

Mr. G. R. D. Harding, Member and General Manager of the Commission seen in a characteristic pose by d'Orly.

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Electricity Supply Commission

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G. R. D. HARDING

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Electricity Supply Commission

Escom Centre,
204 Smit Street,
Johannesburg.
4th August, 1965.

To the Honourable,
The Minister of Economic Affairs,
Union Buildings,
Pretoria.

Sir,

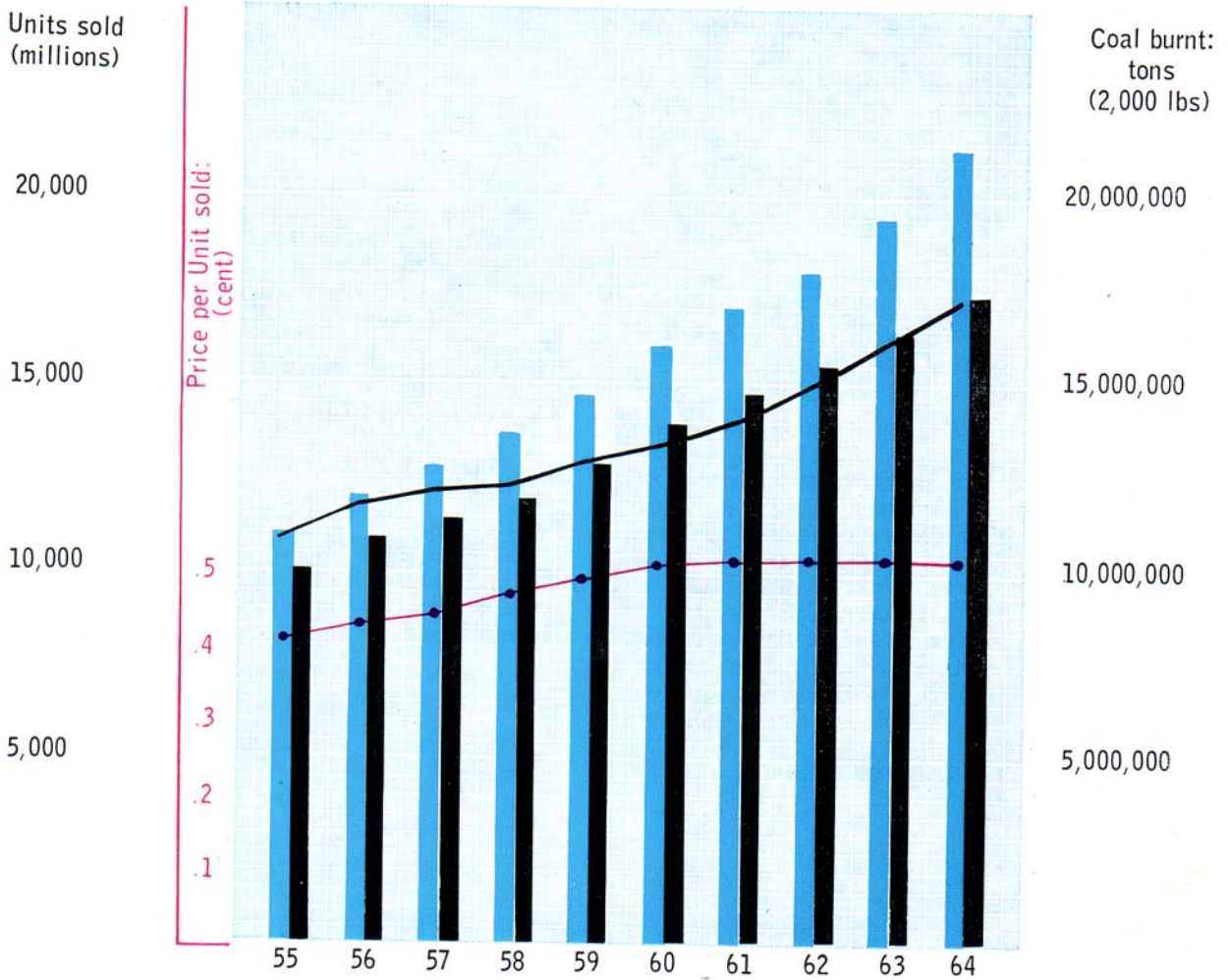
As required by Section 19 of the Electricity Act, 1958, the Commission has the honour to present its forty-second Annual Report and the Accounts covering its work in the financial year ended at the 31st December, 1964.

As in former years, the Report includes brief comment on the more important developments which have taken place in the period up to 30th April, 1965.

GROWTH OF ESCOM AND GROWTH OF THE NATIONAL PRODUCT

The dominant feature which emerges from a review of Escom's sales of electricity is the high rate of expansion which has been sustained for more than 10 years. Total sales in 1964 increased by 8.96 per cent over the figure for the previous year, compared with the increase of 7.6 per cent in 1963 and the average of 8.2 per cent over the ten years 1954–1964.

GROWTH OF ESCOM AND GROWTH OF THE NATIONAL PRODUCT



This growth is depicted by the blue poles in the diagram below: while the black poles show the tonnage of coal burnt in Escom's power stations.

Coal burnt increased to 17.2 million tons in 1964: but this rate of increase is only 6.8 per cent per annum. The difference between 8.2 per cent increase in sales and 6.8 per cent increase in coal burnt indicates the improvement in efficiency of the larger units installed in the Escom's new power stations, and to some extent an improvement in transmission efficiency also.

Escom's expansion is sometimes looked upon as reflecting the growth of the National Product: but the rates of growth are significantly different. Growth of the National Product over the years 1955-1964 relative to Escom's growth is shown by the black line upon the blue pole diagram. Growth of the National Product (after adjustment for price changes) averaged slightly more than 5 per cent per annum over this period, the last three years being at exceptionally high rates of about 7 per cent per annum.

The significance of these rates may be emphasized by saying that at an average increase of 5.06 per cent per annum, the National Product will be doubled in 14 years: whereas at the average increase of 8.2 per cent per annum, Escom's output must be doubled in 9 years.

The red line which has been superimposed upon the diagram shows the average price per unit sold. It is reassuring that the price of Escom power has been maintained for the past five or six years at a stable level of about .5 cent per kilowatt-hour. This is, of course, an average price over all Undertakings: the prices in each Undertaking, and for different classes of consumers in each Undertaking, are shown on pages 21 to 43.

The bulk of the increased output in 1964 was absorbed by mining and industrial consumers: but large percentage increases are reflected in bulk sales to Municipalities and in reticulations in country districts.

The rise in Escom's sales to mining consumers reflects, in the main, the expansion in mining for gold, diamonds and coal: and although the increase of 4.3 per cent in Escom's sales was below the 10-year average, mining production in the Republic advanced to record levels. Gold production increased by 6.1 per cent to a record output of over 29,000,000 fine ounces, valued at R730,000,000, which represents 70 per cent of the Free World's output of newly-mined gold; diamond production, largely from mines was 4.45 million carats, valued at R41,500,000; and coal sales rose to a record of 47,600,000 tons, including Escom's requirements for power generation of 17,200,000 tons. Production of uranium oxide de-

clined somewhat: but production of metaliferous minerals — iron ore, chrome, copper, manganese and tin — was higher in 1964 than in the previous year.

The increase in units sold to Mining Consumers during the last three years is shown in the following figures:—

| | Units sold (millions) | | |
|--|-----------------------|--------------|--------------|
| | 1962 | 1963 | 1964 |
| Gold mining (including Uranium) | 8,567 | 8,759 | 9,047 |
| Coal mines | 288 | 315 | 341 |
| Diamonds, Platinum and other mines | 392 | 444 | 539 |
| | <u>9,247</u> | <u>9,518</u> | <u>9,927</u> |

For the second year in succession expansion of commerce and industry has been significantly above the 10-year average. In 1964 there were increases of 12.4 per cent in the total units sold as bulk supplies to Municipalities and 14.5 per cent in the sale of power direct to industrial consumers.

Although Escom's figures represent only part of the power consumed, * a broad picture of the expansion that is taking place in the principal categories of industry may be drawn from the following figures of electricity sold to industrial consumers supplied directly from Escom:

| | Units sold (millions) | | |
|---|-----------------------|-------|-------|
| | 1962 | 1963 | 1964 |
| Building and Cement (including quarrying) | 296 | 327 | 447 |
| Chemical (including pharmaceutical) | 774 | 849 | 868 |
| Engineering, (including the Motor Industry) | 170 | 201 | 357 |
| Foodstuffs, Consumer Goods and Commercial | 510 | 560 | 624 |
| Iron, Steel and Base Metals | 1,420 | 1,659 | 1,991 |
| Paper and Paper Products | 193 | 212 | 212 |

*Note:—These figures do not include supplies of electricity provided by municipalities or generated by industrial undertakings themselves.

OUTPUT AND SALES

The total units generated in all Escom's Undertakings in the year 1964 amounted to 24,355 million units, which was an increase of 9.16 per cent over the corresponding figure for 1963.

Purchases from other undertakings (including units re-purchased) amounted to 40.9 million units.

The figures of output and sales for all Undertakings were as follows:—

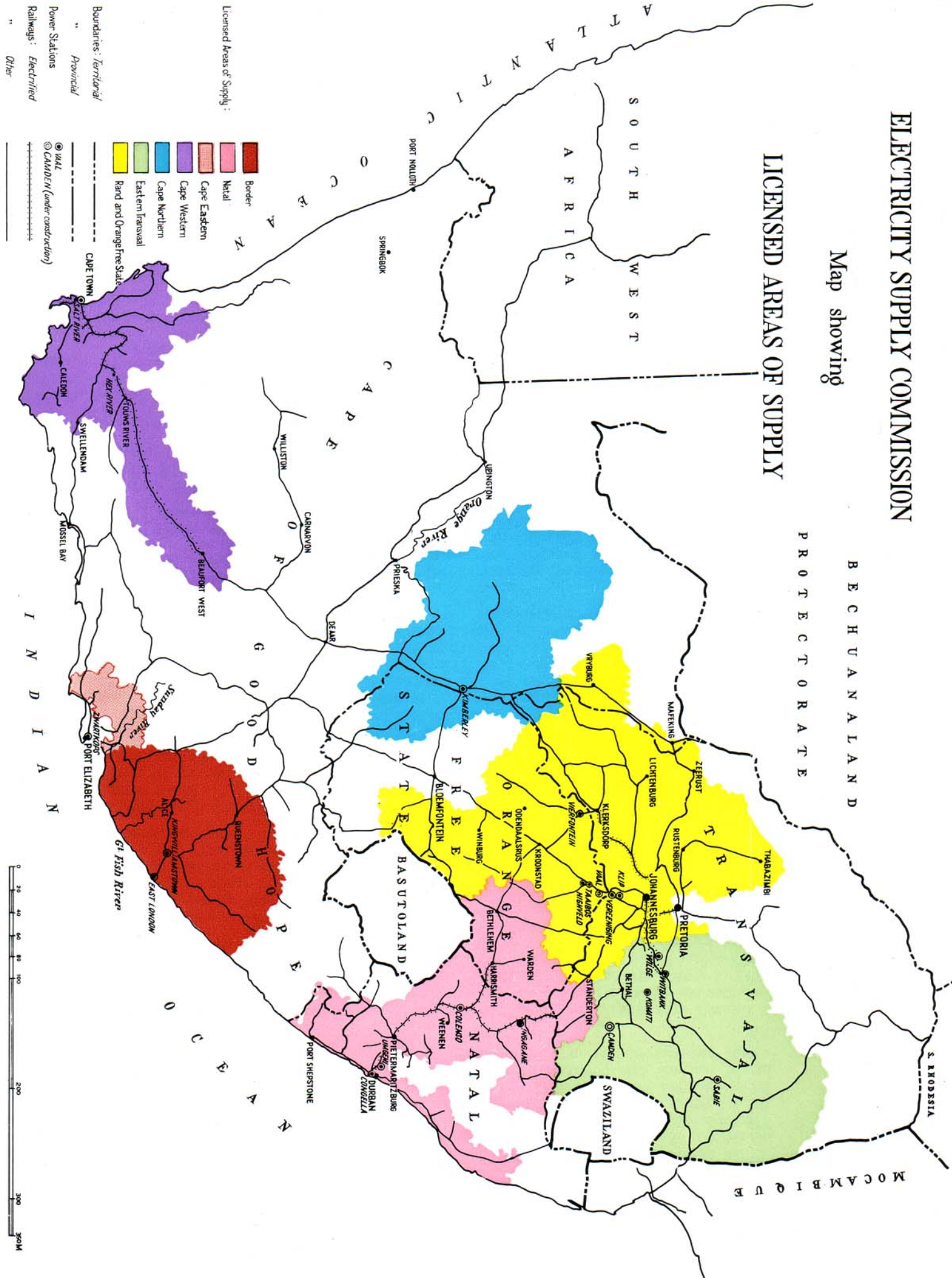
| | | | | | | | | | | | 1964 | 1963 | Increase |
|-----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------------|----------------|-----------------|
| Units generated | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 24,355,271,933 | 22,312,389,427 | 9.16% |
| Units purchased | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 40,950,587 | 18,582,815 | — |
| Units sold | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 21,247,542,296 | 19,500,013,697 | 8.96% |

ELECTRICITY SUPPLY COMMISSION

Map showing

LICENSED AREAS OF SUPPLY

BECHUANALAND
PROTECTORATE



Boundaries: Territorial
" Provincial

Power Stations
Railways: Electrified
" Other

Legend:
 - Border (Red line)
 - Natal (Pink)
 - Cape Eastern (Blue)
 - Cape Western (Purple)
 - Cape Northern (Light Blue)
 - Eastern Transvaal (Light Green)
 - Rand and Orange Free State (Yellow)

Scale: 0 20 40 60 80 100 200 300 350 Miles

Total sales (electricity and compressed air) for the year 1964 in the main categories of supply, with the corresponding figures for 1963 and the rate of increase in the year under review are shown in the following table. The final column enables a comparison to be made with the average rate of increase over the 10 years 1955-1964.

| | 1964 | 1963 | % Increase 1964 | Average Annual Increase in 10 years |
|------------------------|-----------------------|-----------------------|-----------------------|--|
| <i>Bulk Supplies</i> | | | | |
| Municipalities..... | 4,498,572,591 | 4,001,567,340 | 12·4 | 9·4 |
| <i>Direct Supplies</i> | | | | |
| Traction..... | 1,558,603,600 | 1,388,966,164 | 12·2 | 9·8 |
| Mining..... | 9,927,327,853 | 9,517,969,988 | 4·3 | 6·1 |
| Industrial..... | 4,882,354,674 | 4,262,427,593 | 14·5 | 12·3 |
| Domestic..... | 372,236,197 | 322,560,938 | 15·4 | 10·3 |
| Street Lighting..... | 8,456,341 | 7,521,679 | 13·4 | 12·01 |
| | <u>21,247,542,296</u> | <u>19,500,013,697</u> | <u>8·96</u> | <u>8·2</u> |

Total Revenue for the year amounted to R108,948,000 which was an increase of 7.35 per cent over the previous year. As the increase in sales was at the higher rate of 8.96 per cent, the average price per unit sold was lower in 1964 by some 1½ per cent.

