformators (MVA)
<b>Number of Escom consumers</b>	203 590	<b>214 783</b>	5,5	<b>Getal Evkom-verbruikers</b>
<b>Staff employed</b>	58 850	<b>62 924</b>	6,9	<b>Personeel in diens</b>

Uranium fuel was loaded into the reactor core at the Koeberg power station towards the end of 1983.

Uraanbrandstof is teen die einde van 1983 in een van die reaktors van Koeberg-kragstasie geplaas.



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## **Escom's administration**

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## **Administrasie van Evkom**

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### **Members of the Electricity Supply Commission**

Jan H. Smith *Chairman*

D.J. Malan

E. Pavitt

J.F.W. Haak

T.R. Castle

J. Wilkens

(on leave of absence from the Commission since 1 August 1983)

L.F. Rive

(resigned from the Commission on 31 July 1983)

### **Lede van die Elektriesiteitsvoorsieningskommissie**

Jan H. Smith *Voorsitter*

D.J. Malan

E. Pavitt

J.F.W. Haak

T.R. Castle

J. Wilkens

(met verlof van die Kommissie afwesig sedert 1 Augustus 1983)

L.F. Rive

(op 31 Julie 1983 uit die Kommissie bedank)

## **Members of the Management Committee**

I.D. van der Walt  
*Senior General Manager*

F.J.W. Barnard  
*General Manager (Services)*

I.C. McRae  
*General Manager (Operations)*

J.L. Rothman  
*General Manager (New Works)*

L. te Groen  
*General Manager (Finance)*

J.S. Els  
*Assistant General Manager (Operations)*

R.A. Forbes  
*Assistant General Manager (Finance)*

E.H. Ralph  
*Assistant General Manager (New Works)*

G.F. Lindeque  
*Personnel Manager*

A.A. Loots  
*Acting Legal Manager (from 1 May 1983)*

P.J.T. Oosthuizen  
*Legal Manager (seconded to the Commission of Enquiry on Electricity Supply on 1 May 1983)*

G.A. Park  
*Production Assets Manager*

## **Lede van die Bestuurskomitee**

I.D. van der Walt  
*Senior Hoofbestuurder*

F.J.W. Barnard  
*Hoofbestuurder (Dienste)*

I.C. McRae  
*Hoofbestuurder (Bedryf)*

J.L. Rothman  
*Hoofbestuurder (Nuwe Werke)*

L. te Groen  
*Hoofbestuurder (Finansies)*

J.S. Els  
*Assistent-hoofbestuurder (Bedryf)*

R.A. Forbes  
*Assistent-hoofbestuurder (Finansies)*

E.H. Ralph  
*Assistent-hoofbestuurder (Nuwe Werke)*

G.F. Lindeque  
*Personeelbestuurder*

A.A. Loots  
*Waarnemende Regsbestuurder (vanaf 1 Mei 1983)*

P.J.T. Oosthuizen  
*Regsbestuurder (aan die Kommissie van Ondersoek na Elektrisiteitsvoorsiening op 1 Mei 1983 gesekondeer)*

G.A. Park  
*Produksiebatesbestuurder*



During the year Escom bought the Trust Building in Kimberley, which was already occupied by its Northern Cape head office.

In die loop van die jaar het Evkom die Trust-gebou in Kimberley aangekoop wat reeds deur die Noord-Kaaplandse hoofkantoor beset was.

## **Regional managers**

H. Edeling

*Eastern Transvaal*

(appointed on 1 October 1983 on retirement of  
T.P. O'Connor on 30 September 1983)

G.F. Hellström

*Western Cape*

E.F. Otten

*Eastern Cape*

J.P. Rodger

*Northern Cape*

M.W. Walter

*Rand and Orange Free State*

H.E. Wohlberg

*Natal*

## **Streekbestuurders**

H. Edeling

*Oos-Transvaal*

(op 1 Oktober 1983 aangestel by die aftrede van  
T.P. O'Connor op 30 September 1983)

G.F. Hellström

*Wes-Kaapland*

E.F. Otten

*Oos-Kaapland*

J.P. Rodger

*Noord-Kaapland*

M.W. Walter

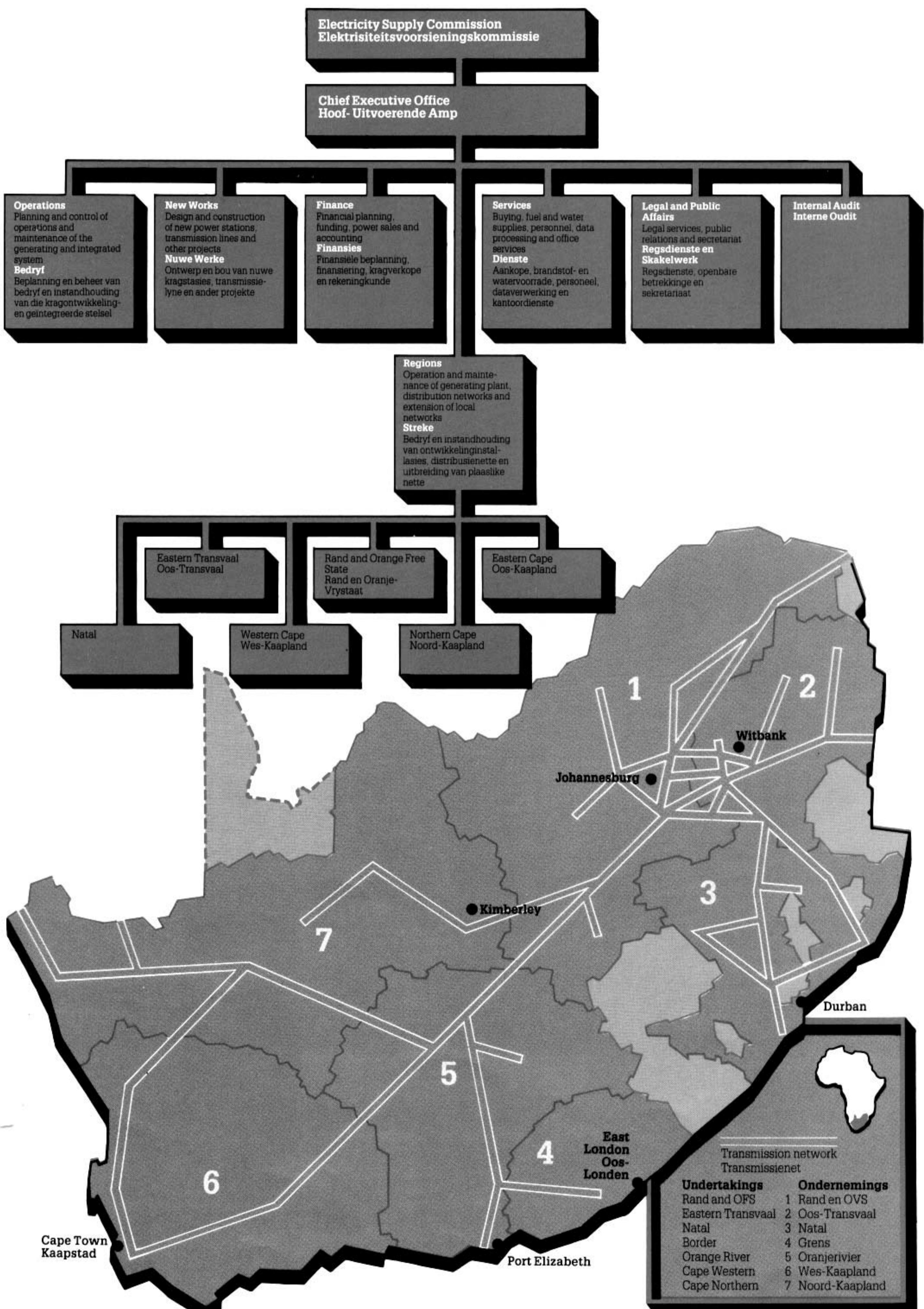
*Rand en Oranje-Vrystaat*

H.E. Wohlberg

*Natal*

# Escom's activities, undertakings and national grid

## Evkom se werksaamhede, ondernemings en nasionale net



## **Escom and the country's electricity supply**

### **Evkom en die land se elektrisiteitsvoorsiening**

The Electricity Supply Commission (Escom) was incorporated on 7 March 1923. It is governed by the provisions of the Electricity Act No. 40 of 1958, which replaced the Act of 1922. Escom is a statutory body, directed by seven commissioners appointed by the State President.

As the national electricity utility, Escom generates some nine-tenths of all electricity sold in South Africa. It operates in terms of licences and permits issued by the Electricity Control Board, which is the regulatory authority for the total supply of electricity in South Africa. Escom's licences and permits are in respect of seven geographical distribution undertakings and a single countrywide generation undertaking.

Escom is required to operate at neither a profit nor a loss. This means that all consumers are supplied at prices which are as near to cost as possible. In practice surpluses or deficits are carried forward at the end of each year.

Escom has no shareholders and therefore pays no dividends. It is financed partly by outside loans and partly by allocations from tariff income in accordance with the Electricity Act, which limits the amount of internal financing through the tariff. Capital expenditure is at present financed by internal and external funds in a ratio of approximately 30% internal finance and 70% external finance.

At present just under 14% of tariff income represents a contribution to the Capital Development Fund which is the principal vehicle for internal financing. The other internal funds are the smaller Redemption and Reserve Funds for amortising loans and for emergencies respectively.

External finance is obtained through South African and foreign capital markets. In South Africa Escom usually has two primary stock issues a year and it also operates a secondary market in these and older stock issues. Overseas loans include bond issues and both project-related and untied direct placements with or through various banks.

Die Elektrisiteitsvoorsieningskommissie (Evkom) is op 7 Maart 1923 gestig. Dit word bestuur ooreenkomsdig die bepalings van die Elektrisiteitswet no 40 van 1958, wat die wet van 1922 vervang. Evkom is 'n statutêre liggaam onder leiding van sewe kommissielede deur die Staatspresident aangestel.

As die nasionale elektrisiteitsnutsorganisasie ontwikkel Evkom sowat nege tiendes van alle elektrisiteit wat in Suid-Afrika verkoop word. Dit funksioneer kragtens lisensies en permitte wat uitgereik word deur die Elektrisiteitsbeheerraad, die beheerliggaam vir die totale voorsiening van elektrisiteit in Suid-Afrika. Evkom se lisensies en permitte is vir sewe geografiese distribusie-onderneemings en 'n enkele landwye kragontwikkelingsonderneming.

Daar word van Evkom verwag om sy werkzaamhede nog teen 'n wins nog teen 'n verlies te verrig. Dit beteken dat alle verbruikers voorsien word teen pryse wat so na as moontlik aan kosprys is. Oorskotte of tekorte word aan die einde van elke jaar oorgedra.

Evkom het geen aandeelhouers nie en betaal derhalwe geen dividende nie. Dit word deels deur eksterne lenings en deels deur toedelings uit die tariefinkomste gefinansier in ooreenstemming met die voorskrifte van die Elektrisiteitswet, wat 'n beperking plaas op interne finansiering deur middel van die tarief. Kapitaaluitgawes word tans uit ongeveer 30% interne en 70% eksterne fondse gefinansier.

Tans verteenwoordig net minder as 14% van die tariefinkomste 'n bydrae tot die Kapitaalontwikkelingsfonds wat die belangrikste middel vir interne finansiering is. Die ander interne fondse is die kleiner Delgings- en Reserwefondse, respektiewelik vir die delging van lenings en vir noodgevalle.

Eksterne finansiering word deur middel van Suid-Afrikaanse en buitelandse kapitaalmarkte verkry. In Suid-Afrika het Evkom gewoonlik twee primêre effekuitgiftes per jaar en het ook 'n sekondêre mark tot stand gebring vir hierdie en ouer effekuitgiftes. Buitelandse lenings is in die vorm van obligasie-uitgiftes en beide projekgebonden en ongebonden direkte plasings, met of deur verskeie banke.

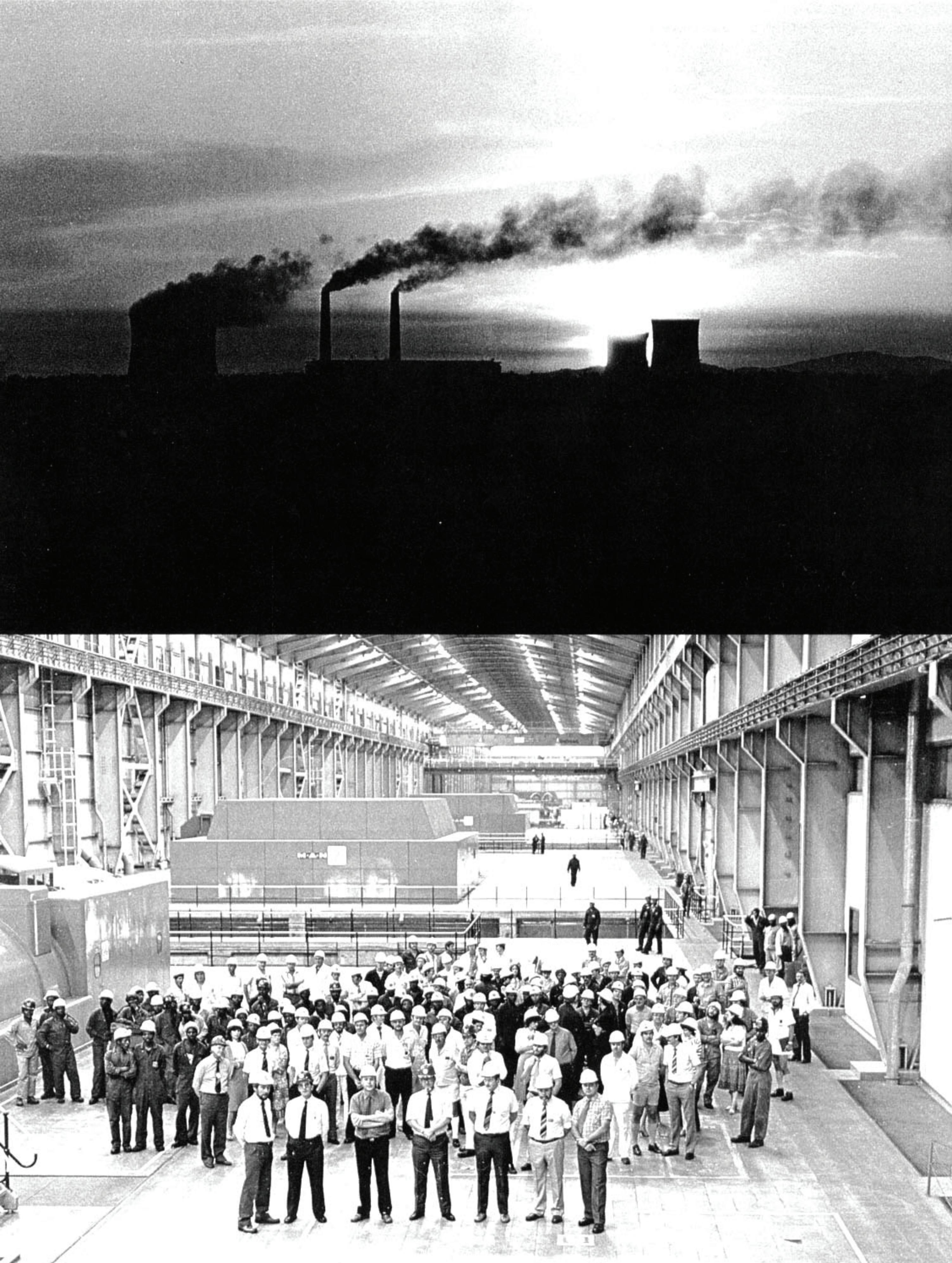


Parallel 400kV transmission lines near a group of Eastern Transvaal power stations.

Parallelle 400kV-transmissielyne naby 'n groep Oos-Transvaalse kragstasies.

Sunrise at Grootvlei highlights the absence of condensation above the cooling towers from the air-cooled section of this power station. Below: Some 150 power station staff gather in the Matla turbine hall for a picture marking the completion of the station in 1983.

Sonsopkoms by Grootvlei beklemtoon die awesigheid van kondensasie bokant die koeltorings van hierdie kragstasie se lugverkoelde gedeelte. Onder: Sowat 150 personeellede vergader in die Matla-turbinesaal vir 'n foto ter herdenking van die stasie se voltooiing in 1983.



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## **Chairman's review**

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## **Oorsig van die Voorsitter**

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Chairman's review

## DROUGHT AND THE ECONOMY

In company with many of South Africa's other public and private sector businesses, Escom's management was most notably challenged in 1983 by the serious drought and by an economy that has been characterised as being in one of the most difficult phases since the Great Depression.

The way that Escom has met these two challenges has both enhanced its reputation within South Africa and underlined its creditworthiness internationally. Both achievements will stand Escom in good stead in the year ahead, which promises to be another difficult one for the country as a whole, and, almost certainly, an even more difficult one for Escom.

Although Escom registered its lowest growth rate in electricity sales for 36 years – at 2,2% for the year, the increase in sales volume was fractionally below the 2,4% achieved in 1982 – Escom continued to outperform the real growth in GDP by a substantial margin. Much of this growth, albeit small for the year as a whole, came from an end-of-the year surge in demand from major industrial consumers, which in itself augurs well for the country's economic recovery in the medium term.

## DROOGTE EN DIE EKONOMIE

Net soos baie ander Suid-Afrikaanse ondernemings in die owerheid- en private sektor, het Evkom se bestuur in 1983 te staan gekom voor die uitdagings van die ernstige droogte en 'n ekonomie in een van die moeilikste fases sedert die Groot Depressie.

Die wyse waarop Evkom hierdie twee uitdagings die hoof gebied het, het nie alleen sy reputasie binne Suid-Afrika verhoog nie maar ook sy kredietwaardigheid op internasionale gebied beklemtoon. Albei prestasies sal Evkom goed te pas kom in die jaar wat voorlê, wat waarskynlik nog 'n moeilike een vir die land in sy geheel en byna seker 'n selfs moeiliker een vir Evkom sal wees.

Hoewel Evkom sy laagste groeikoers in elektrisiteitsverkope vir 36 jaar beleef het – 2,2% vir die jaar met die toename in die volume van verkope effens minder as die 2,4% wat in 1982 bereik is – het Evkom steeds die reële groei in die BBP deur 'n aansienlike marge oortref. Baie van hierdie groei, hoewel klein vir die jaar in sy geheel, is afkomstig van die oplewing in die aanvraag van groot nywerheidsverbruikers teen die jaareinde, wat op sigself veel beloof vir die land se ekonomiese herstel in die middeltermyn.



Jan H. Smith, Escom's Chairman, unveils the plaque as Kitty, a steam locomotive with more than a century of service, is declared a national monument.

Jan H. Smith, Voorsitter van Evkom, onthul die gedenkplaat toe Kitty, 'n stoomlokomotief met 'n dienstyd van meer as 'n eeu, tot nasionale monument verklaar is.

## SYSTEM OPERATION

The drought itself added some R100 million to Escom's costs for the year. The main contributors were the scheme to augment water supplies to the large power stations in the Eastern Transvaal and the need to increase generation at some of Escom's less efficient power stations, which had sufficient water supplies. Despite the loss of some 3 000 MW of generating capacity for much of the year, the quality of supply was generally acceptable, and somewhat better than was achieved in 1982. Three-fifths of the lost generation capacity was attributable to the drought, while the remaining two-fifths was due to the continued unreliability of the supply from the Cahora Bassa scheme in Mozambique. Escom welcomes the international negotiations which may lead to this supply again becoming reliable in the future.

## STELSELBEDRYF

Die droogte self het sowat R100 miljoen tot Evkom se koste vir die jaar bygedra. Die grootste gedeelte hiervan was vir die skema om die watervoorrade van die groot kragstasies in Oos-Transvaal aan te vul en die verhoging van kragontwikkeling deur Evkom se minder doeltreffende kragstasies wat oor toereikende watervoorrade beskik het. Ondanks die verlies van sowat 3 000MW-ontwikkelvermoë vir die grootste deel van die jaar was die kwaliteit van die toevoer in die algemeen aanvaarbaar, en effens beter as die prestasie vir 1982. Drie vyfdes van die verlore ontwikkelvermoë kan aan die droogte toeskryf word, en die oorblywende twee vyfdes aan die voortgesette onbetroubaarheid van die toevoer vanaf die Cahora Bassa-skema in Mosambiek. Evkom verwelkom die internasionale onderhandelings wat daartoe kan lei dat hierdie toevoer weer in die toekoms betroubaar word.

## CAPITAL COSTS

A recent report by the Organisation for Economic Cooperation and Development (OECD) notes that electricity utilities represent the most capital-intensive sector of industrialised countries. This is true in South Africa's case as well, and in present money values, the capital cost of one of Escom's new 3 600 MW power stations and associated transmission and distribution facilities is approximately R1 041 per kW, which is approximately three times the historical average cost of R350 per kW for plant in service.

The cost of servicing Escom's current capital requirements is closely related to interest rates, which reached new highs in 1983. High interest rates first affect the level of capital expenditure as the interest on loans for work under construction is capitalised. The net effect is an increase in capital costs. This, in turn, has to be recovered from the consumer by way of a higher tariff. If the cost of capital remains

## KOSTE VAN KAPITAALGOEDERE

'n Onlangse verslag deur die Organisasie vir Ekonomiese Samewerking en Ontwikkeling (OESO) wys daarop dat elektrisiteitsnutsmaatskappye die mees kapitaalintensieve sektor van nywerheidslande verteenwoordig. Dit is ook in Suid-Afrika die geval. In huidige geldwaardes is die kapitaalkoste van 'n nuwe 3 600MW-kragstasie en die bybehorende transmissie- en distribusiefasilitete sowat R1 041 per kW, wat ongeveer drie keer die gemiddelde historiese koste van R350 per kW is vir uitrusting in bedryf.

Daar is 'n noue verband tussen die koste van leningsdienste vir Evkom se huidige kapitaalbehoeftes en rentekoerse wat in 1983 nuwe hoogtes bereik het. Hoe rentekoerse beïnvloed eerste die peil van kapitaaluitgawes aangesien die rente op

high, it will be difficult to keep tariff increases below the inflation rate.

During the year Escom's local and imported purchases of capital goods were subject to very different influences. Escom continues to encourage local manufacture of power-supply and other equipment. This encouragement has been effective and today a wide range of components for the electricity supply industry is being made in South Africa. From Escom's point of view, however, the South African financial market has not kept pace with this development as it is not generally able to provide the volume of finance Escom requires to make full use of local manufacturing potential. In addition, Escom requires relatively long drawdown periods, fixed interest rates, long-term repayment periods, and a total effective cost which is not prohibitively high. A financial package such as this is difficult to obtain on the local market.

South Africa's trading account receives an equal benefit from import replacements as it does from exports. Escom therefore believes that the South African financial authorities should provide similar benefits for import replacement to those made available for export promotion. At present, finance is perhaps the most important factor restricting the further development of the local manufacturing programme for power station equipment. Inflation is also running at a far higher level in South Africa than it is in other countries from which Escom buys.

Imported capital goods, on the other hand, were made more expensive than expected by the weakness of the rand against the dollar throughout the year and, towards the end of the year, by the weakening of the rand against major European currencies. In addition, wide differentials in interest rates between the United States and European countries led to extraordinarily high forward cover premiums to cover the exchange risk on the currencies of major European countries. This has meant that loans and credits from European countries have become expensive in terms of their total effective cost.

As a result of Escom's high level of capital expenditure and heavy loan repayment commitments, as well as the substantial cutback in Escom's internal financing levels, the demand for external borrowings during 1984 will be large. It is therefore encouraging to note the continued improvement in the standing of South African borrowers on foreign markets. Recent successes on the Eurobond capital market by South African borrowers have confirmed their improved rating, which has resulted in better rates and more favourable loan conditions.

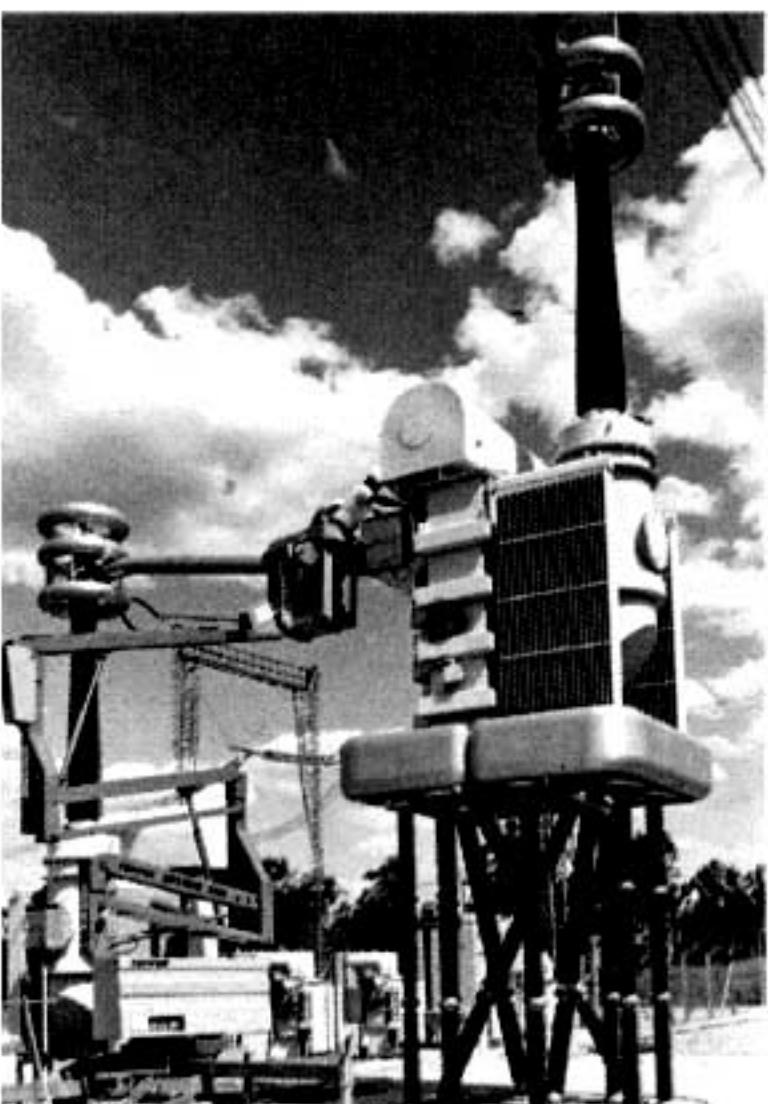
lenings vir werk in aanbou gekapitaliseer word. Die netto effek is 'n verhoging in kapitaalkoste. Dit moet van die verbruiker by wyse van 'n hoër tarief verhaal word. Indien die koste van kapitaal hoog bly sal dit moeilik wees om tariefverhogings onder die inflasiekoers te hou.

Gedurende die jaar was Evkom se plaaslike en ingevoerde aankope van kapitaalgoedere aan baie verskillende invloede onderhewig. Evkom moedig steeds die plaaslike vervaardiging van kragvoorsienings- en ander uitrusting aan. Hierdie aanmoeidiging het vrugte afgewerp en vandag word 'n wye verskeidenheid komponente vir die elektrisiteitsvoorsieningsbedryf in Suid-Afrika vervaardig. Uit Evkom se oogpunt egter, het Suid-Afrikaanse financiering nie met hierdie ontwikkeling tred gehou nie aangesien dit in die reël nie die volume finansiering kan verskaf wat Evkom benodig om die plaaslike vervaardigingspotensiaal ten volle te benut nie. Daarbenewens vereis Evkom betreklik lang opnameperiodes, vaste rentekoerse, langtermynterugbetaalperiodes en 'n totale effektiewe koste wat nie so hoog is dat dit 'n stremmende invloed het nie. 'n Finansiële pakket soos hierdie word moeilik op die plaaslike mark verkry.

Suid-Afrika se handelsrekening trek net soveel voordeel uit invoervervanging as uit uitvoere. Evkom is dus van mening dat die Suid-Afrikaanse finansiële owerhede soortgelyke voordele vir invoervervanging moet voorsien as dié wat vir uitvoerbevordering beskikbaar is. Tans is finansiering miskien die vernaamste faktor wat die verdere ontwikkeling van die plaaslike vervaardigingsprogram vir kragstasie-uitrusting aan bande lê. Verder is inflasie in Suid-Afrika op 'n baie hoër vlak as in ander lande waar Evkom koop.

Andersyds was ingevoerde kapitaalgoedere duurder as wat verwag is weens die swak vertoning van die rand teenoor die dollar gedurende die jaar en, teen die jaareinde, deur die verswakkering van die rand teenoor die vernaamste Europese geldeenheide. Daarbenewens het groot verskille in rentekoerse tussen die Verenigde State en Europese lande gelei tot buitengewoon hoë termyndekingspremies om die wisselkoersrisiko met die geldeenheide van die vernaamste Europese lande te dek. Dit het beteken dat lenings en krediete van Europese lande duur geword het in terme van hulle totale effektiewe koste.

As gevolg van Evkom se hoë vlak van kapitaaluitgawes en swaar leningsterugbetaalverpligtings, sowel as die groot besnoeiing in Evkom se interne finansieringsvlakte, sal die aanvraag vir eksterne lenings gedurende 1984 groot wees. Dit is daarom bemoedigend om kennis te neem van die voortdurende verbetering van die reputasie van Suid-Afrikaanse leners op buitelandse markte. Die onlangse suksesse op die Eurobond-kapitaalmark deur Suid-Afrikaanse leners het hulle verbeterde kredietwaardigheid bevestig, wat beter koerse en gunstiger leningsvoorwaardes tot gevolg gehad het.



Engineers connect a lead to a 2 x 400 kV transformer cascade in preparation for energising a test line at Megawatt Park.

Ingenieurs verbind 'n leiding met 'n 2 x 400 kV-transformatorkaskade ter voorbereiding vir die bekragting van 'n toetslyn by Megawatt Park.

## REVISED LOAD FORECAST

While the very low growth in electricity demand experienced in 1982 and 1983 will not necessarily continue in the future, Escom revised its load forecast downwards by about 0,5% to a growth rate of about 7% a year from 1983 to 1995. This revised load forecast indicates a reduction in the required generation capacity of some 5 000 MW by 1995 compared to previous forecasts, thus reducing Escom's capital requirements by about R3 800 million in current values over this period. If this forecast trend is confirmed, the 5 000 MW reduction can be achieved by deferring power stations not yet firmly committed, by deferring sets at committed stations, and by advancing the decommissioning of old stations.

Three main resources essential for operating thermal power stations are skilled manpower, coal and water. Escom recorded significant advances during the year in the efficient use of coal and water. Detailed information on these advances is set out in the Senior General Manager's report, but it gives me pleasure to refer to the magnitude of the water savings Escom is planning for the future. Very large savings in water consumption will follow the introduction by Escom of some 10 000 MW of air-cooled generating plant now under construction. South Africa is already a world leader in air-cooling technology, which reduces the water requirement for the generation of electricity by about 70% – from 2,5 to between 0,5 and 0,8 litres per kilowatt-hour.

## HERSIENE LASVOORUITSKATTING

Ofskoon die uiters lae groei in die elektrisiteitsaanvraag wat in 1982 en 1983 ondervind is nie noodwendig in die toekoms sal voortduur nie, het Evkom sy lasvooruitskatting afwaarts aangepas met ongeveer 0,5% tot 'n groeikoers van ongeveer 7% per jaar vir die tydperk 1983 tot 1995. Hierdie gewysigde lasvooruitskatting dui daarop dat die benodigde ontwikkelvermoe teen 1995 met nagenoeg 5 000 MW verminder sal moet word vergeleke met vorige vooruitskattings. Evkom se kapitaalbehoeftes sal hierdeur met ongeveer R3 800 miljoen in huidige geldwaardes oor die tydperk verminder word. Indien hierdie neiging bevestig word, kan die 5 000MW-vermindering verkry word deur die uitstel van kragstasies waarvoor daar nog nie vaste verpligtinge aangegaan is nie, die uitstel van stelle by kragstasies waar vaste verpligtinge reeds aangegaan is, en vervroeging van die buitebedryfstelling van ou stasies.

Drie hoofbronne wat noodsaaklik is vir die bedryf van termiese kragstasies is opgeleide mannekrag, steenkool en water. Evkom het gedurende die jaar aansienlike vordering gemaak met die doeltreffende gebruik van steenkool en water. Breedvoerige besonderhede van hierdie vordering word in die Senior Hoofbestuurder se verslag verstrek, maar dit is vir my 'n genoeë om melding te maak van die omvang van die waterbesparings wat Evkom vir die toekoms beplan. Baie groot besparings in waterverbruik sal volg op die ingebuikneming van lugverkoelde ontwikkelinstallasies van sowat 10 000 MW wat nou in aanbou is. Suid-Afrika is reeds 'n wêreldleier in lugverkoelingstechnologie, wat die waterbehoefte vir die ontwikkeling van elektrisiteit met ongeveer 70% verminder – van 2,5 tot tussen 0,5 en 0,8 liter per kilowatt-uur.

## SIXTY YEARS OF SERVICE

The 60th anniversary of Escom's establishment took place during the year. I should like to refer to just two of the more significant developments that have taken place during this long period of Escom's and South Africa's history.

The first is the electrification of South Africa's railways. The economic and other advantages of a countrywide electrified railway network were obvious to South Africa's lawmakers when they passed the first Electricity Act in 1922. One of Escom's first actions was to start the negotiations with the railway authorities that led to Escom taking over the Colenso power station – then under construction – and to the long subsequent programme of electrification that has given South Africa one of the world's largest electrified railway networks. A significant milestone in that programme was achieved in 1983 with the electrification of one of the last two sections of the main line between Cape Town and the Witwatersrand – that between Beaufort West and De Aar.

Incidentally, that same Colenso power station, one of Escom's first, is, 60 years later, still generating a reliable 70 MW, and it was indeed the only thermal power station in Natal with sufficient cooling water to continue generating at full capacity throughout the period of the drought.

Today, about 4% of Escom's total electricity production is required by the railways. However – and this brings me to the second development I should like to refer to – the railways' electrification programme was one of the considerations leading to the establishment of South Africa's national electricity grid.

In Escom's early days separate undertakings were required to meet the electricity needs of the small parts of the country which were becoming industrialised. The Electricity Act required Escom to keep separate accounts for each of these undertakings, so that consumers could be charged the actual cost of the electricity they bought, and so that consumers should not subsidise one another. The benefits of cheaper electricity in one undertaking – because, for example, of its size – could be shared by consumers in that undertaking but not by Escom's consumers elsewhere. With the completion of the national grid and the pooling of major generating costs in the 1970s, the large tariff differentials from one undertaking to another have been gradually reduced and some undertakings have been merged.

This evolutionary process is continuing and the Electricity Act does not prevent the eventual consolidation of all Escom's present seven distribution undertakings and the establishment of a single national electricity tariff. It is perhaps important to emphasise that this would not lead to a uniform price for electricity, because the differentials applying to factors such as the cost of distribution and the consumer's load factor would continue to ensure that the price each consumer pays would vary according to the cost of his supply.

## SESTIG JAAR VAN DIENS

Evkom se 60ste bestaansjaar is gedurende die jaar herdenk. Ek wil graag verwys na slegs twee van die meer beduidende ontwikkelings wat gedurende hierdie lang tydperk in die geskiedenis van Evkom en van Suid-Afrika plaasgevind het.

Die eerste is die elektrifisering van die Suid-Afrikaanse spoorweë. Die ekonomiese en ander voordele van 'n landwye geëlektrifiseerde spoorwegnetwerk is deur Suid-Afrika se wetmakers besef toe hulle die eerste Elektrisiteitswet in 1922 uitgevaardig het. Een van Evkom se eerste stappe was om onderhandelings met die spoorwegowerhede aan te knoop wat geleid het tot die oornname deur Evkom van die Colenso-kragstasie – destyds in aanbou – en tot die lang elektrifiseringsprogram wat aan Suid-Afrika een van die wêreld se grootste geëlektrifiseerde spoorwegnetwerke gegee het. 'n Noemenswaardige mylpaal in daardie program is in 1983 bereik met die elektrifisering van een van die laaste twee gedeeltes van die hooflyn tussen Kaapstad en die Witwatersrand – die gedeelte tussen Beaufort-Wes en De Aar.

Dieselde Colenso-kragstasie, een van Evkom se eerstes, ontwikkel na 60 jaar steeds 'n betroubare 70 MW en dit was inderdaad die enigste termiese kragstasie in Natal wat deur die hele droogtetylperk voldoende verkoelingswater gehad het om teen volle vermoë te kon werk.

Vandag word sowat 4% van Evkom se totale elektrisiteitslewering deur die spoorweë gebruik. Maar – en dit bring my by die tweede ontwikkeling waarvan ek melding wil maak – die spoorweë se elektrifiseringsprogram was een van die oorwegings wat geleid het tot die oprigting van Suid-Afrika se nasionale elektrisiteitsnet.

In Evkom se vroeë geskiedenis was afsonderlike ondernemings nodig om te voorsien in die elektrisiteitsbehoeftes van klein gedeeltes van die land wat geïndustrialiseerd geraak het. Die Elektrisiteitswet het vereis dat Evkom afsonderlike rekeninge vir elk van hierdie ondernemings hou, sodat verbruikers aangeslaan kon word met die werklike koste van die elektrisiteit wat hulle gekoop het, en sodat verbruikers nie mekaar sou subsidieer nie. Die voordele van goedkoper elektrisiteit in een onderneming – vanweë sy grootte byvoorbeeld – kon deur verbruikers in daardie onderneming geniet word, maar nie deur Evkom se verbruikers elders nie. Met die voltooiing van die nasionale net en die saampotting van die vernamste ontwikkelkoste in die sewentigerjare, is die groot tariefverskille tussen ondernemings geleidelik verminder. Sommige ondernemings het saamgesmelt.

Hierdie evolusionêre proses duur voort en die Elektrisiteitswet verbied nie die uiteindelike konsolidasie van al Evkom se huidige sewe distribusieondernemings en die instelling van 'n enkele nasionale elektrisiteitstarief nie. Dit is miskien belangrik om te benadruk dat dit nie sal lei tot 'n uniforme prys vir elektrisiteit nie, omdat die verskille weens faktore soos die koste van verspreiding en die verbruiker se lasfaktor steeds sal verseker dat die prys wat elke verbruiker betaal wissel in ooreenstemming met die koste van sy toevoer.

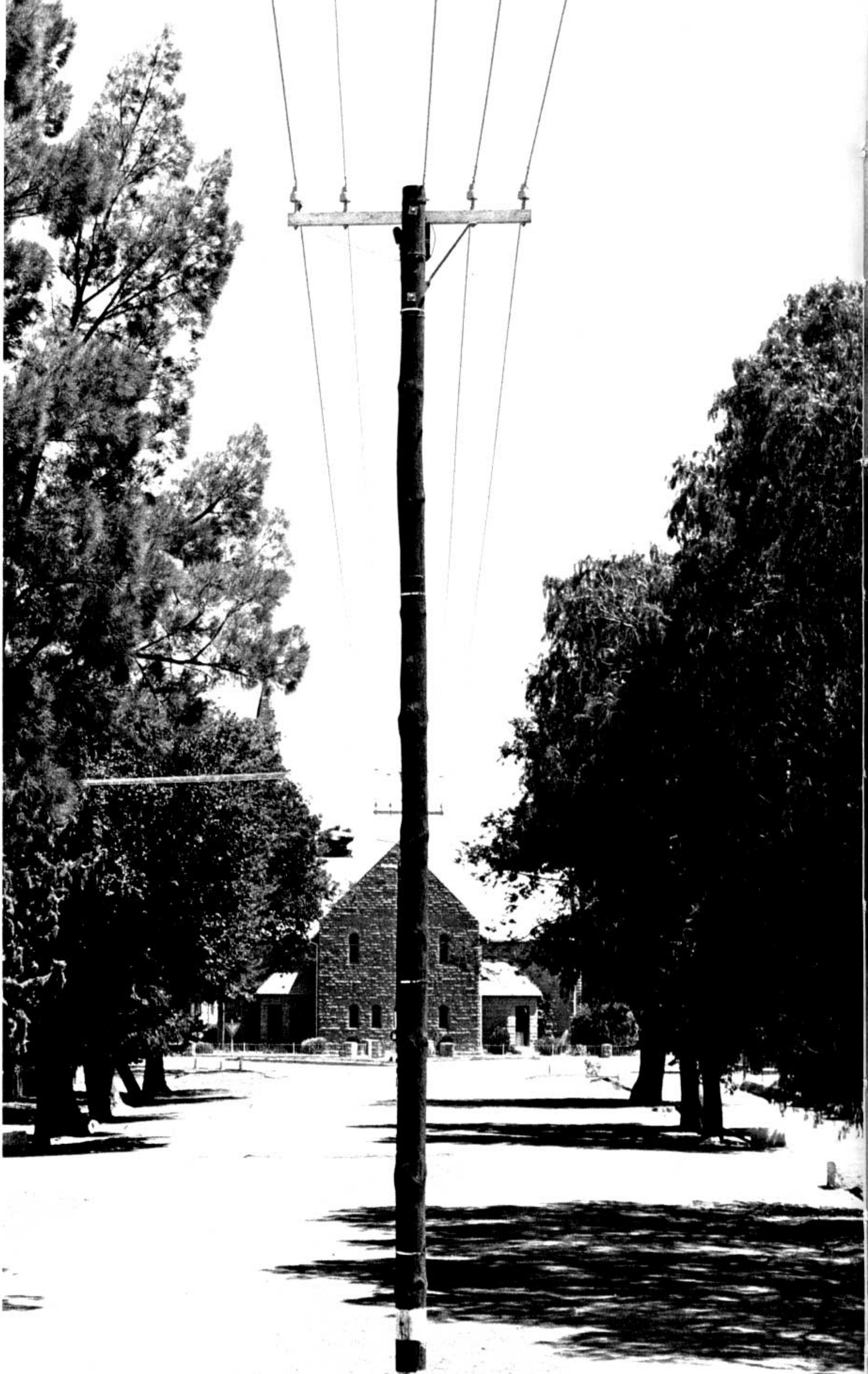


Escom House, built in 1936 as Johannesburg's tallest building, was demolished in 1983.

Evkom-huis is in 1936 as Johannesburg se hoogste gebou opgerig en in 1983 gesloop.

The small Karoo town of Loxton was one of more than a dozen municipalities to be linked to the Escom supply network during the year.

Die klein Karoodorpie Loxton was een van meer as 'n dosyn munisipaliteite wat gedurende die jaar aan die Ekom-voorsieningsnet gekoppel is.



## COMMISSION AND STAFF

After this brief excursion into the past and the future, I should like to conclude with one or two references to Escom's commissioners and staff.

During the year, Escom completed a number of studies for the Commission of Enquiry into the Provision of Electricity in South Africa, and we look forward to its findings.

Two members of the Electricity Supply Commission were appointed to this commission of enquiry. Mr L.F. Rive resigned as an Escom commissioner on his appointment and Mr J. Wilkens took leave of absence from Escom for the duration of the commission of enquiry. Escom's Legal Manager, Mr P.J.T. Oosthuizen, was seconded as secretary to the commission of enquiry on 1 May 1983, since when Mr A.A. Loots has been Acting Legal Manager.

During 1983 I relinquished my position as Escom's chief executive officer, but continued as Chairman of the Commission. I should like to congratulate Mr I.D. van der Walt, Escom's Senior General Manager, on his appointment as chief executive officer as from 1 June 1983. The Regional Manager for the Eastern Transvaal, Mr T.P. O'Connor, retired after 36 years' service with Escom, and he was succeeded by Mr H. Edeling.

Finally, I should like to express my appreciation to all Escom's staff throughout South Africa for their loyal service during the year.

## KOMMISSIE EN PERSONEEL

Na hierdie kort historiese oorsig en toekomsblik wil ek graag afsluit met een of twee verwysings na Evkom se kommissielede en personeel.

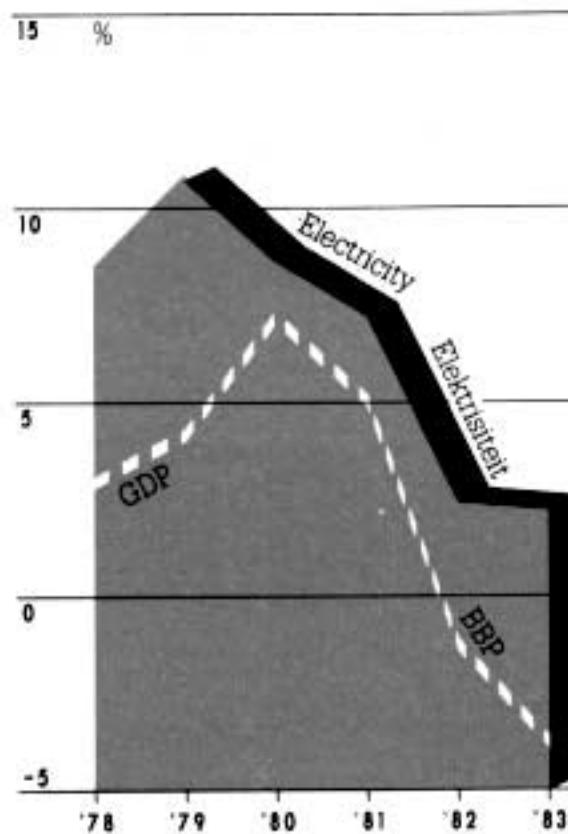
Gedurende die jaar het Evkom op versoek van die Kommissie van Ondersoek na Elektrisiteitsvoorsiening in Suid-Afrika 'n aantal studies onderneem, en ons sien uit na sy bevindings.

Twee lede van die Elektrisiteitsvoorsieningskommissie is op hierdie kommissie van ondersoek aangestel. Mn. L.F. Rive het by sy aanstelling as Evkom-kommissielid bedank en mn. J. Wilkens het verlof van Evkom geneem vir die duur van die kommissie van ondersoek. Evkom se Regsbestuurder, mn. P.J.T. Oosthuizen, is op 1 Mei 1983 as sekretaris van die kommissie van ondersoek gekondeer en sedertdien het mn. A.A. Loots as Regsbestuurder waargeneem.

Gedurende 1983 het ek afstand gedaan van my pos as Evkom se hoof- uitvoerende beampete, maar as Voorsitter van die Kommissie aangebly. Ek wil graag mn. I.D. van der Walt, Evkom se Senior Hoofbestuurder, geluk wens met sy aanstelling as hoof- uitvoerende beampete vanaf 1 Junie 1983. Die Streekbestuurder vir Oos-Transvaal, mn. T.P. O'Connor, het afgetree na 36 jaar diens by Evkom en is opgevolg deur mn. H. Edeling.

Ten slotte wil ek my waardering betuig teenoor al Evkom se personeel dwarsdeur die land vir hulle getroue diens gedurende die jaar.

Electricity sales and GDP  
Elektrisiteitsverkope en BBP



The growth in South African electricity sales continues to stay above growth in GDP in the longer term, but the gap is expected to narrow as electricity supplies a greater proportion of the country's total energy requirements, but at a decreasing rate.

Die groei in die Suid-Afrikaanse elektrisiteitsverkope bly steeds hoër as die groei in die BBP in die langer termyn, maar die gaping sal na verwagting vermou namate elektrisiteit in 'n groter mate in die land se totale energiebehoeftes voorsien, maar teen 'n afnemende koers.

The Alusaf aluminium reduction plant at Richards Bay expanded its capacity in 1983 to become one of Escom's biggest consumers, using more electricity than most of South Africa's cities.

Alusaf se aluminiumreduksie-aanleg by Richardsbaai het in 1983 sy vermoe verhoog en aldus een van Evkom se grootste verbnuikers geword. Hier word meer elektrisiteit as die meeste Suid-Afrikaanse stede gebruik.



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Sixty-first annual report of the Electricity Supply Commission, for the year ending 31 December 1983, submitted to the Minister of Mineral and Energy Affairs in accordance with Section 19 of the Electricity Act of 1958, as amended.

Published April 1984 by the Electricity Supply Commission, Megawatt Park, Maxwell Drive, Sandton 2199.

Additional copies of the report are obtainable from the Public Relations Division, Escom, P.O. Box 1091, Johannesburg 2000, South Africa.

Een-en-sestigste jaarverslag van die Elektrisiteitsvoorsieningskommissie vir die jaar geëindig 31 Desember 1983, voorgelê aan die Minister van Mineraal- en Energiesake soos vereis deur artikel 19 van die Elektrisiteitswet van 1958, soos gewysig.

Gepubliseer in April 1984 deur die Elektrisiteitsvoorsieningskommissie, Megawatt Park, Maxwellrylaan, Sandton 2199.

Bykomende eksemplare van die verslag is verkrybaar by die Skakelaafdeling, Ekvom, Posbus 1091, Johannesburg 2000, Suid-Afrika.

ISBN 0-620-07639-9

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# **Escom's administration**

## **Administrasie van Evkom**

### **Members of the Electricity Supply Commission**

Jan H. Smith *Chairman*  
D.J. Malan  
E. Pavitt  
J.F.W. Haak  
T.R. Castle  
J. Wilkens  
(on leave of absence from the Commission since 1 August 1983)  
L.F. Rive  
(resigned from the Commission on 31 July 1983)

### **Lede van die Elektrisiteitsvoorsieningskommissie**

Jan H. Smith *Voorsitter*  
D.J. Malan  
E. Pavitt  
J.F.W. Haak  
T.R. Castle  
J. Wilkens  
(met verlof van die Kommissie afwesig sedert 1 Augustus 1983)  
L.F. Rive  
(op 31 Julie 1983 uit die Kommissie bedank)

### **Members of the Management Committee**

I.D. van der Walt  
*Senior General Manager*  
F.J.W. Barnard  
*General Manager (Services)*  
I.C. McRae  
*General Manager (Operations)*  
J.L. Rothman  
*General Manager (New Works)*  
L. te Groen  
*General Manager (Finance)*  
J.S. Els  
*Assistant General Manager (Operations)*  
R.A. Forbes  
*Assistant General Manager (Finance)*  
E.H. Ralph  
*Assistant General Manager (New Works)*  
G.F. Lindeque  
*Personnel Manager*  
A.A. Loots  
*Acting Legal Manager (from 1 May 1983)*  
P.J.T. Oosthuizen  
*Legal Manager (seconded to the Commission of Enquiry on Electricity Supply on 1 May 1983)*  
G.A. Park  
*Production Assets Manager*

### **Lede van die Bestuurskomitee**

I.D. van der Walt  
*Senior Hoofbestuurder*  
F.J.W. Barnard  
*Hoofbestuurder (Dienste)*  
I.C. McRae  
*Hoofbestuurder (Bedryf)*  
J.L. Rothman  
*Hoofbestuurder (Nuwe Werke)*  
L. te Groen  
*Hoofbestuurder (Finansies)*  
J.S. Els  
*Assistent-hoofbestuurder (Bedryf)*  
R.A. Forbes  
*Assistent-hoofbestuurder (Finansies)*  
E.H. Ralph  
*Assistent-hoofbestuurder (Nuwe Werke)*  
G.F. Lindeque  
*Personeelbestuurder*  
A.A. Loots  
*Waarnemende Regsbestuurder (vanaf 1 Mei 1983)*  
P.J.T. Oosthuizen  
*Regsbestuurder (aan die Kommissie van Ondersoek na Elektrisiteitsvoorsiening op 1 Mei 1983 gesekondeer)*  
G.A. Park  
*Produksiebatesbestuurder*

### **Regional managers**

H. Edeling  
*Eastern Transvaal*  
(appointed on 1 October 1983 on retirement of T.P. O'Connor on 30 September 1983)  
G.F. Hellström  
*Western Cape*  
E.F. Otten  
*Eastern Cape*  
J.P. Rodger  
*Northern Cape*  
M.W. Walter  
*Rand and Orange Free State*  
H.E. Wohlberg  
*Natal*

### **Streekbestuurders**

H. Edeling  
*Oos-Transvaal*  
(op 1 Oktober 1983 aangestel by die aftrede van T.P. O'Connor op 30 September 1983)  
G.F. Hellström  
*Wes-Kaapland*  
E.F. Otten  
*Oos-Kaapland*  
J.P. Rodger  
*Noord-Kaapland*  
M.W. Walter  
*Rand en Oranje-Vrystaat*  
H.E. Wohlberg  
*Natal*

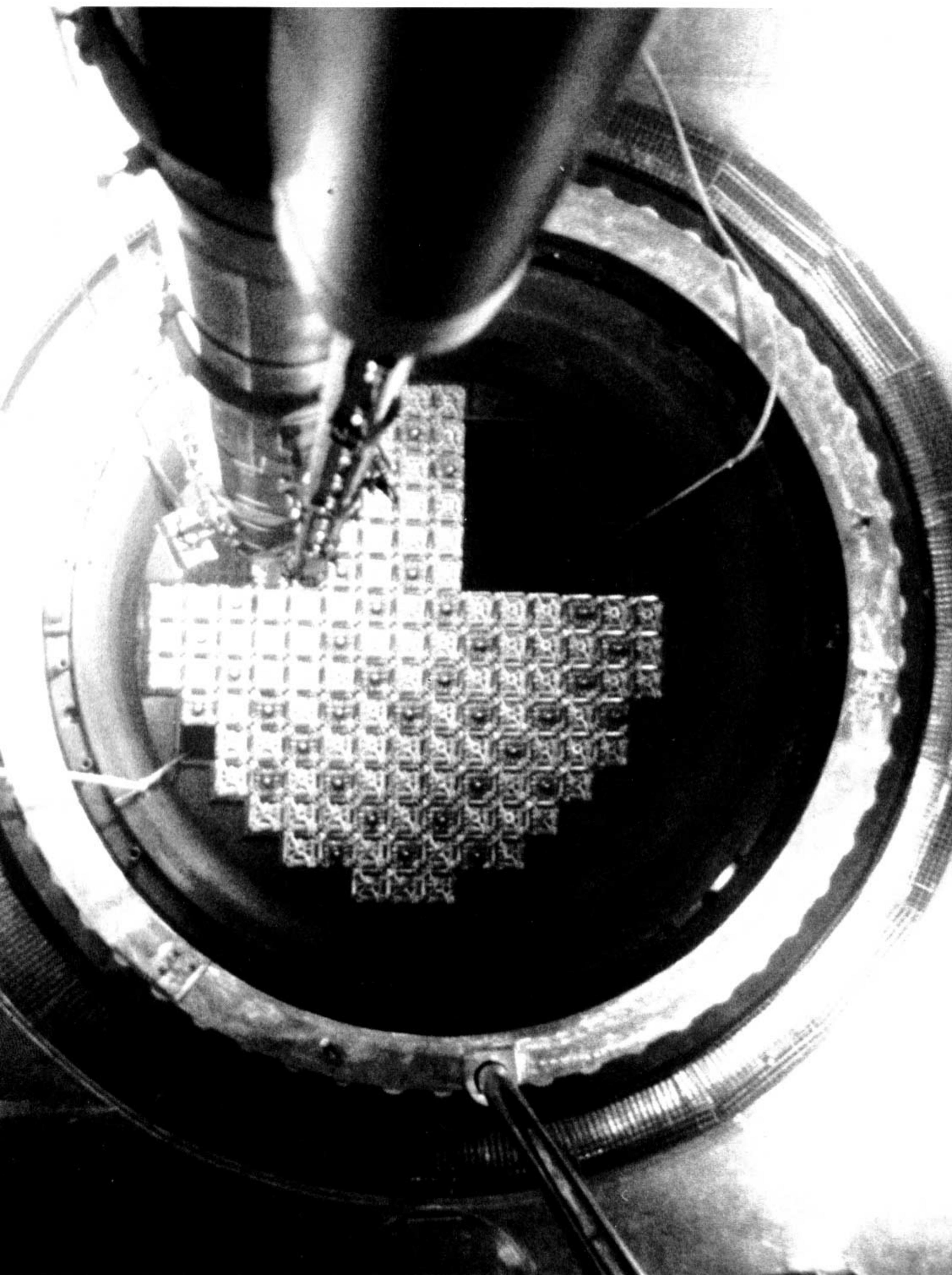


During the year Escom bought the Trust Building in Kimberley, which was already occupied by its Northern Cape head office.

In die loop van die jaar het Evkom die Trust-gebou in Kimberley aangekoop wat reeds deur die Noord-Kaaplandse hoofkantoor beset was.

Uranium fuel was loaded into the reactor core at the Koeberg power station towards the end of 1983.

Uraanbrandstof is teen die einde van 1983 in een van die reaktors van Koeberg-kragstasie geplaas.



# Notes to the financial statements for the year ended 31 December 1983

## Aantekeninge by finansiële state vir die jaar geëindig 31 Desember 1983

### 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. 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 write them off over their estimated useful lives.

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 fuel 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 average cost per ton based on the value at the beginning of the quarter plus the following three months' purchases. Nuclear fuel is valued at 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. Gains or losses on the translation of other uncovered liabilities and assets are accounted for in terms of the interest recovery procedure.

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

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.

#### 1.1 Vaste bates

##### (a) Vaste bates in bedryf

Die vaste bates in bedryf word nie aan waardevermindering onderwerp nie, maar word teen historiese koste getoon. Lenings word aangegaan om hierdie bates te finansier. Weens die korrelasie tussen die lenings aldus opgeneem en vaste bates, neem die vordering teen inkoms vir die aflossing van lenings die plek van waardevermindering in.

##### (b) Werke in aanbou

Rente en 'n vordering vir korporatiefokoste word gedurende die oprigtingstydperk gekapitaliseer.

##### (c) Uitrusting, voertuie en meubels

Uitrusting, voertuie en meubels word gedepresieer teen koers wat geskik geag word om die historiese kosprys af te skryf oor die geskatte ekonomiese lewensduur van die bates.

Sekere uitgawes aan vaste bates ingevolge artikel 13(1)(a) van die Elektrisiteitswet, 1958, word ten volle teen die Reservefonds afgeskryf.

#### 1.2 Voorrade, materiaal en brandstof

Die basis waarvolgens voorrade en materiaal uitgesonderd brandstof, waardeer word is die laagste van kosprys, bepaal op grondslag van laaste-in-eerste-uit, en vervangingswaarde. Waar toepaslik, word voorsiening vir veroudering gemaak. Steenkoolvoorraad word waardeer teen die gemiddelde koste per ton, gebaseer op die waarde aan die begin van die kwartaal plus die daaropvolgende drie maande se aankope. Kernbrandstof word waardeer teen koste.

#### 1.3 Buitelandse betaalmiddele

Verpligte in buitelandse valuta wat deur valutatermykontrakte gedek is, word teen die gedeekte wisselkoers in rand omgereken. Verpligte wat nie deur valutatermykontrakte gedek is nie en buitelandse bates word teen die wisselkoers wat op die balansstaatdatum heers in rand omgereken. Geldeenheid wat vir obligasiehouers die voordeelste is, word gebruik vir die omrekening van lenings wat in Europese Rekeneenhede aangegaan is.

Die netto wins of verlies voortspruitend uit die omrekening van ongedekte buitelandse leningsaldo's teen heersende wisselkoers op die balansstaatdatum word uitgestel en verreken oor die oorblywende tydperke van die lenings by wyse van 'n vordering of krediet aan die inkomsterekening. Winsten en verliese met die omrekening van ander ongedekte verpligte en bates word verreken volgens die prosedure vir die verhaling van rente.

Premiums, netto van diskontos, op termyndekking word uitgestel en verreken oor die oorblywende termyne van die dekking.

#### 1.4 Uitgestelde uitgawes

Diskonto op lenings word volgens die grondslag van 'n amortisasiefonds oor die termyn van elke lening gedelg deur volle voorsiening vir aflossing van die betrokke lenings. Die gedelgde gedeelte van die diskonto word teen die Delgingsfonds verreken en by terugbetaling van die lenings na die Kapitaalreservoir oorgeplaas.

Uitgawes om toekomstige brandstofvoorraade ter verseker, word opgehoog vir delging sodra afluwing begin.

Die verskil tussen die boekwaarde en die opbrengs van effekte verkoop word afgeskryf oor die oorblywende lewensduur van die oorspronklike belegging volgens die prosedure vir die verhaling van rente.

#### 1.5 Aflossing van lenings

'n Delgingsfonds is ingevolge die bepalings van die Elektrisiteitswet, 1958, gestig en voorsiening word gemaak vir die delging van plaaslike lenings oor tydperke van hoogstens 25 jaar.

Die Staatspresident het ooreenkomsdig artikel 10(2) van die Wet gelas dat die bepalings rakende die stigting van die Delgingsfonds nie op buitelandse lenings van toepassing moet wees nie. Voorsiening word gemaak vir die terugbetaling van sulke lenings oor tydperke van hoogstens 25 jaar.

Die bepalings van die Delgingsfonds word nie op wentelkrediete en korttermynvoorskotte toegepas nie, aangesien dit aangegaan word ingevolge die bepalings van paragraaf 1(3) van die Bylae by die Wet.

#### 1.6 Bedryfsinkomste en -uitgawes

Meterlesings geskied op 'n sikliese basis en elektrisiteitsverkope word dienoordeelkonsistig in berekening gebring. Die inkomste uit toewoere tussen die datum van die laaste lesing en die einde van die boekjaar word nie by verkope ingesluit nie, terwyl die verwante uitgawes gedeelteer word soos dit aangegaan word.

#### 1.7 Kapitalisering van rente en finansieringskoste

Rente op fondse aangewend vir die finansiering van kapitaaluitgawes en deposito's, vir die versekering van toekomstige brandstofvoorraade en konstruksiemateriaal, word gekapitaliseer.

## 2 Fixed assets

### Vaste bates

	1983 R000	1982 R000	
Assets in commission at cost			Bates in bedryf, teen kosprys
Land and rights	162 470	107 557	Grond en regte
Buildings and facilities	973 834	625 143	Geboue en fasiliteite
Production plant	8 082 642	6 956 699	Produksieuitrusting
Total in commission	9 218 946	7 689 399	Totaal in bedryf
Works under construction	6 209 611	5 016 580	Werke in aanbou
Equipment, vehicles and furniture, at cost	294 932	263 023	Uitrusting, voertuie en meubels, teen kosprys
Less: Accumulated depreciation	132 570	110 540	Min: Opgeloepe waardevermindering
	15 590 919	12 858 462	

### **3 Stores, materials and fuel**

#### **Voorrade, materiaal en brandstof**

	1983 R000	1982 R000	
Construction material	<b>224 072</b>	181 771	Konstruksiemateriaal
Maintenance and consumable stores	<b>159 769</b>	117 004	Instandhouding- en verbruiksvorraad
Fuel	<b>287 971</b>	148 840	Brandstof
	<b>671 812</b>	447 615	

### **4 Other non-current assets**

#### **Ander nie-bedryfsbates**

Unamortised portion of loan discount	<b>758 216</b>	208 905	Onafgeloste gedeelte van leningsdiskonto
Expenditure and deposits to secure future fuel supplies	<b>837 971</b>	267 526	Uitgawes en deposito's om toekomstige brandstofvoorraad te verseker
Difference between book value and proceeds of Escom stock sold	<b>486 388</b>	468 638	Verskil tussen boekwaarde en opbrengs uit Evkom-effekte verkoop
Other deferred charges	<b>114 856</b>	23 425	Ander uitgestelde kostes
Deferred expenditure	<b>2 197 431</b>	968 494	Uitgestelde uitgawes
Listed investments held for Reserve Fund	<b>2 796</b>	2 948	Genoteerde beleggings gehou vir Reservefonds
Redemption Fund	<b>312</b>	306	Delgingsfonds
Housing loans to employees secured by first mortgage	<b>147 483</b>	106 117	Huislenings aan werknemers verseker deur eerste verband
Amounts owing in respect of reticulation systems sold	<b>4 050</b>	4 347	Bedrae verskuldig ten opsigte van kragnetwerke verkoop
	<b>2 352 072</b>	1 082 212	

### **5 Loans and extended credit**

#### **Lenings en uitgestelde krediet**

The current portion (excluding revolving credits) included in loans and extended credit amounts to approximately	<b>579 000</b>	410 000	Die bedryfsgedeelte (uitgesonderd wentelkrediete) wat by lenings en uitgestelde krediet ingesluit is bedra ongeveer
Borrowings in the following currencies are not covered by forward exchange contracts:			Lenings in die volgende geldeenheid word nie deur valutatermynkontrakte gedek nie:
1983	1982		1983                  1982
European Units of Account	4 040 000	5 370 000	Europese Rekenenhede                  4 040 000        5 370 000
Deutsche Mark	3 572 000	3 072 000	Duitse Mark                  3 572 000        3 072 000
Pounds Sterling	—	1 995 000	Pond Sterling                  —        1 995 000
US Dollars	107 914 000	90 495 000	VSA Dollar                  107 914 000        90 495 000
French Francs	—	2 189 000	Franse Frank                  —        2 189 000
Swiss Francs	7 043 000	519 000	Switserse Frank                  7 043 000        519 000
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.			Ingevolge die bepalings van die Elektrisiteitswet het effekte uitgereik vir die aangaan van lenings, tesame met rente daarop, 'n eerste vordering teen al die bates van die Kommissie.

### **6 Escom stock held for Evkom-effekte gehou vir**

	Schedule Bylae	1983 Book value Boek- waarde R000	1983 Nominal value Nominale waarde R000	1982 Book value Boek- waarde R000	1982 Nominal value Nominale waarde R000
Capital Development Fund	3	<b>4 063 263</b>	<b>4 421 098</b>	2 922 914	3 003 907
Reserve Fund	4	<b>228 350</b>	<b>275 698</b>	124 997	137 927
Redemption Fund	5	<b>944 960</b>	<b>1 132 036</b>	595 592	647 763
Repayment of foreign loans	6	<b>3 920</b>	<b>3 848</b>	5 060	5 050
		<b>5 240 493</b>	<b>5 832 680</b>	3 648 563	3 794 647
Difference between nominal and book value			<b>592 187</b>	146 084	Verskil tussen nominale en boekwaarde

### **7 Statutory funds**

#### **Statutêre fondse**

**7.1** 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.

**7.1** Die statutêre fondse word gekrediteer met bedrae soos bepaal deur die Elektrisiteitswet. Hierdie bedrae word hoofsaaklik in Evkom-effekte belê en die rente val die onderskeie fondse toe.

Die Delgingsfonds maak op die grondslag van 'n amortisasiefonds voorseening vir die terugbetaling van plaaslike lenings.

Die Reservefonds word, wanneer nodig, gebruik vir die vervanging van verouderde masjinerie of uitrusting en in die algemeen vir die verbetering van uitrusting of vir of in die plek van verzekering, of vir buitengewone herstelwerk of noodgevalle.

Die Kapitaalontwikkelingsfonds maak voorseening vir die interne financiering van kapitaaluitbreiding.

**7.2** The Redemption Fund at the year-end is stated as follows:

Redemption Fund (Schedule 9)  
Amortised portion of discount on loans

	1983 R000	1982 R000
	<b>1 000 456</b>	744 696
	<b>48 777</b>	27 208
	<b>951 679</b>	717 488

**7.2** Die Delgingsfonds aan die jaareinde word soos volg uiteengesit:  
Delgingsfonds (Bylae 9)  
Afgeloste gedeelte van diskonto op lenings

## 8 Capital reserve Kapitaalreserwe

	1983 R000	1982 R000	
Loans repaid	<b>883 146</b>	745 420	Lenings terugbetaal
Production plant financed from Reserve Fund	<b>10 360</b>	10 360	Produksie-uitrusting gefinansier uit Reservefonds
	<b>893 506</b>	755 780	
Less: Cost of commissioned assets scrapped or sold	<b>129 925</b>	118 579	Min: Koste van bates in bedryf onttrek of verkoop
	<b>763 581</b>	637 201	

## 9 Other reserves Ander reserwes

Difference between nominal and book values of Escom stock held internally	592 187	146 084	Verskil tussen nominale en boekwaardes van Eskom-effekte wat intern gehou word
Deferred proceeds of reticulation systems sold	4 050	4 347	Uitgestelde opbrengs uit kragnetwerke verkoop
Unrealised exchange profits on foreign liabilities	49 574	38 335	Ongerealiseerde wisselkoerswins op buitelandse verpligtinge
	<b>645 811</b>	188 766	

## 10 Accumulated surplus or deficit Opgehopte surplus of tekort

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 Reserve and Capital Development Funds. The surplus or deficit in any financial year is carried forward and taken into account when charges are adjusted from time to time.		Ingevolge die bepalings van die Elektrisiteitswet, 1958, word elektrisiteit voorsien teen pryse wat bereken is om bedryfsuitgawes, leningsaflossingskoste en bedrae wat vir die Reservew- en Kapitaalontwikkelingsfonds opsygesit mag word, te dek. Die surplus of tekort in enige finansiële jaar word oorgedra en in berekening gebring wanneer pryse van tyd tot tyd aangepas word.
A detailed analysis of the revenue and charges for each undertaking of the Commission is given in the Electricity Supply Account (Schedule 1).		'n Breedvoerige ontleding van die inkomste en koste vir elke onderneming van die Kommissie word in die Elektrisiteitsvoorsieningsrekening gegee (Bylae 1).

## 11 Supplementary information Bykomende inligting

Total interest and finance costs	1 665 331	1 305 046	Totale rente en finansieringskoste
Amounts capitalised and charged to Redemption Fund (in respect of assets sold)	725 778	583 098	Bedrae gekapitaliseer of afgeskryf teen die Delgingsfonds (ten opsigte van bates verkoop)
	<b>939 553</b>	721 948	
Leasing charges on equipment	13 000	9 200	Bruikhuurvorderings op uitrusting
Commitment fees with regard to overdrafts and other credit facilities	8 400	8 100	Verpligtingsgeld op oortrekking en ander kredietfasilitete
Depreciation of equipment, vehicles and furniture	41 000	34 000	Waardevermindering van uitrusting, voertuie en meubels

## 12 Commitments Verpligtinge

The Commission is committed for		Die Kommissie is gebind vir	
<b>12.1</b> Capital expenditure contracted for, excluding contract price adjustments and general sales tax, amounting to approximately	6 808 000	<b>12.1</b> Kapitaaluitgawes aangegaan, uitgesonderd kontrakprysaanpassings en algemene verkoopbelasting, ten bedrae van ongeveer	
This expenditure will be financed from external borrowings and from cash generated internally, and is expected to be incurred, as follows:		Hierdie uitgawes sal uit eksterne lenings en kontant wat intern geskep is, gefinansier word. Na verwagting sal dit soos volg aangegaan word:	
	R000	R000	
1984	1 146 000	1984	1 146 000
1985	1 111 000	1985	1 111 000
1986	1 022 000	1986	1 022 000
1987	946 000	1987	946 000
1988	735 000	1988	735 000
1989 onwards	1 848 000	1989 en daarna	1 848 000

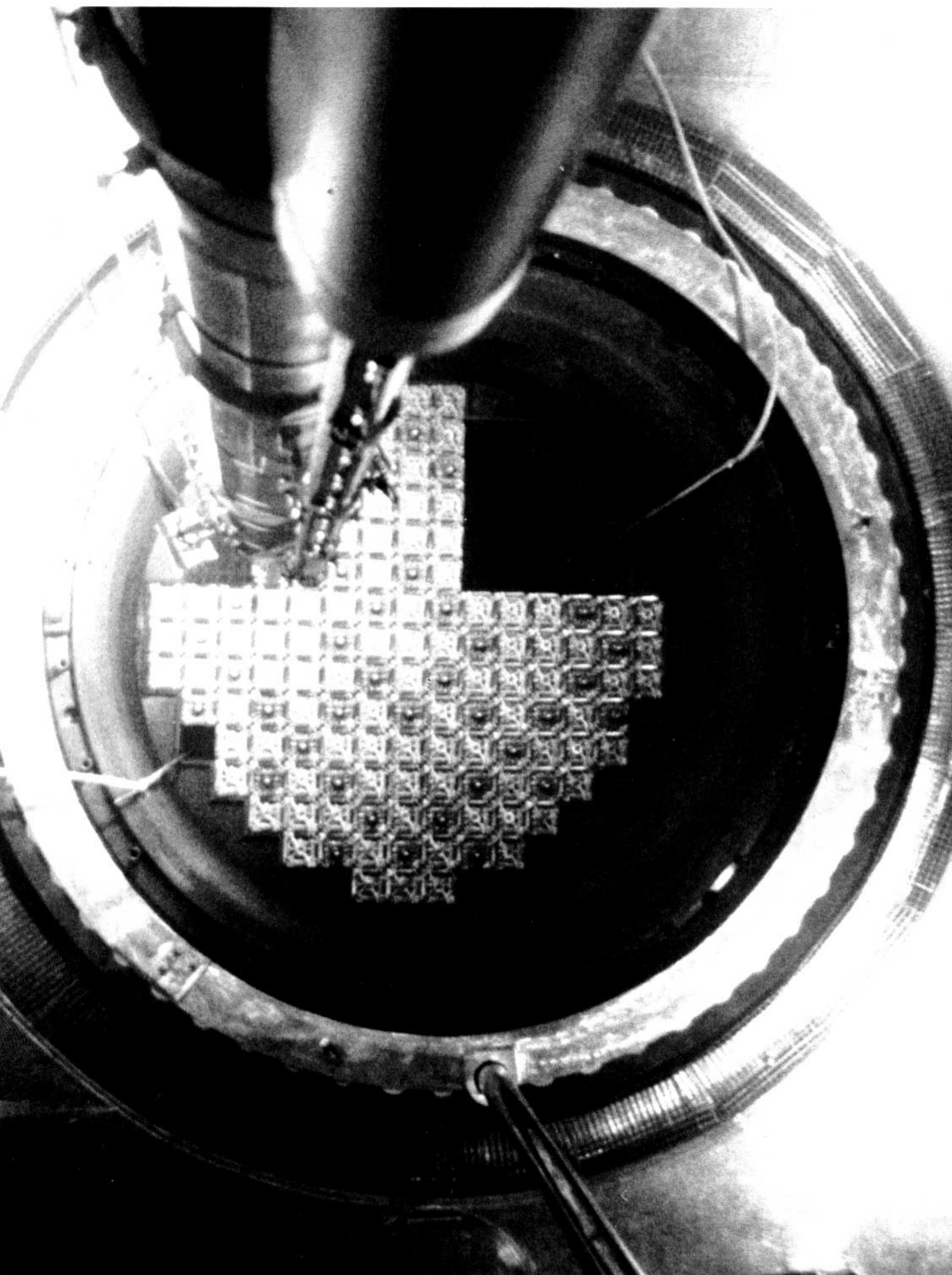
<b>12.2</b> Payment in respect of housing loans granted to employees of approximately	10 600	5 600	<b>12.2</b> Betaling van huislenings aan werknemers van ongeveer
<b>12.3</b> Payment to the Electricity Supply Commission Pension and Provident Fund, in addition to the normal contributions of R191 000 a year to 1985	382	573	<b>12.3</b> Betaling aan die Elektrisiteitsvoorsienings-kommissie se Pensioen- en Voorsorgfonds, benewens die normale bydraes van R191 000 per jaar tot 1985

## 13 Contingent liabilities Voorwaardelike aanspreeklikheid

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 Trustees.	Die Kommissie het die Elektrisiteitsvoorsienings-kommissie se Pensioen- en Voorsorgfonds gevrywaar teen enige verlies voortspruitend uit die nalatigheid, oneerlikheid of bedrog van die Fonds se amptenare of Trustees.
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Uranium fuel was loaded into the reactor core at the Koeberg power station towards the end of 1983.

Uraanbrandstof is teen die einde van 1983 in een van die reaktors van Koeberg-kragstasie geplaas.



**Income statement** for the year ended 31 December 1983

**Inkomstestaat** vir die jaar geëindig 31 Desember 1983

	Note Aantekening	1983 R000	1982 R000	
Sales of electricity		<b>3 301 904</b>	2 695 422	Elektrisiteit verkoop
Operating expenditure	11	<b>1 691 317</b>	1 400 636	Bedryfsuitgawes
Net operating income		<b>1 610 587</b>	1 294 786	Netto bedryfsinkomste
Less: Loan charges		<b>1 213 580</b>	876 706	Min: Leningskoste
Interest and finance	11	<b>939 553</b>	721 948	Rente en finansiering
Contributions – Redemption of local loans		<b>225 664</b>	106 714	Bydraes – Delging van plaaslike lenings
– Redemption of foreign loans		<b>48 363</b>	48 044	– Delging van buitelandse lenings
Contribution to Reserve Fund		<b>50 000</b>	26 000	Bydrae tot Reserwe Fonds
		<b>347 007</b>	392 080	
Amount set aside to Capital Development Fund in terms of Section 13 of the Electricity Act, 1958		<b>450 000</b>	450 000	Bydrae tot Kapitaalontwikkelingsfonds opsygesit ingevolge artikel 13 van die Elektrisiteitswet, 1958
Net deficit for the year as shown in the Electricity Supply Account	10	<b>102 993</b>	57 920	Netto tekort vir die jaar volgens die Elektrisiteitsvoorsieningsrekening
Accumulated deficit at beginning of year		<b>153 659</b>	95 739	Opgehoorde tekort aan begin van die jaar
Accumulated deficit at end of year	10	<b>256 652</b>	153 659	Opgehoorde tekort aan einde van die jaar

**Overall picture**

Total Escom sales for the year of 98 251 GWh represented a growth of 2,2% compared with 1982. This growth was lower than the 2,4% reported in 1982, and is the lowest for 36 years. Even this modest growth would not have been achieved without a significant surge in electricity consumption during the last four months of the year. The average annual growth in total sales for the past two years has been 2,3%. This is significantly lower than the average annual growth rate of 9,5% from 1971 to 1981, and has been due to the unusual combination of a severe drought, a domestic recession and low growth in the major Western economies which occurred in 1982 and 1983. Sales to the industrial sector increased by 4,3%, to the mining sector by 2,4%, to the municipal sector by 1,2%, and to the domestic and street-lighting sector by 5,7%. Sales to the railways declined by 6,7%.

**Sales to industry**

A five-year review of Escom's direct sales to industrial users reflects an average annual increase of 6,0%. In 1983 the relatively small growth rate of 4,3% was achieved as a result of a significant recovery in sales during the last quarter of the year. Industrial consumers are now responsible for 32,9% of Escom's total sales.

The growth rate in industrial sales is to some extent misleading. During 1983 most industries were operating at consumption levels below those of 1982. The additional sales attributable to the commissioning of plant at Sasol 2, Sasol 3 and Alusaf and a partial recovery in ferro-alloy production were largely responsible for the growth in this category.

**Bulk sales**

Bulk sales include sales to municipalities which generate some of their own electricity, sales to municipalities with no generation plant of their own, and sales to neighbouring states.

The 1,2% increase in bulk sales to municipalities

**Geheelbeeld**

Evkom se totale verkope van 98 251 GWh vir die jaar verteenwoordig 'n groei van 2,2% in vergelyking met 1982. Die groei was laer as die 2,4% van 1982 en is die laagste in 36 jaar. Selfs hierdie beskeie groei sou onmoontlik wees sonder 'n aansienlike styging in elektrisiteitsverbruik gedurende die laaste vier maande van die jaar. Die gemiddelde jaarlikse groei in totale verkope oor die afgelope twee jaar was 2,3%. Dit is aansienlik laer as die gemiddelde jaarlikse groeikoers van 9,5% van 1971 tot 1981 en moet toegeskryf word aan die ongewone kombinasie van 'n ernstige droogte, 'n binnelandse resessie en lae groei in die vernaamste Westerse ekonomiese wat in 1982 en 1983 voorgekom het. Verkope aan die nywerheidsektor het met 4,3% toegeneem, dié aan die mynbou-sektor met 2,4%, aan die municipale sektor met 1,2% en dié aan die huishoudelike en straatverligtingsektor met 5,7%. Verkope aan die spoorweë het met 6,7% afgeneem.

**Verkope aan die nywerheid**

Die vyfjaarroorsig van Evkom se direkte verkope aan nywerheidsgbruikers weerspieël 'n gemiddelde jaarlikse toename van 6,0%. In 1983 is die betreklik klein groeikoers van 4,3% behaal weens die herstel in verkope gedurende die laaste kwartaal van die jaar. Nywerheidsgbruikers is nou verantwoordelik vir 32,9% van Evkom se totale verkope.

Die groeikoers in nywerheidsverkope is tot 'n mate misleidend. Gedurende 1983 het die meeste nywerhede gewerk teen verbruiksvlakte laer as dié van 1982. Die bykomende verkope wat toegeskryf kan word aan die ingebruikneming van installasies by Sasol 2, Sasol 3 en Alusaf en 'n gedeeltelike herstel in ferroallooioproduksie was grootliks verantwoordelik vir die groei in hierdie kategorie.