Total sales of electricity and compressed air by individual Undertakings in 1964, with the corresponding figures for 1963, and the percentage increase for the year were as follows:—

| | 1964 | 1963 | Increase % |
|------------------------|----------------|----------------|---------------|
| Cape Western..... | 1,163,909,687 | 1,051,395,162 | 11·07 |
| Cape Northern..... | 311,403,362 | 264,928,379 | 17·54 |
| Cape Eastern..... | 440,069 | — | — |
| Border..... | 228,767,756 | 204,924,863 | 11·63 |
| Natal (combined)..... | 2,922,098,771 | 2,543,589,076 | 14·88 |
| Eastern Transvaal..... | 1,553,586,819 | 1,212,129,341 | 12·82 |
| Rand and O.F.S..... | 15,067,335,832 | 14,223,046,876 | 5·94 |
| | <hr/> | <hr/> | <hr/> |
| | 21,247,542,296 | 19,500,013,697 | 8·96 |
| | <hr/> <hr/> | <hr/> <hr/> | <hr/> <hr/> |

ESCOM'S UNDERTAKINGS

The present licensed areas of supply of Escom's Undertakings are shown in colour on the map which appears opposite this page.

The following new areas were added in 1964:—

Natal Undertaking. The inclusion of the districts of Vryheid and Paulpietersburg and portion of the district of Ugotshhe in the area of supply of the Natal Central Licence, 1927, was granted by the Electricity Control Board on the 22nd April, 1964.

Eastern Transvaal Undertaking. The inclusion of an area in the vicinity of Gravelotte in the area of supply of the Eastern Transvaal Licence, 1925, was granted by the Board on the 22nd June, 1964.

Rand and Orange Free State Undertaking. The inclusion of certain farms in the district of Brits in the area of supply of the Greater Rand Extension and Orange Free State Licence was approved by the Board on the 24th February, 1964.

Amalgamation of the Natal Undertakings. Following upon the applications made on the 25th November 1963, for amendment of the standard prices under the Natal Southern Licence, 1927, and the Natal Central Licence, 1927, an Application dated 8th July, 1964, was made to the Electricity Control Board to authorize the Commission to combine the business and

accounts of the two Undertakings in Natal to form one Undertaking. This was a logical development from the pooling of generating stations in Natah which was adopted in 1954, and met the general wis,l of consumers and of Escom. The application was granted by the Electricity Control Board and mdea effective from the month of April, 1964, i.e. from the date of introducing the revision of tariffs in the Natal Undertaking.

Although the amalgamation took place during the year, the accounts and statistics in this Report have been combined, for convenience of reference, for the whole year.

ORANGE RIVER UNDERTAKING

It has been decided, after studying the hydrological data, that the hydro-electric station at the Hendrik Verwoerd dam will comprise two 60,000 kW units, and the station at Vanderkloof dam two 70,000 kW units. Details of design are being worked out, and Escom expects to be able to issue the enquiry for the Hendrik Verwoerd sets in the last quarter of 1965.

The site indicated in the White Paper for the Hendrik Verwoerd station appears suitable, but the geological investigation of the Vanderkloof site has not yet been completed.

Meanwhile negotiations have been initiated with prospective consumers in the area, and preliminary offers of supply have been made to and accepted by

the Municipalities of Aliwal North, Rouxville, Smithfield and Zastron. Enquiries have also been received from the Municipalities of Colesberg and Cradock.

Exploratory discussions have been held with the South African Railways on the possible requirements for electrification of the main lines between Kimberley and Beaufort West, from De Aar to Port Elizabeth, Bloemfontein to Noupoort and Springfontein to East London.

The forecast of the growing loads in the Western Cape shows that in 1969 Escom's Cape Western Undertaking will require additional supplies of electricity over and above the increases that will be available from the two 60 MW units ordered for Salt River Power Station: and although no reduction in costs will be achieved in the early years, Escom is satisfied that the transmission of power from the hydro-electric stations on the Orange River and from the Transvaal thermal stations offers the best prospect in the long term of reducing electricity tariffs at the Cape.

The Cape Town City Council will also require additional supplies in 1970: and after careful consideration of an offer from Escom, the Council has agreed to defer the proposal to build a second station on the Athlone site and that for the four years 1970-1973 it will purchase its additional requirements from Escom.

In order to provide these supplies Escom will construct the 400 kV transmission system from Camden power station to the Cape, by stages, to meet the load requirements. Two 400 kV lines between Camden power station and Atlas distribution station will be in service by January, 1967, and the first 400 kV line from Atlas via a major distribution station in the Orange River Undertaking is to be built as far as Beaufort West by the end of 1968. The final leg between Beaufort West and Muldersvlei will be completed by the end of 1969. The programme provides for duplicate lines as soon as possible.

Supplies of electricity to the proposed Orange River Undertaking and to the Cape Western Undertaking will thus be initiated from the new high voltage transmission system in the first quarter of 1969, even if the hydro electric stations are not at that time ready to produce power.

NUCLEAR POWER

The Chairman, Dr. R. L. Straszacker, and Mr. G. R. D. Harding, a Member of the Commission and General Manager of Escom, attended the Third United Nations International Conference on the Peaceful Uses of Atomic Energy, which was held in Geneva, Switzerland, from the 31st August, 1964, to the 9th September, 1964.

Dr. R. L. Straszacker is also a Member of the Atomic Energy Board established by the Atomic Energy Amendment Act, 1958.

Escom is keeping a close watch upon technical developments in the design of atomic power stations overseas and the costs of nuclear power. It is of course, in direct contact with the work that is being done in

South Africa; but present indications are that the building of the first atomic power station in South Africa is still some way off.

Nuclear power stations hold out the possibility of conserving water supplies in the interior by placing generating stations on the coast where sea water could be used for cooling purposes: but many technical as well as economic problems have yet to be resolved; and it should be noted that the plans for transmission of power to the Cape, which Escom has now embarked upon, will be adequate on present estimates, to meet the demands forecast for that area until well into the 'seventies.

SUPPLY OF ELECTRICITY IN SOUTH WEST AFRICA

Under the power conferred upon Escom in the Electricity Amendment Act, 1964, Escom has entered into a contract with the Industrial Development Corporation of South Africa, Limited, to act as agent of the Corporation in the generation, supply and distribution of electricity in the territory of South West Africa by the Corporation and for that purpose will work with its subsidiary, South West Africa Water and Electricity Corporation (Pty) Ltd. The agency will be performed by Escom at cost, that is to say neither at a profit nor a loss.

South West Africa Water and Electricity Corporation (Pty) Ltd. has been registered, and the Chairman, Dr. R. L. Straszacker, has been appointed a Director of the Corporation.

The firm Motor-Columbus, Limited, has been appointed as Consulting Engineers with instructions to prepare a full report on all aspects of the Kunene scheme, including the possibility of purchasing a supply from the Portuguese Authority from the Matala power station in Angola. The report is expected in July, 1965.

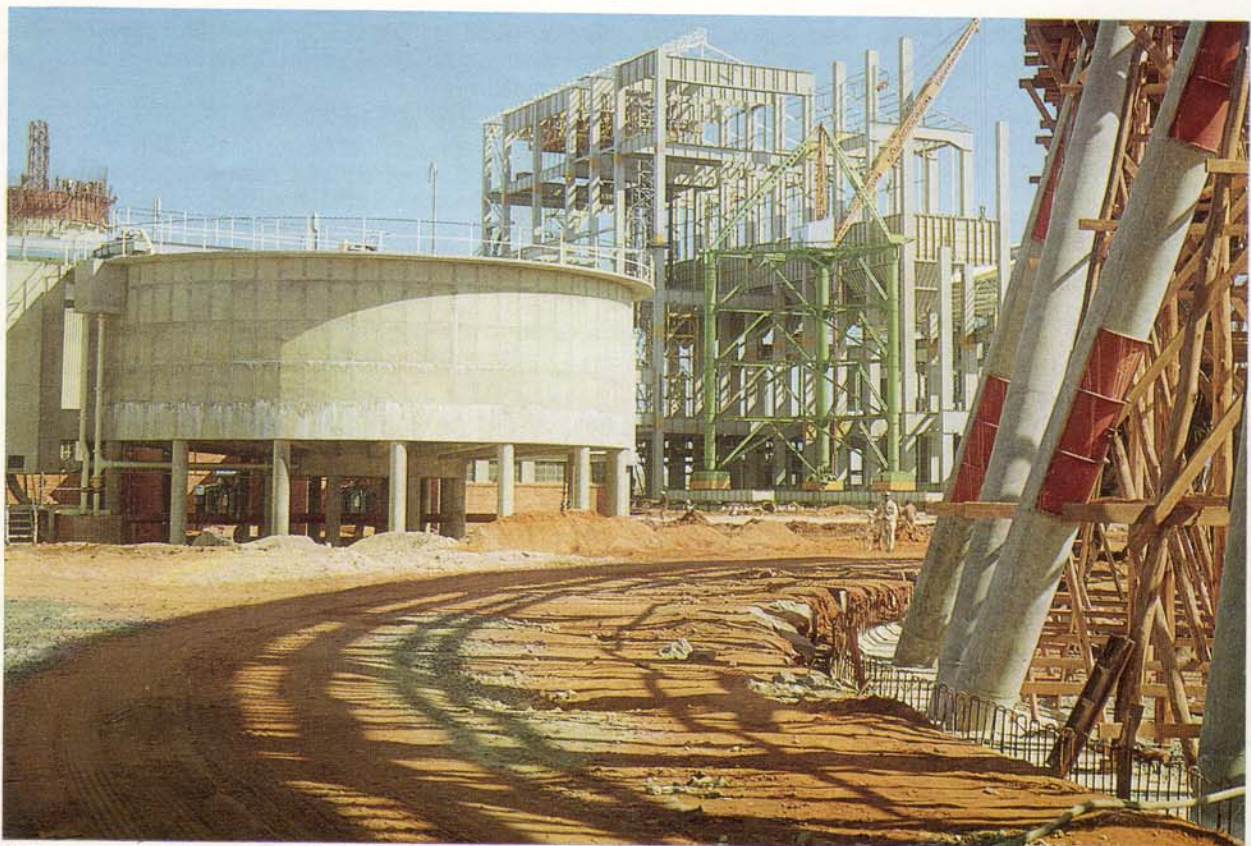
NEW DEVELOPMENTS IN ESCOM'S UNDERTAKINGS

Electrification of Railways

The initial supplies for the electrification of the Union Junction—Volksrust section of the Natal main line were made available over the period February to May, 1964. Although some substations were not ready at the time, the section was converted to electric traction from the end of March. The opening of this section completed the electrification of the main line from Durban to Pretoria.

Supplies were made available at the fourteen traction substations provided for the Klerksdorp—Kimberley electrification over the period August to December, 1964, and the line was converted to electric operation on 7th December, 1964. Work was started in preparation for the electrification of the section between Kimberley and Postmasburg.

Construction of the 88 kV line and four traction substations to serve the new rail link between Houtkop and Potchefstroom was completed early in 1965, and supplies were made available in February—



The progress made so far with the construction of the Camden power station (shown above) will make it possible to commission the first set in October 1966 as originally planned.



The Komati power station contributed nearly 3,000 million units in 1964 to the output of the pooled stations of the Eastern Transvaal and Rand and O.F.S. Undertakings.

April, 1965. This line has not yet been opened to traffic.

Construction is proceeding on the transmission lines and substations for the Witbank—Komatipoort electrification, and supplies will be available at the first substations for testing during the second half of 1965. Full working is scheduled for 1966.

Cape Eastern Undertaking

Commercial operation of the Cape Eastern Undertaking commenced on 30th May, 1964, with the supply to the Municipality of Kirkwood; and by the end of the year a total of 52 consumers, including 13 industrial consumers, were being supplied.

A detailed report appears on page 30.

In connection with the supply of electricity in the Gamtoos River Valley from the hydro-electric station at the Kouga dam, agreement has been reached between Escom and the Municipality of Port Elizabeth whereby Escom's system will be interconnected with the Council's system at Loerie, to provide a stand-by supply for maintenance of the water canals or against breakdown of plant. Electricity which is sold by Escom to the Council or by the Council to Escom for these purposes at Loerie will be sold at the average cost of coal per unit generated in the Council's power stations.

Finality has not yet been reached on the cost of generating electricity in the hydro-electric power station at the Kouga dam which is being built and will be operated by the Department of Water Affairs, and the price that Escom will pay for power supplied to it.

Supply of Electricity to Zululand

The 88 kV line between the South African Pulp and Paper Industries mill at Mandeni and the towns of Eshowe and Empangeni was completed during October, 1964, together with the three temporary 22 kV substations. The line can be energised at 22 kV and used as an interconnector between the existing power stations at Mandeni, Eshowe and Empangeni.

Construction of the duplicate Umgeni/Mandeni 132 kV lines and the permanent substations commenced in 1965 and is to be completed in October, 1965.

Supply of Electricity to the Northern Transvaal

Construction is proceeding on the first section of the 275 kV line from Eerste Fabriek (near Pretoria)

to Warmbad, which will augment the supply of electricity available to Warmbad, Nylstroom and Na-boomspruit.

It is understood that discussions are taking place between the Municipalities of Potgietersrust and Pietersburg on the offer of a partial supply which was made by Escom to the Municipality of Pietersburg.

New Power Stations: Transvaal and Natal

In order to provide for the exceptional growth of load on Escom's Undertakings, enquiries were initiated in 1964 for water and coal supplies for two new power stations, each of 2,000 MW capacity.

The intention is that each station will comprise 10×200 MW sets with pulverized fuel boilers designed for steam conditions similar to Camden Power Station, i.e. 1,500 p.s.i. and 1,000 °F without re-heat: and the first of these stations is required in the Transvaal, one set to be ready for starting up in May, 1970, and the second in September, 1970.

Enquiries were put to all known coal interests for a coal supply for a pit-head power station, situated in the Eastern Transvaal, and after weighing all the factors which affect the cost of generation and transmission costs, the tender of Trans-Natal Coal Corporation, Limited, was accepted. This new station, which will be built on the farm Boschmanskop, near Hendrina, has been named Hendrina Power Station.

The second of these large stations will be needed in part to supply the further requirements of the Natal Undertaking after Ingagane Power Station has been developed to its full potential of 500 MW. Water can be supplied by the Department of Water Affairs from the Buffalo and Hlelo Rivers: and again enquiries have been put out to all known coal interests for an adequate coal supply for a 2,000 MW station. Tenders will be called for on 1st October, 1965, to be delivered within 30 days of that date.

PLANT CAPACITY

The capacity of new generating plant installed in and taken into commercial service in Escom's power stations in 1963, and the capacity of additional boilers and turbo-generators under construction or on order, are given in the following table:—

| | Plant taken into service: 1964 | | Plant under construction or on order | |
|---|--------------------------------|------------------|--------------------------------------|------------------|
| | Boilers lb/hr | Generators kW | Boilers lb/hr | Generators kW |
| Cape Western Undertaking Salt River Power Station..... | — | — | 1,040,000 | 120,000 |
| Border Undertaking West Bank Power Station..... | — | — | 170,000 | 20,000 |
| Natal Undertaking Ingagane Power Station..... | 900,000 | 100,000 | 1,800,000 | 200,000 |
| Eastern Transvaal Undertaking Komati Power Station..... | 3,150,000 | 225,000 | 2,250,000 | 375,000 |
| Rand and O.F.S. Undertaking Camden Power Station..... | — | — | 9,000,000 | 1,000,000 |
| | 4,050,000 | 325,000 | 14,260,000 | 1,715,000 |

Of the plant listed in the Table as being under construction at the end of the year, one 125,000 kW set at Komati Power Station was commissioned in February, 1965, and will thus be available to meet the 1965 winter load.

In addition, enquiries have been issued for three further sets and boilers at Camden Power Station to complete this Station to its designed capacity of 1,600,000 kW and further enquiries have been put out for two 200,000 kW sets and boilers at the new Grootvlei Power Station.

The development of Grootvlei Power Station is to provide for replacement of plant at Witbank, Vereeniging and Klip Power Stations, and it will use existing supplies of water and coal as they become available by reason of adjustment of station load factors or decommissioning of plant at the old stations. The new

power station is being built on a site adjacent to the existing Grootvlei Colliery of Springfield Collieries, Limited, and is being laid out for an ultimate capacity of four or five 200,000 kW sets.

EXTENSION OF ESCOM'S TRANSMISSION SYSTEMS

The route miles of transmission lines and cables constructed during 1964, with similar figures for the years 1960–1963, are shown in the table hereunder, grouped as follows:—

- (i) high voltage transmission lines, of 275 kV and 132 kV:
- (ii) transmission lines of intermediate voltages, 88 kV to 33 kV:
- (iii) distribution lines and cables of lower voltages, ranging from 22 kV to 380 volts. (Most of these lines are for Escom's reticulation systems.)

Route Miles of Transmission lines and Cables Taken into Service: Years 1960-1964.

| Year | 275 kV | 132 kV | 88/33 kV | 22 kV and lower | Total (miles) |
|-------------|---------------|---------------|-----------------|------------------------|----------------------|
| 1960 | — | 56 | 217 | 815 | 1,088 |
| 1961 | — | 627 | 65 | 1,132 | 1,824 |
| 1962 | 208 | 44 | 349 | 1,072 | 1,673 |
| 1963 | 141 | 129 | 460 | 1,281 | 2,011 |
| 1964 | 385 | 202 | 376 | 1,348 | 2,311 |

CAPITAL EXPENDITURE

Borrowing Powers for New Projects

Two applications were made on 25th March, 1964, and 7th July, 1964, for approval in terms of Section 10 of the Act, of borrowing powers for a further amount of R91,500,000. This sum covered the estimates for the extensions at Salt River No. 2 Power Station, Ingagane Power Station and Camden Power Station and for extensions of the transmission and distribution systems in all undertakings.

These projects and borrowing powers therefor were approved on 28th April, 1964, and 4th August, 1964.

Annual Capital Expenditure

Expenditure on Capital Account during the year 1964 amounted to R42,117,000.

The yearly expenditure on Capital Account for the years 1923-1964 is depicted in the following table:—

ANNUAL CAPITAL EXPENDITURE

| Year | Expenditure | Totals to Date | Year | Expenditure | Totals to Date |
|------|-------------|-------------------|------|-------------|-------------------|
| | Rand | Rand | | Rand | Rand |
| 1923 | 34,000 | 34,000 | 1944 | 1,462,000 | 48,036,000 |
| 1924 | 75 000 | 109,000 | 1945 | 1,877,000 | 49,913,000 |
| 1925 | 1,770,000 | 1,879,000 | 1946 | 2,940,000 | 52,853,000 |
| 1926 | 2,394,000 | 4,273,000 | 1947 | 4,797,000 | 57,650,000 |
| 1927 | 8,937,000 | 13,210,000 | 1948 | 30,362,000 | 88,012,000 |
| 1928 | 1,637,000 | 14,847,000 | 1949 | 9,408,000 | 97,420,000 |
| 1929 | 764,000 | 15,611,000 | 1950 | 14,821,000 | 112,241,000 |
| 1930 | 556,000 | 16,167,000 | 1951 | 21,592,000 | 133,833,000 |
| 1931 | 424,000 | 16,591,000 | 1952 | 36,612,000 | 170,445,000 |
| 1932 | 232,000 | 16,823,000 | 1953 | 42,701,000 | 213,146,000 |
| 1933 | 453,000 | 17,276,000 | 1954 | 50,683,000 | 263,829,000 |
| 1934 | 1,510,000 | 18,786,000 | 1955 | 40,513,000 | 304,342,000 |
| 1935 | 4,195,000 | 22,981,000 | 1956 | 37,726,000 | 342,068,000 |
| 1936 | 4,122,000 | 27,103,000 | 1957 | 35,197,000 | 377,265,000 |
| 1937 | 3,460,000 | 30,563,000 | 1958 | 40,436,000 | 417,701,000 |
| 1938 | 3,734,000 | 34,297,000 | 1959 | 35,429,000 | 453,130,000 |
| 1939 | 2,348,000 | 36,645,000 | 1960 | 38,341,000 | 491,471,000 |
| 1940 | 2,017,000 | 38,662,000 | 1961 | 38,094,000 | 529,565,000 |
| 1941 | 2,146,000 | 40,808,000 | 1962 | 52,014,000 | 581,579,000 |
| 1942 | 2,955,000 | 43,763,000 | 1963 | 55,497,000 | 637,076,000 |
| 1943 | 2,811,000 | 46,574,000 | 1964 | 42,117,000 | 679,193,000 |

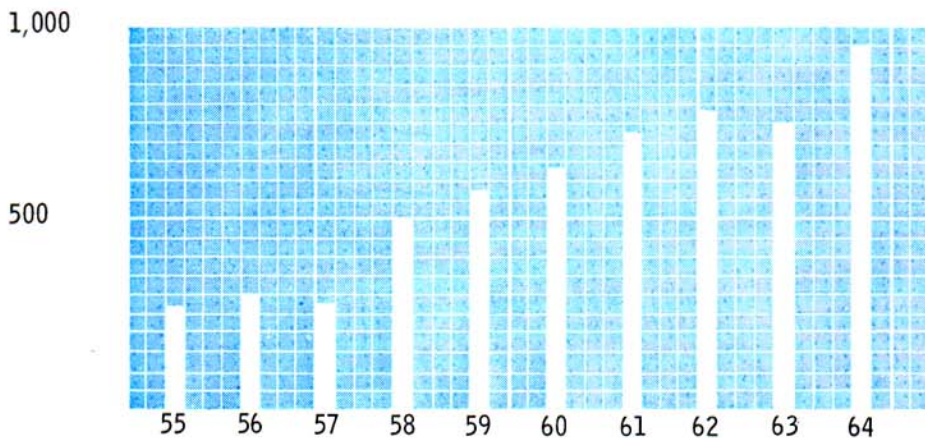
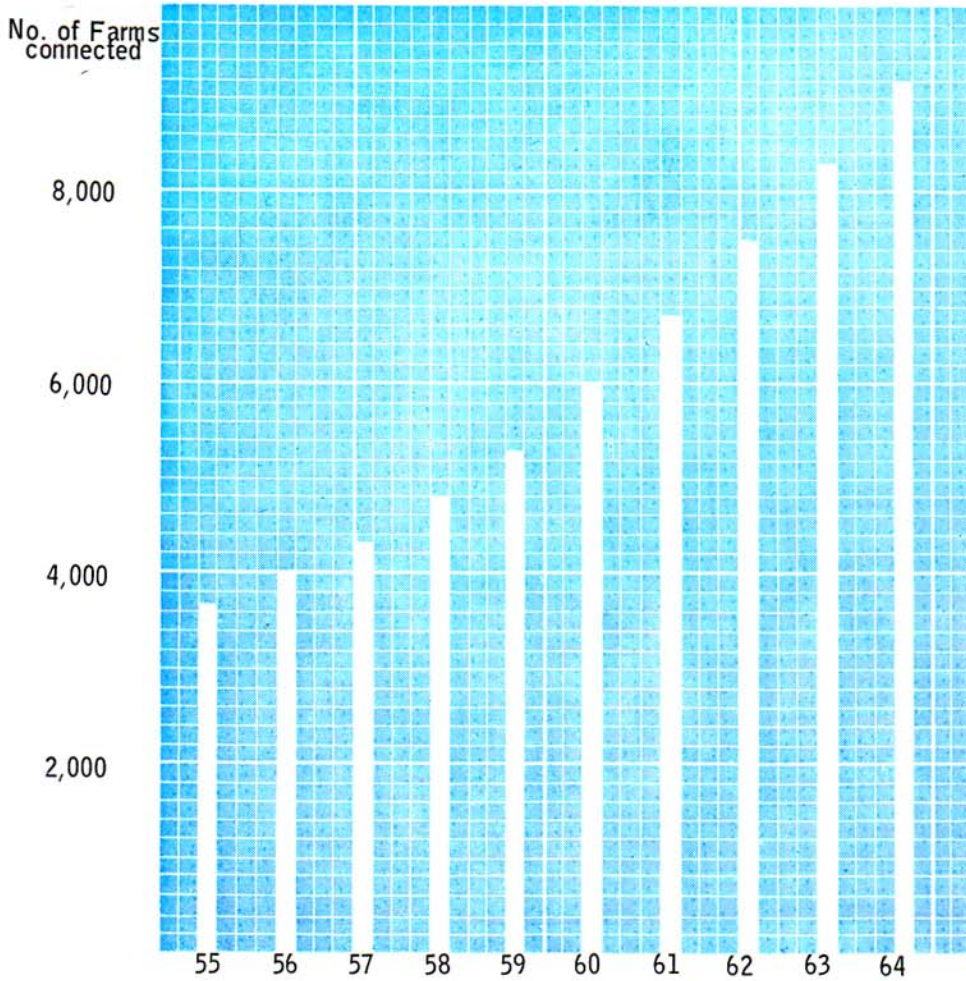
(Assets Sold Excluded)

RURAL ELECTRIFICATION

Good progress continues to be made in extending electricity supply to rural areas throughout the Republic, and Managers in all Undertakings continue to give special attention to the development and enlargement of existing rural networks and the investigation of new rural schemes.

Escom's rural networks make provision for supplies

to many consumers which cannot be classified as farmers, so that the statistical record of supplies given to farms is not a complete picture: nevertheless the progress in rural electrification may be seen in the diagrams below which show the total number of farms connected to Escom's rural networks at the end of the years 1955-1964 and the number of new connections effected each year.

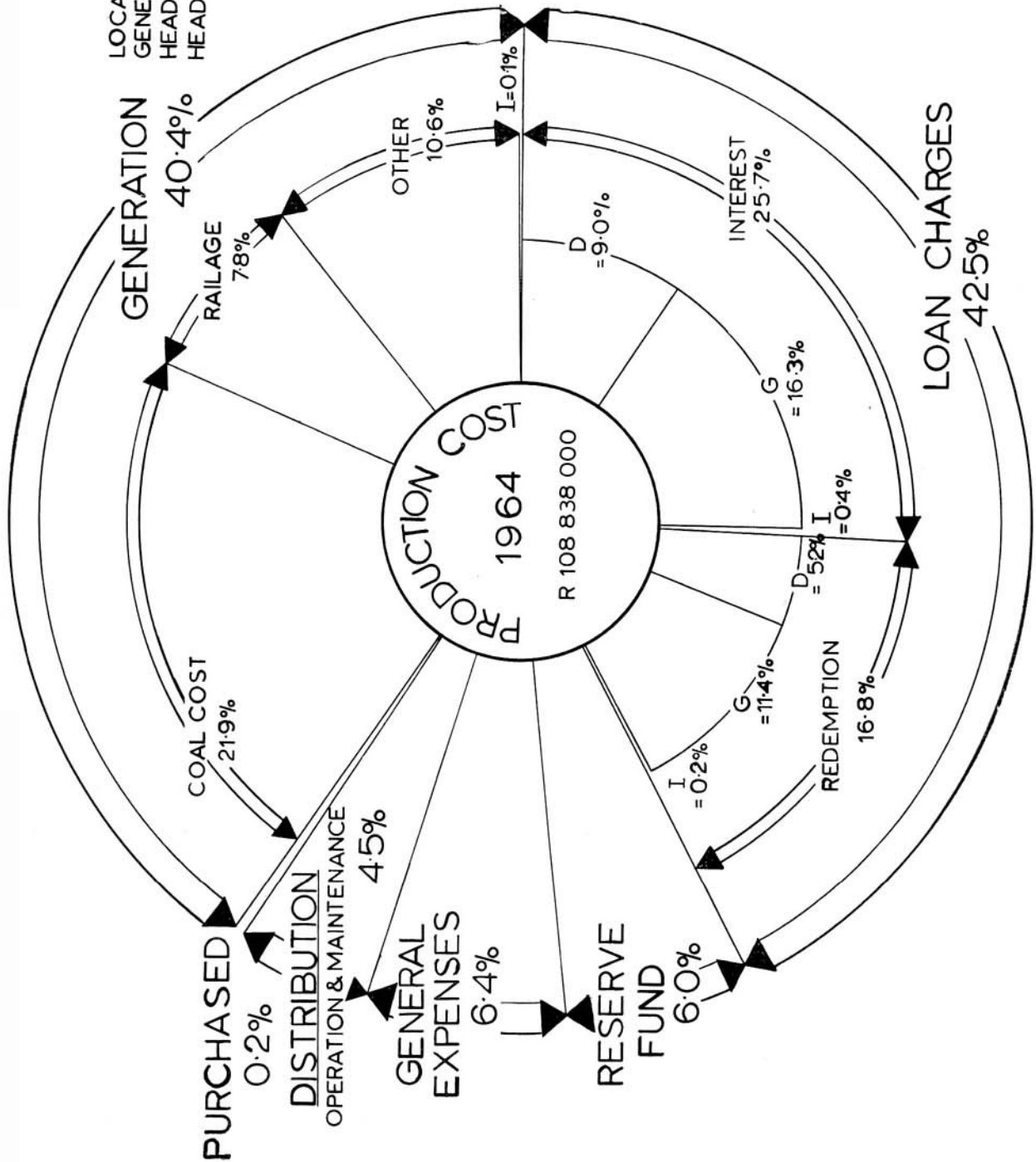


GENERAL EXPENSES

- LOCAL ADMINISTRATION 2.0%
- GENERAL EXPENSES 3.2%
- HEAD OFFICE ADMINISTRATION 0.7%
- HEAD OFFICE ENGINEERING 0.5%

ABBREVIATIONS

- D = DISTRIBUTION
- I = INTERCONNECTOR
- G = GENERATION



It will be noted that the number of farms connected to Escom's networks has been increased over the 9-year period from 3,710 to 9,170 while the tempo of this work, represented by the number of new connections effected each year, has been raised more than three-fold from 269 in 1955 to 938 in 1964.