**Grootmaatverkope**

Grootmaatverkope sluit in verkope aan munisipaliteite wat self elektrisiteit ontwikkel, verkope aan munisipaliteite wat nie oor eie ontwikkelinstallasies



Dave van der Walt, Escom's Senior General Manager, signs one of the main contracts for the Majuba power station.

Dave van der Walt, Evkom se Senior Hoofbestuurder, teken een van die hoof-kontrakte vir Majuba-kragstasie.

### Sales of electricity to categories of consumers Elektrisiteitsverkope aan verbruikerskategorieë

Category of supply	1978	1979	1980	1981	1982	1983	Average increase		Kategorie van toevoer
							Toename 1982-83 %	Gemiddelde toename 1978-83 %	
Bulk sales <sup>1</sup>	21 834	24 133	26 923	29 961	32 349	32 729	1,2	8,4	Grootmaatverkope <sup>1</sup>
Domestic <sup>2</sup>	960	940	906	1 002	1 020	1 078	5,7	2,4	Huishoudelik <sup>2</sup>
Industrial	24 182	27 475	29 373	31 091	30 959	32 286	4,3	6,0	Nywerhede
Mining	22 219	24 000	25 882	27 131	27 372	28 021	2,4	4,7	Mynbou
Traction	3 586	4 035	4 455	4 659	4 436	4 137	-6,7	2,9	Trekkrug
<b>Total</b>	<b>72 780</b>	<b>80 583</b>	<b>87 539</b>	<b>93 844</b>	<b>96 136</b>	<b>98 251</b>	<b>2,2</b>	<b>6,2</b>	<b>Totaal</b>

	% of total % van totaal						Grootmaatverkope <sup>1</sup> Huishoudelik <sup>2</sup> Nywerhede Mynbou Trekkrug
	Bulk sales <sup>1</sup>	Domestic <sup>2</sup>	Industrial	Mining	Traction		
Bulk sales <sup>1</sup>	30,0	29,9	30,8	31,9	33,6	33,3	
Domestic <sup>2</sup>	1,4	1,2	1,0	1,1	1,1	1,1	
Industrial	33,2	34,1	33,6	33,1	32,2	32,9	
Mining	30,5	29,8	29,5	28,9	28,5	28,5	
Traction	4,9	5,0	5,1	5,0	4,6	4,2	

<sup>1</sup> This category includes sales to municipalities and electricity undertakings in neighbouring territories.

<sup>2</sup> Hierdie kategorie sluit verkope aan munisipaliteite en elektrisiteitsondernemings in buurstate in.

<sup>2</sup> Sales in this category include street lighting and have declined as the result of reticulation systems being transferred to municipalities.

<sup>2</sup> Verkope in hierdie kategorie sluit straatverligting in en het afgeneem namate retikulasiestelsels aan munisipaliteite oorgedra word.

and neighbouring states is substantially lower than the 8,4% average annual growth rate over the past five years. Bulk consumers now take 33,3% of Escom's total sales.

Water restrictions resulting from the drought decreased the demand for electricity in a number of municipal areas. In Natal, which was the province worst affected by the drought, sales to municipalities over the year declined by 6,9%.

The supply to Swawek, the South West African water and electricity utility, which was commissioned towards the end of 1982, was in operation for the whole of 1983. Escom and Swawek exchanged power according to Swawek's requirements, and Escom was a net exporter for the year.

Cape Town bought more electricity from Escom during the year, indicating a slight change in mix between municipal and Escom generation. The supply to Soweto increased steeply as large numbers of new consumers were connected to the reticulation network.

### Mining and traction

The 2,4% increase in sales to the mining sector is about half the 4,7% average for the past five years, and is an indication of the difficulties experienced in the export of raw materials. Mining consumers now take 28,5% of Escom's total sales.

Gold mining continued to show growth, but at a slower rate than in the past. The possibility that electricity might need to be rationed during the drought led a number of mines to introduce measures to conserve electricity. Platinum mines reversed their downward consumption trend in the second half of the year, but other mines remained depressed.

Reduced exports, particularly of minerals and agricultural produce, led to substantially lower consumption by the railways despite a considerable expansion in the railways' overall electrification programme. Electricity sales to the railways have declined from 4,6% to 4,2% of Escom's total sales.

### Future prospects

Higher annual growth rates are likely in 1984 and 1985 when the spare capacity in many sectors of the economy is expected to be taken up as demand increases in line with the predicted growth in the economies both of South Africa and of South Africa's more important trading partners.

In the longer term, the growth in electricity sales is expected to continue to be closely linked with growth in GDP. The growth rate of electricity sales is likely to be about 3,0% above GDP for the next 10 years; the actual figure for 1983 was 5,3% above GDP. This difference is predicted to reduce to about 2,5% above GDP after 10 years and 2,0% above GDP after 20 years as the percentage of net energy supplied by electricity continues to rise, but at a decreasing rate.

beskik nie en verkoop aan buurstate.

Die 1,2%-toename in verkoop aan munisipaliteite en buurstate is aansienlik laer as die gemiddelde jaarlikse groeikoers van 8,4% van die afgelope vyf jaar. Grootmaatverbruikers neem nou 33,3% van Evkom se totale verkoop.

Waterbeperkings as gevolg van die droogte het die vraag na elektrisiteit in 'n aantal munisipale gebiede laat afneem. In Natal, wat die ergste deur die droogte geraak is, het verkoop aan munisipaliteite oor die jaar met 6,9% gedaal.

Die toevoer aan Swawek, die Suidwes-Afrikaanse water- en elektrisiteitsnutsmaatskappy, wat teen die einde van 1982 aangesluit is, was die hele 1983 in werking. Evkom en Swawek ruil krag uit volgens Swawek se behoeftes, en Evkom was 'n netto uitvoerder vir die jaar.

Kaapstad het meer elektrisiteit van Evkom gedurende die jaar gekoop. Die aanvraag in Soweto het skerp toegeneem weens nuwe verbruikers.

### Mynbou en trekkrug

Die 2,4%-toename in verkoop aan die mynbousektor is sowat die helfte van die 4,7%-gemiddeld vir die afgelope vyf jaar, en is 'n aanduiding van die probleme wat met die uitvoer van grondstowwe ondervind word. Mynbouverbruikers neem nou 28,5% van Evkom se totale verkoop.

Goudmyne het 'n groei bly toon, maar teen 'n stadier koers as in die verlede. Die moontlikheid dat elektrisiteit gedurende die droogte gerantsoeneer kon word, het daartoe geleid dat 'n aantal myne maatreels ingestel het om elektrisiteit te bespaar. Platinamyne se dalende verbruiksneiging is in die tweede helfte van die jaar omgekeer, maar by die ander myne het die insinking voortgeduur.

Verminderde uitvoere, veral van minerale en landbouprodukte, het geleid tot heelwat laer verbruik deur die spoorweë, ondanks 'n aansienlike uitbreiding in die spoorweë se totale elektrifikasieprogram. Elektrisiteitsverkoope aan die spoorweë het afgeneem van 4,6% tot 4,2% van Evkom se totale verkoop.

### Vooruitsigte vir die toekoms

Hoër jaarlikse groeikoerse kan in 1984 en 1985 verwag word indien die ekonomiese van Suid-Afrika en sy belangrikste handelsvennote herstel soos wat voorspel word.

Oor die langer termyn sal die groei in elektrisiteitsverkoope waarskynlik steeds aan die groei in die BBP gekoppel wees. Die groeikoers in elektrisiteitsverkoope behoort oor die volgende 10 jaar sowat 3,0% hoër as die BBP te wees – die werklike syfer vir 1983 was 5,3%. Dié verskil behoort dan te daal tot sowat 2,5% en na 20 jaar tot 2,0% hoër as die BBP namate die netto energielewering deur elektrisiteit aanhou om te styg, maar teen 'n afnemende koers.



The completed assembly of a large crane for use in the construction of a 3 600MW power station.

'n Groot hyskraan wat opgestel is om in die konstruksie van 'n 3 600MW-kragstasie gebruik te word.

## **Results for the year**

Revenue for the year was R3 302 million, which was R607 million (23%) up on the previous year. Charges against the supply account were R3 405 million, or R652 million (24%) higher than the previous year. The accumulated deficit increased by R103 million to R257 million, or 7,8% of current revenue. It is possible to foresee the deficit being recovered in the years following 1984.

The contribution to the Capital Development Fund

## **Resultate vir die jaar**

Die inkomste vir die jaar was R3 302 miljoen, wat R607 miljoen (23%) meer as die vorige jaar was. Vorderings teen die voorsieningsrekening was R3 405 miljoen, of R652 miljoen (24%) hoër as die vorige jaar. Die opgehoopte tekort het met R103 miljoen gestyg tot R257 miljoen, of 7,8% van die lopende inkomste. Die tekort kan in die jare na 1984 uitgewis word.

Die bydrae tot die Kapitaalontwikkelingsfonds het onveranderd op R450 miljoen gebly, en die bydrae tot die Reserwefonds was R50 miljoen (R26 miljoen in

was unchanged at R450 million, and the contribution to the Reserve Fund was R50 million compared with R26 million in 1982. The total of these contributions represented 2,9% of unredeemed loans and was well below the limit of 6% set by the Electricity Act, 1958, as amended. The higher contribution to the Reserve Fund reflects increased provisions for self-insurance, modernisation of existing plant and abnormal maintenance.

### Capital expenditure

The net expenditure on fixed assets in 1983 amounted to R2 757 million.

During the year Escom revised its capital expenditure programme to effect savings by deferring projects not directly related to the generation and distribution of electricity. Considerable short-term savings were made in 1983 and will continue to be made in 1984, but the potential for controlling escalating capital expenditure on power generation and distribution projects is limited by the need to maintain an acceptable quality of supply.

### Replacement cost depreciation

In the following table, the internal financing generated during the year on a funds basis is compared to projected results based on replacement cost depreciation policies.

Comparative supply account 1983	Funds basis Rm	Depreciation basis Rm
<b>Revenue from electricity sold</b>	3 301,9	3 301,9
<b>Total debits on funds basis (excluding contribution to Capital Development Fund)</b>	2 954,9	2 954,9
<b>Adjustments to convert to depreciation basis</b>		
Reduce by aggregate of increases in statutory funds (excluding contribution to Capital Development Fund), capital reserve and provision for repayment of foreign loans		(871,8)
Add depreciation charges on basis of historical cost	254,4	
<b>Total debits depreciation basis</b>	2 337,5	
<b>Operating surplus for year</b>	347,0	964,4
<b>Appropriations:</b>		
<b>Funds basis:</b>		
Contribution to Capital Development Fund	(450,0)	
<b>Depreciation basis:</b>		
(i) Contribution towards higher replacement cost of assets		(581,8)
(ii) Contribution towards cost of capital expansion	(382,6)	
<b>Surplus (deficit) for year</b>	(103,0)	—

The basis used for arriving at the depreciation values given above is summarised below:

1. The charge for historical cost depreciation has been arrived at using straight-line depreciation on the basis of a 30-year asset life with no residual value.
2. The charge for replacement cost depreciation has been arrived at assuming:
  - (a) a replacement cost of R1 041 (1982: R921) per kW installed (generation, transmission and distribution),
  - (b) a like depreciation period of 30 years with no residual value, and
  - (c) an allowance for depreciation under this heading on the increase in the replacement cost of assets that arose during 1983 only.

1982). Al hierdie bydraes het 2,9% van die ongedelde lenings verteenwoordig en was heelwat laer as die perk van 6% wat deur die Elektrisiteitswet, 1958, soos gewysig, gestel word. Die hoër bydrae tot die Reservewefonds weerspieël verhoogde voorsiening vir selfverzekering, modernisering van bestaande installasies en abnormale instandhouding.

### Kapitaaluitgawes

Die netto uitgawes aan vaste bates het in 1983 R2 757 miljoen bedra.

In die jaar het Evkom op sy kapitaalprogram gespaar met die uitstel van projekte wat nie direk met die ontwikkeling en verspreiding van elektrisiteit gemoeid is nie. Die aansienlike korttermyn-besparings sal in 1984 voortgesit word, maar die beheer van eskalerende kapitaaluitgawes word beperk deur die noodsaaklikheid vir 'n aanvaarbare gehalte van toevoer.

### Vervangingswaardeafskrywing

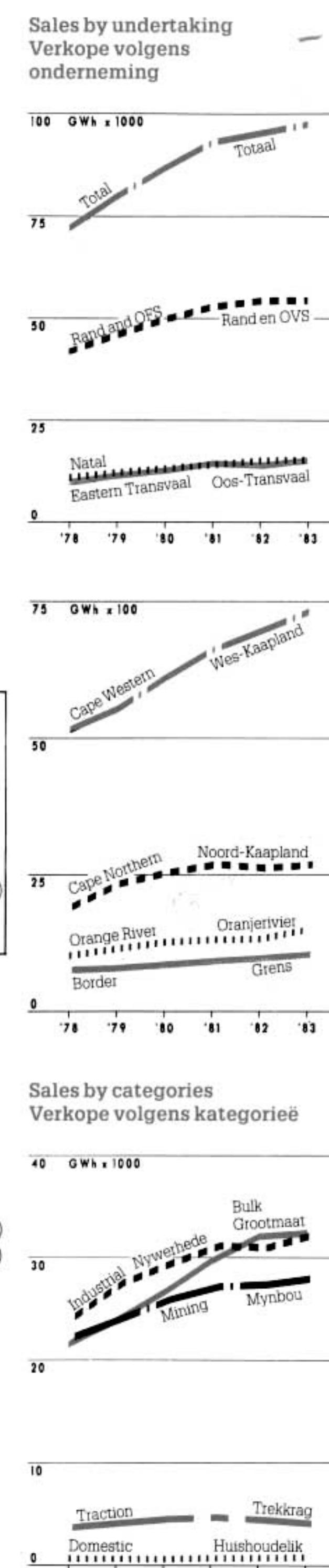
Die tabel toon die interne finansiering wat in die jaar op 'n fondsbasis ontwikkel is, vergeleke met die geprojekteerde resultate volgens vervangingswaardeafskrywing.

Vergelykende voorseeningsrekening 1983	Fondsbasis Rm	Afskrywingsbasis Rm
<b>Inkomste uit elektrisiteit verkoop</b>	3 301,9	3 301,9
<b>Totale debiete op fondsbasis (uitgesonderd bydrae tot Kapitaalontwikkelingsfonds)</b>	2 954,9	2 954,9
<b>Regstellings vir omsetting tot afskrywingsbasis</b>		
Verminder deur totaal van verhogings in statutêre fondse (uitgesonderd bydrae tot Kapitaalontwikkelingsfonds), kapitaalreserve en voorseening vir terugbetaling van buitelandse lenings		(871,8)
Tel by afskrywingskoste op basis van historiese koste		254,4
<b>Totale debiete afskrywingsbasis</b>	2 337,5	
<b>Bedryfsoorskot vir jaar</b>	347,0	964,4
<b>Verdelings:</b>		
<b>Fondsbasis:</b>		
Bydrae tot Kapitaalontwikkelingsfonds		(450,0)
<b>Afskrywingsbasis:</b>		
(i) Bydrae vir hoër vervangingskoste van bates		(581,8)
(ii) Bydrae vir koste van kapitaaluitbreiding		(382,6)
<b>Oorskot (tekort) vir jaar</b>	(103,0)	—

Bestaande afskrywingswaardes is as volg bereken:

1. Die vordering vir afskrywing teen historiese koste is bepaal deur reglynige afskrywing en 'n bategbruiksduur van 30 jaar sonder reswaarde.
2. Aannames vir vervangingswaardeafskrywing:
  - (a) 'n vervangingskoste van R1 041 (1982: R921) per kW geinstalleer (ontwikkeling, transmissie en distribusie),
  - (b) 'n gelyke afskrywingsperiode van 30 jaar met geen reswaarde nie, en
  - (c) 'n voorseening vir afskrywing onder hierdie opskrif vir die verhoging in die vervangingskoste van bates wat slegs gedurende 1983 ontstaan het.

Die bedryfsresultate volgens dié basis wys dat die bydrae wat in 1983 beskikbaar gestel is (R382,6 miljoen) vir kapitaaluitgawes in daardie jaar (R2 733,9 miljoen) 14% was en dat een voor-

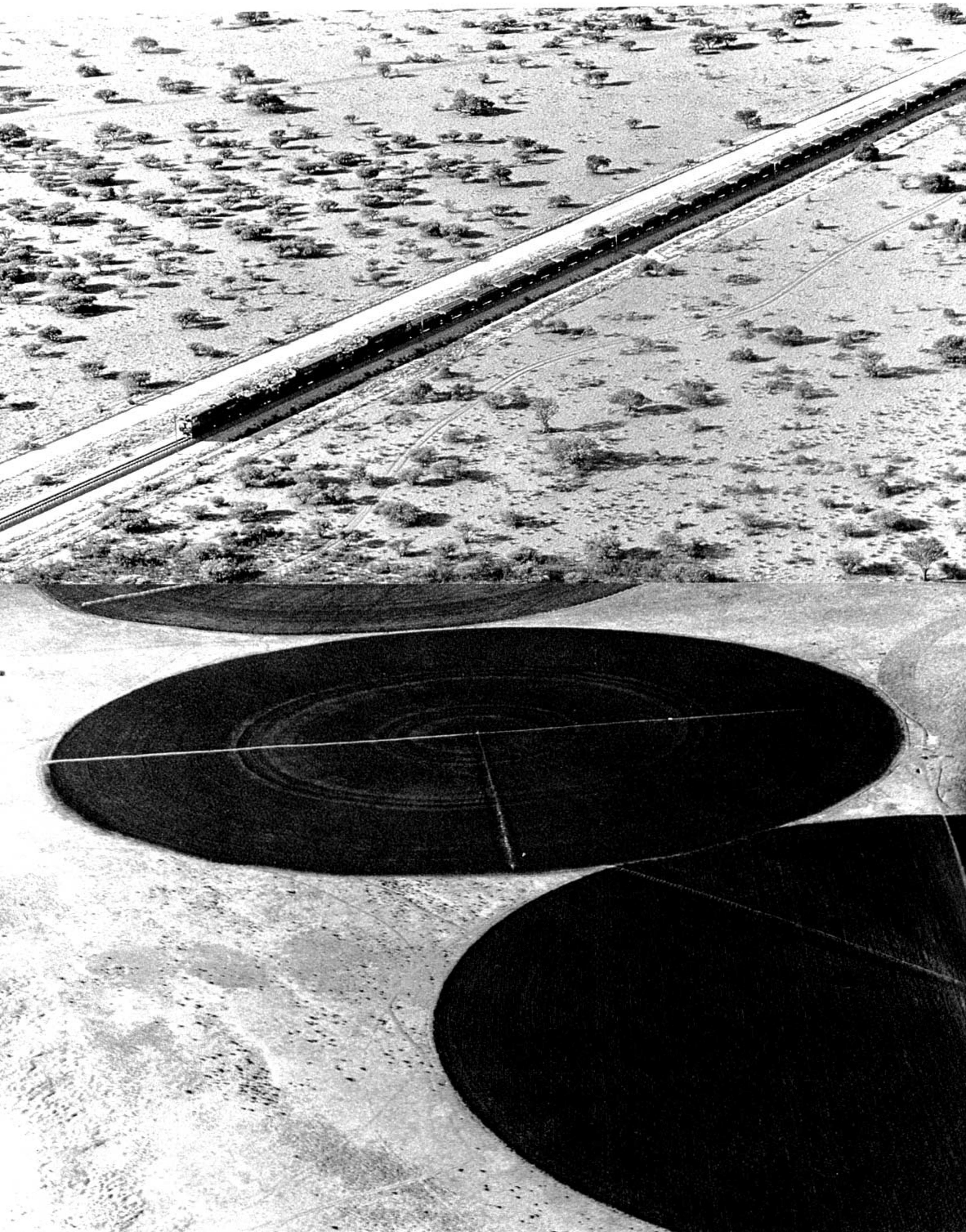


Five-year movements in electricity sales by Escom undertakings and to the different categories of consumers are shown in these three graphs.

Die vyfjaarbewegings in elektrisiteitsverkope deur Evkom se ondernemings en aan die verskillende verbruikers-kategorieë word in hierdie drie grafieke getoon.

Electric units haul an ore train through the Northern Cape on its way to Saldanha Bay. Below: Electrically driven crop sprinklers create circular fields up to 2 km in diameter near the Orange River.

Elektriese eenhede trek 'n ertstrein deur Noord-Kaapland op pad na Saldanhabaai. Onder: Elektries gedrewe landbousprinkelaars vorm sirkels met 'n deursnee van tot 2 km naby die Oranjerivier.



The comparative operating results based on depreciation accounting following the above assumptions indicate that the contribution made available in 1983 (i.e. R382,6 million) towards meeting the cost of capital expenditure incurred in that year, namely R2 733,9 million, was 14% and that no allowance was made available from revenue in that year towards making good arrears of replacement cost depreciation on assets placed in commercial operation prior to 1982. If allowance were made for making good these arrears, there would be no balance available for financing capital expansion.

## Costs

The most significant cost increase during the year was the 35,4% increase in loan charges per kWh sold. By contrast, operating charges increased by only 18,2% per kWh sold.

## Funding

During 1983 the net proceeds of external finance received through the local and foreign financial markets amounted to R2 239 million. The main sources were R967 million from the net sales of Escom stock on the local secondary capital market (1982: R1 173 million) and R604 million from the use of foreign project-related loans (1982: R345 million).

The local financial markets were characterised by fluctuating interest rates and a general shortage of loanable funds. Fierce competition took place for the available funds. The South African government was the dominant borrower on the capital market, attracting slightly more than half the funds available.

The decline in long-term interest rates which started in the third quarter of 1982 continued for the first two months of 1983, and Escom long-term stock rates reached a low point of 11,5% in February 1983. From March long-term rates started to move up and they reached a high point of 14,25% at the end of the year.

No less than 35% of the 1983 total net sales of Escom stock took place in the first month of the year, when interest rates were still coming down.

Short-term interest rates moved up rapidly after the first quarter of 1983. The 90-day liquid bankers' acceptance rate almost doubled from 9,5% in March to 18,5% in December, while the prime overdraft rate and other short-term rates were regularly adjusted upwards to reach 20% by the end of the year.

These significant increases in interest rates, together with high cost of forward exchange cover, resulted in a substantial increase in Escom's financing costs. Despite the difficult market conditions in the latter part of the year, Escom again recorded high net sales of its stock through its secondary market operations. It is Escom's policy to continuously investigate ways and means of enhancing the marketability of Escom stock.

With the demand from public and private sector borrowers continuing at a high level, there was no prospect at the end of the year of a significant decline in long-term interest rates.

The standing of South African borrowers on foreign capital markets continues to improve, and during the year Escom floated two successful bond issues yielding some R144 million. One was a domestic German issue of DM 150 million and the second was a Euro-dollar bond issue of \$75 million. This second issue was the first successfully floated by a South African borrower on this market since 1975. In addition, Escom was successful in raising \$100 million through

siening uit inkomste van daardie jaar beskikbaar gestel is vir agterstallige bedrae van vervangingswaardeafskrywing op bates wat voor 1982 in handelsbedryf geplaas is nie. Sou vergoeding hieroor toegelaat word, is daar geen balans vir die finansiering van kapitaaluitbreiding nie.

## Koste

Die betekenisvolste kosteverhoging gedurende die jaar was die verhoging van 35,4% in die leningskoste per kWh verkoop. Daarteenoor het bedryfskoste met slegs 18,2% per kWh verkoop gestyg.

## Finansiering

In 1983 was die netto opbrengs van eksterne finansiering op die plaaslike en buitelandse finansiële markte R2 239 miljoen. Die vernaamste bronre was R967 miljoen uit die netto verkope van Evkom-effekte op die plaaslike sekondêre kapitaalmark (1982: R1 173 miljoen) en R604 miljoen uit buitelandse projekverbonde lenings (1982: R345 miljoen).

Die plaaslike finansiële markte is gekenmerk deur skommelende rentekoerse en 'n algemene tekort aan uitleenbare fondse. Kompetisie om die beskikbare fondse was straf. Die Suid-Afrikaanse regering was die oorheersende lener op die kapitaalmark, en het effens meer as die helfte van die beskikbare fondse getrek.

Die daling in langtermynrentekoerse vanaf die derde kwartaal in 1982, het die eerste twee maande van 1983 voortgeduur, en Evkom se langtermynrentekoerse het 'n laagtepunt van 11,5% in Februarie 1983 bereik. Sedert Maart het langtermynrentekoerse begin styg en teen die einde van die jaar die hoë vlak van 14,25% bereik.

Nie minder nie as 35% van 1983 se totale netto verkope van Evkom-effekte het in die eerste maand van die jaar plaasgevind toe rentekoerse steeds bly daal het.

Korttermynrentekoerse het vinnig gestyg na die eerste kwartaal van 1983. Die 90-dae likiede bankakksepkoers het byna verdubbel van 9,5% in Maart tot 18,5% in Desember terwyl die prima oortrekingskoers en ander korttermynrentekoerse gereeld opwaarts aangepas is om 20% teen die einde van die jaar te bereik.

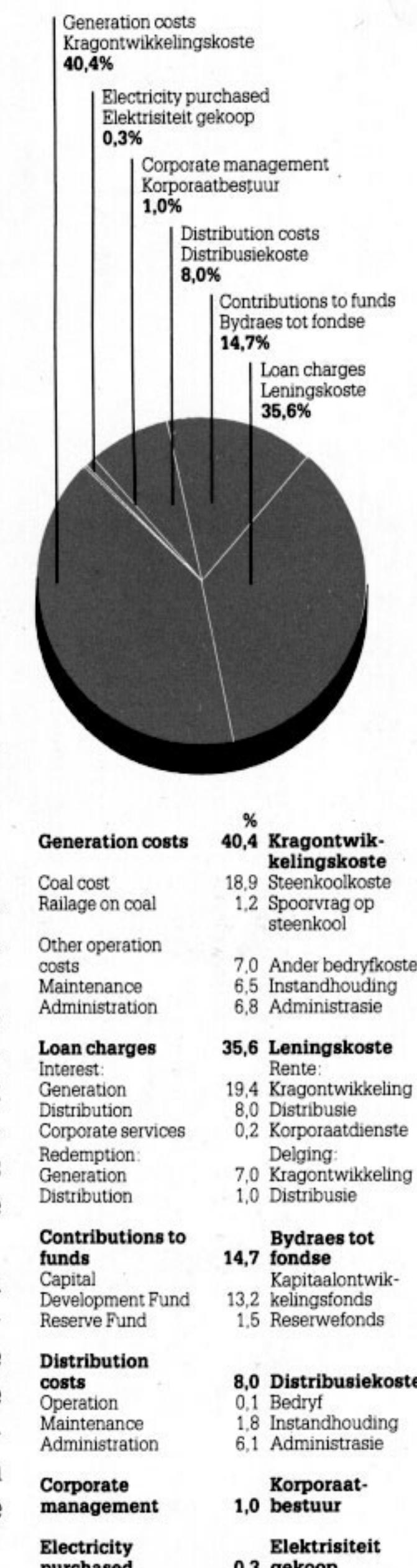
Die verhogings in rentekoerse en die hoë koste van termynvalutadekking het Evkom se finansieringskoste aansienlik laat styg. Ondanks die moeilike marktoestande laat in die jaar, het Evkom weer hoë netto verkope van sy effekte deur sy sekondêre markbedrywighede behaal. Dit is Evkom se beleid om deurlopend die bemarkbaarheid van sy effekte te bevorder.

Omdat die vraag van leners in die owerheid- en private sektor hoog gebly het, is teen jaareinde nie juis 'n daling in langtermynrentekoerse verwag nie.

Die aansien van Suid-Afrikaanse leners op buitelandse kapitaalmarkte verbeter steeds, en Evkom se twee geslaagde obligasie-uitgifte het nagenoeg R144 miljoen gelewer. Een was 'n binnelandse Duitse uitgawe van DM150 miljoen en die tweede was 'n Eurodollarobligasie-uitgawe van \$75 miljoen. Laasgenoemde was die eerste een wat sedert 1975 suksesvol deur 'n Suid-Afrikaanse lener op hierdie mark uitgeskryf is. Evkom het ook \$100 miljoen verkry deur 'n Suid-Afrikaanse bank wat op 'n buitelandse mark funksioneer. Verskeie Amerikaanse finansiële instellings het deelgeneem.

Die premie vir Suid-Afrikaanse leners op die internationale mark vernou steeds. Evkom beywer hom

Breakdown of costs  
Kosteverdeling  
R3 405m



**Generation costs** 40,4% **Kragontwikkelingskoste**

Coal cost	18,9%
Railage on coal	1,2%
Other operation costs	7,0%
Maintenance	6,5%
Administration	6,8%

**Loan charges** 35,6% **Leningskoste**

Interest:	Rente:
Generation	19,4% Kragontwikkeling
Distribution	8,0% Distribusie
Corporate services	0,2% Korporaatdienste
Redemption:	Delging:
Generation	7,0% Kragontwikkeling
Distribution	1,0% Distribusie

**Contributions to funds** 14,7% **Bydraes tot fondse**

Capital	Kapitaalontwikkelingsfonds
Development Fund	13,2%
Reserve Fund	1,5% Reservewfonds

**Distribution costs** 8,0% **Distribusiekoste**

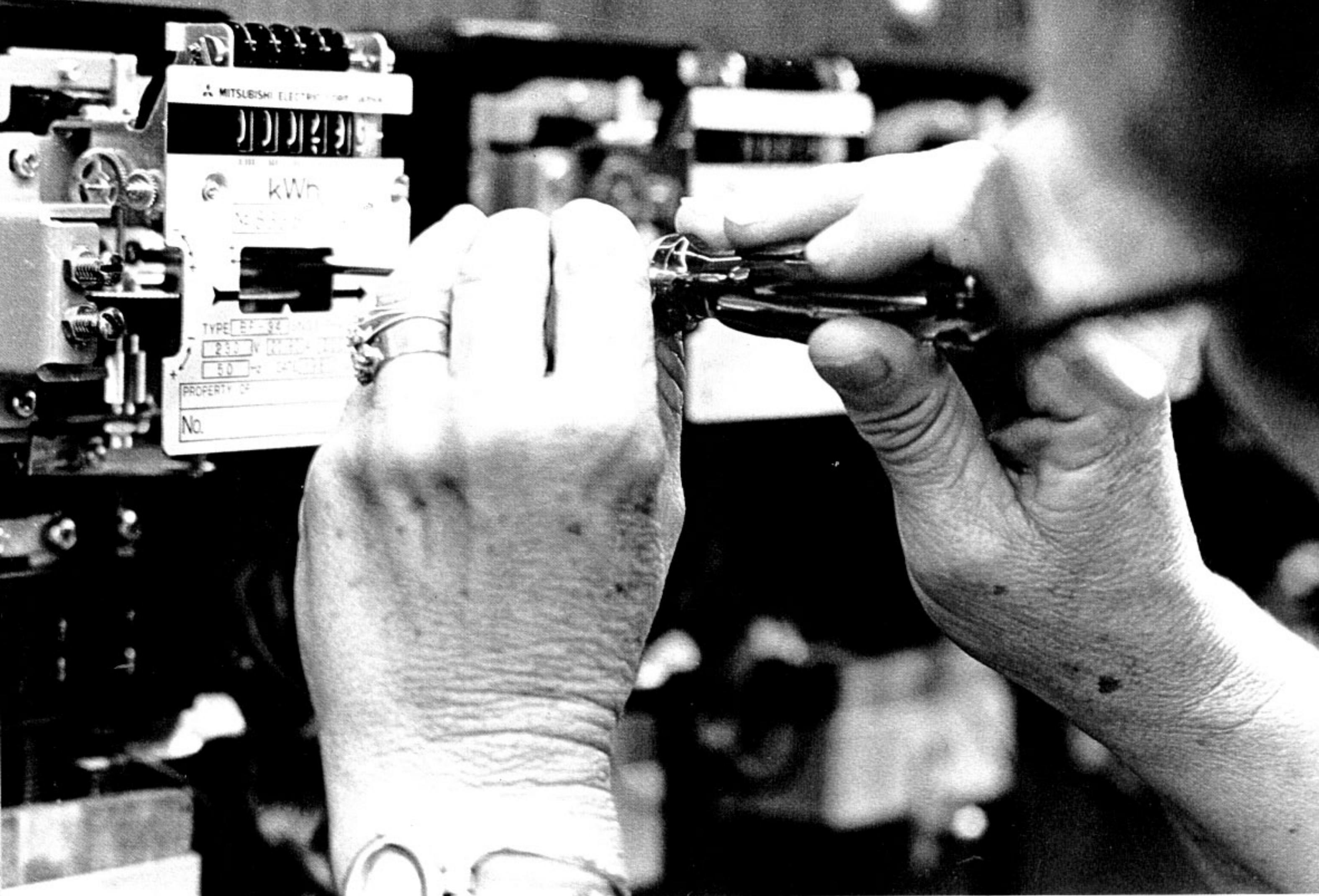
Operation	0,1% Bedryf
Maintenance	1,8% Instandhouding
Administration	6,1% Administrasie

**Corporate management** 1,0% **Korporaatbestuur**

Electricity purchased	0,3% Elektrisiteit gekoop
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Officials from Escom and the Swaziland government meet in Witbank to discuss a planned new bulk power supply to Swaziland. Below: Electricity meters are calibrated at Escom's Simmerpan workshops.

Beampies van Evkom en die Swazilandse Regering kom in Witbank byeen om 'n beplande grootmaattoevoer aan Swaziland te bespreek. Onder: Elektrisiteitsmeters word gekalibreer by Evkom se Simmerpan-werkplaas.



a South African bank operating in a foreign market. Several United States financial institutions participated in this loan.

The premium South African borrowers are paying for funds on the international market is narrowing and Escom is working towards further narrowing of margins and lengthening of loan periods.

Activities on the foreign syndicated loan market showed a considerable slowdown in 1983 compared with 1982 as a result of debt difficulties experienced by certain Latin American and Comecon countries. This development did not affect Escom, which did not approach this market for large amounts of funds during the year.

Several new lines of credit were established in 1983 and Escom is now able to use lines of credit to finance imports from all the major European exporting countries. OECD countries have agreed to a new procedure for establishing interest rates on export credits.

The new procedure means that interest rates are adjusted at six-monthly intervals in line with the long-term gilt rates ruling in each country. Despite the sharp increase in the cost of export credits in 1983, this form of funding continues to be an important source of finance for Escom.

A more favourable climate for investment in South Africa was brought about in 1983 by the abolition of the financial rand, a relaxation of exchange control for non-residents and the termination of spot rand/dollar quotations by the South African Reserve Bank. This last development gives the local foreign exchange market more freedom to determine market-related exchange rates.

## Tariffs

As a result of revised tariffs which came into operation on 1 January 1983 and coal price adjustments made during the year, the average price paid for electricity increased by 19.9% compared with 1982. The average revenue received for electricity was 3.36 cents a kWh compared with 2.80 cents a kWh in 1982.

In November 1983 notification was given of a tariff increase averaging 6% to come into effect on 1 January 1984. This lower-than-expected increase was a contribution by Escom to the national effort to reduce the inflation rate to a single-digit level in 1984. Escom warned that a further increase would be unavoidable if inflation could not be contained, if the drought were not broken or if sales of electricity did not increase by at least 7% in 1984.

Early in 1984 the inflation rate was still at a relatively high level, the drought was continuing in some areas, and the economic recovery, which will be accompanied by increasing electricity sales, had not yet begun in earnest.

vir 'n verdere vernouing en verlenging van lenings-periodes.

Weens die skuldprobleme van sekere Latyns-Amerikaanse en Komekon-lande was die buitelandse sindikaatleningsmark in 1983 veel stiller as in 1982. Evkom is nie geraak nie omdat hy nie huis hierdie mark vir fondse genader het nie.

Nuwe kredietfasilitete is in 1983 verkry en finansieringskrediet is nou beskikbaar vir invoere uit al die groot Europese lande. OESO-lande het 'n nuwe prosedure vir die vasstelling van rentekoerse vir uitvoerkrediete, waarvolgens rentekoerse sesmaandeliks aangepas word by die langtermyn-primakoerse in elke land.

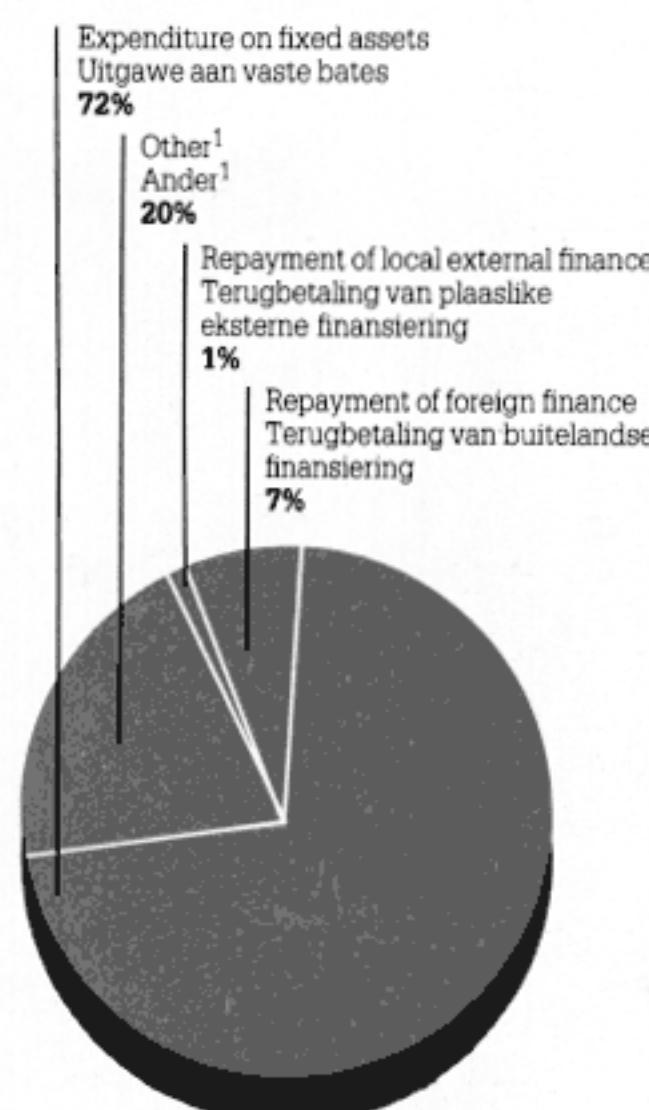
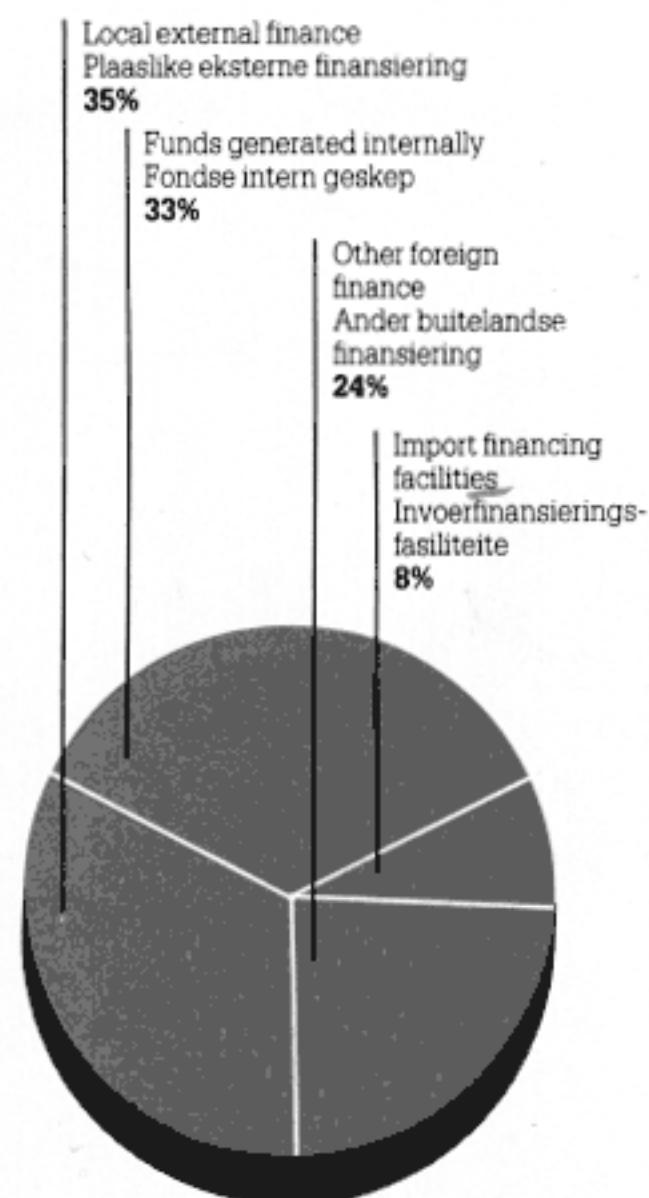
Hoewel die koste van uitvoerkrediete in 1983 skerp gestyg het, bly dit 'n belangrike finansieringsbron vir Evkom. 'n Gunstiger beleggingklimaat is in 1983 in Suid-Afrika geskep deur die afskaffing van die finansiële rand, 'n verslapping in wisselkoersbeheer vir nie-inwoners en die beëindiging van onmiddellike rand/dollarnoterings deur die Suid-Afrikaanse Reserwebank. Laasgenoemde gee aan die plaaslike buitelandse valutamark meer vryheid om markgebonden wisselkoerse vas te stel.