During 1963 and the early part of 1964 great difficulty was experienced in securing adequate quantities of wood poles for the rural construction programme, and the work was slowed down to some extent by this shortage.

Although Escom buys what it can from private sources, it relies mainly upon the Department of Forestry for the supply of wood poles. After discussion with the Department, Escom has agreed to relax in some degree the specification as to straightness of the poles it will accept, and the Department has undertaken to make a thorough investigation into all aspects of the production and supply of wood poles required by Escom, both now and in the long term, and to take the necessary steps to ensure that adequate supplies will be available in future.

In the present conditions of expansion in the building and other industries, shortages of skilled workers and of equipment have set limits to the rate of development of rural electrification. Escom will continue, however, to give special attention to this work.

FINANCIAL

Loan Capital

During 1964 two local loans totalling R40,000,000 were raised as follows:—

| Date Issued | Amount |
|--------------------|--------------------|
| 28th April..... | R20,000,000 |
| 6th October..... | R20,000,000 |
| | <hr/> |
| | <u>R40,000,000</u> |

These loans were fully subscribed, but at the year end the amount received on account of the loan issued on the 6th October was R18,825,000. The balance of R1,175,000 payable not later than the 30th January, 1965, in terms of the prospectus, has since been received. At the year end the loans raised locally as Local Registered Stock totalled R636,000,000. Loans Nos. 6 and 9 for R5,000,000 and R4,000,000 were redeemed on 31st May and 30th September, 1964, respectively and the total local loans repaid now amount to R28,500,000.

During the year R3,530,000 was repaid against overseas loans.

These amounts increased the Commission's loans outstanding at the date of the Balance Sheet to R640,201,000.

Redemption Fund

The amount in the Redemption Fund at the 31st December, 1964, totalled R175,658,000 which exceeded the amounts required for the redemption of the loans in accordance with the provisions of the Act.

The amount in the Redemption Fund includes the proceeds from the sales of assets and profits on realisation of investments.

Reserve Fund

The amount in the Reserve Fund at the 31st December, 1964, was R50,575,000.

Capital Expenditure

Expenditure on Capital Account during the year amounted to R42,117,000 which increased the total capital expenditure at the 31st December, 1964, to R679,193,000.

Expenditure on Capital Account will amount to approximately R1,162,000,000 on completion of all the works to which the Commission is committed and on projected works.

Investments

The book value of securities, representing investment in stocks of Electricity Supply Commission, Republic of South Africa and Municipalities held by the Commission on behalf of the redemption and reserve funds at 31st December, 1964, was R221,160,000 the nominal value being R222,878,000. The market value of these investments at that date was R213,666,000.

Assets and Liabilities

The Commission's total assets at the 31st December, 1964, amounted to R941,339,000 and its total liabilities to R670,018,000, the difference being R271,321,000 which is represented by the amounts in the redemption and reserve funds, loans repaid, and balance on revenue accounts.

COSTS AND TARIFFS

The more important components in Escom's cost structure are shown in the diagram on page 15 of Production Costs for the year 1964:—

| Interest | Issue Price | Redeemable |
|-----------------|--------------------|-------------------|
| 5% | R98.50% | 31.5.82/84 |
| 5½% | R99.00% | 31.10.82/84 |

The changes in tariffs made during the financial year 1964 were as follows:—

Cape Northern Undertaking

A further rebate of 5 per cent, bringing the total rebate to 10 per cent off the Standard Prices, was introduced from 1st January, 1964.

Natal Undertaking

As reported on page 9 a complete revision of tariffs was introduced for the combined Natal Undertaking with effect from the month of April, 1964.

Rand and Orange Free State Undertaking

A small reduction in the charges to consumers in the Rand and Orange Free State Undertaking was made from January 1964 by increasing the general discount from 5 per cent to 6 per cent; and a further reduction was made from January, 1965, by raising the discount to 8 per cent. In terms of the proviso to the Extension Licences, corresponding adjustments were made by reducing the surcharge in the outlying areas to 8 per cent in 1964 and 6 per cent in 1965.

STAFF

Home Ownership Scheme

The balance at 31st December, 1964, on loans granted to employees to enable them to acquire homes under the Commission's Home Ownership Scheme in terms of the Electricity Act, was R2,920,000.

Personnel

The staff employed by the Commission at the 31st December, 1964, numbered 17,172 employees made up as follows:—

| | 1963 | 1964 | Increase | |
|-------------------------|-------------|--------|----------|------|
| | Whites..... | 5,896 | 6,032 | 136 | 2.3% |
| Coloured and Bantu..... | 10,908 | 11,140 | 232 | 2.1% |
| | 16,804 | 17,172 | 368 | 2.2% |

The Commission desires to express to all employees its appreciation of their loyal and conscientious service.

STATISTICAL SUMMARY

The figures of revenue, production costs, output and sales which are customarily set out in a Statistical Summary are shown in the table which appears on page 17.

This table has been extended to show the figures for the last five years, as well as showing the increase or decrease in 1964 as compared with 1963.

STATISTICAL SUMMARY

Revenue, costs, output and sales, and other figures relating to the operation of the Commission's Undertakings during the years 1960 to 1964 are as follows:—

| | 1960 | 1961 | 1962 | 1963 | 1964 | Increase 1964 over 1963 |
|--|----------------|----------------|----------------|----------------|----------------|----------------------------|
| TOTAL REVENUE..... | R81,884,000 | R88,062,000 | R94,046,000 | R101,488,000 | R108,948,000 | 7.351% |
| TOTAL COSTS..... | 80,784,000 | 86,105,000 | 93,465,000 | 100,097,000 | 108,838,000 | 8.733% |
| Difference between Total Revenue and Total Costs..... | 1,100,000 | 1,957,000 | 581,000 | 1,391,000 | 110,000 | -R1,281,000 |
| Sales of Electricity, Air and Steam..... | 81,553,000 | 87,710,000 | 93,579,000 | 100,953,000 | 108,382,000 | 7.359% |
| Net Costs (less Sundry Revenue)..... | 80,453,000 | 85,753,000 | 92,998,000 | 99,562,000 | 108,272,000 | 8.748% |
| Average Price per Unit Sold..... | .5079c | .5155c | .5164c | .5177c | .5101c | -1.471% |
| Average cost per Unit sold..... | .5019c | .5061c | .5158c | .5133c | .5122c | -0.214% |
| Average Net Cost per Unit Sold..... | .4999c | .5040c | .5132c | .5106c | .5096c | -0.196% |
| Cost of Coal Consumed (including Railage).. | 25,373,000 | 27,713,000 | 29,230,000 | 31,009,000 | 32,367,000 | 4.379% |
| Railage on Coal Consumed..... | 8,912,000 | 8,849,000 | 8,627,000 | 8,428,000 | 8,504,000 | 0.902% |
| Coal Consumed (in tons of 2,000 lb.)..... | 13,792,816 | 14,544,837 | 15,383,313 | 16,226,535 | 17,256,296 | 6.346% |
| Units Generated..... | 18,543,341,972 | 19,575,396,581 | 20,805,518,186 | 22,312,389,427 | 24,355,271,933 | 9.16% |
| Units sent Out..... | 17,361,049,153 | 18,284,050,367 | 19,403,958,379 | 20,793,543,267 | 22,591,625,157 | 8.647% |
| Units Purchased..... | 15,320,932 | 8,399,659 | 12,559,278 | 18,582,815 | 40,950,587 | 120.368% |
| Units Sold..... | 16,094,129,276 | 17,013,161,822 | 18,121,036,829 | 19,500,013,697 | 21,247,542,296 | 8.962% |

ASSETS AND LIABILITIES

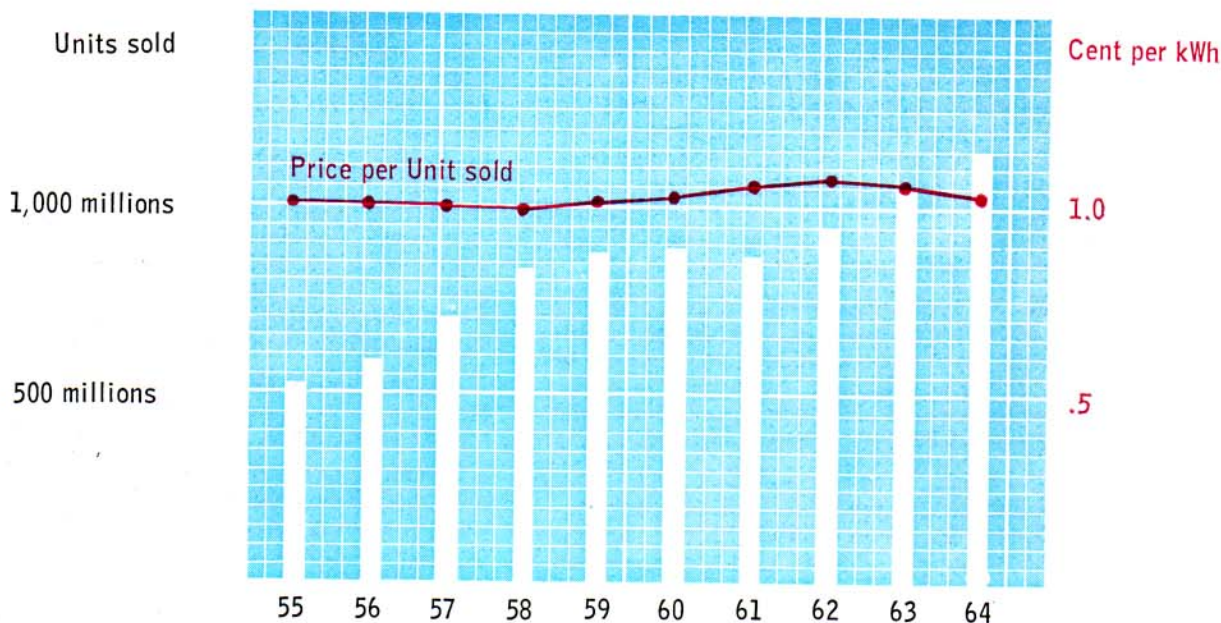
| 31st December | Loans Outstanding | Total Liabilities including Loan Capital | Total Assets | Excess of Assets over Liabilities |
|------------------|----------------------|--|-----------------|---|
| | Rand | Rand | Rand | Rand |
| 1950 | 118,266,000 | 126,432,000 | 158,610,000 | 32,178,000 |
| 1951 | 133,936,000 | 150,097,000 | 186,249,000 | 36,152,000 |
| 1952 | 168,131,000 | 191,344,000 | 231,684,000 | 40,340,000 |
| 1953 | 210,872,000 | 234,986,000 | 276,845,000 | 41,859,000 |
| 1954 | 266,345,000 | 284,865,000 | 335,241,000 | 50,376,000 |
| 1955 | 305,146,000 | 326,311,000 | 387,537,000 | 61,226,000 |
| 1956 | 335,132,000 | 362,164,000 | 436,271,000 | 74,107,000 |
| 1957 | 380,824,000 | 400,919,000 | 489,342,000 | 88,423,000 |
| 1958 | 419,549,000 | 440,148,000 | 547,754,000 | 107,606,000 |
| 1959 | 462,114,000 | 480,337,000 | 608,626,000 | 128,289,000 |
| 1960 | 489,607,000 | 511,571,000 | 663,357,000 | 151,786,000 |
| 1961 | 518,373,000 | 547,279,000 | 725,886,000 | 178,607,000 |
| 1962 | 560,056,000 | 594,342,000 | 800,784,000 | 206,442,000 |
| 1963 | 612,475,000 | 640,719,000 | 878,314,000 | 237,595,000 |
| 1964 | 640,201,000 | 670,018,000 | 941,339,000 | 271,321,000 |

ESCOM'S UNDERTAKINGS

The operation and development of Escom's separate Undertakings are reviewed in detail in the following pages.

General Note:— “Working Costs” include interest charges and Redemption Fund contributions on loan capital and amounts set aside to Reserve Fund.

CAPE WESTERN UNDERTAKING



The development of the Cape Western Undertaking, which serves the area shown on the map on page 20, is depicted on the above diagram of units sold during the past ten years.

The price of electricity in this Undertaking is indicated by the red line, which represents the average price per unit sold.

Details for the year 1964 of the sales to the major classes of consumers, the revenue received and working costs, and the statistics of generation of electricity are given in the tables on page 23.

Output and Sales

For the year 1964 the output from the Undertaking's power stations was raised to 1,268 million units, to provide total sales of 1,163 million units. This represented an increase of 10.7 per cent over the sales in the previous year.

The half-hourly maximum demand for the year was 238.7 MW, an increase of 24.9 MW.

Higher outputs were obtained from all stations, but the bulk of the increase came from Hex River Power Station where the new 30 MW set was installed in 1963.

Liaison was maintained daily with the South African Railways in connection with the supply of coal to Escom's power stations. The Railways have not failed to deliver adequate supplies of coal for the power stations: but coal stocks were lower in 1964 than in previous years, and on several occasions gave cause for anxiety.

Grade and calorific values of coal showed a slight improvement on 1963 values.

Salt River No. 2 Power Station: Extensions

During the year the site was cleared and work started on the extensions of Salt River No. 2 Power Station.

Orders have been placed for two 60 MW turbo-generators and four boilers, the first set and pair of boilers to be ready for service in March, 1967, and the second unit later in that year.

Major Transmission System

Construction of the Windmill—Hex 132 kV line proceeded throughout the year. By the year-end all the towers had been erected and conductor stringing commenced early in 1965. Preparatory work on the terminal equipment had also been commenced.

The Strand and Somerset West Municipalities both completed their change-over to 11 kV supply and all Escom 3.3 kV equipment was removed.

Provision of the second point of supply to African Explosives at Firgrove, by means of two 4 MVA transformers was completed in March.

With the late delivery of the second two 4 MVA transformers, the installation and associated work at Ceres was completed in December, when the old substation was finally dismantled.

At Bellville South work commenced in the latter half of the year on the conversion of the substation to 66 kV working. The 66 kV lines were looped in to the Oakdale—Eersterivier circuit and by the end of the year both 20 MVA transformers had been commissioned, leaving only the 66 kV line switches to be erected.

Early in the year the Hex—Hammanshof 66 kV line, Hammanshof 66/11 kV substation and the 11 kV line up to the Jonaskop F.M. station were completed and commissioned.

At Eersterivier work commenced in the latter half of the year on the establishment of a 66/33 kV substation to supply the Airport—National Cement Works 33 kV ring. By the end of the year all the steelwork had been erected, the two 15 MVA transformers were on site and the majority of the bus work and switch installation was complete. Here the late delivery of 66 kV current-transformers also impeded progress.

In the Karoo, substation extensions and overhead line work were carried out at Laingsburg and Leeu-Gamka. Supply was made available to Laingsburg in December and the substation extensions at Leeu-Gamka, and the erection of the poles on the thirty-mile route to Prince Albert were also completed by the year end.

As mentioned in the report for last year, negotiations were concluded for an extensive farmers' scheme in the Koue Bokkeveld. The first part of this scheme, involving sixteen miles of 66 kV line from Ceres, a step-down substation at Gydo, and 58 miles of 22 kV line was constructed during the year, and 54 connections made. During 1965 work will commence on the second part of the scheme.

Due to the erection by Amcor of a new concentrator plant near Langebaan it was found necessary to construct a new substation on their property which will replace the old and completely inadequate Langebaan substation. By the end of the year the structural steelwork had been delivered to site and all foundations were cast. The target date for commissioning this substation is early May, 1965.

Supply to the Caltex Oil Refinery, which is to be made available by twin 66 kV lines from Acacia, is desired during July or August, 1965. All the necessary equipment is on order and construction work will commence in 1965. In the meanwhile six temporary points of supply for construction purposes were made available.

Survey work associated with the 400 kV line routes and distribution sites of the Orange River Scheme

commenced in the latter half of the year and field work will commence in January, 1965.

Urban Distribution Systems

The demand for electricity in the Urban Areas of Goodwood, Parow and Bellville increased by 8.6 per cent during the year to a total of 50.8 MVA. This demand was met from the three step-down centres of Elsies River, Oakdale and Bellville South, with installed capacities of 30 MVA, 25 MVA and 5 MVA respectively. During the month of October, the Bellville South Step-down 5 MVA transformer was replaced by a 20 MVA unit and in December, the second 20 MVA transformer was also commissioned. The combined step-down transformer capacity feeding the urban 11 kV network is thus 95 MVA.

The temporary 33 kV line feeding Bellville South Step-down substation was dismantled after commissioning the 66 kV lines from Oakdale and Firgrove.

Seventeen new substations were erected and commissioned during the year, and together with alterations in existing substations provided a nett addition of 6,470 kVA in transformer capacity, bringing the total connected capacity in the urban 11 kV network to 89,735 kVA (excluding Large Users at 11 kV), i.e. an increase of 7.8 per cent.

A total of 1,174 new consumers were connected during the year of whom seventeen were Large Users.

Development of Rural Supplies

During the year 185 miles of high voltage lines and 14 miles of low voltage lines were added to the Undertaking's rural networks. 790 new connections were made, including 418 new or additional supplies on farms and 18 large users. Nine of the large user contracts were entered into with farmers. 207 new farms were supplied in 1964.

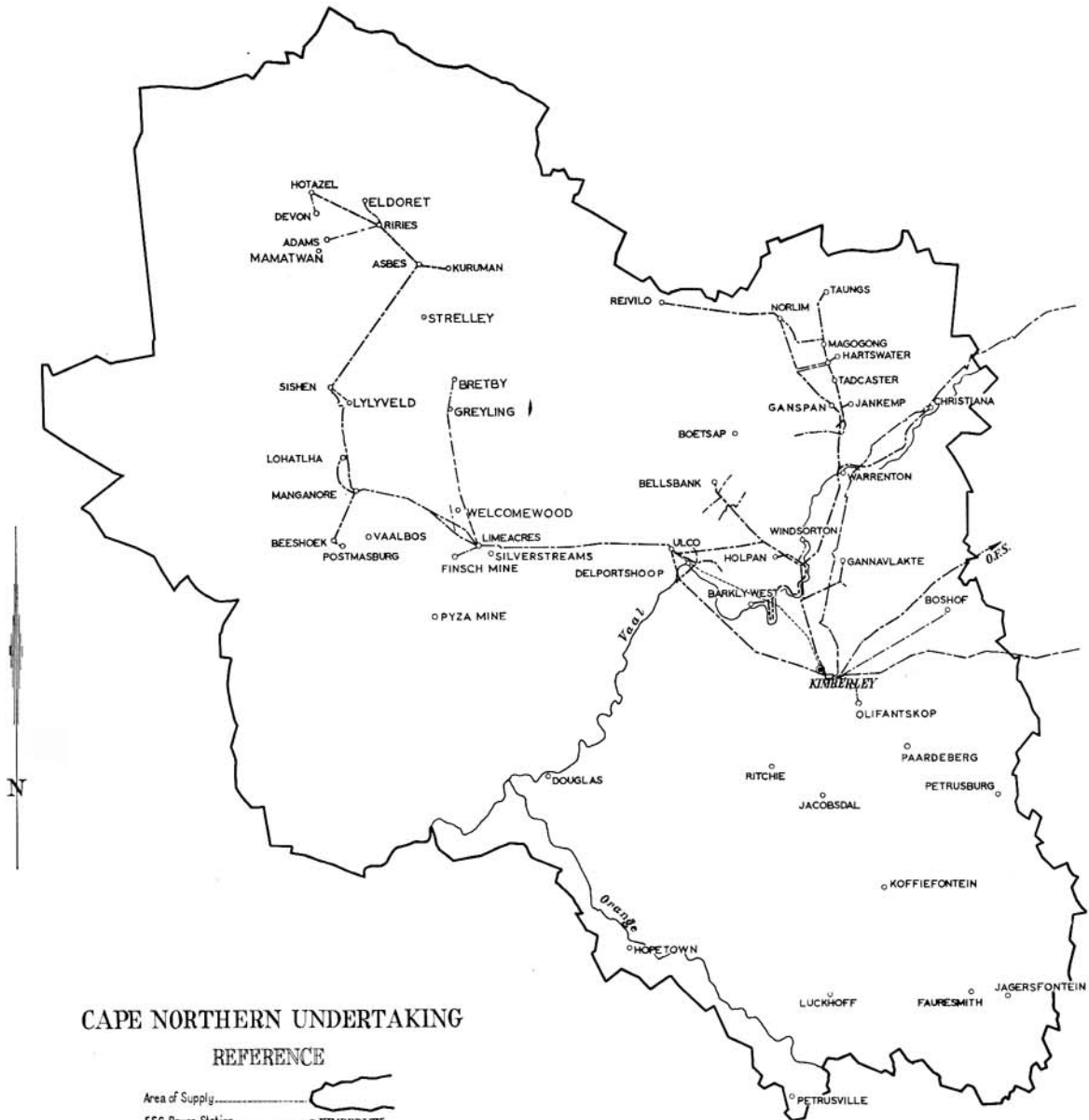
Financial

Revenue for the year amounted to R12,466,000, which gave a small surplus of R44,000.

After taking account of the higher rate of load growth and the accumulated surplus, the Commission felt justified in making a reduction of 5 per cent on all tariffs in the Undertaking, as from January, 1965. The reduction applies to all items of the tariffs except extension charges.

CAPE WESTERN UNDERTAKING

| CONSUMER | | SALES | | | REVENUE FROM SALES | | AVERAGE PRICE PER UNIT SOLD | | | |
|-----------------------------------|---------------|--------------------------------|---------------|--------------------------------|--------------------|-------------------------|-----------------------------|-------------|-------------|-------------------------|
| | | Units | | % Increase | | | | | | |
| Class | Number | | 1964 | 1963 | 64/63 | 63/62 | 1964 | 1963 | 1964 | 1963 |
| | Traction..... | 3 | 3 | 356,489,436 | 340,456,327 | + 4.709 | + 6.981 | 3,506,000 | 3,584,000 | 0.9835 | 1.0526 |
| Bulk..... | 32 | 31 | 258,023,440 | 237,079,444 | + 8.834 | + 10.199 | 2,317,000 | 2,165,000 | 0.8978 | 0.9134 |
| Mining..... | 3,705 | 3,438 | 375,626,698 | 316,437,722 | + 18.705 | + 22.711 | 3,976,000 | 3,435,000 | 1.0585 | 1.0853 |
| Industrial..... | 34,487 | 32,531 | 173,770,113 | 157,421,669 | + 1.039 | + 2.377 | 2,629,000 | 2,409,000 | 1.5129 | 1.5306 |
| Domestic and Street Lighting..... | 38,227 | 36,003 | 1,163,909,687 | 1,051,395,162 | + 10.701 | + 11.257 | 12,428,000 | 11,593,000 | 1.0678 | 1.1026 |
| Total..... | | | | | | | | | | |
| Total Revenue..... | | | | | | | 12,466,000 | 11,632,000 | 1963 | Accumulated to 31.12.64 |
| Working Costs..... | | | | | | | 12,422,000 | 11,434,000 | R | R |
| Surplus..... | | | | | | | 44,000 | 198,000 | | 448,000 |
| Deficit..... | | | | | | | | | | |
| Capital Expenditure..... | | | | | | | 2,776,000 | 3,001,000 | | 71,070,000 |
| | | | | | | | | | | |
| Electricity Units Sent Out..... | | Salt River No. 1 Power Station | | Salt River No. 2 Power Station | | Hex River Power Station | | | | |
| Maximum..... | 1964 | | 1963 | | 1964 | | 1963 | | 1964 | |
| Demand kW S.O. } Half-hour..... | 54,997,971 | 36,419,230 | 739,451,640 | 727,940,470 | 474,348,690 | 368,298,910 | 474,348,690 | 368,298,910 | 474,348,690 | 368,298,910 |
| } 2 Minute..... | 51,205 | 44,361 | 119,022 | 116,988 | 111,400 | 88,400 | 111,400 | 88,400 | 111,400 | 88,400 |
| Load Factor %..... | 58,500 | 49,000 | 129,000 | 128,000 | 128,000 | 111,400 | 111,400 | 111,400 | 111,400 | 111,400 |
| Thermal Efficiency % S.O..... | 12.2 | 9.4 | 70.7 | 71.0 | 48.4 | 47.6 | 48.4 | 47.6 | 48.4 | 47.6 |
| | 26.0 | 15.3 | 27.1 | 26.8 | 25.1 | 24.4 | 25.1 | 24.4 | 25.1 | 24.4 |
| FUEL: | | | | | | | | | | |
| Coal Consumed—tons..... | 31,373 | 26,466 | 415,604 | 408,127 | 277,574 | 223,462 | 277,574 | 223,462 | 277,574 | 223,462 |
| Average per unit sent out—lb..... | 1.934 | 1.934 | 1.087 | 1.102 | 1.170 | 1.213 | 1.170 | 1.213 | 1.170 | 1.213 |
| Calorific Value B. Th. U./lb..... | 11,570 | 11,540 | 11,570 | 11,540 | 11,610 | 11,530 | 11,610 | 11,530 | 11,610 | 11,530 |
| Total Cost Rand..... | 2,377,000 | 2,331,000 | 5.36 | 5.17 | 1,434,000 | 1,164,000 | 1,434,000 | 1,164,000 | 1,434,000 | 1,164,000 |
| Cost per ton Rand..... | 5.32 | 5.32 | 5.36 | 5.17 | 5.17 | 5.21 | 5.17 | 5.21 | 5.17 | 5.21 |



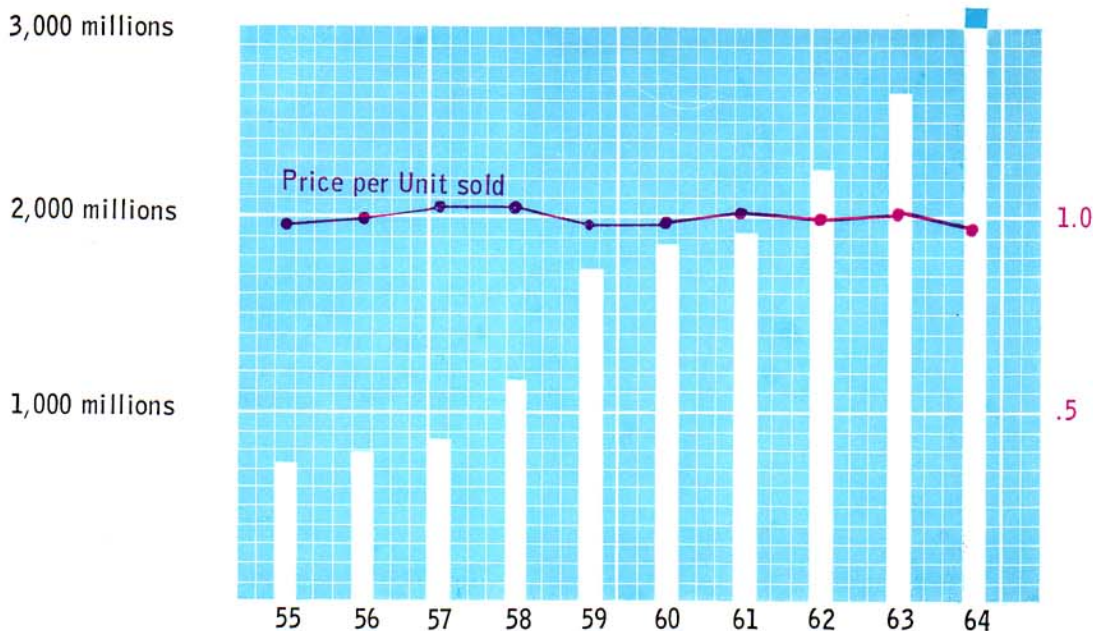
CAPE NORTHERN UNDERTAKING

REFERENCE

- Area of Supply.....
- ESC Power Station @ **KIMBERLEY**
- Transmission lines.....
- Transmission lines under construction.....

0 10 20 30 40 50
MILES

CAPE NORTHERN UNDERTAKING



The development of the Cape Northern Undertaking, which serves the area shown on the map on page 24, is depicted on the above diagram of units sold during the past ten years.

The price of electricity in this Undertaking is indicated by the red line, which represents the average price per unit sold.

Details for the year 1964 of the sales to the major classes of consumers, the revenue received and working costs, and the statistics of the generation of electricity in the Central Power Station, Kimberley, are given in the tables on page 28.

Sales

Total sales amounted to 311.4 million units in 1964, which represents an increase of 17.5 per cent over the previous year.

A maximum simultaneous demand of 65.2 megawatts was recorded during the very cold weather in June.

Sales to the Kimberley City Council increased by 11 per cent to 83.8 million units, and judging from the number of building proposals put forward, it is likely that this rate will be maintained for several years to come.

Sales to the De Beers Company increased by 8.9 per cent to 69.8 million units. A further increase in power usage occurred when the new rock hoist was commissioned at Wesseltion mine early in 1965.

Anglo Alpha Cement at Ulco continued to expand production and increased their power consumption by 15.3 per cent; but they must now be reaching the full production capability of their existing plant.

Near the end of 1964 the South African Railways received supplies at seven traction substations on the

Beaconsfield—Klerksdorp line. The maximum demand on this system during December was 9,159 kVA.

Sales of electricity for the production of lime at both Northern Lime Company's works showed a combined increase of 16 per cent. Further increases are expected.