## Tariewe

Weens die gewysigde tariewe vanaf 1 Januarie 1983 en steenkoolprysaanpassings in die jaar, was die gemiddelde prys vir elektrisiteit 19.9% hoër as in 1982. Die gemiddelde inkomste uit elektrisiteit was 3.36 sent per kWh teenoor 2.80 sent in 1982.

In November 1983 is kennis gegee van 'n tariefverhoging van gemiddeld 6% vanaf 1 Januarie 1984. Hierdie baie lae verhoging was Evkom se bydrae om die inflasiekoers in 1984 tot een syfer te verminder. Evkom het gewaarsku dat 'n verdere verhoging onvermydelik is indien inflasie nie aan bande gelê word nie, die droogte nie gebreek of elektrisiteitsverkope nie in 1984 met minstens 7% toeneem nie. Vroeg in 1984 was die inflasiekoers steeds op 'n relatief hoëvlak, die droogte het in sommige gebiede voortgeduur en die herstel van die ekonomie, wat met groter elektrisiteitsverkope gepaard gaan, het nog nie in erns begin nie.

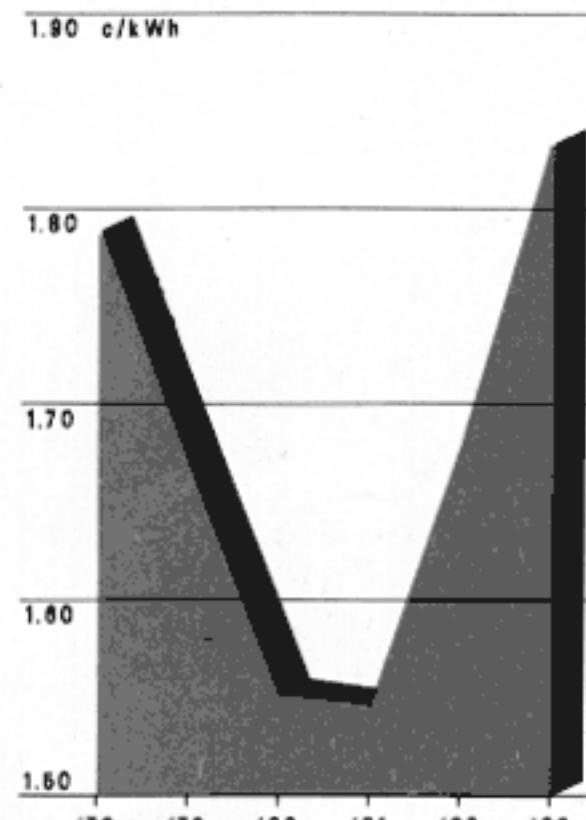
Source and application of funds  
Bron en aanwending van fondse



<sup>1</sup> Stores and materials; Future fuel supplies; Reserve Fund expenditure; Other asset expenditure.

<sup>1</sup> Voorrade en materiaal; Toekomstige brandstofvoorsiening; Reservefonds-uitgawe; Ander uitgawes aan bates.

Tariffs deflated by PPI  
Tariewe gedefleer deur PPI



Taking 1978 as the base year, the change in the average price of Escom electricity has been deflated by the production price index for a five-year period.

Met 1978 as basisjaar is die verandering in die gemiddelde prys van Evkom-elektrisiteit met die produksieprysindeks vir 'n tydperk van vyf jaar gedefleer.

### **Uitwerking van die droogte**

Die droogte van 1982–3 was die ergste in menseheugenis. Statisties kan dit van 'n een-in-tweehonderdaarfrekwensie wees. Dit het Evkom op verskillende maniere geraak. Die belangrikste hiervan was die bedreiging vir die land se totale ontwikkelvermoë wat veroorsaak is deur die krimpende waterreserves in Oos-Transvaal waar die meeste van Evkom se elektrisiteit ontwikkel word.

Vroeg in die jaar het Evkom en die Direktoraat van Waterwese 'n skema ontwikkel om die watervoorrade in Oos-Transvaal aan te vul deur die vloeい van die Vaalrivier om te keer en die water oor 'n reeks van sewe stuwalte teen die rivier se vloeい te pomp. Die skema is binne 20 weke teen 'n koste van nagenoeg R28 miljoen voltooi waartoe Evkom R19 miljoen en Sasol, nog 'n groot watergebruiker in Oos-Transvaal, die oorblywende R9 miljoen bygedra het.

Nie minder nie as 48 miljoen kubieke meter water is vanaf 3 September tot 28 November teen die normale vloeい van die rivier oor 'n afstand van 208 km vanaf stuwal 1 na die Grootdraaidam verplaas. Die ontwerp en konstruksie van die skema is deur Evkom

## **SYSTEM OPERATION**

### **Effects of the drought**

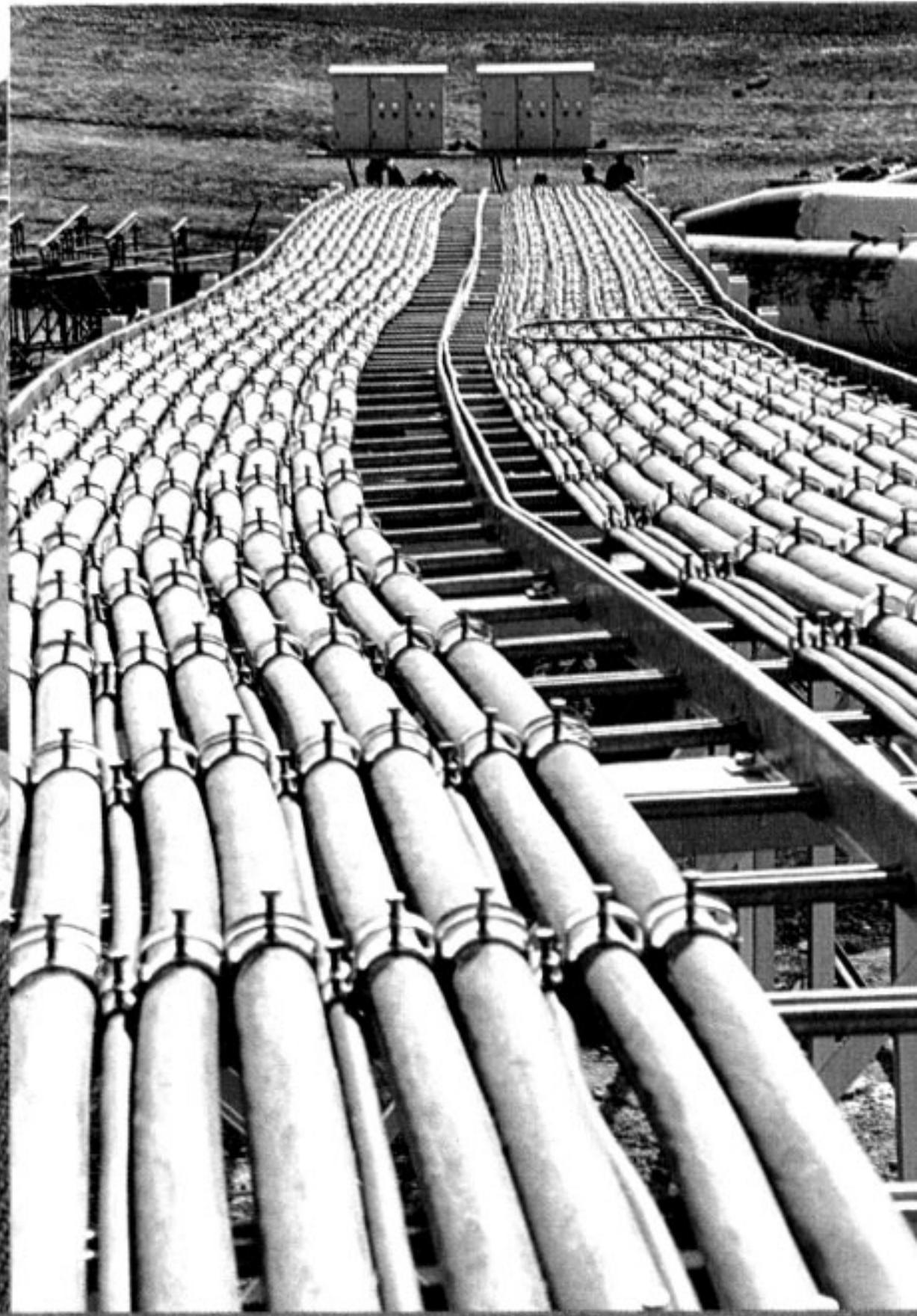
The drought of 1982–3 was the worst in living memory. Statistically, it may have been of a one-in-two-hundred-year frequency. It affected Escom in a number of ways. The most important of these was the threat to the country's total generating capacity caused by the dwindling water reserves in the Eastern Transvaal, where most of Escom's electricity is generated.

Early in the year Escom and the Directorate of



Escom engineers W.T. Witoszynski and Bruno Graber check progress at a weir on the route of the emergency pumping scheme which brought water to Escom's main power stations during the 1983 drought.

Evkom-ingenieurs W.T. Witoszynski en Bruno Graber kontroleer die vordering by 'n stuwal op die roete van die noodpompskema wat gedurende die droogte van 1983 water aan Evkom se vernaamste kragstasies besorg het.



Water Affairs developed a scheme to augment the supplies of water in the Eastern Transvaal by reversing the flow of the Vaal River by pumping water up the river over a series of seven weirs. The scheme was completed within 20 weeks at a cost of some R28 million, to which Escom contributed R19 million and Sasol, another large water user in the Eastern Transvaal, the remaining R9 million.

No less than 48 million cubic metres of water was moved against the normal flow of the river between 3 September and 28 November over a distance of 208 km from Weir 1 to the Grootdraai dam. The design and construction of the scheme was shared between Escom and the Directorate of Water Affairs. In all, 87 submersible pumps able to deliver up to 1,5 m<sup>3</sup> of water a second each were installed; 4,5 km of pipeline up to 800 mm in diameter and 15 km of cables were laid; and 80 km of special transmission lines were provided.

Two power stations – Umgeni and Ingagane – had to be closed down during the drought and a third – Camden – had its output reduced by three-quarters. Additional water treatment plant was installed at several power stations to allow water from sources other than those for which the power stations were designed to be used without causing operational problems.

### Plant capability and loading

The sent-out capacity of Escom's 25 power stations increased from 20 523 MW in 1982 to 21 673 MW at the end of 1983. New plant with a total sent-out capacity of 1 150 MW was taken into service – the fifth set at Duvha power station and the sixth and last set at Matla power station. Matla, with its sent-out capacity of 3 450 MW, is one of the largest coal-fired power stations in the world.

The 1 373 MW contractual capacity from Cahora Bassa was again unreliable during 1983. Peace in Mozambique is a prerequisite to reliable supplies from Cahora Bassa.

Details of Escom's power station plant and the countrywide transmission system are shown in Tables 1 and 3 (pages 49–50 and 51).

Energy sent out by Escom power stations during the year totalled 103 295 GWh, and 5 026 GWh was imported from Cahora Bassa and other sources.

Of the total sent-out energy of 108 321 GWh, 105 404 GWh was available for distribution. The bulk of the difference was absorbed by the Drakensberg pumped storage scheme. As reported elsewhere, 98 251 GWh was sold. This represents 93% of the energy available for distribution. Most of the difference can be attributed to transmission losses in the distribution of the energy along some 17 000 km of major transmission lines and a further 120 000 km of supporting networks.

The one-hour maximum demand on the interconnected Escom system was 15 639 MW, which was 107 MW (0,7%) higher than the maximum demand for 1982. This growth rate in the maximum demand is the lowest yet recorded and is well below the 5,8% growth in demand which took place between 1981 and 1982.

### Plant performance and maintenance

The average availability of Escom's generating plant decreased from 74,3% in 1982 to 71,9% in 1983. The decrease was mainly as a result of shutting down Umgeni and Ingagane and curtailing the output of

en die Direktoraat van Waterwese gedoen. Altesaam 87 dompelpompe wat elk 1,5 m<sup>3</sup> water per sekonde kan lewer is geïnstalleer; 4,5 km pypeleiding tot 800 mm in deursnee en 15 km kabels is aangelê; en 80 km spesiale transmissielyne is opgerig.

Twee kragstasies – Umgeni en Ingagane – moes tydens die droogte afgesluit word en 'n derde – Camden – se lewering is met 75% verminder. Bykomende waterbehandelingsinstallasies is by verskeie kragstasies geïnstalleer sodat water van ander bronne as dié waarvoor die kragstasies ontwerp is, gebruik kon word sonder bedryfsprobleme.

### Installasievermoë en -belasting

Die uitstuurvermoë van Evkom se 25 kragstasies het toegeneem van 20 523 MW in 1982 tot 21 673 MW aan die einde van 1983. Nuwe installasies met 'n totale uitstuurvermoë van 1 150 MW is in gebruik geneem – die vyfde stel by Duvha-kragstasie en die sesde en laaste stel by Matla-kragstasie. Matla, met 'n uitstuurvermoë van 3 450 MW, is een van die grootste steenkoolkragstasies in die wêreld.

Die kontraktuele toevoer van 1 373 MW vanaf Cahora Bassa was gedurende 1983 weer eens onbetroubaar. Vrede in Mosambiek is 'n voorvereiste vir betroubare toevoere vanaf Cahora Bassa.

Besonderhede van Evkom se kraginstallasies en die landwye transmissiestelsel word in Tabelle 1 en 3 (bladsy 49–50 en 51) getoon.

Die energie wat deur Evkom se kragstasies gedurende die jaar uitgestuur is, was altesaam 103 295 GWh, en 5 026 GWh is vanaf Cahora Bassa en ander bronne ingevoer.

Van die totale uitgestuurde energie van 108 321 GWh was 105 404 GWh beskikbaar vir verspreiding. Die grootste deel van die verskil is deur die Drakensberg-pompopgaarskema geabsorbeer. Soos elders vermeld, is 98 251 GWh verkoop. Dit verteenwoordig 93 persent van die energie wat beskikbaar was vir verspreiding. Die grootste gedeelte van die verskil kan toegeskryf word aan transmissieverliese in die verspreiding van energie langs sowat 17 000 km hooftransmissielyne en 'n verdere 120 000 km van ondersteunende netwerke.

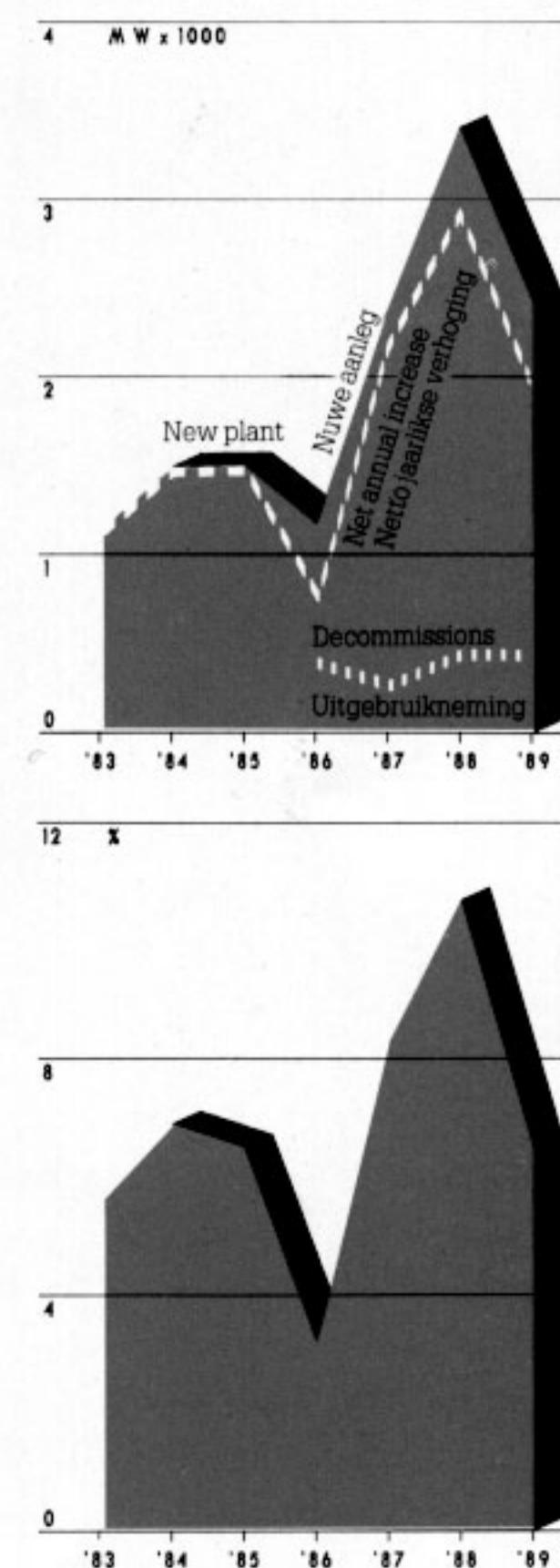
Die maksimum eenuuraanvraag op die onderling gekoppelde Evkom-stelsel was 15 639 MW, wat 107 MW (0,7%) hoër was as die maksimum aanvraag vir 1982. Hierdie groeikoers in die maksimum aanvraag is die laagste ooit en dit is heelwat laer as die 5,8%-groei van 1981–82.

### Installasieprestasie en instandhouding

Die gemiddelde beskikbaarheid van Evkom se ontwikkelinstallasies het afgeneem van 74,3% in 1982 tot 71,9% in 1983. Hierdie afname moet hoofsaaklik toegeskryf word aan die afsluiting van Umgeni en Ingagane en die inkorting van die lewering van Camden-kragstasie weens die droogte. Die prestasie van die nuwe reeks 600MW-ontwikkelstelle bly suboptimaal en dit, tesame met die swak prestasie van 'n ander groot stasie, Kriel, wat 500MW-stelle het, het 'n nadelige uitwerking op installasieprestasie gehad. Die betrouwbaarheid van die groot stelle bly 'n saak van kommer. Die langtermynprestasie-verhogingsprogramme wat nou in werking is, sal na verwagting nie die volgende twee jaar 'n uitwerking hê nie, maar daar is korttermynmaatreëls wat reeds bemoedigende resultate toon.

Die totale termiese rendement van Evkom se steenkoolkragstasies was 31,1% in 1983 teenoor

Planned increases to sent-out capacity  
Beplande toenames in uitstuurvermoë



Planned additions to Escom's sent-out capacity and planned decommissioning of old power stations will result in the net annual increase in capacity indicated for the years 1984–89. The second graph shows the annual planned increases for this period as percentages.

Die beplande byvoeging tot Evkom se uitstuurvermoë en die beplande uitgebruikneming van ou kragstasies sal die netto jaarlikse verhoging in vermoë soos aangedui vir die jare 1984–89 tot gevolg hê. Die tweede grafiek toon die jaarlikse beplande toenames vir hierdie tydperk as persentasies.

Farmers from the Mabula area sign their approval of a joint electricity supply scheme. Below: Escom's Margie Böhm helps the owners set up an acid rain recording station on the Venter farm near Morgenzon, and an Escom team strings a new farm line near Verena.

Boere van die Mabula-gebied keur 'n gesamentlike elektrisiteitsvoorsieningskema goed. Onder: Margie Böhm van Evkom help die eienaars om 'n suurreën-registreerstasie op te stel op die Venter-plaas naby Morgenzon en 'n Evkom-span lê 'n nuwe plaaslyn aan naby Verena.



Camden power stations because of the drought. Performance of the new series of 600 MW generation sets continues to be sub-optimal and this, with the poor performance at another large station, Kriel, which has 500 MW sets, had an adverse effect on plant performance. The reliability of the large sets continues to be a matter of concern. The longer-term performance enhancement programmes now in operation are not expected to have an effect for another two years, but some short-term actions are already showing encouraging results.

The overall thermal efficiency of Escom's coal-fired power stations was 31,1% in 1983 compared with 30,5% in 1982. The highest-ever thermal efficiency achieved by an Escom power station (35,7%) was recorded by Matla in 1983.

Outages for plant maintenance at most of the larger stations were curtailed as some 1 827 MW of plant capacity was not available elsewhere because of the drought. The opportunity was, however, taken to do maintenance on the plant which had been shut down. A programme to shorten outage time through double-shift working by Escom maintenance staff will be introduced during 1984. A continued shortage of skilled manpower is still one of the main maintenance bottlenecks.

## Fuel and water

Despite the 2,2% increase in electricity sold, Escom decreased its consumption of both coal and water during the year.

Some 55,0 million tons of coal was burnt. This is a 0,4% decrease compared with 1982, and it represents the first decrease in coal consumption between two successive years for more than 50 years. The decrease can be attributed in part to the improved thermal efficiency of the newer and larger power stations, which are taking over an ever-increasing share of total generation. This is reflected in the improved coal requirement per kWh sent out of 0,546 kg compared with 0,551 kg in 1982, and in the improved heat rate of 11,57 MJ per kWh sent out compared with 11,82 MJ in 1982. These are improvements of 1% and 2% respectively.

The decreased coal consumption is also partly attributable to the higher than expected imports of energy from Cahora Bassa and other sources during the year. These imports totalled 5 026 GWh in 1983 compared with 2 151 GWh in 1982. Cahora Bassa's share of these imports was 4 835 GWh, which was a substantial increase compared with both 1981 and 1982 but only about half the average imports from this source in the three years 1978–80.

Coal purchases in 1983 decreased to 55,3 Mt compared with 60,5 Mt in 1982. This 8,6% decrease was the result of a planned reduction in Escom's coal stock. There was a small (5,9%) increase in the average cost of coal from R11,75 a ton in 1982 to R12,44 a ton in 1983. This cost includes transport and handling charges. The containment of coal cost increases was the major contributor to the relatively low overall increase of Escom's operating costs of 18,6% during the year.

The high abrasiveness of coal delivered to some of Escom's larger power stations is causing severe problems. Investigations into the most effective methods of using inferior quality coal are taking place.

Overall consumption of water by Escom decreased by 7% during the year. This excellent result was achieved despite the sub-optimal operation of the

30,5% in 1982. Die hoogste termiese rendement wat al ooit deur 'n Evkom-kragstasie behaal is (35,7%) is in 1983 deur Matla aangeteken.

Uitdiensnemings vir installasie-instandhouding by die meeste groter stasies is aan bande gelê aangesien sowat 1 827MW-installasievermoë nie elders beskikbaar was nie vanweë die droogte. Die geleentheid is egter benut om instandhouding te doen aan installasies wat afgesluit is. 'n Program om buitebedryfstyd deur middel van dubbelskofwerk deur Evkom se instandhoudingspersoneel te verkort, sal gedurende 1984 ingestel word. Die voortdurende tekort aan opgeleide mannekrag bly steeds een van die hoofinstandhoudingsprobleme.

## Brandstof en water

Ondanks die 2,2%-toename in elektrisiteit verkoop, het Evkom sy verbruik van steenkool sowel as water gedurende die jaar verminder.

Nagenoeg 55,0 miljoen ton steenkool is verbrand. Dit is 'n afname van 0,4% in vergelyking met 1982, en dit is die eerste afname in steenkoolverbruik tussen twee opeenvolgende jare vir meer as 50 jaar. Die afname kan gedeeltelik toegeskryf word aan die verbeterde termiese rendement van die nuwer en groter kragstasies, wat 'n al groter wordende aandeel van die totale kragontwikkeling verkry. Dit word weerspieël in die verbeterde steenkoolverbruik per kWh uitgestuur van 0,546 kg in vergelyking met 0,551 kg in 1982, en in die verbeterde hittetempo van 11,57 MJ per kWh uitgestuur in vergelyking met 11,82 MJ in 1982. Dit is verbeterings van 1% en 2%.

Die laer steenkoolverbruik kan ook deels toegeskryf word aan die hoër energie-invoer vanaf Cahora Bassa en ander bronne gedurende die jaar as wat aanvanklik verwag is. Hierdie invoer was altesaam 5 026 GWh in 1983 teenoor 2 151 GWh in 1982. Cahora Bassa se aandeel in hierdie invoere was 4 835 GWh. Hoewel baie hoër as in 1981 en 1982, is dit net sowat die helfte van die gemiddelde invoere vanaf hierdie bron vir die drie jaar 1978–80.

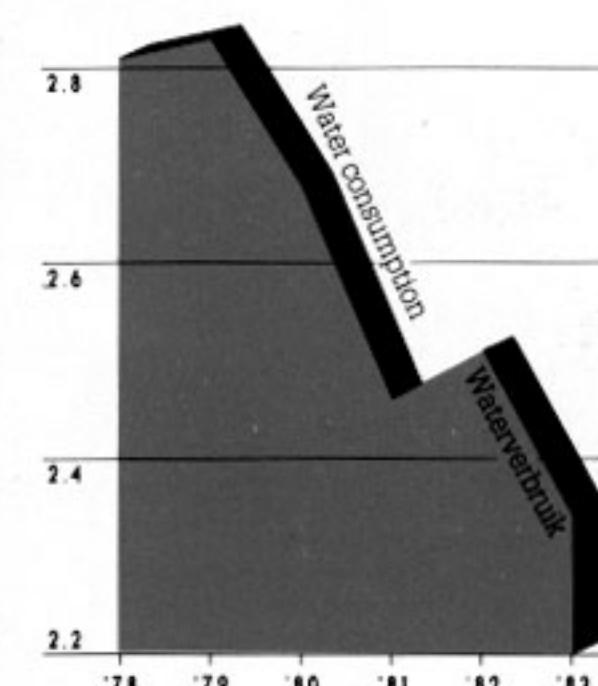
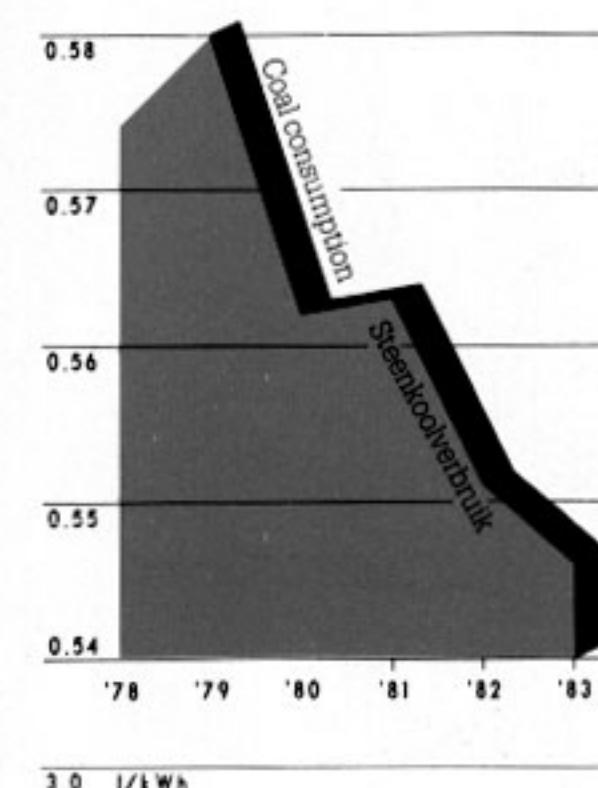
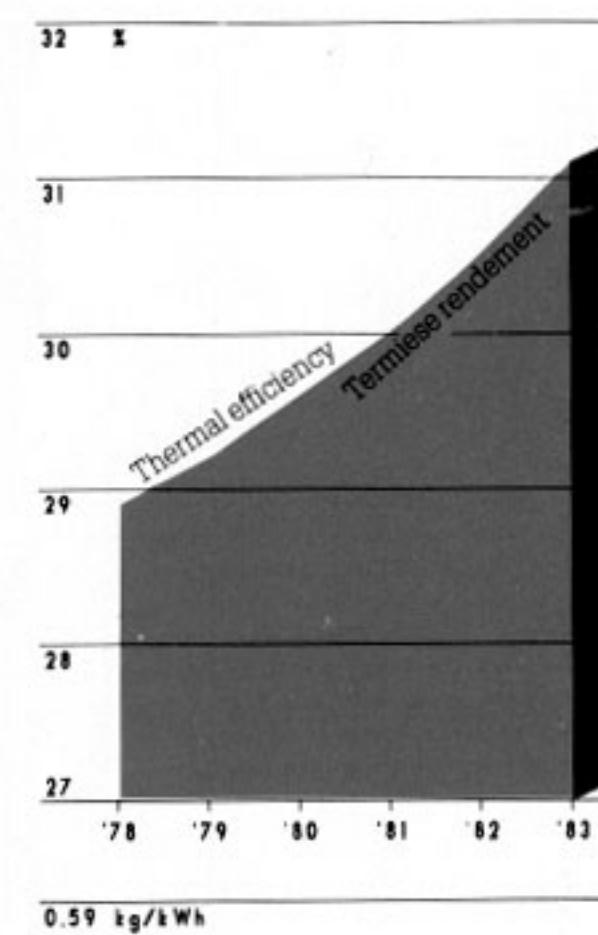
Steenkoolaankope het in 1983 afgeneem tot 55,3 Mt teenoor 60,5 Mt in 1982. Hierdie afname van 8,6% was die resultaat van 'n beplande vermindering in Evkom se steenkoolvoorraad. Daar was 'n klein (5,9%) verhoging in die gemiddelde koste van steenkool vanaf R11,75 per ton in 1982 tot R12,44 per ton in 1983. Hierdie koste sluit in vervoer- en hanteerkoste. Die feit dat steenkolkosteverhogings in bedwang gehou kon word was die grootste bydraende faktor tot die relatief lae totale styging in Evkom se bedryfskoste van 18,6% gedurende die jaar.

Die hoë skuurvermoë van die steenkool wat aan sommige van Evkom se groter kragstasies gelewer word, veroorsaak ernstige probleme. Ondersoek word ingestel na die mees effektiewe metodes vir die gebruik van steenkool van minderwaardige kwaliteit.

Evkom se totale waterverbruik het gedurende die jaar met 7% afgeneem. Hierdie uitstekende resultaat is behaal ondanks die suboptimale bedryf van die stelsel vanweë die droogte. Die spesifieke waterverbruik vir die jaar (2,34 liter per kWh uitgestuur) vergelyk gunstig met die syfer van 2,51 liter per kWh wat in 1982 behaal is. Evkom het ook tot die land se totale waterbesparing bygedra deur 'n dramatiese vermindering in huishoudelike verbruik. Sommige Evkom-dorpsgebiede gebruik slegs die helfte soveel water as wat hulle in 1982 gebruik het.

Gedurende die jaar is gebeurlikheidsplanne saam met Evkom se verbonde steenkoolmyne ontwikkel vir

Efficiency indicators  
Bedryfsrendement-aanwysers



Three indicators of improving operating efficiency – thermal efficiency and coal and water consumption per kilowatt-hour sent out – are plotted for the five-year period 1978–83.

Drie aanwysers vir die verbetering van bedryfsrendement – termiese rendement en steenkool- en waterverbruik per kilowatt-uur uitgestuur – is getrek vir die vyfjaartydperk 1978–83.

Escom technician Meryl Bibb examines the effects of bacterial corrosion in secondary cooling water piping.

Evkom-tegnikus Meryl Bibb ondersoek die gevolge van bakteriese korrosie in sekondêre verkoelingwaterpype.



system as a result of the drought. The specific water consumption figure of the year (2,34 litres per kWh sent out) compares favourably with the figure of 2,51 litres per kWh achieved in 1982. Escom also contributed to the country's total water-saving effort with a dramatic reduction in domestic consumption. Some Escom townships used only half as much water as they did in 1982.

During the year contingency plans were developed with Escom's associated collieries for the use of underground water in old mine workings, particularly at Usutu and Kilbarchan collieries. For the present, however, it has not been necessary to implement these plans.

### Test and research

The size and nature of Escom's operations make it essential that there should be a strong on-going test and research capability to ensure that the country's generation and transmission systems remain efficient. Generally, Escom relies on specialised research organisations in South Africa and elsewhere to undertake fundamental research on, for example, new methods of energy conversion and storage. Its own test and research teams have some 450 staff members concentrating on materials, chemistry, mechanical and electrical engineering, electrical science and the environment. The teams also work closely with Escom's suppliers and contractors. Major activities during the year included the following:

**Air-cooled condensing plant.** Three of Escom's new power stations will be air-cooled. Both direct and indirect methods of cooling will be used.

**Corrosion protection.** During the year 65 specifications were prepared to meet Escom's current requirements for various corrosion protection applications.

**Lightning damage to rural transmission lines.** New design parameters were developed that should make Escom's 11 and 22 kV rural distribution lines much less susceptible to lightning damage. The work is being done in conjunction with the Council for Scientific and Industrial Research. By introducing a predetermined length of wood between the insulators and the earth wire of each pole, an overall insulation strength can be achieved which will enable the line to withstand most lightning-induced surge voltages. This will mean far fewer line outages and less equipment damage than previously. The results of this work are being disseminated in South Africa and other countries and will become available to other users of woodpole lines, such as local authorities, industries and mines.

**Extra high voltage transmission.** Escom has started work on its first 765 kV transmission line, and preparatory experimental work has been done on the tower structures themselves, on the design of the conductor bundles and on the corona developed on line fittings.

Escom's principal collaborator in these areas has been the research arm of Enel, the Italian electricity utility. Comparisons between sea-level conditions studied by Enel and high-altitude conditions studied by Escom have been valuable for both parties and for electricity utilities in other countries.

### Security

Essential security measures at all Escom's installations account for a significant percentage of

die gebruik van ondergrondse water in ou myngange, veral by die steenkoolmyne Usutu en Kilbarchan. Dit was egter nie nodig om hierdie planne toe te pas nie.

### Toetsing en navorsing

Die omvang en aard van Evkom se werkzaamhede maak dit noodsaaklik dat hy oor behoorlike toets- en navorsingsfasiliteite beskik om te verseker dat die land se ontwikkel- en transmissiestelsels so doeltreffend moontlik gehou word. Evkom steun in die reël op gespesialiseerde navorsingsorganisasies in Suid-Afrika en elders vir fundamentele navorsing oor byvoorbeeld nuwe metodes van energie-omsetting en bewaring. Sy eie toets- en navorsingspan bestaan uit sowat 450 lede wat hulle toespits op materiale, chemie, meganiese en elektriese ingenieurswese, elektrisiteit en die omgewing. Die spanne werk ook nou saam met Evkom se leveransiers en kontrakteurs. Die vernaamste aktiwiteite gedurende die jaar het die volgende ingesluit:

**Lugverkoelde kondenseerinstallasies.** Drie van Evkom se nuwe kragstasies sal lugverkoeld wees. Direkte sowel as indirekte verkoelingsmetodes sal toegepas word.

**Korrosiebeskerming.** Gedurende die jaar is 65 spesifikasies opgestel ter voldoening aan Evkom se vereistes vir verskillende korrosiebeskermingstoepassings.

**Weerligskade aan plattelandse transmissielyne.** Nuwe ontwerpparameters is ontwikkel waardeur Evkom se 11- en 22kV-plattelandse kragnette baie minder aan weerligskade blootgestel behoort te wees. Die werk word met die medewerking van die Wetenskaplike en Nywerheidsnavorsingsraad uitgevoer. Deur 'n voorafbepaalde lengte hout tussen die isolators en die aarddraad van elke paal te plaas, kan 'n totale isolasiesterkte verkry word wat die lyn teen die meeste weerliggeïnduseerde stuwingsspannings bestand sal maak. Dit sal baie minder lynuitvallings en minder uitrustingsbeskadiging as voorheen beteken. Die resultate van hierdie werk word in Suid-Afrika en in ander lande versprei en sal beskikbaar gestel word aan ander gebruikers van houtpaallyne, soos plaaslike besture, nywerhede en myne.

**Ekstrahoëspanningstransmissie.** Evkom het met die werk aan sy eerste 765kV-transmissielyn begin, en voorbereidende eksperimentele werk is aan die masstrukture self gedoen, aan die ontwerp van die geleierbundels en aan die korona wat op lyntoebehore ontwikkel. Evkom se vernaamste medewerker op hierdie gebied is die navorsingsarm van Enel, die Italiaanse elektrisiteitsnntsorganisasie. Vergelykings tussen seevlaktoestande wat deur Enel bestudeer word en hoe hoogte toestande wat deur Evkom bestudeer word, is van nut vir albei partye en vir elektrisiteitsnntsorganisasies in ander lande.

### Sekuriteit

Noodsaaklike sekuriteitsmaatreëls by al Evkom se installasies is verantwoordelik vir 'n aansienlike persentasie van Evkom se totale uitgawes. Gedurende die jaar is sekuriteitsmaatreëls aangepas en verfyn, en die doeltreffendheid daarvan is verhoog deur voortdurende skakeling met nasionale en internasionale sekuriteitsorganisasies. Ewe veel klem is gelê op die opleiding van sekuriteitspersoneel as op die aanwending van die toepaslike tegnologie.

Rand and OFS  
Rand en OVS



Eastern Transvaal  
Oos-Transvaal



Natal



Escom's total expenditure. During the year security measures were adapted and refined, and their effectiveness was increased as a result of continuous liaison with security organisations both nationally and internationally. Equal emphasis was given to the training of security personnel and to the development and application of appropriate technology.

## POWER STATIONS UNDER CONSTRUCTION Kragstasies in aanbou

The construction of **Duvha** was almost complete at the end of 1983 and the sixth and last set was taken into commercial service early in 1984, seven months earlier than originally planned.

**Kendal** will be Escom's second power station wholly committed to air-cooling. The closed-circuit cooling system will be connected to cooler banks mounted in the largest cooling towers yet constructed in South Africa. Some ten years' operational experience has been gained in a smaller but similar cooling system at Grootvlei power station.

Repairs to **Koeberg** following the acts of sabotage in December 1982 occupied a substantial part of the year. Licences to load fuel and to start pre-critical testing were granted by the Atomic Energy Corporation on 12 October and 8 November.

The structures for **Lethabo's** first boiler house and parts of the turbine house were completed during the year. The first boiler drum, assembled in South Africa from parts manufactured overseas, was placed into position at a height of 70 m. Water-treatment plant specified for Lethabo will ensure that no liquid effluents are discharged from the power station.

Although **Majuba** is geographically situated in the South-Eastern Transvaal, it falls within the power distribution area administered by Escom's Natal region. Majuba will be air cooled by a system similar to that being designed for Matimba.

**Matimba** is the first of Escom's new generation of power stations to be air-cooled. The condensers will be coupled to coolers making use of mechanical draught.

**Matla** was fully commissioned during the year. The last set went into commercial operation on 1 August 1983, two months ahead of the original date.

Contracts for the **Palmiet** civil works, pump-turbines, generator-motors and steel-lined penstocks were placed during the year. In addition to generating power during peak demand periods, this power station will transfer water from the Palmiet River across the Hottentots Holland Mountains to the Steenbras Reservoir, and so augment the water supply to the Cape Town metropolitan area.

During 1983 good progress was made at **Tutuka** with the civil works for all six sets. Erection of the first and second boiler plants and the first turbo-generator plant started during the year.

Die bouwerk aan **Duvha** was aan die einde van 1983 byna klaar en die sesde en laaste stel is vroeg in 1984 in handelsgebruik geneem, sewe maande vroeer as wat oorspronklik beplan is.