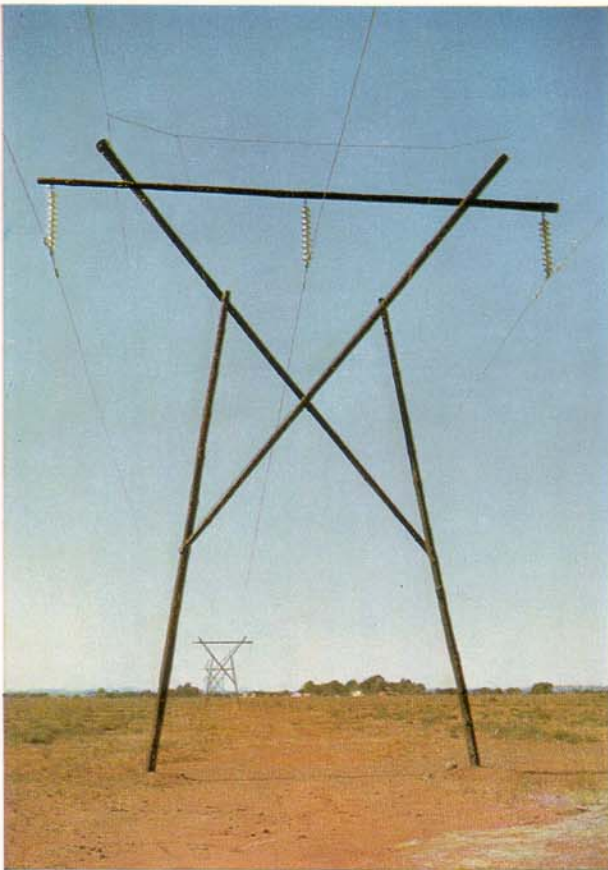
Isacor commissioned the new heavy medium separation plant at Sishen and used 14.2 million units, which is about twice the amount for 1963; and Amcor at the adjacent Lylyveld iron ore quarry used 1.7 million units in the first six months of working, to supply iron ore for their new blast furnace at Newcastle.

S.A. Manganese and Associated Manganese increased production of both iron ore and manganese and showed a combined increase in power purchased of 19 per cent.

From the middle of 1964 there was a considerable rise in the demand for blue asbestos and the output from the mines was stepped up from that time by almost 50 per cent. A supply was furnished to Postmasburg Cape Blue Asbestos mine, and two of Gefco's asbestos mines, Bretby and Greyling, which had been operating on diesel power, were connected in December.

Sales of electricity to the small diamond mines in the Smith's mine—Bellsbank area increased by 8.5 per cent.

An initial supply was furnished to De Beers at their new Finsch diamond mine during November 1964. At this early stage our supply is being used for electrically driven excavators and for the pilot washing plant.



Extensive use is being made of wood poles for high voltage lines in the Cape Northern Undertaking and the picture shows a 132 kV line carried on such poles in the Kimberley district.



An 11 kV wood-pole transmission line crossing the Vaal River. The line forms part of a farm scheme in the Cape Northern Undertaking.

The following table shows the breakdown of units sold for mining, quarrying and cement manufacture in 1964:—

| | Units (millions) | | Per cent of total units sold |
|------------------------|---------------------|--------------|------------------------------------|
| | 1963 | 1964 | 1964 |
| Diamonds..... | 70.3 | 76.6 | 24.6 |
| Lime and Cement..... | 60.2 | 69.5 | 22.3 |
| Iron Ore..... | 11.6 | 20.9 | 6.7 |
| Blue Asbestos..... | 15.8 | 19.9 | 6.4 |
| Manganese..... | 5.3 | 6.5 | 2.1 |
| Gypsum Quarrying... .. | 1.8 | 2.1 | 0.7 |
| | <u>165</u> | <u>195.5</u> | <u>62.6</u> |

Sales of units to the small municipalities again increased by large percentages.

Sales to Kuruman Municipality rose by 30.7 per cent to 4.1 million units, and Postmasburg increased by 34.2 per cent to 3.0 million units.

Warrenton is consuming about ten times the power it did when given bulk supply ten years ago, and still shows an annual increase of 20 per cent.

The Municipalities of Barkly West, Christiana and Boshof showed increases of 19, 14.5 and 8.1 per cent respectively.

Sales to the Hartswater municipal area increased by 16.4 per cent, and the new J. L. Clark cotton ginnery, which was connected in April, 1964, contributed largely to the increase of 22.1 per cent in the Jan Kempdorp area.

The number of plowholders supplied on the Vaalharts Irrigation scheme increased by 126 to 872. Sales to this group increased by 24.8 per cent.

Units consumed in the Taung area, where a native training college has been established, increased by 26.7 per cent.

A reticulation network was erected in Windsorton village and some twenty domestic consumers received supplies during the first half of 1964.

Interconnection with the Pooled Power Stations

During the year 307.9 million units were supplied from the Grootkop distribution station and 292.1 million units were received at Kimberley.

94 per cent of the units sent out from the Kimberley Distribution Station were supplied from the Rand and O.F.S. network compared with 86 per cent in 1963.

The Central Power Station contributed 24.7 megawatts towards meeting the peak system load of 65.2 megawatts during the severely cold spell in June, 1964.

The power station was uncoupled from the Kimberley Distribution Station during the light load periods at night and over the week-ends and a single gene-

rating set was left spinning to supply auxiliaries so that load could be picked up quickly in the event of failure of the Grootkop interconnector.

Development of the Undertaking

The contractors, who commenced excavations on the 151 miles of 275 kV transmission lines from Everest via Dealesville to Kimberley in December, 1963, completed the line in December, 1964, in spite of delays due to steel shortages.

Other contractors completed the Cape Northern Undertaking's 88 mile section of the Vierfontein—Kimberley 132 kV line. Six traction substations were completed and supplied from this line and a further substation was supplied from the Herlear yard.

The Undertaking's construction staff erected 2 × 1.6 miles of steel tower lines to replace the wooden pole lines to Herlear substation. They also constructed 23 miles of 66 kV line from Welcome Wood to Gryp-poort, and some 44 miles of 22 kV and 11 kV lines to new consumers. Work was commenced on the second 50 mile 132 kV line from Kimberley to Ulco, and by the end of the year 40 per cent of the work had been completed.

A 75 MVA 165/132 kV line regulating transformer for the Grootkop line was installed at the Kimberley Distribution Station and was commissioned in July, 1964. Two 15 MVA 132/66/11 kV transformers were being installed at Silverstreams substation, and the first was commissioned in December, 1964.

A scheme to supply Modder River and Jacobsdal, together with river pumping farmers in the area, and also the Municipality of Petrusburg, has been investigated and reported upon.

A bulk supply is to be furnished to the village of Olifantshoek by about the middle of 1965.

Major construction work scheduled for 1965 includes the commissioning of the 275 kV Everest—Kimberley transmission line and the two 275/132 kV step-down transformers which is expected to take place during May, 1965, the commissioning of the second 132 kV wooden pole line to Ulco and the commissioning of the 132/11 kV substation which will provide the permanent supply at Finsch mine.

Financial

The rebate on standard tariffs was increased from 5 per cent to 10 per cent as from the 1st January, 1964.

Revenue for 1964 amounted to R2,945,000 which was an increase of 8.45 per cent for the increase of 17.5 per cent in units sold. The surplus for the year was R137,000.

CAPE NORTHERN UNDERTAKING

| CONSUMER Class | Number | | SALES | | REVENUE FROM SALES | | AVERAGE PRICE PER UNIT SOLD | |
|-----------------------------------|--------|-------|-------------|-------------|--------------------|---------|-----------------------------|-------------------------|
| | Units | | % Increase | | 1963 | | | |
| | 1964 | 1963 | 1964 | 1963 | 64/63 | 63/62 | 1964 | 1963 |
| Traction..... | 2 | — | 1,759,296 | — | — | — | 1-3604 | — |
| Bulk..... | 8 | 8 | 97,597,630 | 86,512,744 | +12-813 | +14-743 | 0-7944 | 0-8429 |
| Mining..... | 49 | 46 | 144,174,112 | 120,558,864 | +19-588 | +22-650 | 1-0377 | 1-1474 |
| Industrial..... | 200 | 181 | 60,313,516 | 51,393,255 | +17-357 | +12-477 | 0-8133 | 0-8548 |
| Domestic and Street Lighting..... | 1,638 | 1,453 | 7,558,808 | 6,463,516 | +16-946 | +16-366 | 2-0636 | 2-1894 |
| Total..... | 1,897 | 1,688 | 311,403,362 | 264,928,379 | +17-542 | +17-778 | 0-9447 | 1-0166 |
| Total Revenue..... | | | | | | | 1964 | 1963 |
| Working Costs..... | | | | | | | R | R |
| Surplus..... | | | | | | | 2,945,000 | 2,697,000 |
| Deficit..... | | | | | | | 2,808,000 | 2,477,000 |
| Capital Expenditure..... | | | | | | | 137,000 | 220,000 |
| | | | | | | | 3,941,000 | 1,509,000 |
| | | | | | | | | Accumulated to 31.12.64 |
| | | | | | | | | R |
| | | | | | | | | 718,000 |
| | | | | | | | | 15,000,000 |


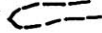
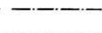
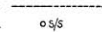
| Central Power Station (Kimberley) | |
|-----------------------------------|------------|
| 1964 | 1963 |
| 31,612,818 | 38,215,705 |
| 23,680 | 18,610 |
| 25,700 | 20,900 |
| 22-8 | 23-8 |
| 9-9 | 10-5 |
| 48,384 | 54,534 |
| 3-223 | 2-862 |
| 11,230 | 11,370 |
| 198,000 | 225,000 |
| 4-10 | 4-12 |

| FUEL: | |
|-----------------------------------|---------|
| Coal Consumed—tons..... | 54,534 |
| Average per unit sent out—lb..... | 2-862 |
| Calorific Value B. Th. U./lb..... | 11,370 |
| Total Cost—Rand..... | 225,000 |
| Cost per ton—Rand..... | 4-12 |



BORDER UNDERTAKING

CAPE EASTERN UNDERTAKING
REFERENCE

- Area of Supply..... 
- Border Undertaking..... 
- Transmission Lines..... 
- Transmission Lines Under Construction..... 
- Substation Site..... o/s



CAPE EASTERN UNDERTAKING

Licensed Area

As reported last year, a licence for the new Cape Eastern Undertaking was granted by the Electricity Control Board on 19th February, 1963, and the approval of the Minister, under Section 7 of the Act, was given on 5th April, 1963.

The area of supply is shown on the map on page 29.

Development

The erection of the 22 kV line from Aloes—which is the point of supply of the bulk supply purchased from the Municipality of Port Elizabeth—to Escom's distribution station at Dunbrody in the Sundays River Valley was completed early in the year. Construction of the Dunbrody 22/11 kV substation and the 11 kV line to Kirkwood was the first step and a supply to Kirkwood Municipality was commenced on 30th May, 1964, when their reticulation system was ready.

Supply to Richardson's Citrus (Pty) Ltd. was commenced in June, and to the Sundays River Citrus Co-operative Co. Ltd., at Hermitage in August.

Attention was then given to the extensions of the main 11 kV system and erecting spurs to connect farming consumers.

At the close of the year the main 11 kV system from Kirkwood to Addo was virtually completed, leaving the irrigation area northwest of Kirkwood to be reticulated during early 1965.

The connecting of rural consumers is proceeding, but is limited by the rate at which the wiring of premises can be carried out by the contractors operating in the area.

At the end of the year a total of fifty-two consumers were taking supply.

Developments in connection with supply in the Gamtoos River Valley are reported on page 12.

Output and Sales

Total sales by the Undertaking for the year 1964 amounted to 440,069 units.

The supply purchased from Port Elizabeth Municipality amounted to 500,331 units with a maximum demand of 490 kVA.

Financial

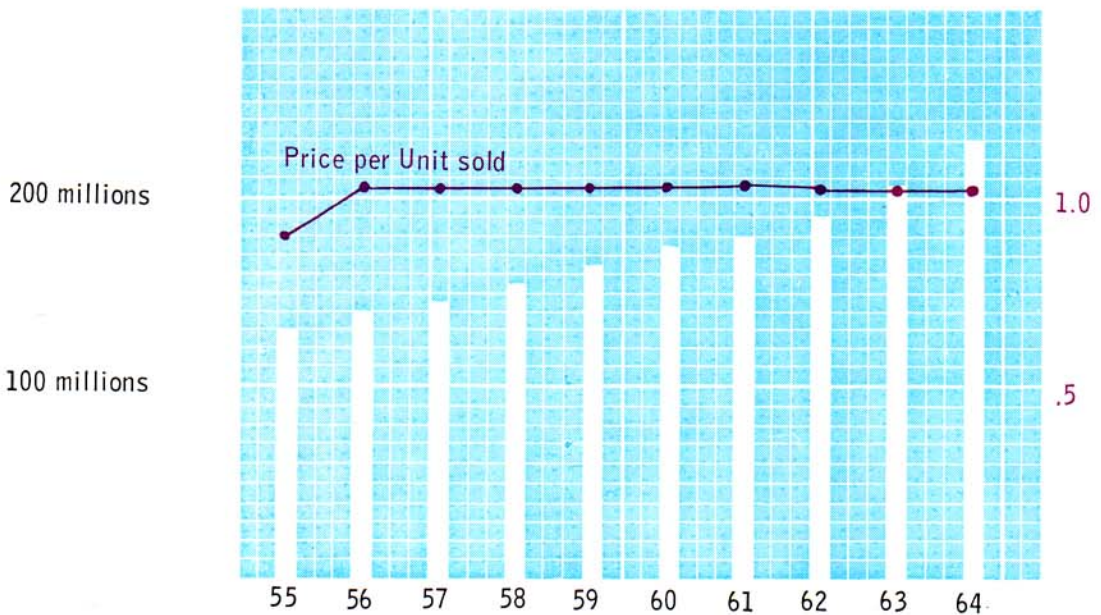
Total revenue for the year amounted to R16,788, resulting in a deficit on the year's working of R1,576.

CAPE EASTERN UNDERTAKING

1964

| CONSUMER | | SALES | | REVENUE FROM SALES | AVERAGE PRICE PER UNIT SOLD | |
|--|--------|---------|------------|-----------------------|--------------------------------|----------------------------|
| Class | Number | Units | % Increase | | 1964 | |
| | | | | R | c | c |
| Traction..... | | — | — | — | — | — |
| Bulk..... | 1 | 300,520 | — | 10,000 | 3·2188 | — |
| Mining..... | | — | — | — | — | — |
| Industrial..... | 13 | 124,605 | — | 6,000 | 4·9950 | — |
| Domestic and Street Light- ing..... | 38 | 14,944 | — | 1,000 | 5·9623 | — |
| Total..... | 52 | 440,069 | — | 17,000 | 3·8149 | — |
| | | | | 1964 | | Accumulated to 31.12.64 |
| | | | | R | R | R |
| Total Revenue..... | | | | 17,000 | — | |
| Working Costs..... | | | | 18,000 | — | |
| Surplus..... | | | | | | |
| Deficit..... | | | | 1,000 | — | 1,000 |
| Capital Expenditure..... | | | | 201,000 | — | 283,000 |

BORDER UNDERTAKING



The development of the Border Undertaking, which has been established in the area shown on the map on page 31, is depicted on the above diagram of units sold during the years 1955–1964.

The price of electricity in this Undertaking is indicated by the red line, which represents the average price per unit sold.

Details for the year 1964 of the sales of electricity to the major classes of consumers, the revenue received and working costs, and the statistics of generation of electricity in the West Bank power stations are given on page 33.

Output and Sales

The total sales by the Undertaking amounted to 228,767,756 units, an increase of 11.6 per cent over the figure for the previous year, while the system maximum demand increased from 41,830 kW in 1963 to 47,110 kW in 1964.

East London Municipality purchased 181,577,000 units, the increase for the year being 11.1 per cent. The maximum demand at the Municipality increased from 32,760 kVA in 1963 to 36,900 kVA in 1964, an increase of 12.7 per cent.

160 New consumers were connected during the year, the total number of consumers on the Undertaking at the end of the year being 3,463.

West Bank Power Station

No new items of major plant were commissioned during the year. The fourth 170,000 lb/hour boiler for West Bank 2 Power Station was on order and is due for commissioning in August, 1966.

Cyclone steam separators were installed in the drum of Boiler 2 (West Bank 2) and this has overcome the problem of "carry-over". A similar modification will be carried out on Boiler 1 early in 1965.

Although coal deliveries were generally satisfactory, the coal stocks remained at a comparatively low level during the major part of the year, and towards the end of the year reached a very low figure.

The efficiency of the combined stations increased from 21.1 per cent in 1963 to 21.5 per cent in 1964.

King William's Town Power Station

Operation of the 1,000 kW diesel set was confined to routine test runs. It was not necessary to make use of the steam plant during the year.

Generator 1, a Bellis & Morcom 500 kW reciprocating steam engine set, was disposed of as it was of little value as stand-by equipment.

Development of the Undertaking

Work on Tyume 66/33/11 kV sub-station, near Alice, which was commenced during 1963, was delayed due to late delivery of transformers and relay panels. The sub-station was finally commissioned in June, 1964.

The alterations to increase the transformer capacity at Fort Beaufort and Adelaide sub-stations, as part of the overall scheme to reinforce the King William's Town/Adelaide system, will be carried out early in 1965.

Several minor extensions to the distribution system were carried out and supplies were given to the St. Matthew's Hospital near Keiskama Hoek, Katberg Hotel, the South African Broadcasting Corporation's FM station near Butterworth, and to the Department of Water Affairs for construction of a dam near Seymour.

A scheme to supply several holiday camps and farmers in the Cintsa area along the coast North of East London was nearing completion at the close of the year.

A number of smaller industries, mainly quarries and brickfields, in the East London and King William's Town areas were connected to the system.

Financial

There was no change in the tariffs in force on the Undertaking during the year under review.

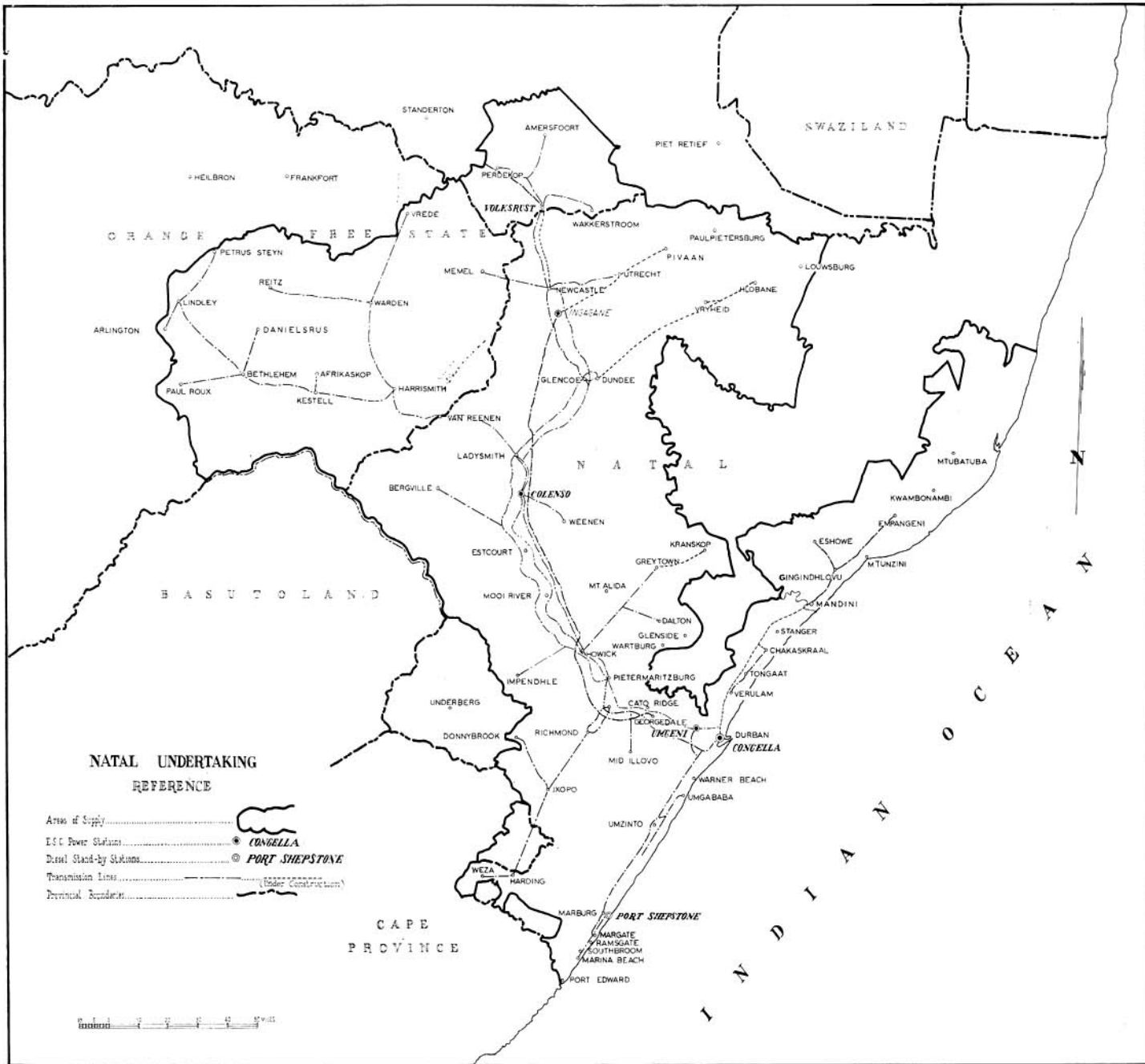
Total revenue for the year amounted to R2,482,999, an increase of 11.6 per cent over the revenue for 1963.

A surplus of R38,516 was realised on the year's working and the accumulated deficit was thus reduced to R103,862.

BORDER UNDERTAKING

| CONSUMER | | SALES | | | REVENUE FROM SALES | | AVERAGE PRICE PER UNIT SOLD | |
|-----------------------------------|-------|--------|-------------|-------------|--------------------|------|-----------------------------|-------------------------|
| | | Number | Units | % Increase | | | | |
| Class | 1964 | 1963 | 1964 | 1963 | 1964 | 1963 | 1964 | 1963 |
| Traction..... | 14 | 13 | 201,721,800 | 181,921,115 | + 8.377 | R | 1,963,000 | 1,774,000 |
| Bulk..... | 331 | 295 | 11,654,419 | 9,429,745 | + 23.592 | R | 239,000 | 193,000 |
| Industrial..... | 3,118 | 2,869 | 15,391,537 | 13,574,003 | + 13.390 | R | 277,000 | 254,000 |
| Domestic and Street Lighting..... | 3,463 | 3,177 | 228,767,756 | 204,924,863 | + 11.635 | R | 2,479,000 | 2,221,000 |
| Total..... | | | | | + 8.655 | | | |
| | | | | | | | 2,479,000 | 2,221,000 |
| | | | | | | | 1.0837 | 1.0839 |
| Total Revenue..... | | | | | | | 1964 | 1963 |
| Working Costs..... | | | | | | | R | R |
| Surplus..... | | | | | | | 2,483,000 | 2,224,000 |
| Deficit..... | | | | | | | 2,445,000 | 2,207,000 |
| Capital Expenditure..... | | | | | | | 38,000 | 17,000 |
| | | | | | | | 250,000 | 644,000 |
| | | | | | | | | Accumulated to 31.12.64 |

| | East London—West Bank No. 1 & 2 Power Station | | King William's Town Power Station (steam) | | King William's Town Power Station (oil) | |
|---|---|-------------|---|---------|---|--------|
| | 1964 | 1963 | 1964 | 1963 | 1964 | 1963 |
| Electricity Units Sent Out..... | 232,883,480 | 209,423,280 | — | 256,230 | 3,000 | 11,790 |
| Maximum Demand kW S.O. } Half-hour..... | 47,110 | 41,830 | — | 2,800 | 1,000 | 1,000 |
| } 2 Minute..... | 50,100 | 44,900 | — | 3,000 | 1,000 | 1,000 |
| Load Factor %..... | 56.3 | 57.2 | — | — | — | — |
| Thermal Efficiency % S.O..... | 21.5 | 21.1 | — | — | — | — |
| FUEL: | | | | | | |
| Coal Consumed—tons..... | 160,415 | 146,134 | — | 325 | — | — |
| Average per unit sent out—lb..... | 1.378 | 1.396 | — | 2.530 | — | — |
| Calorific Value B. Th. U./lb..... | 11,540 | 11,580 | — | — | — | — |
| Total Cost—Rand..... | 804,000 | 734,000 | — | 1,000 | — | — |
| Cost per ton..... | 5.01 | 5.02 | — | 4.58 | — | — |
| Fuel oil consumed—lb..... | — | — | — | — | 2,075 | 6,782 |
| Fuel oil per S.O.—lb..... | — | — | — | — | 0.691 | 0.575 |



NATAL UNDERTAKING



The growth of what is now the Natal Undertaking, which serves the two licensed areas shown on page 34, is depicted on the above diagram of units sold during the past ten years.

The price of electricity in the Undertaking and the average price in the former Undertakings is indicated by the red line, which represents the average price per unit sold.

Details for the year 1964 of the units sold to the major classes of consumers, the revenue received and working costs, and the statistics of the generation of electricity in the Natal power stations are given in the tables on page 37 and 38.

Amalgamation of Natal Undertakings

As reported on page 9, the two Undertakings, established in terms of the Natal Central Licence, 1927, and the Natal Southern Licence, 1927, were amalgamated with effect from the month of April, 1964, this being the date of introducing the revision of tariffs which was made to take account of the changes in cost structure as a result of commissioning the Ingagane Power Station.

Although in 1964 Ingagane Power Station could not be operated as a base load station to the extent that it is designed to do, nevertheless the higher efficiency of the 100 MW sets and the saving in railage on coal at this pit-head power station are reflected in the year's costs: and the average cost per unit sold decreased in 1964 by 2.4 per cent.

Output and Sales

The output from the combined stations increased to 3,012 million units, an increase of 14.6 per cent over the 1963 figure; and the maximum demand rose from 465,660 kW to 515,660 kW.

Sales increased to 2,922 million units, which was an increase of 14.9 per cent—the main increases being in the supplies to the Durban Corporation, the Pietermaritzburg Corporation, the traction supplies to the South African Railways and the supply to Feralloys, Limited, works at Cato Ridge.

Thirty five large power consumers were connected up during the year.

Ingagane Power Station

As explained last year, although the first set and boiler in Ingagane Power Station went into service in April, 1963, operation of the Station had to be restricted within the limits of safe working and the existing transmission facilities. The 275 kV lines between Ingagane and Georgedale distribution station and the equipment at Georgedale were completed and brought into service in stages during the year.

The second turbo-generator in Ingagane was commissioned on 27th February, 1964, using steam from No. 1 Boiler; and the second boiler was steamed on 6th May, 1964.

Distribution Systems

The Volksrust—Platrand 88 kV line which supplies the traction substations at Sandspruit and Perdekop was completed during March, 1964; and work was started on the Newcastle—Volksrust section of the Ingagane—Volksrust 88 kV line which will supplement the existing 88 kV line from Newcastle.

Construction of the Craigsid—Hlobane 88 kV line was also commenced in the second half of 1964, for the supply to Hlobane Colliery near Vryheid.

The capacity of Feralloys substation was increased to 40 MVA to cater for the load of two additional furnaces, and the increased supply was made available in February, 1964.

At Hammarsdale a new 88/11 kV substation with a firm capacity of 7.5 MVA was completed and commissioned during July, 1964, to provide for the development of the border area industrial township of Elangeni.

Progress in the development of the transmission system to Zululand is reported on page 12.

Rural Electrification

A total of 297 new rural consumers were given supply in 1964. A large number of the new supplies were in the area between Durban and Pietermaritzburg; but the major developments of new networks

are at Greytown, Hammarsdale and Umlaas Road, and in the construction of the Danielsrus scheme near Bethlehem.

Financial

As reported above, new tariffs were introduced from April, 1964, when consequential adjustments were also made to the surcharges levied in the North Coast and South Coast areas.

Revenue for the year amounted to R20,486,000, against working costs of R19,944,000; so that a surplus of R542,000 was realized on the year's working. The accumulated surplus at the 31st December, 1964, was R702,000.