**Kendal** sal Evkom se tweede kragstasie wees wat ten volle lugverkoeld sal wees. Die geslotekringverkoelingstelsel sal gekoppel word aan groep koelers wat gemonteer sal word in die grootste koelitings wat nog in Suid-Afrika gebou is. Sowat tien jaar se bedryfs-ondervinding is met 'n kleiner maar soortgelyke stelsel by Grootvlei-kragstasie opgedoen.

Herstelwerk aan **Koeberg** na die dade van sabotasje in Desember 1982 het 'n aansienlike deel van die jaar in beslag geneem. Licensies om brandstof te laai en met voorkritieke toetsing te begin, is op 12 Oktober en 8 November deur die Atoomenergiekorporasie verleen.

Die strukture vir **Lethabo** se eerste ketelhuis en dele van die turbinehuis is gedurende die jaar voltooi. Die eerste keteldrom, in Suid-Afrika gemonteer uit dele wat in die buiteland vervaardig is, is in posisie geplaas op 'n hoogte van 70 m. 'n Waterbehandelingsaanleg sal verseker dat geen afloopwater deur die stasie uitgelaat word nie.

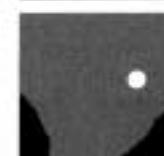
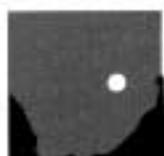
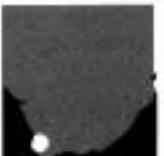
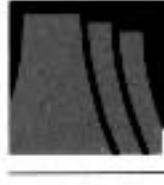
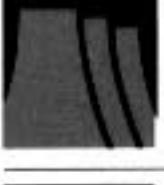
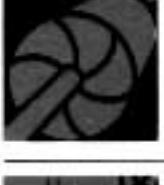
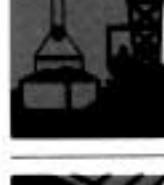
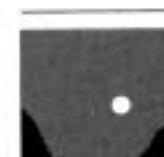
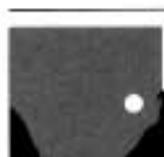
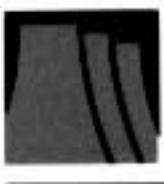
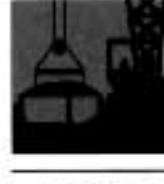
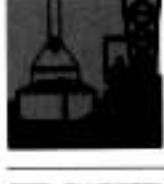
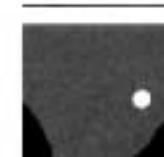
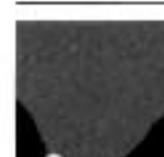
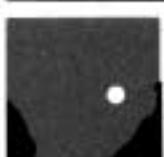
Hoewel **Majuba** geografies in Suidoos-Transvaal geleë is, val dit binne die lisensiegebied van Evkom se Natalse streek. Majuba sal lugverkoel wees deur 'n stelsel soortgelyk aan die een wat vir Matimba ontwerp is.

**Matimba** is die eerste van Evkom se nuwe generasie van kragstasies met lugverkoeling. Die kondensators sal verbind word aan koelers met waaiers.

**Matla** is gedurende die jaar ten volle in gebruik geneem. Die laaste stel is op 1 Augustus 1983 in handelsbedryf gestel, twee maande voor die oorspronklike datum.

Kontrakte vir **Palmiet** se siviele werk, pomp-turbines, generatormotors en staaluitgevoerde drukleidings is in die jaar geplaas. Benewens kragontwikkeling gedurende spitsye sal hierdie kragstasie water uit die Palmietrivier oor die Hottentots-Hollandberge na die Steenbrasopgaardam pompen so die watervoorraad van die Kaapstadse metropolitaanse gebied aanvul.

Gedurende 1983 is goeie vordering by **Tutuka** met die siviele werk vir al ses stelle gemaak. Gedurende die jaar is begin met die oprigting van die eerste en tweede ketelinstallasies en die eerste turbo-generatorinstallasie. (See also page 63.)

 <b>DUVHA</b> 3 600 MW Near Witbank, Transvaal Naby Witbank, Transvaal	 <b>KENDAL</b> 4 032 MW Near Kendal, Transvaal Naby Kendal, Transvaal	 <b>KOEBERG</b> 1 844 MW (e) Near Cape Town Naby Kaapstad
 Coal-fired Steenkoolgestook	 Coal-fired Steenkoolgestook Air cooled Lugverkoel	 Nuclear Pressurised water reactor (PWR) Kernkrag. Drukwaterreaktor (PWR)
 6 × 600 MW	 6 × 672 MW	 2 × 922 MW (e)
 10 Mt Rand Mines' Duvha Opcast Colliery Rand Mines se Duvha-oopgröefmyn	 12 Mt TCL's Khutala Colliery TCL se Khutala-steenkoolmyn	 48 480 kg U in $\text{UO}_2$ enriched 3,25% 48 480 kg U in $\text{UO}_2$ 3,25% veryk
 Komati River water scheme and Witbank Dam Komati-rivier-waterskema en Witbankdam	 Usutu and Vaal Rivers Usutu- en Vaalrivier	 Fresh water from Voelvlei Seawater for cooling circuits Vars water uit Voelvlei Seawater vir verkoeling
 <b>LETHABO</b> 3 708 MW Near Deneysville, OFS Naby Deneysville, OVS	 <b>MAJUBA</b> 3 942 MW Near Amersfoort, Transvaal Naby Amersfoort, Transvaal	 <b>MATIMBA</b> 3 990 MW Near Ellisras, Transvaal Naby Ellisras, Transvaal
 Coal-fired Steenkoolgestook	 Coal-fired Steenkoolgestook Air cooled Lugverkoel	 Coal-fired Steenkoolgestook Air cooled Lugverkoel
 6 × 618 MW	 6 × 657 MW	 6 × 665 MW
 15 Mt Anglo American's New Vaal Colliery Anglo American se New Vaal-steenkoolmyn	 11 Mt Rand Mines' Majuba Colliery Rand Mines se Majuba-steenkoolmyn	 11 Mt Isco's Grootegeel Colliery Yskor se Grootegeel-steenkoolmyn
 Vaal River Vaalrivier	 (Not yet decided) (Nog nie besluit nie)	 Strydom Dam on Mogol River Strydomdam in Mogolrivier
 <b>MATLA</b> 3 600 MW Near Bethal, Transvaal Naby Bethal, Transvaal	 <b>PALMIET</b> 400 MW Near Grabouw, CP Naby Grabouw, KP	 <b>TUTUKA</b> 3 654 MW Near Standerton, Transvaal Naby Standerton, Transvaal
 Coal-fired Steenkoolgestook	 Pumped storage hydro Pompopgaar-hidro	 Coal-fired Steenkoolgestook
 6 × 600 MW	 2 × 200 MW	 6 × 609 MW
 10 Mt General Mining's Matla Colliery General Mining se Matla-steenkoolmyn		 10 Mt Anglo American's New Denmark Colliery Anglo American se New Denmark-steenkoolmyn
 Usutu River and Usutu-Vaal water scheme Usuturivier en Usutu-Vaalwaterskema	 Palmiet River Palmietrivier	 Grootdraai Dam on Vaal River Grootdraaidam in Vaalrivier

The graphics indicate the location of each of Escom's nine power stations under construction, the type of station, the number and installed capacity of generating sets (sent-out capacity at Koeberg), the approximate annual fuel requirements, the source of fuel and the source of water. (See also page 63.)

Bogenoemde toon die ligging van Evkom se nege kragstasies wat in aanbou is, die tipe stasie, die aantal stelle, geïnstalleerde vermoeë (uitstuervermoeë by Koeberg), die gemiddelde jaarlike brandstofvereistes, die bron van die brandstof en die waterbron. (Sien ook bladsy 63.)

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# **Senior General Manager's Report**

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# **Verslag van die Senior Hoofbestuurder**

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**Mannekrag**

Evkom se personeel het gedurende die jaar met 6,9% gegroei van 58 850 tot 62 924. Dit kan veral toege-skryf word aan groot innames van leerlinge in die professionele en tegniese kategorieë in 'n poging om in Evkom se toekomstige behoeftes aan opgeleide mannekrag deur middel van opleiding te voorsien.

'n Gunstige plaaslike arbeidsmark het die keuring van opgeleide personeel vergemaklik en werwing in die buitenland verminder. Die personeelomset het aansienlik afgeneem in vergelyking met die vorige jaar. Daar is egter steeds tekorte aan gekwalifiseerde personeel met tegniese en ander gespesialiseerde vaardighede en Evkom se beurs- en interne opleidingskemas is derhalwe uitgebrei. Waar noodsaaklik, het konsultante en gehuurde arbeid Evkom se mannekrag op gespesialiseerde gebiede aangevul.

**Opleiding**

Formele loopbaanbeplanningskemas is gedurende die jaar ingestel vir personeel wat op 'n aantal gebiede werksaam is, insluitende stelselbedryf, finansiëls, aankope en sekuriteit.

Altesaam 10 400 Evkom-werknemers het kursusse met 'n wisselende duur in 184 vakrigtings bygewoon. Dit verteenwoordig 'n toename van ongeveer 14% in die getal werknemers wat kursusse bygewoon het, in vergelyking met die vorige jaar. Bykomende bestuursopleidingsprogramme is gedurende die jaar ingestel, en altesaam 413 personeellede het drie kursusse voltooi wat by die Evkom-kollege by Halfweghuis gehou is. Twee van hierdie kursusse is deur Unisa se Skool vir Bedryfsleiding opgestel en aangebied – een oor aspekte van begroting, beplanning, beheer en besluitneming, en die tweede oor financiering, aankope, bedryf, mannekrag en projekbeheer – terwyl die derde 'n bestuursontwikkelingskursus was met die klem op gedrag en houdings.

Daar word bevredigend gevorder met die bou van fase 2 van die Evkom-kollege vir die opleiding van vakleerlinge en leerling-tegnici en dit behoort in 1986 gereed te wees vir gebruik.

**Behuising**

Werknemers vir die nuwe kragstasies sal gehuisves word in nabygeleë dorpe sodat van die beskikbare infrastruktuur gebruik gemaak word en sodat Evkom-personeel en hulle gesinne by die bestaande gemeenskappe ingeskakel word.

**Arbeidsverhoudings**

Ondanks 'n dispuit oor loonverhogings vir Evkom se swart werknemers, wat tot 'n loontoekenning deur die Nywerheidshof gelei het, is die jaar deur gesonde arbeidsverhoudings gekenmerk. Die groter bedrywigheid van ongeregistreerde vakunies en ander neigings in die arbeidsveld het gesorg dat Evkom se werknemers ingestel is op 'n nuwe patroon van arbeidsverhoudings in Suid-Afrika wat hom op verskillende maniere gemanifesteer het, bv. werk-

**PERSONNEL****Manpower**

During the year Escom's staff increased by 6,9% from 58 850 to 62 924. Most of the increase was accounted for by substantial intakes of pupils in the professional and technical categories in an endeavour to meet Escom's future requirements for skilled manpower by means of training.

A favourable local labour market facilitated selective recruitment of skilled staff and reduced overseas recruitment. Staff turnover decreased significantly compared with the previous year. There are, however, still shortages of qualified personnel with technical and other specialised skills and Escom's bursary and in-house training schemes were therefore extended. Where essential, consultants and hired labour supplemented Escom's manpower resources in specialised areas.

**Training**

Formal career path planning schemes were implemented during the year for staff working in a number of fields, including system operation, finance, buying and security.

A total of 10 400 Escom employees attended courses of varying duration in 184 subjects. This represents an increase of about 14% in the number of employees who attended courses compared with the previous year.

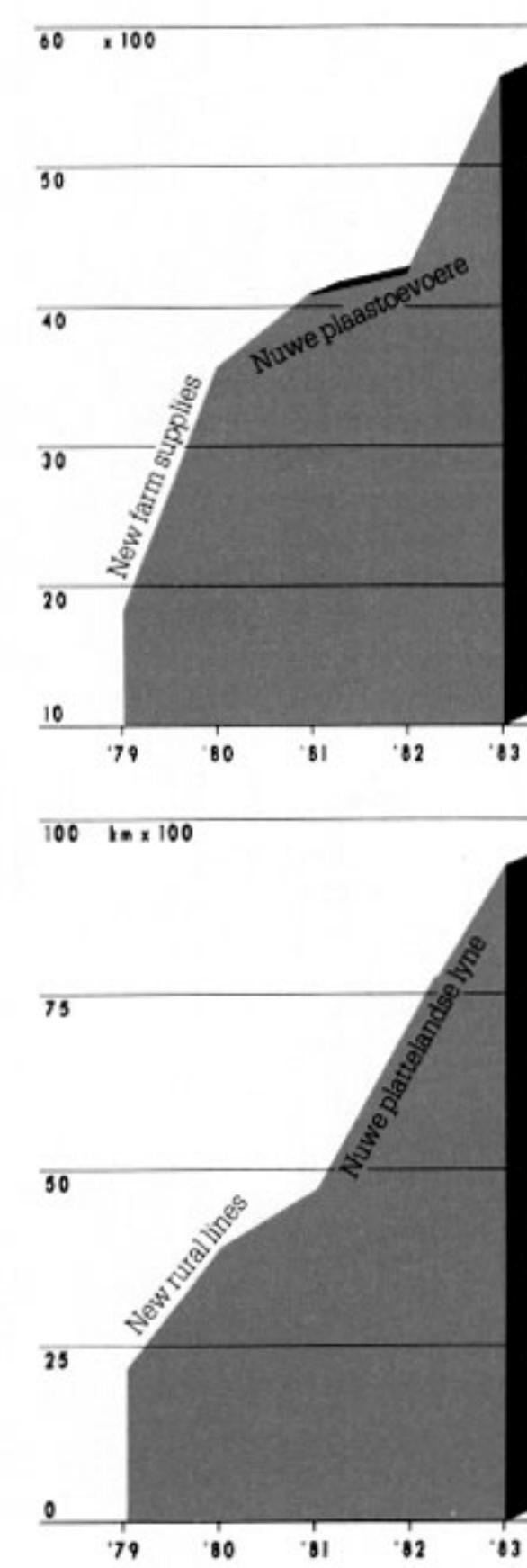
Additional management training programmes were introduced during the year, and a total of 413 staff completed three courses held at the Escom College at Halfway House. Two of these courses were prepared and presented by the Unisa School of Business Leadership – one on aspects of budgeting, planning, control and decision-making, and the second on financing, buying, operations, manpower and project control – while the third was a management development course with the emphasis on behaviour and attitudes.

The construction of Phase 2 of the Escom College for the training of apprentices and pupil technicians is progressing satisfactorily and it should be ready for use in 1986.

**Housing**

Employees for the new power stations will be housed in nearby towns in order to make use of available infrastructure and to integrate Escom staff and their families into existing communities.

Increasing rural reticulation  
Toenemende plattelandse retikulasie



The increasing rate at which farmers are being supplied with electricity is indicated in these two five-year graphs. The first shows the actual number of new farm supplies provided in each year, and the second shows the length of 11kV and 22kV rural reticulation networks completed annually.

Die toenemende tempo waar teen boere van elektrisiteit voorsien word, word in hierdie twee vyfaargrafiese getoon. Die eerste toon die werklike getal nuwe plaatstoeweere wat in elke jaar voorsien is en die tweede toon die lengte van 11kV- en 22kV-plattelandse retikulasietette wat elke jaar voltooi is.

Schoolchildren join in a hands-on simulation of various loadings of the national electricity network at an Escom information centre in Johannesburg – one of three opened in 1983 in different parts of the country.

Skoliere werk saam in 'n nabootsing van verskillende laste op die nasionale elektrisiteitsnet by 'n Evkominliging-sentrum in Johannesburg – een van drie sentra wat in 1983 in verskillende dele van die land geopen is.



## Labour relations

Despite a dispute on pay increases for Escom's black employees, which resulted in a wage award by the Industrial Court, the year was characterised by sound labour relations. The increased activities of unregistered trade unions and other trends in the labour field alerted Escom's employees to the advent of a new pattern of labour relations in South Africa which manifested itself in a number of ways, including employees and their trade unions putting Escom's disciplinary and grievance procedures to the test. Negotiations with the trade unions took place during the year on contentious issues such as the employment of non-whites in traditionally white occupations and the sharing of facilities. These negotiations have not yet been concluded.

## Safety and health

Escom's safety record is among the best in South African industry, and injury rates throughout the organisation are only about 25% of the national average. The fatality rate, too, was reduced in 1983. Escom's overall safety programme was further strengthened by the development and application of occupational hygiene, fire prevention and fire protection programmes.

First-aid training has been standardised by the development of a training module approved by all the country's first-aid organisations. The hearing protection programme has been enhanced by the introduction of computerised records of the audiograms of Escom's power station staff.

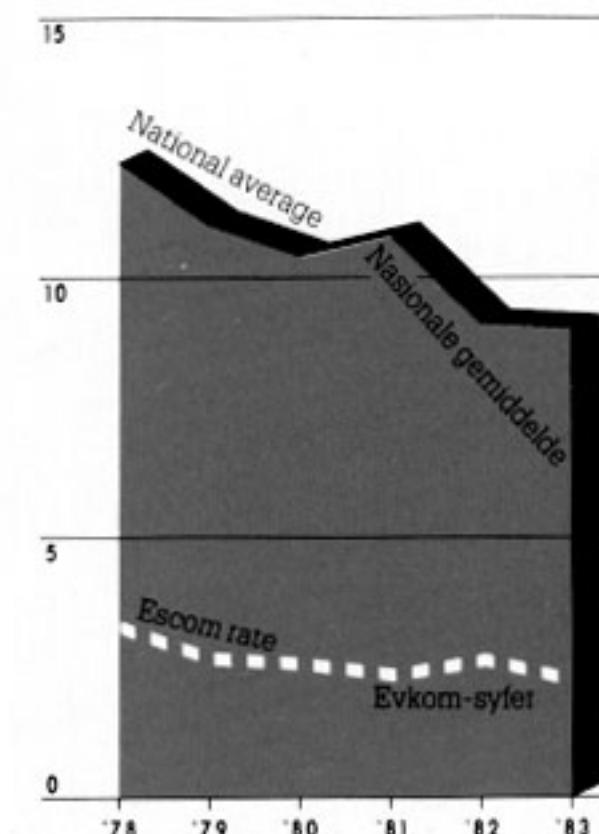
nemers en hulle vakunies wat Evkom se dissiplinêre en grieweprosedures getoets het. Onderhandelings met vakunies het gedurende die jaar plaasgevind oor kontensieuse sake soos die indiensneming van nie-blankes in poste wat tradisioneel as blanke beroepe beskou is en die deel van geriewe. Hierdie onderhandelings is nog nie afgehandel nie.

## Veiligheid en gesondheid

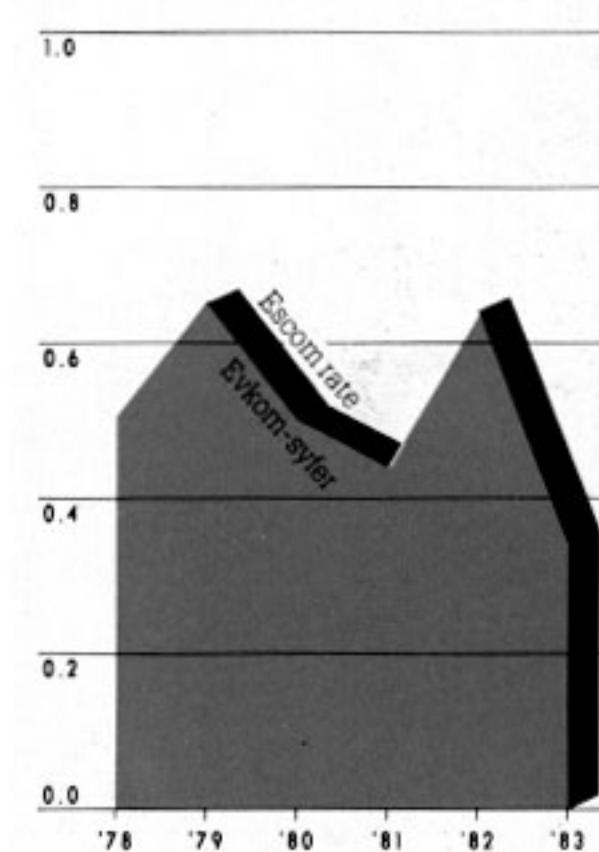
Evkom se veiligheidsrekord is van die beste in die Suid-Afrikaanse nywerheid en beseringsyfers vir die hele organisasie is slegs sowat 25% van die nasionale gemiddelde. Die syfer vir noodlottige ongelukke is ook in 1983 verminder. Evkom se totale veiligheidsprogram is verder versterk deur die ontwikkeling en toepassing van beroepshigiëne-, brandvoorkomings- en brandbeveiligingsprogramme.

Noodhulpopleiding is gestandaardiseer deur die ontwikkeling van 'n opleidingsmodule wat deur die hele land se noodhulporganisasies goedgekeur is. Die gehoorbeskermingsprogram is uitgebrei deur die instelling van gerekenariseerde rekords van die audiogramme van Evkom se kragstasiepersoneel.

Disabling injuries per million man-hours  
Ongeskiktheidsbeserings per miljoen man-ure



Industrial fatalities per five million man-hours  
Nywerheidsterfgevalle per vyf miljoen man-ure



Escom's injury rate for 1983 was 2,3 disabling injuries for each million man-hours worked. This is a 22% improvement compared with 1982 and is less than two-fifths of the national average. The fatality rate was reduced from 0,7 per five million man-hours worked in 1982 to 0,4 in 1983. National figures are not available.

Evkom se beseringsyfer vir 1983 was 2,3 ongeskiktheidsbeserings vir elke miljoen man-ure gewerk. Dit is 'n 22%-verbetering in vergelyking met 1982 en is minder as twee-vyfdes van die nasionale gemiddelde. Die sterfesyfer is verminder van 0,7 per vyf miljoen man-ure gewerk in 1982 tot 0,4 in 1983. Nasionale syfers is nie beskikbaar nie.

## **PLATTELANDSE ELEKTRIFIKASIE**

'n Rekordgetal van 5 631 nuwe plaastoevoere is gedurende die jaar aangesluit. Dit bring die totale getal plaastoevoere op 59 098 te staan.

Die vraag na nuwe plaastoevoere neem steeds toe, beide vanweë die hoë koste van alternatiewe energie

## RURAL ELECTRIFICATION

A record number of 5 631 new farm supplies were provided during the year, bringing the total number of Escom farm supplies to 59 098.

The demand for new farm supplies continues to increase, both because of the continued high cost of alternative energy and because of the increasing use of irrigation equipment. It is often not possible to quote completion times of less than 40 months for new schemes.

On a countrywide basis, 231 schemes, which will serve a total of 7 827 new consumers, are in the construction or planning stages.

en die toenemende gebruik van besproeiingsuitrusting. Dit is dikwels nie moontlik om voltooindatums van minder as 40 maande vir nuwe skemas op te gee nie.

Op 'n landwye basis is 231 skemas, wat altesaam 7 827 nuwe verbruikers sal bedien, in 'n stadium van oprigting of beplanning.

# **TRANSMISSION EN DISTRIBUSIE**

Die oprigting en toetsing van die eerste prototipe

## TRANSMISSION AND DISTRIBUTION

The erection and testing of the first prototype transmission line structures for the new 765 kV system (previously announced as an 800 kV system) were started during the year. Contracts for this extra high voltage line and for the civil works on the substations have been awarded.

The De Aar to Beaufort West section of the main railway line between the Witwatersrand and the Western Cape was electrified during the year and work is proceeding on the electrification of the line between Port Elizabeth and De Aar.

Towns supplied with electricity for the first time during the year were Atamalang, Botshabelo, Brandvlei, Fraserburg, Kwa Thema, Loxton, Midrand, Nieuwoudtville, Niekerkshoop, Thabong, Uniondale and Vosberg.

The schematic maps on pages 25 and 27 indicate additions (in black) to Escom's transmission and reticulation networks.

### Rand and OFS

New 400 kV transmission lines were completed between Grootvlei, Bernina and Pluto and between Duvha and Minerva. The major part of the 132 kV traction line from Esselen to Pietersburg was completed.

### Eastern Transvaal

A 275 kV line between Steelpoort and Phalaborwa was completed, closing the 275 kV ring to the Transvaal lowveld. A second 400 kV transmission line between Duvha and Kriel was completed ahead of schedule to allow more power from the northern power station pool to be transferred to Natal during the drought.

### Natal

New 400 kV lines connecting the Pegasus, Umfolozi and Invubu substations were completed and a new substation was commissioned to reinforce the networks north of Durban.

### Eastern Cape

A 132 kV transmission line between Ruigtevallei and Burgersdorp was completed during the year. This 140 km line forms part of the future traction line which will connect Bloemfontein to East London and Springfontein to Noupoort. This section has been constructed in advance of the railway electrification programme to reinforce Escom's supplies in the Burgersdorp and Aliwal North area.

### Western Cape

The Koeberg power station high-voltage yard was completed and work on connecting the Palmiet power station to the main transmission system began during the year.

### Northern Cape

The transformer capacity at two substations was in-

transmissielynstrukture vir die nuwe 765kV-stelsel (voorheen aangekondig as 'n 800kV-stelsel) is in die loop van die jaar begin. Kontrakte vir hierdie ekstra-hoëspanningslyn en vir die siviele werk aan die substaties is toegeken.

Gedurende die jaar is die trajek tussen De Aar en Beaufort-Wes wat deel van die hoofspoorlyn tussen die Witwatersrand en Wes-Kaapland vorm, bekrag en die werk in verband met die elektrifisering van die lyn tussen Port Elizabeth en De Aar vorder.

Die volgende dorpe het onder andere gedurende die jaar elektrisiteit vir die eerste keer van Evkom ontvang: Atamalang, Botshabelo, Brandvlei, Fraserburg, Kwa Thema, Loxton, Midrand, Nieuwoudtville, Niekerkshoop, Thabong, Uniondale en Vosberg.

Die skematiese kaarte op bladsye 25 en 27 toon (in swart) toevoegings tot Evkom se transmissienetwerke.

### Rand en OVS

Nuwe 400kV-transmissielyne is voltooi tussen Grootvlei, Bernina en Pluto en tussen Duvha en Minerva. Die grootste deel van die 132kV-trekkragnlyn vanaf Esselen na Pietersburg is voltooi.

### Oos-Transvaal

'n 275kV-lyn tussen Steelpoort en Phalaborwa is voltooi waardeur die 275kV-ring na die Oos-Transvaalse laeveld gesluit is. 'n Tweede 400kV-transmissielyn tussen Duvha en Kriel is voor die tyd voltooi sodat meer krag uit die noordelike kragstasiepoel tydens die droogte na Natal oorgebring kan word.

### Natal

Nuwe 400kV-lyne wat die substaties Pegasus, Umfolozi en Invubu verbind, is voltooi en 'n nuwe substaasie is in gebruik geneem om die netwerke noord van Durban te versterk.

### Oos-Kaapland

'n 132kV-transmissielyn tussen Ruigtevallei en Burgersdorp is gedurende die jaar voltooi. Hierdie lyn van 140 km vorm deel van die toekomstige trekkragnlyn wat Bloemfontein met Oos-Londen en Springfontein met Noupoort sal verbind. Hierdie gedeelte is voor die spoorwegelektrifisieringsprogram opgerig om Evkom se toevoer in die gebied van Burgersdorp en Aliwal-Noord te versterk.

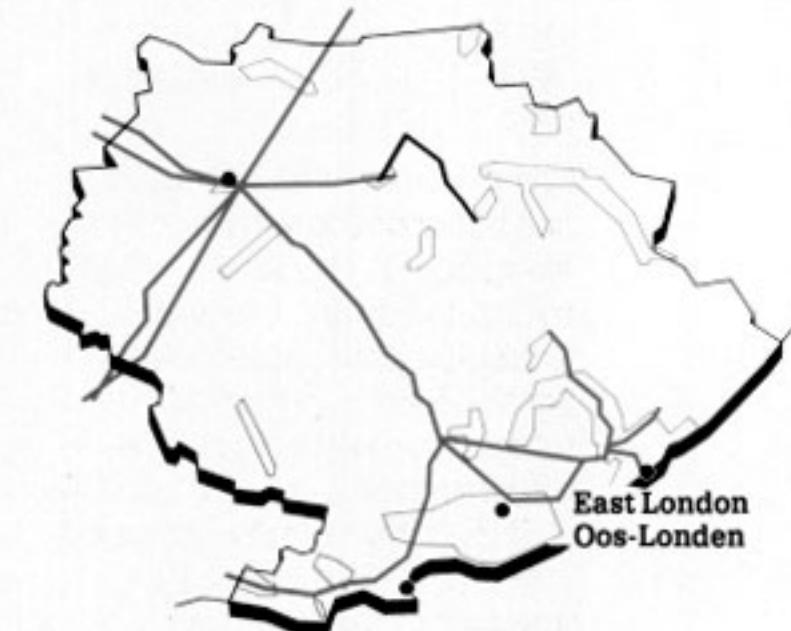
### Wes-Kaapland

Koeberg-kragstasie se hoëspanningswerf is voltooi en daar is gedurende die jaar begin met die werk om Palmiet-kragstasie met die hooftransmissiestelsel te verbind.

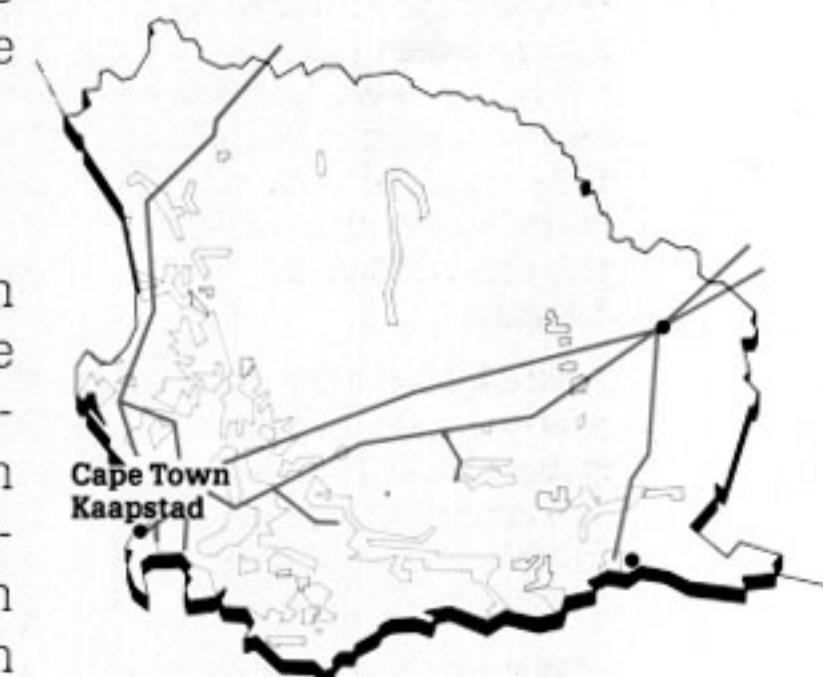
### Noord-Kaapland

Die transformatorvermoë by twee substaties is verhoog om die projekte in verband met 'n tweede 275kV-lyn, wat in 1982 in gebruik gestel is, tussen Boundary, Olien en Ferrum te voltooi.

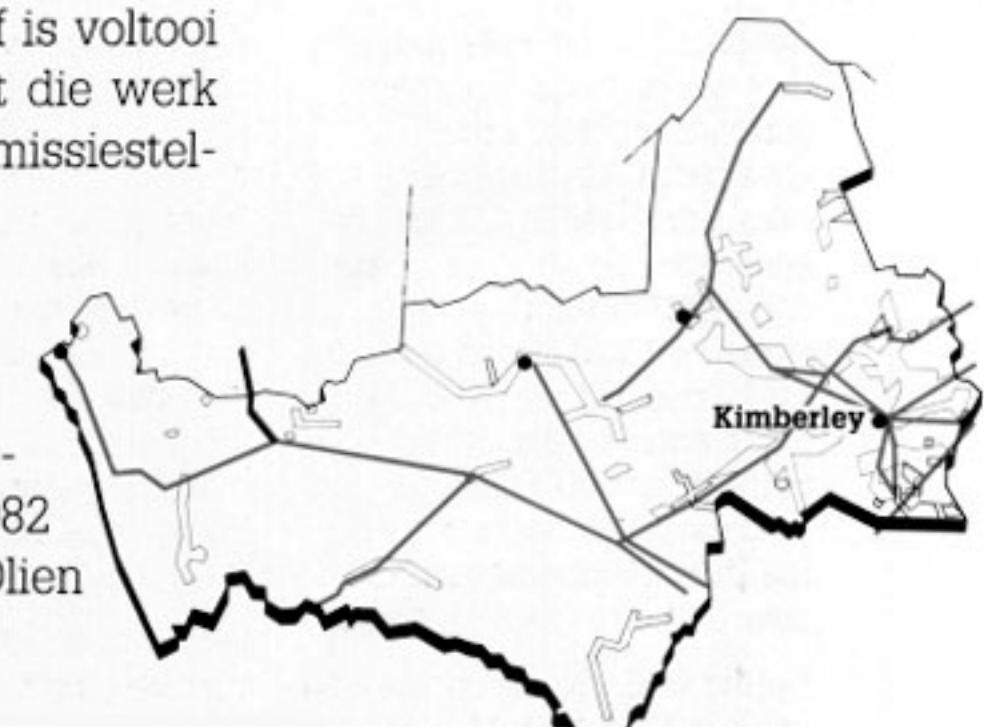
Eastern Cape  
Oos-Kaapland



Western Cape  
Wes-Kaapland



Northern Cape  
Noord-Kaapland



Work on earthing one of the two direct current (DC) lines from Cahora Bassa takes place near Pretoria to allow power to be transmitted over a single line and returned by earth.

Escom consultants Herb Konkel and Kent Mackebon, both from the United States, prepare a 765 kV conductor bundle for corona testing at Megawatt Park.

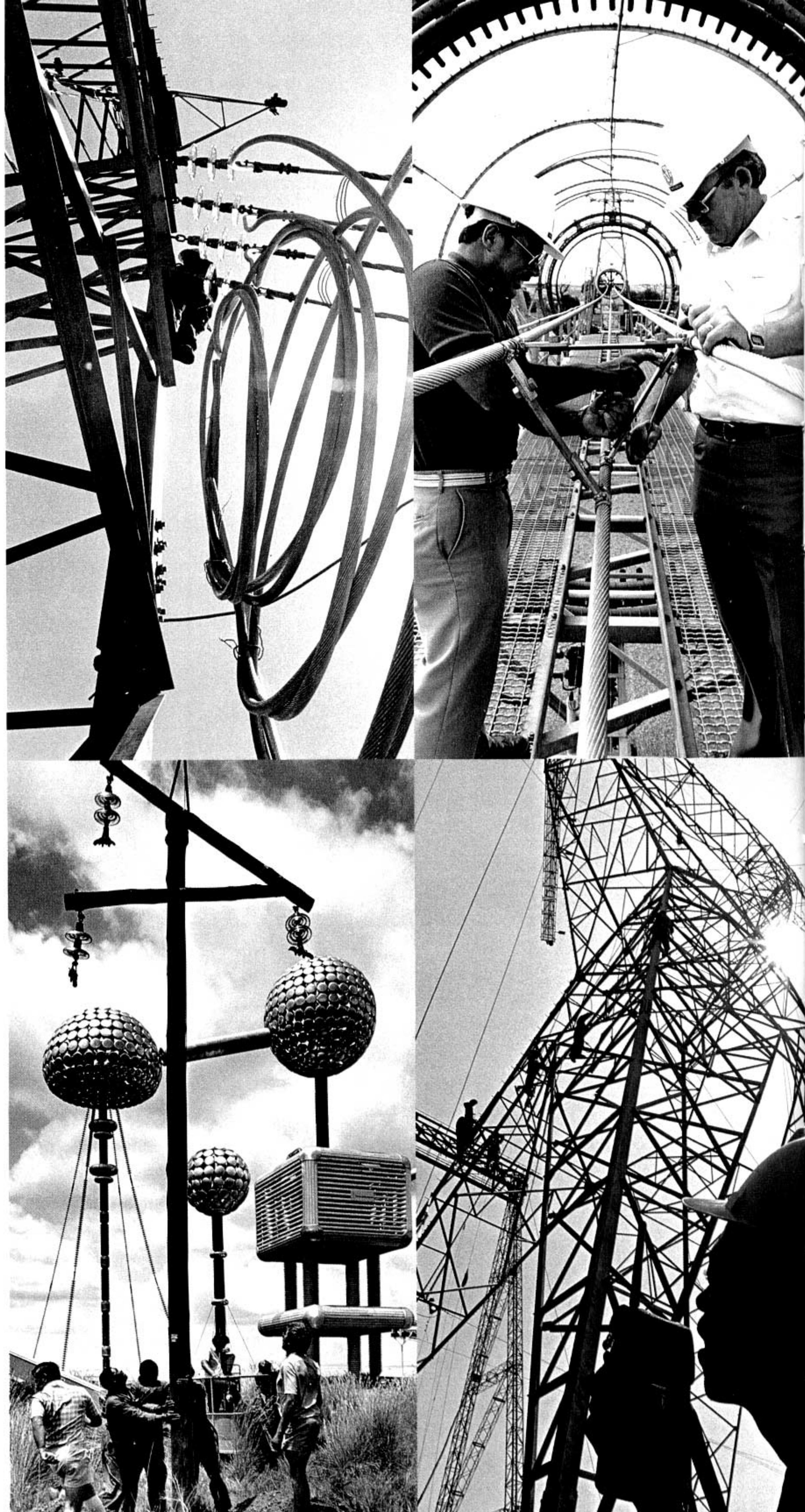
An Escom team prepares a new design for earthing rural reticulation lines for simulated lightning tests at the national Extra High Voltage test facility at Olifantsfontein, near Pretoria.

Two-way radio is used to assist with the erection of a 765 kV transmission tower on test at Escom's Rossherville works near Germiston.

Werk aan die aarding van die twee gelykstroomlyne (GS-lyne) vanaf Cahora Bassa word naby Pretoria gedoen sodat die kraag deur 'n enkele lyn gestuur kan word.

Evkom-raadgewers Herb Konkel en Kent Mackebon, albei uit die Verenigde State, berei 'n 765-kV-geleierbondel voor vir koronatoetsing by Megawatt Park. 'n Evkom-span stel 'n nuwe ontwerp op vir die aarding van plattelandse retikulasie-lyne om nagebootste weerlig toets daarmee uit te voer by die nasionale Ekstrahoëspanningstoetsfasiliteit by Olifantsfontein, naby Pretoria.

Tweerigtingradio's word gebruik om die oprigting van 'n 765-kV-transmissiesmas wat by Evkom se Rossherville-werkplaas naby Germiston getoets word, te vergemaklik.



creased to complete the projects associated with a second 275 kV line, put into service in 1982, between Boundary, Olien and Ferrum.

## OMGEWING

### ENVIRONMENT

Electricity utilities such as Eskom have a number of different impacts on the environment. The more important include atmospheric pollution, disturbance caused by power station siting and power line routing, and the influence on small communities of the sudden influx of the large numbers of people needed to build and run a large power station. During the year Eskom recorded a number of achievements in all these areas.

In parallel with its studies in conjunction with the Council for Scientific and Industrial Research on air pollution levels and atmospheric chemistry, Eskom is reducing the emissions of its older power stations to levels currently considered satisfactory by retrofitting flue gas conditioners. This equipment is designed to reduce particulate emissions by 99,6%.

The impact of power stations and transmission lines on the environment can be minimised by careful siting and routing and by subsequent rehabilitation of land unavoidably damaged. Examples of both approaches include the following:

Matimba power station. Many indigenous bushveld trees are being preserved and a planned visitors' centre will include an exhibition of the ecology of the area. A small wetland area has also been identified as a nature reserve.

Majuba power station. The site was chosen because of its small ecological interest but it was subsequently found to be a habitat for an endangered species of lizard (*Cordylus giganteus*). The Transvaal Division of Nature Conservation is assisting with the relocation of many of these lizards.

Tutuka power station. A potential bird sanctuary was identified and a management plan prepared by the Transvaal Division of Nature Conservation.

Elektriese nutsorganisasies soos Eskom oefen verskillende invloede op die omgewing uit. Die belangrikstes is lugbesoedeling, versteurings wat veroorsaak word deur die plasing van kragstasies en kraglynroetes, en die invloed op klein gemeenskappe deur die skielike instroming van groot getalle mense wat nodig is om 'n groot kragstasie op te rig en te bedryf. Gedurende die jaar het Eskom 'n aantal prestasies op hierdie gebied behaal.

Benewens die studies wat Eskom met die medewerking van die Wetenskaplike en Nywerheidsnavorsingsraad oor lugbesoedelingspeile en atmosferiese chemie ondernem, is Eskom besig om die vrylating by sy ouer kragstasies te verminder tot peile wat tans as bevredigend geag word deur rookgas-kondisioneerders aan te bring. Hierdie uitrusting is ontwerp om die vrylating van stofdeeltjies met 99,6% te verminder.

Die invloed van kragstasies en transmissielyne op die omgewing kan geminimaliseer word deur aandag te skenk aan hulle ligging en roete en aan die herstel van grond wat onvermydelik beskadig is. Voorbeeld van albei benaderings sluit die volgende in:

Matimba-kragstasie. Baie inheemse bosveldbome word bewaar. In die besoekersentrum wat beplan word, sal 'n uitstalling van die ekologie van die omgewing gegee word. 'n Klein moerasgebied is as 'n natuurreservaat aangewys.

Majuba-kragstasie. Die terrein is gekies vanweë sy geringe ekologiese belang, maar daar is agterna gevind dat dit 'n habitat is vir 'n bedreigde akkedis-spesie (*Cordylus giganteus*). Die Transvaalse Afdeling Natuurbewaring verleen bystand met die hervestiging van baie van hierdie akkedisse.

Tutuka-kragstasie. 'n Potensiële voëlreservaat is aangewys en 'n beheerplan is deur die Transvaalse Afdeling Natuurbewaring opgestel.

Palmiet-kragstasie. 'n Waterbeheerplan is ingestel om die afloop van die terrein te beheer en skade aan die inheemse planteryk, bekend as fynbos te minimaliseer.

Transmissielyne in die Tuinroetegebied. Nuwe lyne word naby die kus opgerig sodat die inheemse bosse tussen George en Knysna vermy word.

Palmiet power station. A water management plan has been implemented to control the run-off from the site to minimise damage to the indigenous plant kingdom known as fynbos.

Transmission lines in the Garden Route area. New lines are being built parallel to the coast taking care to avoid the indigenous forest between George and Knysna.

Disposal of power station ash. Ash from power stations now being built will be returned to the open cast mines from which the power stations' coal was originally extracted and the land will then be rehabilitated for agricultural use. Restoration plans have been developed for the new Kendal, Lethabo and Tutuka power stations.

Wegruiming van kragstasie-as. As van die kragstasies wat nou opgerig word, sal teruggestuur word na die oopgroefmyne waar die kragstasie se steenkool oorspronklik ontgin is en die grond sal dan gerehabiliteer word vir landboukundige gebruik. Rehabilitasieplanne is ontwikkel vir die nuwe kragstasies Kendal, Lethabo en Tutuka.

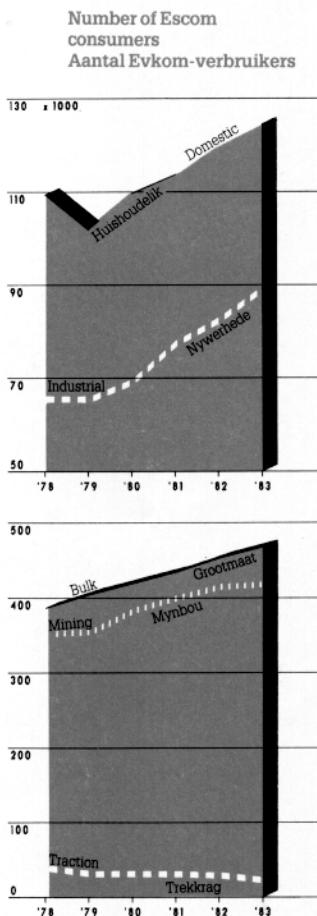
## CONSUMER RELATIONS

Many of Escom's consumers were affected by the economic recession and the drought, and programmes for exchanging information with individual consumers and groups of consumers were extended during the year to explore ways in which Escom could help affected consumers. In this way a number of meetings were held with representatives of mining and minerals processing consumers affected by a reduced demand for their products on overseas markets. In a more general way, Escom was instrumental in setting up an ad hoc committee to examine the effect of the drought on water and electricity supplies. Some 80 consumers and consumer bodies were represented on this committee, which held four constructive meetings during the year.

During the year, the Sandton and Carletonville municipalities took over reticulation to some 775 consumers previously supplied direct by Escom. Negotiations are at present in progress for a number of municipalities in the Western Cape, including Bellville, Brackenfell, Durbanville, Kuilsrivier, Kraaifontein, Parow and Goodwood, to take over the supply to about 75 000 Escom consumers in their municipal areas. Similar negotiations are taking place in Natal with the Port Shepstone and Mtunzini municipalities for the takeover of supplies to some 850 Escom consumers.

Baie van Evkom se verbruikers is deur die ekonomiese resessie en die droogte geraak, en gedurende die jaar is programme uitgebrei om inligting met individuele en groepe verbruikers uit te ruil om vas te stel op watter wyse Evkom sulke verbruikers kan help. Sodoende is 'n aantal vergaderings met verteenwoordigers van verbruikers in die mynbou- en mineraalverwerkingssektor gehou wat 'n verminderde aanvraag vir hulle produkte op buitelandse markte ondervind. Op 'n meer algemene wyse was Evkom behulpsaam met die instelling van 'n ad hoc-komitee om ondersoek in te stel na die uitwerking van die droogte op water- en elektrisiteitsvoorsiening. Nageenoeg 80 verbruikers en verbruikersliggame is in hierdie komitee verteenwoordig wat gedurende die jaar vier opbouende vergaderings gehou het.

Die munisipaliteite van Sandton en Carletonville het gedurende die jaar die tovoer na sowat 775 verbruikers oorgeneem wat tevore regstreeks deur Evkom bedien is. Daar word op die oomblik met 'n aantal munisipaliteite in Wes-Kaapland, met inbegrip van Bellville, Brackenfell, Durbanville, Kuilsrivier, Kraaifontein, Parow en Goodwood onderhandel in verband met die oornname van kragvoorsiening aan sowat 75 000 Evkom-verbruikers in hulle munisipale gebiede. Soortgelyke onderhandelings word in Natal met die munisipaliteite van Port Shepstone en Mtunzini gevoer vir die oornname van kragvoorsiening aan ongeveer 850 Evkom-verbruikers.



Five-year graphs show the changing pattern of Escom's consumer categories.

Vyfjaargrafieke toon die veranderende patroon van Evkom se verbruikerskategorieë.

## **Financial statements** for the year ended 31 December 1983

## **Finansiële state** vir die jaar geëindig 31 Desember 1983

The annual financial statements set out on pages 34 to 48 have been approved by the Electricity Supply Commission and were signed on its behalf on 23 March 1984.

Jan H. Smith *Chairman*  
I.D. van der Walt *Senior General Manager and  
Chief Executive Officer*  
B.M. Murray *Chief Accountant*

Die jaarlikse finansiële state uiteengesit op bladsye 34 tot 48 is deur die Elektrisiteitsvoorsieningskommissie goedgekeur en is namens die Kommissie op 23 Maart 1984 onderteken.

Jan H. Smith *Voorsitter*  
I.D. van der Walt *Senior Hoofbestuurder en  
Hoof-Uitvoerende Beampie*  
B.M. Murray *Hoofrekenmeester*

## **Auditors' report**

## **Ouditeursverslag**

The Chairman and Members  
Electricity Supply Commission  
Sandton

Die Voorsitter en Lede  
Elektrisiteitsvoorsieningskommissie  
Sandton

We have examined the financial statements of the Commission set out on pages 34 to 48. 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 1983 and the results of its operations for the year then ended in conformity with generally accepted accounting principles applied on a consistent basis, 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.

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

Johannesburg  
23 March 1984

Ons het die finansiële state van die Kommissie uiteengesit op bladsye 34 tot 48 nagegaan. Ons ondersoek is uitgevoer ooreenkomstig algemeen aanvaarde ouditstandaarde en het gevvolglik sulke toetse van die rekenkundige rekords en ander ouditprosedures ingesluit as wat ons onder die omstandighede nodig geag het.

Na ons mening gee die finansiële state 'n redelike weergawe van die finansiële stand van die Elektrisiteitsvoorsieningskommissie op 31 Desember 1983 en die resultate van sy werkzaamhede vir die jaar geëindig op daardie datum ooreenkomstig algemeen aanvaarde rekenkundige beginsels toegepas op 'n eenvormige basis, en soos vereis deur die Elektrisiteitswet van 1958.

Ons doen verder verslag dat, ingevolge die Elektrisiteitswet:

- (i) behoorlike voorsiening gemaak is vir die delging en terugbetaling van gelde geleent deur of voorgeskipt aan die Kommissie en dat die Delgingsfonds behoorlik gehandhaaf is, en
- (ii) bedrae deur die Kommissie vasgestel in die Reserwefonds en Kapitaalontwikkelingsfonds opgeset is.

Deloitte Haskins & Sells  
Alex. Aiken & Carter  
Geoktrooieerde Rekenmeesters (S.A.)

Johannesburg  
23 Maart 1984

**Balance sheet** at 31 December 1983

**Balansstaat** op 31 Desember 1983

	Note Aantekening	1983 R000	1982 R000	
<b>Fixed assets</b>	2	<b>15 590 919</b>	12 858 462	<b>Vaste bates</b>
Stores, materials and fuel	3	<b>671 812</b>	447 615	<b>Voorrade, materiaal en brandstof</b>
Other non-current assets	4	<b>2 352 072</b>	1 082 212	<b>Ander nie-bedryfsbates</b>
<b>Current assets</b>		<b>359 733</b>	310 033	<b>Bedryfsbates</b>
Accounts receivable and payments in advance		<b>359 733</b>	275 333	Rekeninge ontvangbaar en vooruitbetalings
Moneys at call		—	34 700	Onmiddellik opeisbare fondse
		<b>18 974 536</b>	14 698 322	
<b>Financed by</b>				<b>Gefinansier deur</b>
<b>Loans and extended credit</b>	5	<b>11 340 230</b>	8 944 235	<b>Lenings en uitgestelde krediet</b>
Local registered stock, bond issues and direct placings (Schedule 2)		<b>14 676 593</b>	10 625 205	Plaaslik geregistreerde effekte, obligasie- uitgifte en direkte plasings (Bylae 2)
less Escom stock held internally	6	<b>5 832 680</b>	3 794 647	min Evkom-effekte intern gehou
		<b>8 843 913</b>	6 830 558	
Import financing facilities and extended credit		<b>1 686 254</b>	1 547 234	Invoerfinansieringsfasiliteite en uitgestelde krediet
Revolving credits and short-term advances		<b>810 063</b>	566 443	Wentelkrediete en korttermynvoorskotte
<b>Current liabilities</b>		<b>866 016</b>	640 121	<b>Bedryfslaste</b>
Creditors and accrued liabilities		<b>592 498</b>	393 139	Krediteure en opgelope verpligtinge
Interest accrued		<b>239 717</b>	209 192	Opgelope rente
Bank overdrafts		<b>33 801</b>	37 790	Bankoortrekkings
<b>Total net debt</b>		<b>12 206 246</b>	9 584 356	<b>Totale netto skuld</b>
<b>Statutory funds</b>	7	<b>5 471 030</b>	4 292 921	<b>Statutêre fondse</b>
Capital Development Fund (Schedule 7)		<b>4 279 674</b>	3 357 023	Kapitaalontwikkelingsfonds (Bylae 7)
Reserve Fund (Schedule 8)		<b>239 677</b>	218 410	Reserwefonds (Bylae 8)
Redemption Fund (Schedule 9)		<b>951 679</b>	717 488	Delgingsfonds (Bylae 9)
<b>Other reserves</b>		<b>1 297 260</b>	821 045	<b>Ander reserwes</b>
Capital reserve	8	<b>763 581</b>	637 201	Kapitaalreserwe
Provision for repayment of foreign loans		<b>144 520</b>	148 737	Voorsiening vir terugbetaling van buitelandse lenings
Other reserves	9	<b>645 811</b>	188 766	Ander reserwes
Accumulated deficit		<b>(256 652)</b>	(153 659)	Opgehoopte tekort
		<b>18 974 536</b>	14 698 322	

**Statement of source and application of funds** for the year ended 31 December 1983

**Staat van bron en aanwending van fondse** vir die jaar geëindig 31 Desember 1983

	1983 R000	1982 R000	
<b>SOURCE OF FUNDS</b>			<b>BRON VAN FONDSE</b>
<b>Funds generated internally</b>	<b>1 275 078</b>	1 046 573	<b>Fondse intern ontwikkel</b>
Net deficit	(102 993)	(57 920)	Netto tekort
Add items not affecting the flow of funds			Plus items wat nie beweging van fondse raak nie
Depreciation on equipment, vehicles and furniture	40 698	34 371	Waardevermindering op uitrusting, voertuie en meubels
Future fuel supplies	(39 302)	(2 331)	Toekomstige brandstofvoorraade
Written off to coal costs	10 963	7 089	Afgeskryf teen steenkoolkoste
Interest capitalised on fuel funding	(50 265)	(9 420)	Rente gekapitaliseer op brandstoffinansiering
Loan amortisation charges	380 450	231 074	Vorderings ter delging van lenings
Repayment of foreign loans	48 363	48 044	Terugbetaling van buitelandse lenings
Redemption of local loans	225 664	106 714	Delging van plaaslike lenings
Interest credited to the Redemption Fund	106 423	76 316	Rente na die Delgingsfonds gekrediteer
Amounts credited to Capital Development and Reserve Funds	996 225	841 379	Bedrae na die Kapitaalontwikkelings- en Reserwefonds gekrediteer
Contributions	500 000	476 000	Bydraes
Interest credited	496 225	365 379	Rente gekrediteer
<b>Net proceeds of external finance</b>	<b>2 238 959</b>	1 969 179	<b>Netto opbrengs van eksterne finansiering</b>
Loans and extended credit	1 585 274	1 107 050	Lenings en uitgestelde krediet
Repayments	(313 304)	(310 818)	Terugbetalings
Sale of Escom stock on secondary market	1 603 836	1 630 490	Verkoop van Evkom-effekte op sekondêre mark
Purchase of Escom stock on secondary market	(636 847)	(457 543)	Koop van Evkom-effekte op sekondêre mark
<b>Refund on expenditure to secure future fuel supplies</b>	—	2 722	<b>Terugbetaling op uitgawes om toekomstige brandstofvoorraade te verseker</b>
<b>Increase in net current liabilities</b>	<b>165 812</b>	48 419	<b>Toename in netto bedryfslaste</b>
<b>Other</b>	<b>12 066</b>	7 543	<b>Ander</b>
	<b>3 691 915</b>	3 074 436	
<b>APPLICATION OF FUNDS</b>			<b>AANWENDING VAN FONDSE</b>
Fixed assets, net	2 757 108	2 741 167	Vaste bates, netto
Increase in stores and materials	224 197	141 536	Toename in voorrade en materiaal
Expenditure to secure future fuel supplies	535 889	91 103	Uitgawes om toekomstige brandstofvoorraade te verseker
Increase in housing loans to employees	41 366	40 668	Toename in huislenings aan werknemers
Deferred expenditure	81 048	23 425	Uitgestelde uitgawes
Reserve Fund expenditure	52 307	36 537	Reserwefondsuitgawes
	<b>3 691 915</b>	3 074 436	

# Notes to the financial statements for the year ended 31 December 1983

## Aantekeninge by finansiële state vir die jaar geëindig 31 Desember 1983

### 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. 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 write them off over their estimated useful lives.

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 fuel 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 average cost per ton based on the value at the beginning of the quarter plus the following three months' purchases. Nuclear fuel is valued at 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. Gains or losses on the translation of other uncovered liabilities and assets are accounted for in terms of the interest recovery procedure.

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

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.

#### 1.1 Vaste bates

##### (a) Vaste bates in bedryf

Die vaste bates in bedryf word nie aan waardevermindering onderwerp nie, maar word teen historiese koste getoon. Lenings word aangegaan om hierdie bates te finansier. Weens die korrelasie tussen die lenings aldus opgeneem en vaste bates, neem die vordering teen inkoms vir die aflossing van lenings die plek van waardevermindering in.

##### (b) Werke in aanbou

Rente en 'n vordering vir korporatiefokoste word gedurende die oprigtingstydperk gekapitaliseer.

##### (c) Uitrusting, voertuie en meubels

Uitrusting, voertuie en meubels word gedepresieer teen koers wat geskik geag word om die historiese kosprys af te skryf oor die geskakte ekonomiese lewensduur van die bates.

Sekere uitgawes aan vaste bates ingevolge artikel 13(1)(a) van die Elektrisiteitswet, 1958, word ten volle teen die Reservefonds afgeskryf.

#### 1.2 Voorrade, materiaal en brandstof

Die basis waarvolgens voorrade en materiaal uitgesonderd brandstof, waardeer word is die laagste van kosprys, bepaal op grondslag van laaste-in-eerste-uit, en vervangingswaarde. Waar toepaslik, word voorsiening vir veroudering gemaak. Steenkoolvoorraad word waardeer teen die gemiddelde koste per ton, gebaseer op die waarde aan die begin van die kwartaal plus die daaropvolgende drie maande se aankope. Kernbrandstof word waardeer teen koste.

#### 1.3 Buitelandse betaalmiddele

Verpligtinge in buitelandse valuta wat deur valutatermykontrakte gedek is, word teen die gedeekte wisselkoers in rand omgereken. Verpligtinge wat nie deur valutatermykontrakte gedek is nie en buitelandse bates word teen die wisselkoers wat op die balansstaatdatum heers in rand omgereken. Geldeenheid wat vir obligasiehouers die voordeelste is, word gebruik vir die omrekening van lenings wat in Europese Rekeneenhede aangegaan is.

Die netto wins of verlies voortspruitend uit die omrekening van ongedekte buitelandse leningsaldo's teen heersende wisselkoers op die balansstaatdatum word uitgestel en verreken oor die oorblywende tydperke van die lenings by wyse van 'n vordering of krediet aan die inkomsterekening. Winsten en verliese met die omrekening van ander ongedekte verpligtinge en bates word verreken volgens die prosedure vir die verhaling van rente.

Premiums, netto van diskontos, op termyndekking word uitgestel en verreken oor die oorblywende termyne van die dekking.

#### 1.4 Uitgestelde uitgawes

Diskonto op lenings word volgens die grondslag van 'n amortisasiefonds oor die termyn van elke lening gedelg deur volle voorsiening vir aflossing van die betrokke lenings. Die gedelgde gedeelte van die diskonto word teen die Delgingsfonds verreken en by terugbetaling van die lenings na die Kapitaalreservoir oorgeplaas.

Uitgawes om toekomstige brandstofvoorraade ter verseker, word opgehoop vir delging sodra afluwing begin.

Die verskil tussen die boekwaarde en die opbrengs van effekte verkoop word afgeskryf oor die oorblywende lewensduur van die oorspronklike belegging volgens die prosedure vir die verhaling van rente.

#### 1.5 Aflossing van lenings

'n Delgingsfonds is ingevolge die bepalings van die Elektrisiteitswet, 1958, gestig en voorsiening word gemaak vir die delging van plaaslike lenings oor tydperke van hoogstens 25 jaar.

Die Staatspresident het ooreenkomsdig artikel 10(2) van die Wet gelas dat die bepalings rakende die stigting van die Delgingsfonds nie op buitelandse lenings van toepassing moet wees nie. Voorsiening word gemaak vir die terugbetaling van sulke lenings oor tydperke van hoogstens 25 jaar.

Die bepalings van die Delgingsfonds word nie op wentelkrediete en korttermynvoorskotte toegepas nie, aangesien dit aangegaan word ingevolge die bepalings van paragraaf 1(3) van die Bylae by die Wet.

#### 1.6 Bedryfsinkomste en -uitgawes

Meterlesings geskied op 'n sikliese basis en elektrisiteitsverkope word dienoordeelkonsistig in berekening gebring. Die inkomste uit toewoere tussen die datum van die laaste lesing en die einde van die boekjaar word nie by verkope ingesluit nie, terwyl die verwante uitgawes gedeelteer word soos dit aangegaan word.

#### 1.7 Kapitalisering van rente en finansieringskoste

Rente op fondse aangewend vir die finansiering van kapitaaluitgawes en deposito's, vir die versekering van toekomstige brandstofvoorraade en konstruksiemateriaal, word gekapitaliseer.

## 2 Fixed assets

### Vaste bates

	1983 R000	1982 R000	
Assets in commission at cost			Bates in bedryf, teen kosprys
Land and rights	162 470	107 557	Grond en regte
Buildings and facilities	973 834	625 143	Geboue en fasiliteite
Production plant	8 082 642	6 956 699	Produksieuitrusting
Total in commission	9 218 946	7 689 399	Totaal in bedryf
Works under construction	6 209 611	5 016 580	Werke in aanbou
Equipment, vehicles and furniture, at cost	294 932	263 023	Uitrusting, voertuie en meubels, teen kosprys
Less: Accumulated depreciation	132 570	110 540	Min: Opgeloepe waardevermindering
	15 590 919	12 858 462	

### **3 Stores, materials and fuel**

#### **Voorrade, materiaal en brandstof**

	1983 R000	1982 R000	
Construction material	<b>224 072</b>	181 771	Konstruksiemateriaal
Maintenance and consumable stores	<b>159 769</b>	117 004	Instandhouding- en verbruiksvorraad
Fuel	<b>287 971</b>	148 840	Brandstof
	<b>671 812</b>	447 615	

### **4 Other non-current assets**

#### **Ander nie-bedryfsbates**

Unamortised portion of loan discount	<b>758 216</b>	208 905	Onafgeloste gedeelte van leningsdiskonto
Expenditure and deposits to secure future fuel supplies	<b>837 971</b>	267 526	Uitgawes en deposito's om toekomstige brandstofvoorraad te verseker
Difference between book value and proceeds of Escom stock sold	<b>486 388</b>	468 638	Verskil tussen boekwaarde en opbrengs uit Evkom-effekte verkoop
Other deferred charges	<b>114 856</b>	23 425	Ander uitgestelde kostes
Deferred expenditure	<b>2 197 431</b>	968 494	Uitgestelde uitgawes
Listed investments held for Reserve Fund	<b>2 796</b>	2 948	Genoteerde beleggings gehou vir Reservefonds
Redemption Fund	<b>312</b>	306	Delgingsfonds
Housing loans to employees secured by first mortgage	<b>147 483</b>	106 117	Huislenings aan werknemers verseker deur eerste verband
Amounts owing in respect of reticulation systems sold	<b>4 050</b>	4 347	Bedrae verskuldig ten opsigte van kragnetwerke verkoop
	<b>2 352 072</b>	1 082 212	

### **5 Loans and extended credit**

#### **Lenings en uitgestelde krediet**

The current portion (excluding revolving credits) included in loans and extended credit amounts to approximately	<b>579 000</b>	410 000	Die bedryfsgedeelte (uitgesonderd wentelkrediete) wat by lenings en uitgestelde krediet ingesluit is bedra ongeveer
Borrowings in the following currencies are not covered by forward exchange contracts:			Lenings in die volgende geldeenheid word nie deur valutatermynkontrakte gedek nie:
1983	1982		1983                  1982
European Units of Account	4 040 000	5 370 000	Europese Rekenenhede                  4 040 000        5 370 000
Deutsche Mark	3 572 000	3 072 000	Duitse Mark                  3 572 000        3 072 000
Pounds Sterling	—	1 995 000	Pond Sterling                  —        1 995 000
US Dollars	107 914 000	90 495 000	VSA Dollar                  107 914 000        90 495 000
French Francs	—	2 189 000	Franse Frank                  —        2 189 000
Swiss Francs	7 043 000	519 000	Switserse Frank                  7 043 000        519 000
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.			Ingevolge die bepalings van die Elektrisiteitswet het effekte uitgereik vir die aangaan van lenings, tesame met rente daarop, 'n eerste vordering teen al die bates van die Kommissie.

### **6 Escom stock held for Evkom-effekte gehou vir**

	Schedule Bylae	1983 Book value Boek- waarde R000	1983 Nominal value Nominale waarde R000	1982 Book value Boek- waarde R000	1982 Nominal value Nominale waarde R000
Capital Development Fund	3	<b>4 063 263</b>	<b>4 421 098</b>	2 922 914	3 003 907
Reserve Fund	4	<b>228 350</b>	<b>275 698</b>	124 997	137 927
Redemption Fund	5	<b>944 960</b>	<b>1 132 036</b>	595 592	647 763
Repayment of foreign loans	6	<b>3 920</b>	<b>3 848</b>	5 060	5 050
		<b>5 240 493</b>	<b>5 832 680</b>	3 648 563	3 794 647
Difference between nominal and book value			<b>592 187</b>	146 084	Verskil tussen nominale en boekwaarde

### **7 Statutory funds**

#### **Statutêre fondse**

**7.1** 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.

**7.1** Die statutêre fondse word gekrediteer met bedrae soos bepaal deur die Elektrisiteitswet. Hierdie bedrae word hoofsaaklik in Evkom-effekte belê en die rente val die onderskeie fondse toe.

Die Delgingsfonds maak op die grondslag van 'n amortisasiefonds voorseening vir die terugbetaling van plaaslike lenings.

Die Reservefonds word, wanneer nodig, gebruik vir die vervanging van verouderde masjinerie of uitrusting en in die algemeen vir die verbetering van uitrusting of vir of in die plek van verzekering, of vir buitengewone herstelwerk of noodgevalle.

Die Kapitaalontwikkelingsfonds maak voorseening vir die interne financiering van kapitaaluitbreiding.

**7.2** The Redemption Fund at the year-end is stated as follows:

Redemption Fund (Schedule 9)

Amortised portion of discount on loans

	1983 R000	1982 R000
	<b>1 000 456</b>	744 696
	<b>48 777</b>	27 208
	<b>951 679</b>	717 488

**7.2** Die Delgingsfonds aan die jaareinde word soos volg uiteengesit:  
Delgingsfonds (Bylae 9)  
Afgeloste gedeelte van diskonto op lenings

## 8 Capital reserve Kapitaalreserwe

	1983 R000	1982 R000	
Loans repaid	<b>883 146</b>	745 420	Lenings terugbetaal
Production plant financed from Reserve Fund	<b>10 360</b>	10 360	Produksie-uitrusting gefinansier uit Reservefonds
	<b>893 506</b>	755 780	
Less: Cost of commissioned assets scrapped or sold	<b>129 925</b>	118 579	Min: Koste van bates in bedryf onttrek of verkoop
	<b>763 581</b>	637 201	

## 9 Other reserves Ander reserwes

Difference between nominal and book values of Escom stock held internally	592 187	146 084	Verskil tussen nominale en boekwaardes van Eskom-effekte wat intern gehou word
Deferred proceeds of reticulation systems sold	4 050	4 347	Uitgestelde opbrengs uit kragnetwerke verkoop
Unrealised exchange profits on foreign liabilities	49 574	38 335	Ongerealiseerde wisselkoerswins op buitelandse verpligtinge
	<b>645 811</b>	188 766	

## 10 Accumulated surplus or deficit Opgehopte surplus of tekort

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 Reserve and Capital Development Funds. The surplus or deficit in any financial year is carried forward and taken into account when charges are adjusted from time to time.		Ingevolge die bepalings van die Elektrisiteitswet, 1958, word elektrisiteit voorsien teen pryse wat bereken is om bedryfsuitgawes, leningsaflossingskoste en bedrae wat vir die Reservew- en Kapitaalontwikkelingsfonds opsygesit mag word, te dek. Die surplus of tekort in enige finansiële jaar word oorgedra en in berekening gebring wanneer pryse van tyd tot tyd aangepas word.
A detailed analysis of the revenue and charges for each undertaking of the Commission is given in the Electricity Supply Account (Schedule 1).		'n Breedvoerige ontleding van die inkomste en koste vir elke onderneming van die Kommissie word in die Elektrisiteitsvoorsieningsrekening gegee (Bylae 1).

## 11 Supplementary information Bykomende inligting

Total interest and finance costs	1 665 331	1 305 046	Totale rente en finansieringskoste
Amounts capitalised and charged to Redemption Fund (in respect of assets sold)	725 778	583 098	Bedrae gekapitaliseer of afgeskryf teen die Delgingsfonds (ten opsigte van bates verkoop)
	<b>939 553</b>	721 948	
Leasing charges on equipment	13 000	9 200	Bruikhuurvorderings op uitrusting
Commitment fees with regard to overdrafts and other credit facilities	8 400	8 100	Verpligtingsgeld op oortrekking en ander kredietfasilitete
Depreciation of equipment, vehicles and furniture	41 000	34 000	Waardevermindering van uitrusting, voertuie en meubels

## 12 Commitments Verpligtinge

The Commission is committed for		Die Kommissie is gebind vir	
<b>12.1</b> Capital expenditure contracted for, excluding contract price adjustments and general sales tax, amounting to approximately	6 808 000	<b>12.1</b> Kapitaaluitgawes aangegaan, uitgesonderd kontrakprysaanpassings en algemene verkoopbelasting, ten bedrae van ongeveer	
This expenditure will be financed from external borrowings and from cash generated internally, and is expected to be incurred, as follows:		Hierdie uitgawes sal uit eksterne lenings en kontant wat intern geskep is, gefinansier word. Na verwagting sal dit soos volg aangegaan word:	
	R000	R000	
1984	1 146 000	1984	1 146 000
1985	1 111 000	1985	1 111 000
1986	1 022 000	1986	1 022 000
1987	946 000	1987	946 000
1988	735 000	1988	735 000
1989 onwards	1 848 000	1989 en daarna	1 848 000

<b>12.2</b> Payment in respect of housing loans granted to employees of approximately	10 600	5 600	<b>12.2</b> Betaling van huislenings aan werknemers van ongeveer
<b>12.3</b> Payment to the Electricity Supply Commission Pension and Provident Fund, in addition to the normal contributions of R191 000 a year to 1985	382	573	<b>12.3</b> Betaling aan die Elektrisiteitsvoorsienings-kommissie se Pensioen- en Voorsorgfonds, benewens die normale bydraes van R191 000 per jaar tot 1985

## 13 Contingent liabilities Voorwaardelike aanspreeklikheid

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 Trustees.	Die Kommissie het die Elektrisiteitsvoorsienings-kommissie se Pensioen- en Voorsorgfonds gevrywaar teen enige verlies voortspruitend uit die nalatigheid, oneerlikheid of bedrog van die Fonds se amptenare of Trustees.
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**Schedules to the financial statements**

**Bylaes tot die finansiële state**

**1 Electricity supply account for the year ended 31 December 1983**

**Elektrisiteitsvoorsieningsrekening vir die jaar geëindig 31 Desember 1983**

R000

	1983														1982													
	Distribution undertakings Distribusie-ondernehemings							Central Generating Sentrale Kragont- wikkeling							Distribution undertakings Distribusie-ondernehemings							Central Generating Sentrale Kragont- wikkeling						
	Total Totaal	Corporate Services Korporaat- dienste	Cape Western Wes- Kaapland	Cape Northern Noord- Kaapland	Orange River Oranje- rivier	Natal Natal	Eastern Transvaal Oos- Transvaal	Rand and OFS Rand en OVS	Total Totaal	Corporate Services Korporaat- dienste	Cape Western Wes- Kaapland	Cape Northern Noord- Kaapland	Orange River Oranje- rivier	Natal Natal	Eastern Transvaal Oos- Transvaal	Rand and OFS Rand en OVS												
<b>Electricity sold</b>	3 301 904	—	—	3 301 904	302 172	122 947	54 373	64 111	533 131	505 638	1 719 532	2 695 422	—	—	2 695 422	253 513	102 970	44 728	48 038	435 154	388 255	1 422 764	<b>Elektrisiteit verkoop</b>					
Industrial	1 090 281	—	—	1 090 281	100 265	15 686	7 699	5 889	199 519	317 800	443 423	874 582	—	—	874 582	83 648	12 484	6 090	3 942	149 980	238 540	379 898	Nywerheid					
Bulk	1 102 009	—	—	1 102 009	133 787	33 031	43 810	57 897	253 181	59 063	521 240	908 289	—	—	908 289	109 341	18 315	36 287	43 875	219 437	47 241	433 793	Grootmaat					
Mining	854 168	—	—	854 168	—	58 921	—	—	11 904	103 108	680 235	695 392	—	—	695 392	—	56 089	—	—	10 938	80 332	548 033	Mynbou					
Traction	188 245	—	—	188 245	28 213	14 807	—	—	59 247	23 850	62 128	161 893	—	—	161 893	27 208	15 680	—	—	47 750	20 649	50 606	Trekkrug					
Domestic and lighting	67 201	—	—	67 201	39 907	502	2 864	325	9 280	1 817	12 506	55 266	—	—	55 266	33 316	402	2 351	221	7 049	1 493	10 434	Huishoudelik en verligting					
<b>Operating expenditure</b>	1 691 317	33 244	1 383 773	274 300	49 755	14 661	10 831	9 190	46 428	41 735	101 700	1 400 636	34 789	1 145 972	219 875	39 516	13 016	8 425	7 686	37 120	31 436	82 676	<b>Bedryfsuitgawes</b>					
Operations	929 086	1 153	923 645	4 288	347	241	96	95	550	611	2 348	793 387	1 084	789 466	2 837	346	284	88	88	283	486	1 262	Bedryf					
Maintenance	281 813	871	219 003	61 939	7 948	2 586	1 775	1 919	9 789	12 794	25 128	222 286	810	164 461	57016	8 393	2 895	2 221	2 092	9 310	11 720	20 384	Onderhoud					
Electricity purchased	9 603	—	9 603	—	—	—	—	—	—	—	—	3 615	—	3 615	—	—	—	—	—	—	—	—	Krag gekoop					
Administration and general expenses	470 815	31 220	231 522	208 073	41 460	11 834	8 960	7 176	36 089	28 330	74 224	381 348	32 895	188 430	160 023	30 777	9 837	6 116	5 506	27 527	19 230	61 030	Administrasie en algemene uitgawes					
<b>Loan charges</b>	1 213 580	7 412	900 839	306 329	41 338	26 768	6 690	8 860	41 502	46 674	133 597	876 706	(3 269)	636 888	243 087	31 379	19 154	5 040	9 223	27 101	38 318	112 872	<b>Leningskoste</b>					
Interest and finance charges	939 553	6 466	662 065	271 022	36 648	23 952	5 820	7 943	36 538	40 726	119 395	721 948	(3 948)	506 456	219 440	28 936	17 644	4 656	7 805	24 715	35 421	100 263	Rente en finansieringskoste					
Redemption of local loans	225 664	946	190 524	34 194	4 690	2 816	870	917	4 851	5 848	14 202	106 714	679	82 538	23 497	2 443	1 510	384	1 418	2 236	2 897	12 609	Delging van plaaslike lenings					
Repayment of foreign loans	48 363	—	48 250	113	—	—	—	—	113	—	—	48 044	—	47 894	150	—	—	—	—	150	—	—	buitelandse lenings					
<b>Contribution to Reserve Fund</b>	50 000	—	50 000	—	—	—	—	—	—	—	—	26 000	—	26 000	—	—	—	—	—	—	—	—	<b>Bydrae tot Reservefonds</b>					
<b>Distribution of costs</b>	—	(40 656)	(2 334 612)	2 375 268	199 969	77 025	31 493	33 744	388 919	344 637	1 299 481	—	(31 520)	(1 808 860)	1 840 380	156 167	63 506	23 693	25 525	308 385	252 543	1 010 561	<b>Verdeling van koste</b>					
Corporate burden	—	(40 656)	30 357	10 299	1 435	960	256	297	1 338	1 610	4 403	—	(31 520)	23 753	7 767	1 072	684	189	205	949	1 223	3 445	Korporaatlas					
Interconnectors	—	—	2 942	(2 942)	—	—	—	(1 297)	—	(173)	(1 472)	—	—	2 821	(2 821)	—	—	(1 178)	—	(171)	(1 472)	—	Koppellyne					
Use of circuits	—	—	—	—	—	37	125	(125)	164	(227)	26	—	—	—	—	178	91	(91)	—	(223)	45	Gebruik van kraglyne						
Transmission costs	—	—	(20 864)	20 864	9 780	4 195	660	932	4 969	60	278	—	—	(38 292)	38 292	17 324	7 508	1 180	1 824	9 826	84	546	Transmissiekoste					
Pooled generation	—	—	(2 347 047)	2 347 047	188 754	71 833	30 462	33 937	382 448	343 367	1 296 246	—	—	(1 797 142)	1 797 142	137 771	55 136	22 233	24 765	297 610	251 630	1 007 997	Gepoelde kragontwikkeling					
<b>Total charges against revenue</b>	2 954 897	—	—	2 954 897	291 062	118 454	49 014	51 794	476 849	432 946	1 534 778	2 303 342	—	—	2 303 342	227 062	95 676	37 158	42 434	372 606	322 297	1 206 109	<b>Totale vorderings teen inkomste</b>					
<b>Operating surplus for the year</b>	347 007	—	—	347 007	11 110	4 493	5 359	12 317	56 282	72 692	184 754	392 080	—	—	392 080	26 451	7 294	7 570	5 604	62 548	65 958	216 655	<b>Bedryfsurplus vir die jaar</b>					
<b>Amount set aside to Capital Development Fund</b>	450 000	—	—	450 000	33 751	12 544	5 087	7 109	73 529	70 100	247 880	450 000	—	—	450 000	32 836	12 486	4 843	6 467	74 768	65 781	252 819	<b>Kapitaalontwikkelingsfonds</b>					
<b>Surplus/(deficit) for the year</b>	(1																											

**2 Borrowings at 31 December 1983**  
**Lenings op 31 Desember 1983**

Loan Lening	Repayment date Terugbetaal datum			Outstanding Uitstaande 1983 R000		Repayment date Terugbetaal datum			Outstanding Uitstaande 1983 R000		Repayment date Terugbetaal datum			Outstanding Uitstaande 1983 R000	
	R000	%	1982 R000	1983 R000	1982 R000	1983 R000	%	1982 R000	1983 R000	1982 R000	1983 R000	%	1982 R000	1983 R000	
<b>Internal registered stock</b>															
<b>Plaaslike geregistreerde effekte</b>															
Brought forward Oorgebring															
1 725 440 1 813 440															
<b>Foreign bond issues</b>															
004	DEM 100 000 000	(18 034)	6,5	1974/83	—	1 803									
005	DEM 100 000 000	(19 583)	8,5	1976/86	3 917	5 875									
007	DEM 100 000 000	(19 556)	8	1977/86	5 867	7 822									
009	UA 20 000 000	(14 210)	8,25	1972/86	9 199	11 764									
013	USD 20 000 000	(14 304)	8,5	1974/86	3 576	4 649									
017	DEM 100 000 000	(25 132)	6,25	1977/87	10 053	12 566									
020	CHF 50 000 000	(8 293)	6,5	1979/88	7 284	7 765									
023	DEM 100 000 000	(24 975)	7	1979/88	12 641	15 139									
027	USD 15 000 000	(10 080)	9,25	1975/89	6 048	6 720									
037	USD 30 000 000	(26 119)	10,25	1979/83	—	535									
123	DEM 50 000 000	(24 102)	9	1984/87	26 513	23 805									
129	DEM 100 000 000	(37 682)	9,25	1987	47 069	45 482									
148	DEM 100 000 000	(47 330)	9,5	1990	41 114	48 783									
156	DEM 150 000 000	(65 416)	8,5	1990	73 187	—									
159	USD 75 000 000	(85 324)	11,5	1988	85 324	—									
<b>Direct placings</b>															
008	DEM 10 000 000	(2 054)	8	1977/86	616	822									
010	DEM 20 000 000	(3 644)	8,5	1977/86	1 093	1 457									
011	DEM 20 000 000	(4 016)	8,5	1977/86	1 205	1 607									
012	DEM 40 000 000	(9 437)	8,5	1976/83	—	1 180									
082	DEM 101 500 000	(41 648)	6,9375	1983	—	41 648									
088/01	CHF 5 000 000	(2 648)	5	1980/83	—	760									
088/02	CHF 4 500 000	(2 191)	5,5	1981/84	369	1 088									
091	DEM 40 000 000	(20 192)	7,625	1981/84	20 192	20 192									
092	DEM 20 000 000	(10 096)	8	1984	10 096	10 096									
093	DEM 68 500 000	(30 690)	7,3125	1983	30 695	30 690									
094	CHF 9 000 000	(4 616)	5	1983	—	5 262									
094A	DEM 17 000 000	(7 747)	10,375	1983	—	8 559									
095	DEM 40 000 000	(18 687)	7,7	1982/83	—	9 374									
097	DEM 60 000 000	(27 641)	6,6875	1985	31 481	31 481									
098	CHF 60 000 000	(30 071)	5,5	1984	35 457	35 457									
099	DEM 23 000 000	(11 087)	7,9375	1984/85	9 465	15 816									
100	DEM 13 144 937	(5 894)	7,375	1984	6 549	6 549									
102	CHF 8 500 000	(4 163)	4,25	1983	—	4 741									
105	CHF 9 000 000	(5 230)	5	1983	—	5 229									
107	DEM 20 000 000	(10 215)	8,75	1984	10 214	10 214									
108	DEM 20 000 000	(10 160)	8,75	1984	10 160	10 160									
110	USD 33 000 000	(30 231)	10,9375	1983/84	18 224	24 450									
111A	USD 13 000 000	(11 845)	11,75	1983/84	12 340	14 728									
111B	USD 5 000 000	(4 648)	12	1983/86	4 746	5 664									
113	CHF 9 500 000	(5 601)	5,25	1983	—	5 601									
116	CHF 100 000 000	(47 590)	6,75	1984	59 404	53 845									
119	USD 25 000 000	(16 716)	10,8125	1984/85	16 716	16 716									
120	USD 200 000 000	(188 044)	11,0625	1984/87	173 049	173 050									
122	DEM 80 000 000	(34 312)	10,6875	1985/87	27 920	29 908									
124	CHF 28 500 000	(14 867)	6,5	1983	—	12 031									
124B	CHF 21 500 000	(11 215)	6,5	1983	—	12 080									
125	USD 50 000 000	(34 648)	10,625	1985	57 019	34 106									
127	USD 150 000 000	(132 478)	11	1984/87	132 478	132 478									
128	CHF 50 000 000	(26 082)	6,125	1983	—	27 420									
130	USD 35 000 000	(30 783)	11,75	1984/87	30 783	30 783									
131	USD 25 000 000	(21 779)	11,4375	1986/87	21 779	21 779									
132	USD 50 000 000	(33 463)	10,9375	1984/85	33 463	33 463									
133	CHF 50 000 000	(24 048)	6,5												

**3 Investments of the Capital Development Fund at 31 December 1983**  
**Beleggings van die Kapitaalontwikkelingsfonds op 31 Desember 1983**

Description Beskrywing	Loan no. Lening nr.	Nominal value R000	Book value Boek waarde R000	Description Beskrywing	Loan no. Lening nr.	Nominal value R000	Book value Boek waarde R000
<b>Escom internal registered stock</b>							
<b>Evkom plaaslike geregistreerde effekte</b>							
%				Brought forward			
5,625	1979/84	40	1 701	1 684	11,400	2001	121
5,375	1979/84	42	1 306	1 274	11,100	1986/96	122
5,375	1979/85	43	644	595	12,750	1996	123
5,375	1980/85	44	1 083	983	12,500	2001	126
5,500	1980/86	45	652	607	12,600	1999	127
5,875	1981/86	46	833	750	11,150	2002	131
6,250	1981/86	47	2 567	2 289	11,750	2002	132
6,125	1982/87	49	884	777	10,900	1988	133
5,250	1982/87	50	214	175	10,750	2003	134
5,000	1982/84	53	1 288	1 264	11,300	2003	135
5,875	1983/85	55	1 892	1 768	9,700	1986	137
6,500	1983/85	56	6 725	6 210	9,700	2003	138
6,750	1991	60	865	586	10,250	2003	139
6,875	1992	61	1 697	1 167	8,000	1986	140
6,500	1993	70	628	435	8,650	2004	141
6,875	1993	71	103	69	9,150	2004	142
6,500	1993	75	2 313	1 472	7,550	1985	143
6,875	1993	76	7 162	4 719	9,050	2005	144
6,500	1994	78	2 405	1 520	9,550	2005	145
6,875	1994	79	1 318	886	9,050	1992	147
6,875	1994	82	194	161	9,050	2005	148
7,500	1995	83	988	764	9,550	2005	149
8,750	1995	85	6 299	4 636	10,250	1990	150
8,500	1995	86	715	577	10,950	2004	151
9,250	1996	87	5 331	4 067	12,950	2006	153
8,750	1996	88	850	608	10,000	2007	154
9,250	1996	89	1 893	1 406	13,200	2007	155
9,250	1996	90	13 614	10 693	15,150	1987	156
8,750	1996	91	2 212	1 708	14,250	2008	157
9,250	1997	92	3 351	2 626	9,250	1994	158
9,125	1997	93	1 628	1 503	12,000	2008	159
8,750	1997	94	254	215	11,000	2009	160
8,500	1997	95	8 631	6 222			
8,250	1997	96	5 121	3 599			
8,000	1997	97	506	323			
8,250	1997	98	1 442	1 256			
8,375	1998	100	2 769	2 222			
8,000	1998	101	30	25			
8,000	1998	103	1 372	914			
8,000	1998	106	332	282			
9,000	1999	107	866	728			
8,500	1999	108	575	473			
9,500	1999	110	3 611	3 080			
10,750	2000	111	3 143	3 080			
10,750	2000	112	4 594	3 735			
10,750	2000	113	1 531	1 446			
10,750	2000	114	3 676	3 062			
10,250	2000	115	23	21			
10,750	2000	116	9 405	7 812			
10,875	1985	117	333	336			
11,000	2000	118	1 278	1 155			
10,750	1995	119	3 163	3 074			
11,000	1986	120	100	100			
<b>Carried forward</b>							
<b>Oorgedra</b>							
		126 110	101 139				
<b>Total (Note 6)</b>							
<b>Totaal (Aantekening 6)</b>							
<b>Interest accrued</b>							
<b>Rente opgeloop</b>							
						110 672	
							4 173 935
<b>Market value</b>							
<b>Markwaarde</b>							
					R3 707 907 000		

**4 Investments of the Reserve Fund at 31 December 1983**  
**Beleggings van die Reservefonds op 31 Desember 1983**

Description Beskrywing	Loan no. Lening nr.	Nominal value Nominale waarde R000	Book value Boek waarde R000	Description Beskrywing	Loan no. Lening nr.	Nominal value Nominale waarde R000	Book value Boek waarde R000
<b>Escom internal registered stock</b>							
<b>Evkom plaaslike geregistreerde effekte</b>							
%				Brought forward			
5,625	1979/84	40	10 617	10 540	11,100	1986/96	122
5,375	1979/84	42	6 455	6 354	11,500	1989	130
5,375	1979/85	43	4 835	4 651	9,700	1986	137
5,375	1980/85	44	1 884	1 755	8,000	1986	140
5,875	1981/86	46	362	331	7,550	1985	143
6,250	1981/86	47	112	99	8,100	1987	146
6,125	1982/87	49	127	110	10,000	2007	154
5,250	1982/87	50	488	407	9,250	1994	158
5,000	1982/84	53	4 917	4 819			
5,500	1982/84	54	4 306	4 165			
6,500	1983/85	56	1 939	1 835			
6,500	1989/91	58	149	131			
6,750	1991	60	13	11			
6,500	1992	64	17	12			
6,875	1992	65	512	492			
6,500	1993	70	21	15	5,375	1980/85	203
6,875	1993	71	561	528	5,500	1981/86	208
6,500	1993	75	46	30	5,500	1983/88	219
6,875	1993	76	99	84	Durban		
6,875	1994	79	31	23	5,000	1984	84
6,500	1994	81	42	31	Germiston		
6,875	1994	82	37	27	5,375	1985	16
7,500	1995	83	515	510	Pretoria		
7,000	1995	84	28	22	6,500	1981/84	59
8,750	1995	85	960	938			
8,750	1996	88	4	3			
8,750	1996	91	9	6			
9,125	1997	93	65	51			
8,750	1997	94	35	34			
8,500	1997	95	49	37			
8,250	1997	96	33	24			
8,000	1998	103	11	8			
9,500	1999	110	14	11			
10,250	2000	115	13	11			
10,750	2000	116	16	14			
10,875	1985	117	54	56			
11,000	2000	118	2	2			
10,750	1995	119	2	2			
11,000	1986	120	378	377			
Carried forward							
Oorgedra							
		39 758	38 556				
<b>Total (Note 6)</b>							
<b>Totaal (Aantekening 6)</b>							
<b>Municipal stock</b>							
<b>Munisipale effekte</b>							
Cape Town							
Kaapstad							
5,375							
5,500							
5,500							
Durban							
5,000							
Germiston							
5,375							
Pretoria							
6,500							
<b>External investments</b>							
<b>Eksterne beleggings</b>							
2 910							
278 608							
231 146							
<b>Interest accrued</b>							
<b>Rente opgeloop</b>							
6 848							
<b>Market value</b>							
<b>Markwaarde</b>							
R209 585 000							

**5 Investments of the Redemption Fund at 31 December 1983**  
**Beleggings van die Delgingsfonds op 31 Desember 1983**

Description Beskrywing	Loan no. Lening nr.	Nominal value R000	Book value Boek waarde R000	Description Beskrywing	Loan no. Lening nr.	Nominal value R000	Book value Boek waarde R000
<b>Escom internal registered stock</b>							
<b>Evkom plaaslike geregistreerde effekte</b>							
%				Brought forward			
5,625	1979/84	40	2 194	2 179	11,400	2001	121
5,375	1979/84	42	4 478	4 403	11,100	1986/96	122
5,375	1979/85	43	6 592	6 365	12,750	1996	123
5,375	1980/85	44	6 045	5 563	12,650	1986	124
5,500	1980/86	45	13 143	11 780	12,500	2001	126
5,875	1981/86	46	10 110	8 945	12,600	1999	127
6,250	1981/86	47	5 513	4 855	12,450	1987	128
6,125	1982/87	49	2 842	2 413	11,500	1989	130
5,250	1982/87	50	1 836	1 451	11,150	2002	131
5,000	1983/88	51	6 534	5 152	11,750	2002	132
5,000	1982/84	53	5 113	5 011	10,900	1988	133
5,500	1982/84	54	1 959	1 879	10,750	2003	134
5,875	1983/85	55	6 657	6 286	11,300	2003	135
6,500	1983/85	56	10 633	9 864	9,700	1986	137
6,500	1989/91	58	1 924	1 375	9,700	2003	138
6,750	1991	60	8 543	6 337	10,250	2003	139
6,875	1992	61	13 271	9 187	8,000	1986	140
6,500	1992	64	3 120	2 168	8,650	2004	141
6,875	1992	65	3 070	2 213	9,150	2004	142
6,500	1993	70	2 998	1 933	7,550	1985	143
6,875	1993	71	3 843	2 582	9,050	2005	144
6,500	1993	75	4 513	2 975	9,550	2005	145
6,875	1993	76	16	11	8,100	1987	146
6,500	1994	78	5 430	3 518	9,050	1992	147
6,875	1994	79	10 852	7 046	9,050	2005	148
6,500	1994	81	5 036	3 365	10,250	1990	150
6,875	1994	82	4 238	2 530	10,950	2004	151
7,500	1995	83	1 882	1 331	12,800	1993	152
7,000	1995	84	1 987	1 340	12,950	2006	153
8,750	1995	85	5 319	4 702	10,000	2007	154
8,500	1995	86	7 371	5 799	15,150	1987	156
9,250	1996	87	5 250	3 944	9,250	1994	158
8,750	1996	88	4 798	3 647	12,000	2008	159
9,250	1996	89	5 960	4 788			
9,250	1996	90	2 449	2 065			
8,750	1996	91	4 327	3 682			
9,250	1997	92	985	752			
9,125	1997	93	11 199	8 609			
8,750	1997	94	1 842	1 393			
8,500	1997	95	5 243	3 863			
8,250	1997	96	3 843	2 762			
8,000	1997	97	2 323	1 517			
8,250	1997	98	6 058	4 363			
8,250	1998	99	5 966	4 023			
8,375	1998	100	5 013	3 764			
8,000	1998	101	2 017	1 409			
8,000	1998	103	111	73			
7,625	1998	104	4 197	2 808			
8,000	1998	106	3 571	2 367			
9,000	1999	107	4 835	3 719			
8,500	1999	108	1 374	1 111			
9,500	1999	110	11 923	9 107			
10,750	2000	111	2 790	2 756			
10,750	2000	112	2 953	2 503			
10,750	2000	113	9 673	8 065			
10,750	2000	114	32	21			
10,250	2000	115	1 488	1 257			
10,750	2000	116	5 508	4 907			
10,875	1985	117	879	856			
11,000	2000	118	16 294	13 913			
10,750	1995	119	2 441	2 384			
11,000	1986	120	1 024	1 001			
Carried forward							
Oorgedra							
		303 428	241 987				
<b>Total (Note 6)</b>							
<b>Totaal (Aantekening 6)</b>							
					1 132 036	944 960	
<b>Municipal stock</b>							
<b>Munisipale effekte</b>							
Cape Town							
Kaapstad							
5,375			1980/85		203	300	292
Germiston							
5,375			1985		16	20	20
<b>External investments</b>							
<b>Eksterne beleggings</b>							
					320	312	
					1 132 356	945 272	
<b>Interest accrued</b>							
<b>Rente opgeloop</b>							
						25 236	
<b>Market value</b>							
<b>Markwaarde</b>							
			R861 919 000				
					970 508		

## **6 Investments in Escom foreign loan bonds at 31 December 1983**

### **Beleggings in Evkom se buitelandse leningsobligasies op 31 Desember 1983**

Description		%		Loan Lening	Foreign currency Buitelandse valuta	Nominal value Nominale waarde R000	Book value Boek waarde R000	Beskrywing	
German	DEM	8,5	1970/85	FF 005	362 000	71	66	Duits	DEM
German	DEM	8	1971/86	FF 007	2 111 000	413	363	Duits	DEM
Euro-dollar	USD	8,5	1971/86	FF 013	35 000	25	24	Euro-dollar	USD
German	DEM	6,25	1972/87	FF 017	2 741 000	689	568	Duits	DEM
German	DEM	7	1973/88	FF 023	3 390 000	846	706	Duits	DEM
Euro-dollar	USD	9,25	1974/89	FF 027	543 000	365	340	Euro-dollar	USD
German	DEM	8	1978/84	FF 092	135 000	68	65	Duits	DEM
German	DEM	8,75	1979/84	FF 108	145 000	74	72	Duits	DEM
German	DEM	9,25	1980/87	FF 129	2 750 000	1 297	1 716	Duits	DEM
<b>Total (Note 6)</b>						3 848	3 920	<b>Totaal (Aantekening 6)</b>	
Interest accrued						126	Rente opgeloop		

**7 Capital Development Fund account for the year ended 31 December 1983**  
**Kapitaalontwikkelingsfondsrekening vir die jaar geëindig 31 Desember 1983**

	1983 R000	1982 R000	
<b>Amounts set aside</b>		450 000	450 000
Cape Western Undertaking	33 751	32 836	Wes-Kaaplandse Onderneming
Cape Northern Undertaking	12 544	12 486	Noord-Kaaplandse Onderneming
Border Undertaking	5 087	4 843	Grensonderneming
Orange River Undertaking	7 109	6 467	Oranjerivieronderneming
Natal Undertaking	73 529	74 768	Natalse Onderneming
Eastern Transvaal Undertaking	70 100	65 781	Oos-Transvaalse Onderneming
Rand and Orange Free State Undertaking	247 880	252 819	Randse en Oranje-Vrystaatse Onderneming
Central Generating Undertaking	—	—	Sentrale Kragontwikkelingsonderneming
<b>Investment income</b>		472 651	350 163
<b>Balance at beginning of year</b>		3 357 023	2 556 860
<b>Balance at end of year</b>		4 279 674	3 357 023
			<b>Bedrae opsy gesit</b>
			<b>Inkomste uit beleggings</b>
			<b>Balans aan begin van jaar</b>
			<b>Balans aan einde van jaar</b>

**8 Reserve Fund account for the year ended 31 December 1983**  
**8 Reservefondsrekening vir die jaar geëindig 31 Desember 1983**

	1983 R000	1982 R000	
<b>Amounts set aside</b>		50 000	26 000
Cape Western Undertaking	—	—	Wes-Kaaplandse Onderneming
Cape Northern Undertaking	—	—	Noord-Kaaplandse Onderneming
Border Undertaking	—	—	Grensonderneming
Orange River Undertaking	—	—	Oranjerivieronderneming
Natal Undertaking	—	—	Natalse Onderneming
Eastern Transvaal Undertaking	—	—	Oos-Transvaalse Onderneming
Rand and Orange Free State Undertaking	—	—	Randse en Oranje-Vrystaatse Onderneming
Central Generating Undertaking	50 000	26 000	Sentrale Kragontwikkelingsonderneming
<b>Investment income</b>		23 574	15 216
		73 574	41 216
<b>Expenditure</b>		52 307	36 537
Cape Western Undertaking	286	101	Wes-Kaaplandse Onderneming
Cape Northern Undertaking	397	615	Noord-Kaaplandse Onderneming
Border Undertaking	—	(5)	Grensonderneming
Orange River Undertaking	(78)	21	Oranjerivieronderneming
Natal Undertaking	222	117	Natalse Onderneming
Eastern Transvaal Undertaking	1 397	469	Oos-Transvaalse Onderneming
Rand and Orange Free State Undertaking	198	211	Randse en Oranje-Vrystaatse Onderneming
Central Generating Undertaking	49 885	35 008	Sentrale Kragontwikkelingsonderneming
		21 267	4 679
<b>Balance at beginning of year</b>		218 410	213 731
<b>Balance at end of year</b>		239 677	218 410
			<b>Balans aan begin van jaar</b>
			<b>Balans aan einde van jaar</b>

**9 Redemption Fund account** for the year ended 31 December 1983  
**Delgingsfondsrekening** vir die jaar geëindig 31 Desember 1983

	1983 R000	1982 R000	
<b>Amounts contributed</b>	224 718	106 036	<b>Bedrae bygedra</b>
Cape Western Undertaking	4 690	2 443	Wes-Kaaplandse Onderneming
Cape Northern Undertaking	2 816	1 510	Noord-Kaaplandse Onderneming
Border Undertaking	870	384	Grensonderneming
Orange River Undertaking	917	1 418	Oranjerivieronderneming
Natal Undertaking	4 851	2 236	Natalse Onderneming
Eastern Transvaal Undertaking	5 848	2 897	Oos-Transvaalse Onderneming
Rand and Orange Free State Undertaking	14 202	12 609	Randse en Oranje-Vrystaatse Onderneming
Central Generating Undertaking	190 524	82 539	Sentrale Kragontwikkelingsonderneming
<b>Other contributions</b>	946	679	<b>Ander bydraes</b>
<b>Proceeds of sales of fixed property</b>	11 673	6 174	<b>Opbrengs van vaste bates verkoop</b>
<b>Investment income</b>	106 423	76 315	<b>Inkomste uit beleggings</b>
	343 760	189 204	
<b>Repayment of internal registered stock</b>	88 000	127 560	<b>Terugbetaling van plaaslike geregistreerde effekte</b>
5,125 per cent 1982 (Loan 36)	—	20 000	5,125 persent 1982 (Lening 36)
5,125 per cent 1982 (Loan 37)	—	22 000	5,125 persent 1982 (Lening 37)
10,750 per cent 2000 (Loan 111)	—	2 473	10,750 persent 2000 (Lening 111)
10,750 per cent 1980/95 (Loan 119)	—	386	10,750 persent 1980/95 (Lening 119)
11,100 per cent 1986/96 (Loan 122)	—	2 701	11,100 persent 1986/96 (Lening 122)
12,150 per cent 1982 (Loan 129)	—	80 000	12,150 persent 1982 (Lening 129)
5,125 per cent 1977/83 (Loan 38)	24 000	—	5,125 persent 1977/83 (Lening 38)
5,375 per cent 1978/83 (Loan 39)	24 000	—	5,375 persent 1978/83 (Lening 39)
5,000 per cent 1980/83 (Loan 52)	40 000	—	5,000 persent 1980/83 (Lening 52)
<b>Balance at beginning of year</b>	255 760	61 644	<b>Balans aan begin van jaar</b>
<b>Balance at end of year (Note 7.2)</b>	744 696	683 052	
	1 000 456	744 696	<b>Balans aan einde van jaar (Aantekening 7.2)</b>

## Tables

### Tabelle

#### 1 Power station equipment installed as at 31 December 1983 Kragstasie-uitrusting geïnstalleer soos op 31 Desember 1983

Power station	Station capacity <sup>1</sup> Stasievermoë <sup>1</sup>			Boilers Ketels	Main turbo- generators Hoofturbo- generators		Steam conditions at turbine inlet Stoomtoestande by turbine-inlaat		Kragstasie
	Installed rating Geïnstalleerde vermoë	Assigned sent-out rating Toegewese uitstuur- vermoë	Maximum continuous rating each Maksimum deurlopende vermoë elk		Nominal rating each Nominale vermoë elk	MW	Pressure Druk MPa (abs)	Temperature Temperatuur °C	
	Boilers Ketels kg/s	Generators Generators MW	MW	kg/s	Getal	MW	MPa (abs)	°C	Steenkool- stasies
<b>Coal-fired stations</b>									
Arnot	1998,6	2 100	1 980	6	333,1	6	350	15,9/3,98	510/510 Arnot
Camden	1 814,4	1 600	1 520	8	226,8	8	200	10,3	538 Camden
Colenso	141,2	80	70	4	22,7	2	25	2,0	385 Colenso
Duvha	2 535,0	3 000	2 875	5	507,0	5	600	16,1/3,55	535/535 Duvha
Grootvlei	1 301,6	1 200	1 130	5	214,2	6	200	10,3	538 Grootvlei
Hendrina	2 142,0	2 000	1 900	10	214,2	10	200	10,3	538 Hendrina
Hex River	170,0	120	111	4	25,2	3	20	4,2	427 Hexrivier
				2	34,6	2	30	4,2	482
Highveld	554,4	480	412	8	69,3	8	60	6,3	482 Highveld
Ingagane	567,0	500	465	5	113,4	5	100	8,4	510 Ingagane
Klip	544,8	424 <sup>1</sup>	325	24	22,7	12	33	2,5	390 Klip
Komati	1 133,8	1 000	906	5	113,4	5	100	8,4	510 Komati
				4	141,7	4	125	8,4	510
Kriel	2 640,0	3 000	2 850	6	440,0	6	500	16,0/3,17	510/510 Kriel
Matla	3 049,2	3 600	3 450	6	508,2	6	600	16,1/3,68	535/535 Matla
Salt River	328,0	240	228	10	32,8	4	30	4,2	482 Soutrivier
				2	60	2	60	4,2	482
Taaibos	584,0	480	440	8	73,1	8	60	4,2	441 Taaibos
Umgeli	345,6	240	222	8	22,7	4	30	4,2	454 Umgeli
				5	32,8	2	60	4,2	454
Vaal	430,2	318 <sup>2</sup>	270	18	23,9	9	33	2,5	427 Vaal
Vierfontein	503,5	360	336	19	26,5	12	30	4,2	441 Vierfontein
West Bank	138,6	85	80	4	21,4	3	15	2,9	427 West Bank
				2	26,5	2	20	2,9	427
Wilge	337,5	240	221	4	15,7	2	30	4,2	454 Wilge
				4	50,4	3	60	4,2	454
				1	73,1				
<b>Total, coal-fired stations</b>	<b>21 259,4</b>	<b>21 067</b>	<b>19 791</b>		<b>188</b>		<b>140</b>		<b>Totaal, steenkool-stasies</b>
Carried forward									Oorgedra

<sup>1</sup> Difference between installed and sent-out rating reflects auxiliary power consumption

and reduced capacity caused by age of the plant and/or low coal quality.

<sup>2</sup> Includes four 7 MW house sets.

<sup>2</sup> Sluit vier 7 MW-huisstelle in.

<sup>1</sup> Verskil tussen geïnstalleerde en uitstuurvermoë dui die eieverbruik van die kragstasie aan asook vermoëvermindering a.g.v. ouderdom en/of lae steenkoolgehalte.

<sup>3</sup> Includes three 7 MW house sets.

<sup>3</sup> Sluit drie 7 MW-huisstelle in.

#### 1 Power station equipment installed as at 31 December 1983 continued Kragstasie-uitrusting geïnstalleer soos op 31 Desember 1983 vervolg

Power station	Station capacity Stasievermoë			Boilers Ketels	Main turbo- generators Hoofturbo- generators		Steam conditions at turbine inlet Stoomtoestande by turbine-inlaat		Kragstasie
	Installed rating Geïnstalleerde vermoë	Assigned sent-out rating Toegewese uitstuur- vermoë	Maximum continuous rating each Maksimum deurlopende vermoë elk		Nominal rating each Nominale vermoë elk	MW	Pressure Druk MPa (abs)	Temperature Temperatuur °C	
	Boilers Ketels kg/s	Generators Generators MW	MW	kg/s	Getal	MW	MPa (abs)	°C	Steenkool- stasies
<b>Total, coal-fired stations</b>									
Brought forward	<b>21 259,4</b>	<b>21 067</b>	<b>19 791</b>		<b>188</b>		<b>140</b>		<b>Totaal, steenkool- stasies</b>
<b>Gas-turbine stations</b>									
Acacia	171	171			3	57			Acacia
Port Rex	171	171			3	57			Port Rex
<b>Total, gas-turbine stations</b>	<b>342</b>	<b>342</b>			<b>6</b>				<b>Totaal, gasturbine- stasies</b>
<b>Hydro-electric stations</b>									
Hendrik Verwoerd	320	320			4	80			Hendrik Verwoerd
Vanderkloof	220	220			2	110			Vanderkloof
<b>Total, hydro-electric stations</b>	<b>540</b>	<b>540</b>			<b>6</b>				<b>Totaal, hidro- elektriese stasies</b>
<b>Pumped-storage station</b>									
Drakensberg	1 000	1 000			4	250			Drakensberg
<b>Total, pumped- storage station</b>	<b>1 000</b>	<b>1 000</b>			<b>4</b>				<b>Totaal, pomp- opgaarstasie</b>
<b>Total, all Escom</b>	<b>21 259,4</b>	<b>22 949</b>	<b>21 673</b>		<b>188</b>		<b>156</b>		<b>Totaal, hele Ekom</b>
<b>Other power sources</b>									
<b>Ander kragbronne</b>									
Firm contractual capacity									
Vaste vermoë beskikbaar aan									
Evkom									
MW									
Cahora Bassa	1 373	Cahora Bassa							

**1 Power station equipment installed as at 31 December 1983 continued**  
**Kragstasie-uitrusting geïnstalleer soos op 31 Desember 1983 vervolg**

Power station	Station capacity Stasievermoë		Boilers Ketels		Main turbo- generators Hoofturbo- generators		Steam conditions at turbine inlet Stoomtoestande by turbine- inlaat		Kragstasie
	Installed rating Geïnstalleerde vermoë Boilers Ketels kg/s	Generators Generators MW	Assigned sent-out rating Toegewese uitstuur- vermoë MW	Number Getal	Maximum continuous rating each Maksimum deurlopende vermoë elk kg/s	Number Getal	Nominal rating each Nominale vermoë elk MW	Pressure Druk MPa (abs)	
<b>Total, coal-fired stations</b>	<b>21 259,4</b>	<b>21 067</b>	<b>19 791</b>	<b>188</b>		<b>140</b>			<b>Totaal, steenkool- stasies</b>
Brought forward									Oorgebring
<b>Gas-turbine stations</b>									<b>Gasturbine- stasies</b>
Acacia		171	171			3	57		Acacia
Port Rex		171	171			3	57		Port Rex
<b>Total, gas-turbine stations</b>	<b>342</b>	<b>342</b>				<b>6</b>			<b>Totaal, gasturbine- stasies</b>
<b>Hydro- electric stations</b>									<b>Hidro- elektriese stasies</b>
Hendrik Verwoerd		320	320			4	80		Hendrik Verwoerd
Vanderkloof		220	220			2	110		Vanderkloof
<b>Total, hydro-electric stations</b>	<b>540</b>	<b>540</b>				<b>6</b>			<b>Totaal, hidro- elektriese stasies</b>
<b>Pumped-storage station</b>									<b>Pompopgaarstasie</b>
Drakensberg		1 000	1 000			4	250		Drakensberg
<b>Total, pumped- storage station</b>	<b>1 000</b>	<b>1 000</b>				<b>4</b>			<b>Totaal, pomp- opgaarstasie</b>
<b>Total, all Escom</b>	<b>21 259,4</b>	<b>22 949</b>	<b>21 673</b>	<b>188</b>		<b>156</b>			<b>Totaal, hele Evkom</b>
<b>Other power sources</b>	<b>Ander kragbronne</b>								
	Firm contractual capacity								
	Vaste vermoë beskikbaar aan Evkom								
	MW								
Cahora Bassa		1 373	Cahora Bassa						

**2 Immovable property and rights acquired** during the year ending 31 December 1983  
**Onroerende eiendom en regte verkry** gedurende die jaar geeindig 31 Desember 1983

<b>Undertaking</b>	Immovable property acquired for considerations amounting to Vaste eiendom verkry teen vergoeding ten bedrae van R000	Servitudes and other interest in or over land or other property acquired or hired Serwitute en ander belang in of by grond of ander eiendom verkry of gehuur R000	<b>Onderneming</b>
Border	—	30	Grens
Cape Northern	3 000	260	Noord-Kaapland
Cape Western	276	627	Wes-Kaapland
Eastern Transvaal	573	137	Oos-Transvaal
Natal	722	651	Natal
Orange River	259	117	Oranjerivier
Rand and OFS	1 033	816	Rand en OVS
Central Generating	31 492	508	Sentrale Kragontwikkeling
Head office facilities	2 530	310	Hoofkantoor-fasilitete

### 3 Transmission system: equipment installed as at 31 December 1983 Transmissiestelsel: uitrusting geïnstalleer soos op 31 Desember 1983

Circuit kilometres (excluding service connections on reticulation systems) of lines and cables and capacity of transformers in service  
Lyne en kabels in kilometer (uitgesonderd diensaansluitings van retikulasiestelsels) en kapasiteit van transformators in gebruik

Undertaking	(Monopolier)	Transmission lines Transmissielyne						Transformers Transformators			Onderneming
		533 kV DC (Monopolar) 533 kV GS	400 kV	275 kV	220 kV	165 kV to 132 kV 165 kV tot	88 kV to 33 kV 88 kV tot	22 kV and below 22 kV en onder	Total Totaal	Capacity Kapasiteit MVA	
Border					160	169	905	3 781	5 015	1 744	Grens
Cape Northern		196		781	363	2 442	1 135	6 869	11 827	4 814	Noord-Kaapland
Cape Western		24				1 378	2 390	13 109	16 901	6 680	Wes-Kaapland
Eastern Transvaal			1 310			2 469	1 631	17 929	22 029	15 994	Oos-Transvaal
Natal			1 453			1 363	3 600	16 054	23 134	14 094	Natal
Orange River				495		479	869	3 331	5 174	3 924	Oranjerivier
Rand and OFS		436		2 421		4 592	10 098	26 611	44 210	58 291	Rand en OVS
Central Generating	1 030	8 270		108	49	57	33	10 356		38 049	Sentrale Krag-ontwikkeling
<b>Total</b>	<b>1 030</b>	<b>8 926</b>	<b>5 965</b>	<b>1 126</b>	<b>12 941</b>	<b>20 685</b>	<b>87 717</b>	<b>138 646</b>	<b>143 590</b>	<b>81 160</b>	<b>Totaal</b>
<hr/>											
Underground cables Ondergrondse kabels											
Border							154	154			Grens
Cape Northern							42	42			Noord-Kaapland
Cape Western				22		132	4 260	4 414			Wes-Kaapland
Eastern Transvaal							283	283			Oos-Transvaal
Natal						3	944	947			Natal
Orange River							15	15			Oranjerivier
Rand and OFS			58		210	1 473	1 741				Rand en OVS
<b>Total</b>			<b>80</b>	<b>345</b>	<b>7 171</b>	<b>7 596</b>					<b>Totaal</b>
<hr/>											
Total lines and cables Totale lyne en kabels											
<b>1983</b>	1 030	8 926	5 965	1 126	13 021	21 030	94 888	146 242	143 590	81 160	<b>1983</b>
<b>1982</b>	1 030	8 129	5 998	1 124	12 584	20 956	85 314	135 135 <sup>1</sup>	136 131	73 810	<b>1982</b>
<b>Additions</b>	—	<b>797</b>	<b>-33</b>	<b>2</b>	<b>437</b>	<b>74</b>	<b>9 574</b>	<b>11 107</b>	<b>7 459</b>	<b>7 350</b>	<b>Toevoegings</b>

<sup>1</sup>Revised figures.

<sup>1</sup>Gewysigde syfers.

**4 Power station operating statistics** for the year ended 31 December 1983  
**Kragstasiebedryfstasiek** vir die jaar geëindig 31 Desember 1983

Power station	Sent-out rating on 31 December 1983 MW	Energy sent out uitgestuur GWh	Maximum demands 1 hour sent out Maksimum aanvraag 1 uur uitgestuur MW	Station load factor <sup>1</sup> %	Besikbaarheid <sup>3</sup> %	Overall thermal efficiency % sent out Algehele termiese rendement % uitgestuur	Fuel burnt tons Brandstof verbrand ton	kg of coal/kWh sent out kg steenkool/kWh uitgestuur	Heat content of coal (as received) Hitte-inhou van steenkool (ontvang) MJ/kg	Station heat rate MJ/kWh sent out Stasiehittekoers MJ/kWh uitgestuur	Kragstasie
<b>Coal-fired stations</b>											
Arnot	1 980	11 061	1 962	63,8	74,3	33,5	5 466 246	0,494	21,63	10,76	Arnot
Camden	1 520	4 058	1 124	30,5	42,7	28,1	2 296 139	0,566	22,57	12,80	Camden
Colenso	70	190	75	31,0	97,4	19,1	139 486	0,734	25,70	18,86	Colenso
Duvha	2 875 <sup>2</sup>	16 711	2 921	69,9	72,2	34,4	7 746 419	0,464	22,43	10,46	Duvha
Grootvlei	1 130	6 041	1 173	61,0	64,6	30,6	3 276 203	0,542	21,66	11,78	Grootvlei
Hendrina	1 900	10 767	1 691	64,7	71,9	31,3	5 383 802	0,500	23,00	11,52	Hendrina
Hex River	111	224	97	23,0	69,3	22,4	136 003	0,608	26,51	16,11	Hex River
Highveld	412	2 564	471	71,1	87,2	27,5	1 867 516	0,728	17,97	13,11	Highveld
Ingagane	465	480	351	11,9	54,8	27,7	271 566	0,562	22,93	13,00	Ingagane
Klip	325	1 335	301	46,9	78,9	17,5	1 499 626	1,123	18,35	20,60	Klip
Komati	906	4 596	799	57,9	68,0	26,3	2 840 952	0,618	22,04	13,67	Komati
Kriel	2 850	13 971	2 825	56,0	60,5	34,2	7 266 659	0,520	20,16	10,53	Kriel
Matla	3 450 <sup>2</sup>	20 623	3 703	75,2	80,9	35,7	10 063 587	0,488	20,55	10,07	Matla
Salt River	228	627	241	31,4	84,1	24,3	355 495	0,567	26,07	14,79	Soutrivier
Taaibos	440	2 615	467	67,8	86,1	25,9	2 012 873	0,770	18,03	13,89	Taaibos
Umgeli	222	150	215	7,7	82,6	19,8	111 567	0,744	24,43	18,18	Umgeli
Vaal	270	1 635	268	69,1	82,3	18,6	1 755 367	1,074	18,03	19,36	Vaal
Vierfontein	336	1 673	316	56,9	75,6	19,7	1 546 625	0,924	19,74	18,24	Vierfontein
West Bank	80	291	87	41,5	88,1	21,9	186 320	0,640	25,67	16,44	West Bank
Wilge	221	1 126	228	58,2	58,7	24,1	787 738	0,699	21,30	14,93	Wilge
<b>Sub-total for coal-fired stations</b>	<b>19 791</b>	<b>100 738</b>		<b>59,5</b>	<b>69,9</b>	<b>31,1</b>	<b>55 010 189</b>	<b>0,546</b>	<b>21,11</b>	<b>11,57</b>	<b>Sub-totaal vir steenkoolstasies</b>
<b>Gas-turbine stations</b>											
Acacia	171	3	170	0,2	89,7	16,8	1 296				Gasturbinstasies
Port Rex	171	2	115	0,2	74,1	15,4	1 035				Acacia
											Port Rex
<b>Sub-total for gas-turbine stations</b>	<b>342</b>	<b>5</b>		<b>0,2</b>	<b>81,9</b>	<b>16,1</b>					<b>Sub-totaal vir gasturbinstasies</b>
<b>Hydro-electric stations</b>											
Hendrik Verwoerd	320	193	362	6,9	89,1						Hidroelektriese stasies
Vanderkloof	220	402	277	20,9	92,0						Vanderkloof
<b>Sub-total for hydro-electric stations</b>	<b>540</b>	<b>595</b>		<b>12,6</b>	<b>90,3</b>						<b>Sub-totaal vir hidroelektriese stasies</b>
<b>Pumped-storage station</b>											
Drakensberg	1 000	1 957	1 143	22,3	96,7						Pompopgaarstasie
<b>Sub-total for pumped-storage station</b>	<b>1 000</b>	<b>1 957</b>		<b>22,3</b>	<b>96,7</b>						<b>Sub-totaal vir pompopgaarstasie</b>
<b>Total/weighted average all Escom</b>	<b>21 673</b>	<b>103 295</b>		<b>55,6</b>	<b>71,9</b>						<b>Totaal/beswaarde gemiddelde hele Evkom</b>
<b>Other power sources</b>											
Cahora Bassa	1 373	4 835	1 280	40,2	38,6						Ander kragbronne
Other		191									Cahora Bassa
											Ander
<b>Sub-total other power sources</b>	<b>1 373</b>	<b>5 026</b>		<b>40,2</b>	<b>38,6</b>						<b>Sub-totaal ander kragbronne</b>
<b>Total/weighted average</b>	<b>23 046</b>	<b>108 321</b>		<b>54,8</b>	<b>69,9</b>						<b>Totaal/beswaarde gemiddelde</b>

<sup>1</sup> Station load factor =  $\frac{\text{kWh sent out} \times 100}{(\text{assigned sent out rating}) \times \text{hours in year}}$

<sup>2</sup> Operating statistics are based on average capacity during the year.

<sup>1</sup> Stasielafactor =  $\frac{\text{kWh uitgestuur} \times 100}{(\text{toegewese uitstuurvermoë}) \times \text{ure in jaar}}$

<sup>2</sup> Bedryfstasiek geprond op gemiddelde kapasiteit gedurende die jaar.

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

<sup>3</sup> Besikbaarheid =  $\frac{\text{kapasiteitsure besikbaar} \times 100}{\text{totale kapasiteitsure in jaar}}$

**5 Summary of operating statistics  
Samevatting van bedryfstatistiek**

Year Jaar	Coal-fired power stations Steenkoolgestookte kragtstasies										All power stations Alle kragtstasies							
	Coal used Steenkool gebruik					Coal cost Steenkoolkoste					Output (sent-out basis) Lewering (uitstuurbasis)							
	Thousands Duisende ton	Average heat content (as received)	Consumption sent-out basis	Average heat rate	Overall thermal efficiency	Coal-fired stations	Hydro- electric stations	Pumped- storage stations	Diesel and gas turbine stations	Total power station output	Total power station capacity assigned sent out rating	Average power station plant load factor						
Year Jaar	Gemiddelde hitte-inhou (ontvang) MJ/kg	Gemiddelde hitte-inhou uitstuurbasis kg/kWh	Verbruik uitstuurbasis	Gemiddelde hittekoers uitstuurbasis MJ/kWh	Gemiddelde rendement- uitstuurbasis %	Gemiddelde R/ton	Cents/kWh sent out Sent/kWh uitgestuur	Steenkool- gestookte stasies GWh	Hidro- elektrische stasies GWh	Totaal krag- stasie lewering GWh	Totaal krag- stasie lewering MW	Gemiddelde krag- stasielasfaktor uitstuurbasis %	Year Jaar					
1950	6 323,4	22,72	0,869	19,74	18,2	0,84	0,0729	7 276	7	—	4	7 287	1 290	64,7	1950			
1951	6 662,9	22,72	0,855	19,43	18,5	0,98	0,0840	7 797	6	—	3	7 806	1 361	66,1	1951			
1952	7 113,4	22,75	0,865	19,68	18,3	1,20	0,1037	8 220	6	—	1	8 227	1 454	66,9	1952			
1953	7 393,9	23,08	0,837	19,32	18,6	1,33	0,1116	8 838	7	—	—	8 845	1 635	65,5	1953			
1954	8 024,9	23,06	0,805	18,56	19,4	1,41	0,1136	9 971	6	—	—	9 977	1 846	66,4	1954			
1955	8 999,7	22,89	0,788	18,04	20,0	1,52	0,1201	11 419	6	—	—	11 425	2 145	65,9	1955			
1956	9 688,5	22,96	0,765	17,56	20,5	1,62	0,1236	12 663	7	—	—	12 670	2 498	61,2	1956			
1957	10 220,6	22,79	0,750	17,09	21,1	1,69	0,1266	13 634	6	—	—	13 640	2 555	61,1	1957			
1958	10 784,1	22,73	0,743	16,89	21,3	1,77	0,1312	14 511	5	—	—	14 516	2 748	62,0	1958			
1959	11 548,7	22,44	0,732	16,43	21,9	1,82	0,1329	15 774	3	—	—	15 777	2 983	62,6	1959			
1960	12 512,6	22,52	0,723	16,28	22,1	2,03	0,1466	17 306	2	—	—	17 308	3 091	65,2	1960			
1961	13 194,9	22,39	0,722	16,17	22,3	2,10	0,1516	18 282	2	—	—	18 284	3 226	66,2	1961			
1962	13 955,5	22,22	0,719	15,98	22,5	2,09	0,1507	19 401	3	—	—	19 404	3 406	65,8	1962			
1963	14 721,1	22,15	0,708	15,68	23,0	2,11	0,1492	20 789	4	—	—	20 793	3 788	65,7	1963			
1964	15 654,7	22,15	0,692	15,33	23,5	2,07	0,1430	22 634	5	—	—	22 639	4 077	65,2	1964			
1965	16 726,7	22,39	0,680	15,23	23,6	2,09	0,1423	24 583	—	—	—	24 583	4 181	67,4	1965			
1966	16 982,3	22,20	0,666	14,79	24,4	2,23	0,1486	25 504	—	—	—	25 504	4 377	67,1	1966			
1967	18 307,7	22,44	0,645	14,47	24,9	2,30	0,1482	28 371	—	—	—	28 371	5 328	66,8	1967			
1968	19 133,9	22,63	0,620	14,03	25,6	2,33	0,1446	30 843	—	—	—	30 843	5 800	62,9	1968			
1969	19 982,9	22,73	0,595	13,52	26,6	2,37	0,1412	33 598	—	—	—	33 598	6 441	62,1	1969			
1970	21 630,6	22,97	0,580	13,32	27,0	2,26	0,1308	37 321	—	—	—	37 321	7 060	62,9	1970			
1971	23 416,2	23,30	0,576	13,42	26,8	2,25	0,1297	40 645	94	—	—	40 739	8 373	61,3	1971			
1972	24 952,8	22,89	0,571	13,07	27,5	2,25	0,1285	43 662	813	—	—	44 475	8 849	59,6	1972			
1973	27 907,9	22,47	0,563	12,65	28,5	2,39	0,1348	49 570	189	—	—	49 759	9 482	62,5	1973			
1974	30 891,4	22,42	0,560	12,56	28,7	2,92	0,1637	55 141	1 110	—	—	56 251	10 002	66,3	1974			
1975	34 231,7	22,21	0,567	12,59	28,6	4,05	0,2295	60 400	1 098	—	—	61 498	10 522	68,6	1975			
1976	37 257,4	21,87	0,579	12,66	28,4	5,39	0,3122	64 309	1 853	—	26	66 188	11 688	66,8	1976			
1977	37 505,6	21,78	0,576	12,55	28,7	6,22	0,3582	65 114	1 924	—	12	67 050	12 756	61,9	1977			
1978	39 589,5	21,61	0,574	12,44	28,9	6,67	0,3824	69 004	1 887	—	11	70 902	13 595	60,7	1978			
1979	43 264,9	21,22	0,580	12,33	29,2	6,96	0,4045	74 485	1 144	—	14	75 643	15 056	60,9	1979			
1980	46 755,0	21,34	0,568	12,16	29,6	8,12	0,4614	82 342	992	—	28	83 362	17 339	57,8	1980			
1981	53 903,7	21,25	0,563	12,01	30,0	9,71	0,5473	95 675	1 653	415	81	97 824	18 989	62,2	1981			
1982	55 198,4	21,39	0,551	11,82	30,5	11,75	0,6471	100 217	1 016	1 519	17	102 769	20 523	59,3	1982			
1983	55 010,2	21,11	0,546	11,57	31,1	12,44	0,6793	100 738	595	1 957	5	103 295	21 673	55,6	1983			

## 6 Electricity sent out and sold Elektrisiteit uitgestuur en verkoop

Year Jaar	Electricity sent out Elektrisiteit uitgestuur										Electricity sales Elektrisiteitsverkoop					Employees Werknemers		
	South Africa total sent out Suid-Afrika totaal uitgestuur GWh	Escom electricity sent out as % of South African total <sup>1</sup>	Electricity sent out from Escom power stations Elektrisiteit uitgestuur van Evkom-kragstasies	Electricity purchased from other sources Elektrisiteit gekoop van ander bronre GWh	Own consumption Eie verbruik GWh	Available for distribution Beskikbaar vir verspreiding GWh	Peak demand on integrated Escom system Topaan-vraag op geïntegreerde Evkomstelsel MW	Integrated Escom system load factor Geïntegreerde Evkomstelsel-lasfaktor %	Ratio GWh sold/ GWh sent out Verhouding GWh verkoopt/GWh uitgestuur	Electricity sold Elektrisiteit verkoopt GWh	Growth for the year Groei vir jaar %	Total number at 31 December Totale getal soos op 31 Desember	Ratio Number/ GWh sold Verhouding Getal/GWh verkoopt R000	Ratio R000/ GWh sold Verhouding R000/ GWh verkoopt R000	Ratio R000/ GWh sold Verhouding R000/ GWh verkoopt Year Jaar			
1950	10 437 <sup>2</sup>	71,1	7 287	131	—	7 418	1 182 <sup>2</sup>	71,6	0,932	6 910,6	11,1	0,274 1	9 352	1,353	— <sup>4</sup>	— <sup>4</sup>	1950	
1951	11 098 <sup>2</sup>	72,1	7 806	195	—	8 001	1 212 <sup>2</sup>	75,4	0,932	7 456,5	7,9	0,292 2	10 336	1,386	— <sup>4</sup>	— <sup>4</sup>	1951	
1952	11 678 <sup>2</sup>	74,1	8 227	424	—	8 651	1 265 <sup>2</sup>	77,9	0,934	8 080,6	8,4	0,311 5	10 889	1,348	— <sup>4</sup>	— <sup>4</sup>	1952	
1953	12 823 <sup>2</sup>	73,3	8 845	550	—	9 395	1 394 <sup>2</sup>	76,9	0,929	8 732,2	8,1	0,354 2	11 518	1,319	— <sup>4</sup>	— <sup>4</sup>	1953	
1954	14 167 <sup>2</sup>	73,5	9 977	437	—	10 414	1 570 <sup>2</sup>	75,7	0,929	9 676,6	10,8	0,380 8	12 317	1,273	— <sup>4</sup>	— <sup>4</sup>	1954	
1955	16 021 <sup>2</sup>	73,4	11 425	339	—	11 764	1 806 <sup>2</sup>	74,4	0,932	10 964,0	13,3	0,413 9	12 490	1,139	— <sup>4</sup>	— <sup>4</sup>	1955	
1956	17 293 <sup>2</sup>	74,8	12 670	257	—	12 927	2 001 <sup>2</sup>	73,5	0,930	12 019,5	9,6	0,428 5	12 977	1,080	— <sup>4</sup>	— <sup>4</sup>	1956	
1957	18 720	73,7	13 640	163	—	13 803	2 151 <sup>2</sup>	73,3	0,925	12 763,1	6,2	0,447 8	13 421	1,052	— <sup>4</sup>	— <sup>4</sup>	1957	
1958	19 765	74,3	14 516	164	—	14 680	2 249 <sup>2</sup>	74,5	0,927	13 602,1	6,6	0,473 3	14 312	1,052	370 030	27,20	1958	
1959	21 051	75,4	15 777	94	—	15 871	2 429 <sup>2</sup>	74,6	0,928	14 724,5	8,3	0,495 1	13 947	0,947	428 183	29,08	1959	
1960	22 717	76,3	17 308	15	—	17 323	2 605 <sup>2</sup>	75,7	0,929	16 094,1	9,3	0,507 9	14 654	0,911	450 853	28,01	1960	
1961	23 760	77,0	18 284	8	—	18 292	2 733 <sup>2</sup>	76,4	0,930	17 013,2	5,7	0,515 5	15 441	0,908	468 416	27,53	1961	
1962	25 599	75,8	19 404	13	—	19 417	2 925 <sup>2</sup>	75,3	0,933	18 121,0	6,5	0,516 4	16 467	0,909	518 722	28,63	1962	
1963	27 335	76,1	20 793	19	—	20 812	3 183 <sup>2</sup>	74,6	0,937	19 500,0	7,6	0,517 7	16 804	0,862	577 530	29,62	1963	
1964	29 547 <sup>2</sup>	76,8	22 639	41	—	22 680	3 460 <sup>2</sup>	74,6	0,937	21 247,5	9,0	0,510 1	17 172	0,808	639 639	30,10	1964	
1965	31 939	77,4	24 583	126	—	24 709	3 669	76,9	0,937	23 143,3	8,9	0,507 6	17 851	0,771	673 626	29,11	1965	
1966	33 929 <sup>2</sup>	77,0	25 504	630 <sup>3</sup>	—	26 134	3 906	76,4	0,940	24 554,3	6,1	0,525 4	18 579	0,757	714 213	29,09	1966	
1967	36 897	77,1	28 371	70	—	28 441	4 227	76,8	0,937	26 657,1	8,6	0,546 7	19 817	0,743	846 818	31,77	1967	
1968	39 761	77,6	30 843	8	—	30 851	4 658	75,4	0,936	28 885,0	8,4	0,555 0	20 893	0,723	911 479	31,56	1968	
1969	42 847	78,4	33 598	8	—	33 606	5 055	75,9	0,937	31 505,6	9,1	0,556 5	21 644	0,687	1 059 123	33,62	1969	
1970	47 456	77,7	37 321	7	—	37 328	5 622	75,8	0,935	34 890,6	10,7	0,554 5	22 700	0,651	1 165 360	33,40	1970	
1971	51 081	79,8	40 739	8	—	40 747	6 115	76,1	0,934	38 040,0	9,0	0,577 2	25 050	0,659	1 390 095	36,54	1971	
1972	55 298	80,4	44 475	10	—	44 485	6 630	76,4	0,936	41 648,9	9,5	0,610 8	26 937	0,647	1 526 697	36,66	1972	
1973	60 080	82,8	49 759	11	—	49 770	7 350	77,3	0,936	46 578,4	11,8	0,648 4	28 559	0,613	1 699 279	36,48	1973	
1974	65 498 <sup>2</sup>	85,9	56 251	8	—	56 259	8 552	75,1	0,935	52 585,1	12,9	0,682 2	29 891	0,568	1 847 484	35,13	1974	
1975	69 883	88,1	61 498	35	—	61 533	9 185	76,5	0,940	57 869,2	10,0	0,795 0	33 999	0,588	2 008 917	34,71	1975	
1976	75 381	89,4	66 188	1 226	—	67 414	10 085	76,1	0,940	63 355,7	9,5	1,036 0	36 915	0,583	2 311 725	36,49	1976	
1977	79 354	89,8	67 050	4 241	27	71 264	10 735	75,8	0,942	67 125,4	5,9	1,535 3	39 112	0,583	2 851 103	42,47	1977	
1978	84 812	91,7	70 902	6 924	52	77 774	11 490	77,3	0,936	72 780,4	8,4	1,788 7	41 040	0,564	3 564 600	48,98	1978	
1979	92 614	92,8	75 643	10 394	58	85 979	12 855	76,4	0,937	80 582,8	10,7	1,898 0	43 690	0,542	4 255 502	52,81	1979	
1980	99 904	93,0	83 362	9 659	71	92 950	13 668	77,5	0,942	87 539,3	8,6	2,024 2	47 490	0,542	5 604 038	64,02	1980	
1981	106 135	93,9	97 824	2 601	712	99 713	14 674	77,6	0,941	93 844,0	7,2	2,281 1	52 080	0,555	6 323 048	67,38	1981	
1982	109 536	93,6	102 769	2 151	2 404	102 516	15 532	75,3	0,938	96 135,9	2,4	2,803 8	58 850	0,612	7 689 399	79,98	1982	
1983	112 423	93,8	103 295	5 026	2 917	105 404	15 639	76,9	0,951	98 251,1	2,2	3,360 6	62 924	0,640</td				

**7 Summary of consolidated revenue and expenditure account  
Samevatting van gekonsolideerde inkomste- en uitgawerekening**

Year Jaar	Total Escom GWh sold Totale Evtom GWh verkoop	Redemption and other provision for loan repayment Delging en ander voorsiening vir leningterug- betaling	Interest Rente	Capital Development Fund Kapitaal- ontwikkelings- fonds	Sub-total capital- related costs Subtotaal kapitaal- verwante koste	Purchase of electricity Koop van elektrisiteit	Fuel Brandstof	Other power station operating and maintenance costs Ander stasie bedryfs- en onderhoudkoste	Distribution, operation and maintenance costs Distribusie-, bedryfs- en onderhoudkoste	General expenses Algemene uitgawe	Total costs Totale koste	Total revenue Totale inkomste.			
1967	26 657,1	R000 cents/kWh sold % of total cost	37 312 0,140 0 25,39	24 536 0,092 0 16,70	9 912 0,037 2 6,75	— — —	71 760 0,269 2 48,84	313 0,001 2 0,21	42 488 0,159 4 28,92	14 618 0,054 8 9,95	7 146 0,026 8 4,86	10 603 0,039 8 7,22	146 928 0,551 2 100,00	146 783 0,550 6 99,90	R000 sent/kWh verkoop % van totale koste
1968	28 885,0	R000 cents/kWh sold % of total cost	43 282 0,149 8 26,72	23 884 0,082 7 14,74	12 300 0,042 6 7,59	— — —	79 466 0,275 1 49,06	121 0,000 4 0,07	45 117 0,156 2 27,85	17 016 0,058 9 10,50	8 097 0,028 0 5,00	12 176 0,042 2 7,52	161 993 0,560 8 100,00	161 475 0,559 0 99,68	R000 sent/kWh verkoop % van totale koste
1969	31 505,6	R000 cents/kWh sold % of total cost	50 943 0,161 7 29,05	20 809 0,066 0 11,87	13 605 0,043 2 7,76	— — —	85 357 0,270 9 48,67	102 0,000 3 0,06	48 035 0,152 5 27,39	19 038 0,060 4 10,86	9 264 0,029 4 5,28	13 578 0,043 1 7,74	175 374 0,556 6 100,00	176 106 0,559 0 100,42	R000 sent/kWh verkoop % van totale koste
1970	34 890,6	R000 cents/kWh sold % of total cost	59 484 0,170 5 30,37	23 654 0,067 8 12,08	15 202 0,043 6 7,76	— — —	98 340 0,281 9 50,21	89 0,000 3 0,05	49 440 0,141 7 25,24	21 955 0,062 9 11,21	10 594 0,030 4 5,41	15 448 0,044 3 7,89	195 866 0,561 4 100,00	193 475 0,554 5 98,78	R000 sent/kWh verkoop % van totale koste
1971	38 040,0	R000 cents/kWh sold % of total cost	70 266 0,184 7 31,99	30 928 0,081 3 14,08	8 568 0,022 5 3,90	— — —	109 762 0,288 5 49,97	82 0,000 2 0,04	53 587 0,140 9 24,40	26 276 0,069 1 11,96	11 492 0,030 2 5,23	18 440 0,048 5 8,40	219 639 0,577 4 100,00	219 584 0,577 2 99,97	R000 sent/kWh verkoop % van totale koste
1972	41 648,9	R000 cents/kWh sold % of total cost	86 631 0,208 0 33,58	30 575 0,073 4 11,85	3 056 0,007 3 1,18	13 596 0,032 6 5,27	133 888 0,321 4 51,88	95 0,000 2 0,04	57 259 0,137 5 22,19	31 586 0,075 8 12,24	13 486 0,032 4 5,23	21 737 0,052 2 8,42	258 021 0,619 5 100,00	254 394 0,610 8 98,59	R000 sent/kWh verkoop % van totale koste
1973	46 578,4	R000 cents/kWh sold % of total cost	101 858 0,218 7 33,27	34 200 0,073 4 11,17	3 760 0,008 1 1,23	15 366 0,033 0 5,02	155 184 0,333 2 50,69	117 0,000 3 0,04	68 634 0,147 4 22,42	38 685 0,083 1 12,64	17 082 0,036 7 5,58	26 460 0,056 8 8,64	306 162 0,657 3 100,00	302 034 0,648 4 98,65	R000 sent/kWh verkoop % van totale koste
1974	52 585,1	R000 cents/kWh sold % of total cost	114 308 0,217 4 31,40	27 151 0,051 6 7,46	66 0,000 1 0,02	28 114 0,053 5 7,72	169 639 0,322 6 46,60	86 0,000 2 0,02	92 530 0,176 0 25,42	48 572 0,092 4 13,34	20 617 0,039 2 5,66	32 611 0,062 0 8,96	364 055 0,692 3 100,00	358 768 0,682 2 98,55	R000 sent/kWh verkoop % van totale koste
1975	57 869,2	R000 cents/kWh sold % of total cost	136 963 0,236 7 28,12	30 814 0,053 2 6,33	1 400 0,002 4 0,29	40 730 0,070 4 8,36	209 907 0,362 7 43,09	114 0,000 2 0,02	141 913 0,245 2 29,13	44 980 <sup>1</sup> 0,077 7 9,23	18 477 <sup>1</sup> 0,031 9 3,79	71 758 <sup>1</sup> 0,124 0 14,73	487 149 0,841 8 100,00	460 073 0,795 0 94,44	R000 sent/kWh verkoop % van totale koste
1976	63 355,7	R000 cents/kWh sold % of total cost	173 829 0,274 4 26,49	41 470 0,065 5 6,32	1 700 0,002 7 0,26	53 584 0,084 6 8,16	270 583 0,427 1 41,23	2 399 0,003 8 0,37	208 316 0,328 8 31,74	62 477 0,098 6 9,52	19 712 0,031 1 3,00	92 835 0,146 5 14,14	656 322 1,036 0 100,01	656 381 1,036 0 100,01	R000 sent/kWh verkoop % van totale koste
1977	67 125,4	R000 cents/kWh sold % of total cost	224 418 0,334 3 22,51	63 403 0,094 5 6,36	900 0,001 3 0,09	224 000 0,333 7 22,47	512 721 0,763 8 51,42	15 501 0,023 1 1,55	239 228 0,356 4 23,99	76 294 0,113 7 7,65	19 859 0,029 6 1,99	133 494 0,198 9 13,39	997 097 1,485 4 100,00	1 030 552 1,535 3 103,36	R000 sent/kWh verkoop % van totale koste
1978	72 780,4	R000 cents/kWh sold % of total cost	308 970 0,424 5 25,03	76 036 0,104 4 6,16	900 0,001 2 0,07	300 000 0,412 1 24,30	685 906 0,942 4 55,56	26 364 0,036 2 2,14	271 222 0,372 6 21,97	89 193 0,122 5 7,22	23 677 0,032 5 1,92	138 106 0,189 7 11,19	1 234 468 1,696 1 100,00	1 301 829 1,788 7 105,46	R000 sent/kWh verkoop % van totale koste
1979	80 582,8	R000 cents/kWh sold % of total cost	373 718 0,463 7 24,72	88 800 0,110 1 5,87	900 0,001 1 0,06	380 000 0,471 5 25,14	843 418 1,046 6 55,79	36 061 0,044 7 2,39	319 428 0,396 3 21,13	95 887 0,118 9 6,34	28 689 0,035 6 1,90	188 203 0,233 5 12,45	1 511 686 1,875 9 100,00	1 529 474 1,898 0 101,18	R000 sent/kWh verkoop % van totale koste
1980	87 539,3	R000 cents/kWh sold % of total cost	504 732 0,576 6 26,99	101 169 0,116 1 5,44	900 0,001 0 0,05	426 400 0,487 1 22,80	1 033 661 1,180 8 55,28	35 806 0,040 9 1,91	405 630 0,463 3 21,69	117 968 0,134 8 6,31	36 824 0,042 1 1,97	240 078 0,274 2 12,84	1 869 967 2,136 1 100,00	1 772 000 2,024 2 94,76	R000 sent/kWh verkoop % van totale koste
1981	93 844,0	R000 cents/kWh sold % of total cost	603 546 0,643 1 27,21	117 088 0,124 8 5,28	900 0,001 0 0,04	435 478 0,464 0 19,63	1 157 012 1,232 9 52,16	4 106 0,004 4 0,19	569 949 0,607 3 25,70	170 206 0,181 4 7,67	43 034 0,045 9 1,94	273 756 0,291 7 12,34	2 218 063 2,363 6 100,00	2 140 689 2,281 1 96,51	R000 sent/kWh verkoop % van totale koste
1982	96 135,9	R000 cents/kWh sold % of total cost	721 948 0,751 0 26,22	154 758 0,161 0 5,62	26 000 0,027 0 0,95	450 000 0,468 1 16,34	1 352 706 1,407 1 49,13	3 615 0,003 7 0,13	693 979 0,721 9 25,21	261 842 0,272 3 9,51	59 852 0,062 3 2,17	381 348 0,396 7 13,85	2 753 342 2,864 0 100,00	2 695 422 2,803 8 97,90	R000 sent/kWh verkoop % van totale koste
1983	98 251,1	R000 cents/kWh sold % of total cost	939 553 0,956 3 27,59	274 027 0,278 9 8,05	50 000 0,050 9 1,47	450 000 0,458 0 13,22	1 713 580 1,744 1 50,33	9 603 0,009 8 0,28	726 534 0,739 4 21,34						

## 8 Consumer categories by undertakings Verbruikerkategorieë volgens ondernemings

Undertaking and category	Electricity sales Elektrisiteitsverkope								Onderneming en kategorie
	Number of consumers Getal verbruikers 1983	Percentage of total Persentasie van totaal 1983	GWh 1983	Increase 1982-83 Styging 1982-83	Average increase 1978-83 Gemid. styging 1978-83 %	Revenue R000 Inkomste 1983	Average price in cents/kWh sold Gemiddelde prys in sent/kWh verkoop 1982 1983		
<b>Border</b>									
Bulk sales <sup>1</sup>	26	87,3	969,2	7,2	7,0	43 810	4,013	4,520	Grootmaatverkope <sup>1</sup>
Domestic and street lighting	5 262	3,1	35,1	6,9	6,7	2 864	7,151	8,149	Huishoudelik en straatverligting
Industrial	2 496	9,6	106,4	9,3	10,9	7 699	6,256	7,239	Nywerhede
<b>Total</b>	<b>7 784</b>	<b>100,0</b>	<b>1 110,7</b>	<b>7,4</b>	<b>7,4</b>	<b>54 373</b>	<b>4,323</b>	<b>4,896</b>	<b>Totaal</b>
<b>Cape Northern</b>									
Bulk sales <sup>1</sup>	44	29,6	810,5	52,5	15,9	33 032	3,446	4,075	Grootmaatverkope <sup>1</sup>
Domestic and street lighting	877	0,3	7,3	5,6	-24,7	502	5,887	6,965	Huishoudelik en straatverligting
Industrial	5 636	9,4	258,9	4,9	13,2	15 686	5,059	6,058	Nywerhede
Mining	90	51,0	1 395,3	-9,3	4,5	58 921	3,645	4,223	Mynbou
Traction	3	9,7	266,7	-22,4	0,6	14 807	4,562	5,552	Trekkrag
<b>Total</b>	<b>6 650</b>	<b>100,0</b>	<b>2 738,7</b>	<b>2,7</b>	<b>7,2</b>	<b>122 948</b>	<b>3,860</b>	<b>4,489</b>	<b>Totaal</b>
<b>Cape Western</b>									
Bulk sales <sup>1</sup>	78	56,4	4 156,3	6,6	9,0	133 787	2,804	3,219	Grootmaatverkope <sup>1</sup>
Domestic and street lighting	83 322	8,2	604,5	6,1	6,8	39 907	5,846	6,601	Huishoudelik en straatverligting
Industrial	19 452	28,0	2 061,8	6,2	4,9	100 265	4,308	4,863	Nywerhede
Traction	3	7,4	546,4	-9,5	3,6	28 213	4,505	5,163	Trekkrag
<b>Total</b>	<b>102 855</b>	<b>100,0</b>	<b>7 369,0</b>	<b>5,1</b>	<b>7,2</b>	<b>302 172</b>	<b>3,614</b>	<b>4,101</b>	<b>Totaal</b>
<b>Eastern Transvaal</b>									
Bulk sales <sup>1</sup>	35	11,5	1 763,0	2,8	15,6	59 063	2,754	3,350	Grootmaatverkope <sup>1</sup>
Domestic and street lighting	2 782	0,2	30,8	-0,1	8,4	1 819	4,840	5,896	Huishoudelik en straatverligting
Industrial	11 065	64,8	9 914,2	12,6	8,9	317 799	2,709	3,206	Nywerhede
Mining	149	20,1	3 082,4	4,8	6,2	103 108	2,731	3,345	Mynbou
Traction	5	3,4	515,1	-8,1	3,1	23 850	3,683	4,630	Trekkrag
<b>Total</b>	<b>14 036</b>	<b>100,0</b>	<b>15 305,5</b>	<b>8,9</b>	<b>8,8</b>	<b>505 639</b>	<b>2,763</b>	<b>3,304</b>	<b>Totaal</b>
<b>Natal</b>									
Bulk sales <sup>1</sup>	37	49,1	7 885,0	-6,9	5,3	253 181	2,591	3,211	Grootmaatverkope <sup>1</sup>
Domestic and street lighting	19 667	1,0	156,1	5,0	5,8	9 280	4,743	5,946	Huishoudelik en straatverligting
Industrial	17 303	40,1	6 438,7	13,7	9,2	199 519	2,647	3,099	Nywerhede
Mining	50	1,8	286,8	-14,2	1,6	11 904	3,274	4,151	Mynbou
Traction	9	8,0	1 287,3	-5,0	2,9	59 247	3,524	4,602	Trekkrag
<b>Total</b>	<b>37 066</b>	<b>100,0</b>	<b>16 053,9</b>	<b>0,5</b>	<b>6,5</b>	<b>533 131</b>	<b>2,724</b>	<b>3,321</b>	<b>Totaal</b>
<b>Orange River</b>									
Bulk sales <sup>1</sup>	53	95,3	1 479,7	11,6	7,6	57 897	3,310	3,913	Grootmaatverkope <sup>1</sup>
Domestic and street lighting	592	0,2	3,2	30,2	174,8	325	9,248	10,451	Huishoudelik en straatverligting
Industrial	1 734	4,5	69,4	29,6	29,2	5 889	7,356	8,482	Nywerhede
<b>Total</b>	<b>2 379</b>	<b>100,0</b>	<b>1 552,3</b>	<b>12,3</b>	<b>8,2</b>	<b>64 111</b>	<b>3,477</b>	<b>4,130</b>	<b>Totaal</b>
<b>Rand and OFS</b>									
Bulk sales <sup>1</sup>	195	29,0	15 665,2	1,1	9,3	521 240	2,798	3,327	Grootmaatverkope <sup>1</sup>
Domestic and street lighting	11 931	0,4	241,4	5,6	-6,0	12 507	4,564	5,180	Huishoudelik en straatverligting
Industrial	31 753	24,8	13 436,8	-5,0	2,8	443 423	2,685	3,300	Nywerhede
Mining	132	43,0	23 256,7	3,1	4,6	680 235	2,430	2,925	Mynbou
Traction	2	2,8	1 521,1	-3,3	3,0	62 128	3,217	4,084	Trekkrag
<b>Total</b>	<b>44 013</b>	<b>100,0</b>	<b>54 121,2</b>	<b>0,2</b>	<b>5,2</b>	<b>1 719 532</b>	<b>2,634</b>	<b>3,177</b>	<b>Totaal</b>
<b>Total Eskom</b>									
Bulk sales <sup>1</sup>	468	33,3	32 728,8	1,2	8,4	1 102 009	2,808	3,367	Grootmaatverkope <sup>1</sup>
Domestic and street lighting	124 433	1,1	1 078,3	5,7	2,4	67 203	5,418	6,232	Huishoudelik en straatverligting
Industrial	89 439	32,9	32 286,1	4,3	6,0	1 090 280	2,825	3,377	Nywerhede
Mining	421	28,5	28 021,3	2,4	4,7	854 168	2,541	3,048	Mynbou
Traction	22	4,2	4 136,7	-6,7	2,9	188 245	3,650	4,551	Trekkrag
<b>Total</b>	<b>214 783</b>	<b>100,0</b>	<b>98 251,1</b>	<b>2,2</b>	<b>6,2</b>	<b>3 301 905</b>	<b>2,804</b>	<b>3,361</b>	<b>Totaal</b>

<sup>1</sup>Supplies to municipalities and electricity undertakings in neighbouring states.

<sup>1</sup>Toevoere aan munisipaliteit en elektrisiteitsondernemings in buurstate.

## 9

**Sales to industry, GWh**  
**Verkope aan nywerheid, GWh**

	1978	1979	1980	1981	1982	1983	Increase Toename 1982-83	Average yearly increase Gemiddelde jaarlikse toename 1978-83	Nywerheidsektor	
									%	%
Industrial sector										
Building cement and quarrying	1 198	1 121	1 194	1 353	1 413	1 375	-2,7	2,8	Bou-sement en steengroefbedryf	
Chemical	4 117	4 657	5 751	7 215	7 258	7 645	5,3	13,2	Chemies	
Engineering, iron, steel and base metals	13 338	15 600	15 900	15 316	14 754	15 348	4,0	2,8	Ingenieurswese, yster, staal en onedele metale	
Foodstuffs, consumer goods									Voedsel, verbruikersgoedere	
commercial and other	4 916	5 378	5 688	6 341	6 688	6 965	4,1	7,2	handel en ander	
Paper and paper products	613	719	840	866	846	953	12,6	9,2	Papier en papierprodukte	
<b>Total</b>	<b>24 182</b>	<b>27 475</b>	<b>29 373</b>	<b>31 091</b>	<b>30 959</b>	<b>32 286</b>	<b>4,3</b>	<b>6,0</b>	<b>Totaal</b>	

## 10 Sales to mining, GWh Verkope aan mynbedryf, GWh

Mining sector	1978	1979	1980	1981	1982	1983	Increase Toename 1982-83	%	Average yearly increase	Gemiddelde jaarlikse jaarlikse toename 1978-83	Mynbousektor
									%		
Gold and uranium	16 241	17 201	18 477	19 406	20 069	20 724	3,3	5,0	Goud en uraan		
Platinum	2 388	2 772	2 973	3 014	2 466	2 552	3,5	1,3	Platina		
Coal	1 078	1 248	1 426	1 522	1 691	1 686	—	9,4	Steenkool		
Copper	1 023	1 042	1 117	1 131	1 178	1 178	—	2,9	Koper		
Diamonds	497	596	678	714	656	649	-1,1	5,5	Diamante		
Asbestos	223	233	242	240	235	225	-4,3	0,2	Asbes		
Iron	272	334	361	335	305	215	-29,5	-4,6	Yster		
Chrome	106	126	127	117	105	99	-5,7	-1,4	Chroom		
Antimony	73	67	67	58	58	54	-6,9	-5,9	Antimoen		
Manganese	72	83	94	104	113	77	-31,9	1,4	Mangaan		
Other	246	298	320	490	496	562	13,3	18,0	Ander		
<b>Total</b>	<b>22 219</b>	<b>24 000</b>	<b>25 882</b>	<b>27 131</b>	<b>27 372</b>	<b>28 021</b>	<b>2,4</b>	<b>4,7</b>	<b>Totaal</b>		

## 11 Sales by undertakings, GWh

### Verkope volgens ondernemings, GWh

Undertaking	1978	1979	1980	1981	1982	1983	Increase Toename 1982-83	Average yearly increase Gemiddelde jaarlikse jaarlike toename 1978-83	Onderneming
									%
Border	779	826	901	971	1 035	1 111	7,4	7,4	Grens
Cape Northern	1 937	2 368	2 577	2 730	2 667	2 739	2,7	7,2	Noord-Kaapland
Cape Western	5 216	5 593	6 168	6 677	7 015	7 369	5,1	7,2	Wes-Kaapland
Eastern Transvaal	10 061	11 698	12 887	14 584	14 053	15 305	8,9	8,8	Oos-Transvaal
Natal	11 736	12 988	13 989	14 885	15 973	16 054	0,5	6,5	Natal
Orange River	1 077	1 203	1 326	1 368	1 382	1 552	12,3	7,6	Oranjerivier
Rand and OFS	41 974	45 907	49 691	52 629	54 011	54 121	0,2	5,2	Rand en OVS
<b>Total</b>	<b>72 780</b>	<b>80 583</b>	<b>87 539</b>	<b>93 844</b>	<b>96 136</b>	<b>98 251</b>	<b>2,2</b>	<b>6,2</b>	<b>Totaal</b>

## 12 Electricity sent out, GWh Elektrisiteit uitgestuur, GWh

Undertaking	1978	1979	1980	1981	1982	1983	Increase Toename 1982-83	Average yearly increase Gemiddelde jaarlikse toename 1978-83	Onderneming
									%
Border	845	895	968	1 052	1 128	1 221	8,2	7,6	Grens
Cape Northern	2 171	2 647	2 883	3 032	3 010	2 949	-2,0	6,3	Noord-Kaapland
Cape Western	5 818	6 139	6 807	7 387	7 837	8 429	7,6	7,7	Wes-Kaapland
Eastern Transvaal	10 358	12 190	13 346	14 765	14 589	15 582	6,8	8,5	Oos-Transvaal
Natal	12 458	13 900	14 812	15 901	16 885	17 294	2,4	6,8	Natal
Orange River	1 130	1 272	1 406	1 454	1 462	1 619	10,7	7,5	Oranjerivier
Rand and OFS	44 994	48 936	52 728	56 122	57 605	58 310	1,2	5,3	Rand en OVS
<b>Net electricity sent out</b>	<b>77 774</b>	<b>85 979</b>	<b>92 950</b>	<b>99 713</b>	<b>102 516</b>	<b>105 404</b>	<b>2,8</b>	<b>6,3</b>	<b>Netto elektrisiteit uitgestuur</b>
<b>Own consumption</b>	<b>52</b>	<b>58</b>	<b>71</b>	<b>712</b>	<b>2 404</b>	<b>2 917</b>	<b>21,3</b>	<b>123,8</b>	<b>Eie verbruik</b>
<b>Gross electricity sent out</b>	<b>77 826</b>	<b>86 037</b>	<b>93 021</b>	<b>100 425</b>	<b>104 920</b>	<b>108 321</b>	<b>3,2</b>	<b>6,8</b>	<b>Bruto elektrisiteit uitgestuur</b>

## **13 Maximum one-hour demands, MW**

**Maksimum eenuur-aanvrae, MW**

Undertaking	1978	1979	1980	1981	1982	1983	Increase Toename 1982–83	Average yearly increase Gemiddelde jaarlikse jaarlike toename 1978–83	Onderneming
									%
Border	168	175	177	213	219	221	0,9	5,6	Grens
Cape Northern	363	433	465	507	496	540	8,9	8,3	Noord-Kaapland
Cape Western	943	922	1 005	1 122	1 244	1 311	5,4	6,8	Wes-Kaapland
Eastern Transvaal	1 465	1 716	2 048	2 201	2 318	2 398	3,5	10,4	Oos-Transvaal
Natal	1 962	2 167	2 211	2 424	2 637	2 541	-3,6	5,3	Natal
Orange River	164	191	208	209	232	232	—	7,2	Oranjerivier
Rand and OFS	6 720	7 468	7 965	8 517	9 235	8 972	-2,8	6,0	Rand en OVS
<b>Aggregate of non-simultaneous maximum demands</b>	<b>11 785</b>	<b>13 072</b>	<b>14 079</b>	<b>15 193</b>	<b>16 381</b>	<b>16 215</b>	<b>-1,0</b>	<b>6,6</b>	<b>Totaal van nie-gelyktydig maksimum aanvrae</b>
<b>Maximum simultaneous one-hour demand on total Escom system</b>	09h00 23/6/78	09h00 26/7/79	09h00 18/7/80	09h00 12/6/81	09h00 2/7/82	09h00 10/8/83			<b>Maksimum gelyktydige eenuur-aanvraag op die hele Evkomstelsel</b>
	<b>11 490</b>	<b>12 855</b>	<b>13 668</b>	<b>14 674</b>	<b>15 532</b>	<b>15 639</b>	<b>0,7</b>	<b>6,4</b>	

## **14 Farm supplies as at 31 December**

### **Plaastoevoere soos op 31 Desember**

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

Plaastoevoere behels toevoere wat aan landbou- en kleinhoewes voorsien word en hoofsaaklik vir boerderydoeleindes gebruik word.

Undertaking	1978	1979	1980	1981	1982	1983	Increase Toename 1982-83	Average yearly increase Gemiddelde jaarlikse toename 1978-83		
									%	Onderneming
Border	1 000	1 054	1 135	1 244	1 427	1 714	20,1	11,3		Grens
Cape Northern	2 831	3 149	3 801	4 322	4 487	5 074	13,1	12,4		Noord-Kaapland
Cape Western	9 246	9 473	10 017	10 603	11 159	11 695	4,8	4,8		Wes-Kaapland
Eastern Transvaal	5 608	5 906	6 495	7 003	8 095	9 382	15,9	10,8		Oos-Transvaal
Natal	7 700	8 034	8 571	9 362	10 176	10 977	7,9	7,3		Natal
Orange River	746	769	889	995	1 166	1 433	22,9	13,9		Oranjerivier
Rand and OFS	12 656	13 220	14 248	15 709	16 957	18 823	11,0	8,3		Rand en OVS
<b>Total</b>	<b>39 787</b>	<b>41 605</b>	<b>45 156</b>	<b>49 238</b>	<b>53 467</b>	<b>59 098</b>	<b>10,5</b>	<b>8,2</b>		<b>Totaal</b>

## **15 Plant taken into commercial service and on order**

### **Installasies in handelsgebruik geneem en op bestelling**

Name of power station	Plant taken into commercial service in 1983 Installasies in 1983 in handelsgebruik geneem		Plant under construction or on order at 31 December 1983 Installasies op 31 Desember 1983 in aanbou of op bestelling		Year of completion Jaar van voltooiing		Naam van kragstasie
	Boilers Ketels kg/s	Generators Generators MW	Boilers Ketels kg/s	Generators Generators MW	First set Eerste stel	Last set Laaste stel	
<b>Coal-fired plant</b>							
Matla	508	600	—	—	1979	1983	Matla
Duvha	507	600	507	600	1980	1984	Duvha
Tutuka	—	—	3 042	3 654	1985	1989	Tutuka
Lethabo	—	—	3 054	3 708	1986	1990	Lethabo
Matimba	—	—	2 308	3 990	1987	1992	Matimba
Kendal	—	—	3 462	4 032	1989	1993	Kendal
Majuba	—	—	3 462	4 032	1990	1995	Majuba
<b>Pumped-storage hydro plant</b>							
Palmiet	—	—	—	400	1988	1988	Palmiet
<b>Nuclear plant</b>							
Koeberg	—	—	1 513	1 844	1984	1985	Koeberg