NATAL UNDERTAKING

| CONSUMER Class | Number | | Units | | % Increase | | REVENUE FROM SALES | | AVERAGE PRICE PER UNIT SOLD | |
|-----------------------------------|--------|--------|---------------|---------------|------------|----------|--------------------|------------|-----------------------------|--------|
| | 1964 | 1963 | 1964 | 1963 | 64/63 | 63/62 | 1964 | 1963 | 1964 | 1963 |
| | | | | | | | R | R | c | c |
| Traction..... | 1 | 2 | 521,314,806 | 465,998,410 | + 11.871 | + 9.856 | 3,825,000 | 3,534,000 | 0.7338 | 0.7582 |
| Bulk..... | 21 | 21 | 1,904,045,462 | 1,685,596,820 | + 12.960 | + 11.150 | 12,256,000 | 11,071,000 | 0.6437 | 0.6568 |
| Mining..... | 19 | 19 | 72,519,243 | 64,626,978 | + 12.212 | + 13.343 | 558,000 | 520,000 | 0.7694 | 0.8046 |
| Industrial..... | 1,641 | 1,530 | 372,780,818 | 279,908,884 | + 33.179 | + 2.784 | 2,855,000 | 2,228,000 | 0.7659 | 0.7962 |
| Domestic and Street Lighting..... | 12,171 | 11,743 | 51,438,442 | 47,457,984 | + 8.387 | - 5.897 | 904,000 | 861,000 | 1.7574 | 1.8147 |
| Total..... | 13,853 | 13,315 | 2,922,098,771 | 2,543,589,076 | + 14.881 | + 9.615 | 20,398,000 | 18,214,000 | 0.6981 | 0.7161 |

| | 1964 | | 1963 | | Accumulated to 31.12.64 |
|--------------------------|------------|------------|------------|------------|-------------------------|
| | R | R | R | R | |
| Total Revenue..... | 20,486,000 | 18,271,000 | 20,486,000 | 18,271,000 | R |
| Working Costs..... | 19,944,000 | 17,796,000 | 19,944,000 | 17,796,000 | R |
| Surplus..... | 542,000 | 475,000 | 542,000 | 475,000 | 702,000 |
| Deficit..... | — | — | — | — | — |
| Capital Expenditure..... | 4,469,000 | 15,329,000 | 4,469,000 | 15,329,000 | 115,352,000 |

| | Colenso Power Station | | Congella Power Station No. 1 and 2 | |
|---|-----------------------|-------------|------------------------------------|-------------|
| | 1964 | 1963 | 1964 | 1963 |
| Electricity Units Sent Out..... | 595,313,590 | 614,542,450 | 689,271,700 | 630,387,900 |
| Maximum Demand kW S.O. } Half-hour..... | 119,020 | 121,940 | 128,095 | 136,510 |
| Load Factor %..... | 143,000 | 140,000 | 148,000 | 150,000 |
| Thermal Efficiency % S.O..... | 56.9 | 57.5 | 53.2 | 52.7 |
| | 18.3 | 18.2 | 20.8 | 20.9 |
| FUEL: | | | | |
| Coal Consumed—tons..... | 487,808 | 498,144 | 491,110 | 448,962 |
| Average per unit sent out—lb..... | 1.639 | 1.621 | 1.451 | 1.424 |
| Calorific Value B. Th. U./lb..... | 11,400 | 11,550 | 11,300 | 11,450 |
| Total Cost—Rand..... | 1,643,000 | 1,733,000 | 1,595,000 | 1,612,000 |
| Cost per ton—Rand..... | 3.37 | 3.48 | 3.25 | 3.59 |

NATAL UNDERTAKING

| | Umgeni Power Station | | Ingagane Power Station | |
|-----------------------------------|----------------------|---------------|------------------------|-------------|
| | 1964 | 1963 | 1964 | 1963 |
| Electricity Units Sent Out..... | | | | |
| Maximum hour } Half-hour..... | 1,142,049,716 | 1,129,125,800 | 584,448,800 | 253,737,700 |
| Demand kW S.O. } 2 Minute..... | 223,200 | 200,000 | 152,000 | 96,000 |
| Load Factor %..... | 237,000 | 216,000 | 160,000 | — |
| Thermal Efficiency % S.O..... | 58.3 | 64.4 | 43.8 | 45.7 |
| | 24.0 | 24.4 | 28.6 | 28.9 |
| FUEL: | | | | |
| Coal Consumed—tons..... | 692,693 | 683,698 | 319,162 | 138,658 |
| Average per unit sent out—lb..... | 1.213 | 1.211 | 1.092 | 1.093 |
| Calorific Value B. Th. U./lb..... | 11,720 | 11,560 | 11,060 | 10,790 |
| Total Cost—Rand..... | 2,996,000 | 2,989,000 | 722,000 | 313,000 |
| Cost per ton—Rand..... | 4.32 | 4.37 | 2.26 | 2.27 |

| | Port Shepstone Power Station (Oil) | |
|-----------------------------------|------------------------------------|--------|
| | 1964 | 1963 |
| Electricity Units Sent Out..... | | |
| Maximum hour } Half-hour..... | 23,262 | 62,046 |
| Demand kW S.O. } 2 Minute..... | 2,950 | 3,429 |
| Load Factor %..... | 3,100 | 3,465 |
| Thermal Efficiency % S.O..... | | |
| FUEL: | | |
| Coal Consumed—tons..... | | |
| Average per unit sent out—lb..... | | |
| Calorific Value B. Th. U./lb..... | | |
| Total Cost Rand..... | | |
| Cost per ton Rand..... | | |
| Fuel oil—lb..... | 14,830 | 36,706 |
| Fuel oil per U. S.O..... | 0.638 | 0.590 |



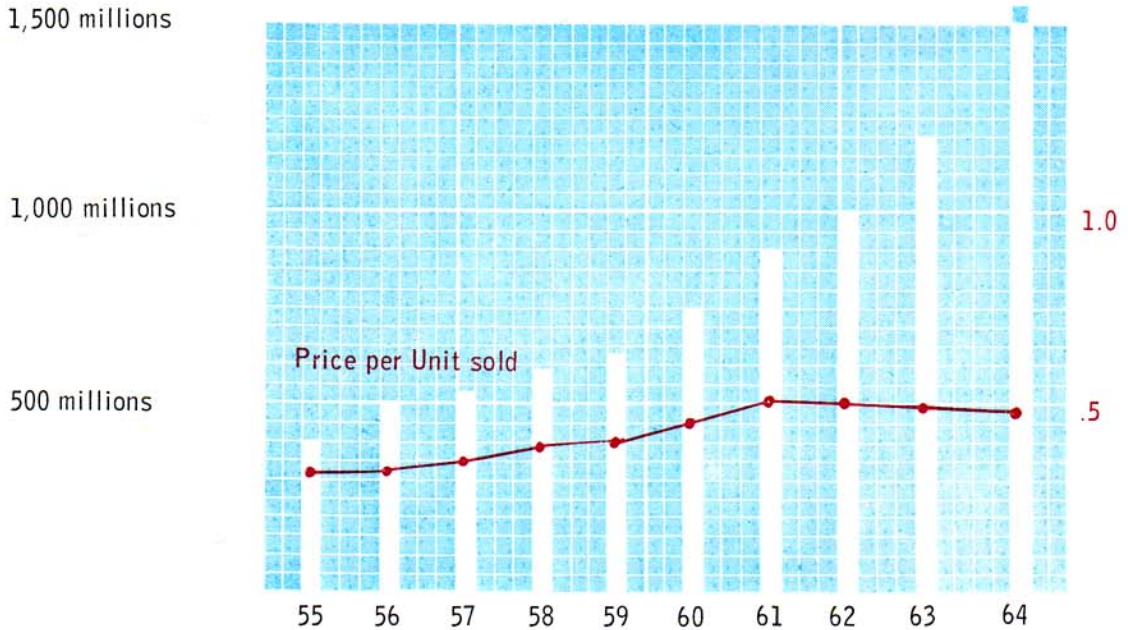
EASTERN TRANSVAAL UNDERTAKING

REFERENCE

- Area of Supply
- E.S.C. Power Stations ● WILGE ● CAMDEN
- Transmission lines
- Transmission lines under construction



EASTERN TRANSVAAL UNDERTAKING



The rapid expansion of the Eastern Transvaal Undertaking which serves the area shown on the map on page 39, is depicted on the above diagram of units sold in the years 1955-1964.

The price of electricity in the Undertaking is indicated by the red line, representing the average price per unit sold.

Details for the year 1964 of the units sold to the major classes of consumers, the revenue received and working costs, and the statistics of generation of electricity in the power stations of the Undertaking are given in the tables on page 41.

Area of Supply

The Commission's application for extension of the area of supply of the Eastern Transvaal Licence to include the area in the vicinity of Gravelotte was granted by the Electricity Control Board on the 22nd June, 1964.

Sales of Electricity

Total sales of electricity in 1964 rose to 1,553 million units, which is an increase of 19.8 per cent on units sold in 1963.

Expansion was recorded in all categories of supply. The gold mines on the Evander gold field purchased 341 million units, an increase of 45 million units on the 1963 figures. Units sold to coal mines rose from 164 million to 212 million. Supplies were started to two large steel works, Transalloys (Pty) Limited, near Witbank, and R.M.B. Alloys, Ltd., at Middelburg. These Companies, together with Ferrometals, Limited, purchased 311 million units. The supply taken by Phosphate Development Corporation (Pty) Ltd. ("Foskor") at Phalaborwa increased from 20 million to 56 million units.

Komati Power Station

Construction of Komati Power Station was pressed on as rapidly as possible. The fifth set (100,000 kW) was commissioned on 5th February, 1964, with No. 6 boiler which was steamed at the beginning of January. The sixth set (125,000 kW) was commissioned on 29th September, 1964, and the seventh unit (125,000 kW) was taken into service on 17th February, 1965.

With a total of 750,000 kW installed, Komati is Escom's largest power station; and its output in 1964 was almost 3,000 million units. The thermal efficiency of the station at 28.7 per cent (sent out) represents a substantial improvement on the old, and smaller stations such as Klip (20.4%) Vaal (20.8%) and Vierfontein (22.4%).

Transmission and Distribution Systems

For the supply to Brakfontein traction substation (near Delmas) an 88 kV line was built from Arbor traction substation to Brakfontein. This supply was furnished on 8th January, 1965.

Work on the Witbank—Komatipoort electrification is progressing. By the end of the year 2×16.75 miles of 88 kV lines had been completed to Middelburg and Olifants River traction substations, and work was proceeding on the 132 kV lines from Rockdale to Machadodorp, Marathon and Komatipoort. The sites for the 16 substations and 5 tee substations had been selected and were being levelled.

For the supply to R.M.B. Alloys, Ltd., the 132 kV line from Kudu to Rockdale distribution station was completed, and with Rockdale equipped with 1×30 MVA transformer, the initial supply was furnished on 29th March, 1964. The second 30 MVA transformer



**RAND AND ORANGE FREE STATE UNDERTAKING
REFERENCE**

- Area of Supply
- E.S.C. Power Stations
- Transmission Lines
- Transmission Lines under construction



which was damaged in transit had to be returned to the makers' works for repair, and a temporary transformer was installed at Rockdale. It is expected that the third 30 MVA transformer will be available for load in July, 1965. Four 22 kV feeders are provided between Rockdale and the consumer's substation.

The supply to Transalloys (Pty) Ltd., was furnished over 10 miles of 132 kV line teed off the Wilge—Grootpan No. 1 line, and an alternative means of supply from Witbank Power Station was provided in the early months of 1965. Transalloys substation has been equipped with 2 × 45 MVA transformers.

In order to meet the growing loads in the Kiepersol, Graskop and Sabie areas, a 66 kV line was built from Marathon to Kiepersol distribution station. This distribution station was equipped with 2 × 5,000 kVA transformers and was brought into service on 5th November, 1964, from which date the Gorge power station was put on a caretaker basis.

In order to provide construction supplies for Camden Power Station and the Usutu Collieries, an 88 kV line was built from Ermelo to Camden construction substation. Erection of the 27 mile 88 kV line from Uitkoms switching station (adjacent to Camden) to Jericho dam pumping station was commenced in April, 1965.

Considerable work has been done in the development of the Phalaborwa—Gravelotte area. The permanent substation for the supply to Bosveld Kunsmis Bpk., was completed in October, 1964, and the permanent substation for the supply to Phalaborwa Town was 90% complete. The site for the Palabora Mining Company substation was selected, and survey of the route of the 132 kV lines from Foskor distribution station was completed. A site has also been selected for Selati distribution station and the route

for the 132 kV line from Foskor to Selati was cleared of bush. The route of the 66 kV line from Selati to Gravelotte has also been cleared, and the site for the Gravelotte substation has been chosen. A supply to the South African Feldspar mine at Mica was given in August, 1964.

Work is in hand on the 275 kV line between Komati Power Station and Kruispunt distribution station, and on the Komati—Leeuwkloof and Komati—Camden 275 kV lines.

Rural Electrification

During the year 35 miles of 22 kV lines and 179 miles of 11 kV lines were added to the rural networks on the Undertaking. A total of 136 farms and 107 supplies to other consumers were connected, the major developments being in the following schemes:—

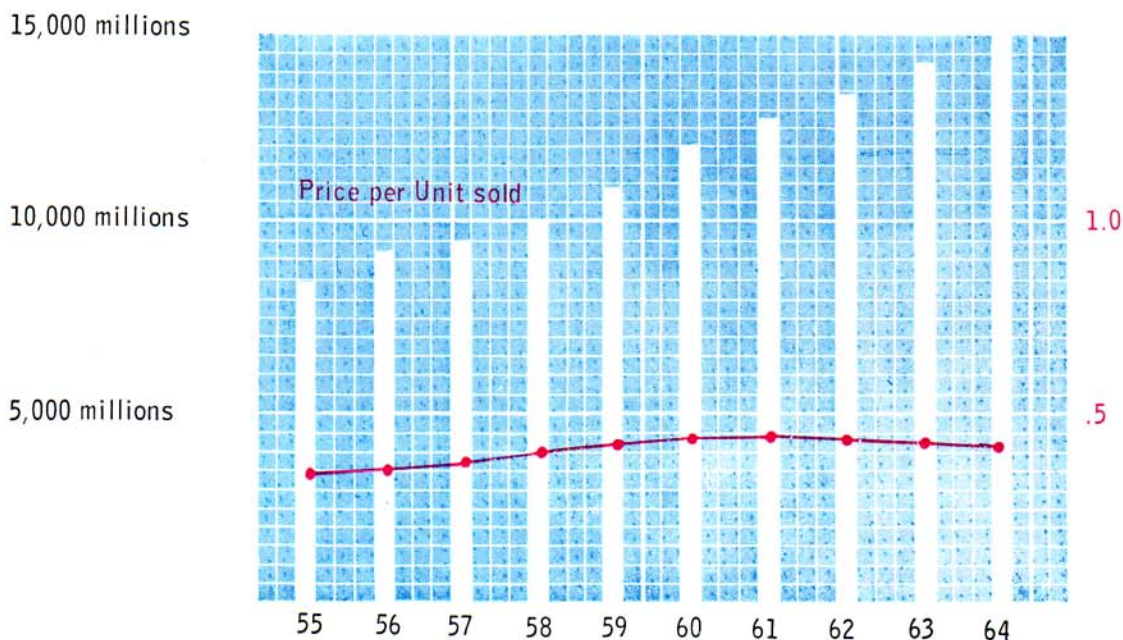
| | Farm supplies | Consumers who are not farmers |
|--|---------------|-------------------------------|
| Groblersdal — Loskopdam — Marble Hall..... | 44 | |
| Nelspruit—White River..... | 14 | 13 |
| Sabie—Graskop—Kiepersol.... | 20 | 20 |
| Highveld area..... | 22 | 20 |
| Malelane..... | 11 | 1 |
| Acornhoek and Klaserie..... | 2 | 6 |
| Louws Creek..... | | 6 |
| Wonderfontein and Morgenzon. | 14 | |

A great many investigations into possible new schemes were carried out.

Financial

Tariffs were unchanged in 1964; but the revenue increased to R7,847,000 and a surplus of R65,000 was realized on the year's working.

RAND AND ORANGE FREE STATE UNDERTAKING



The diagram on page 43 shows the growth of the electricity supply furnished from the Rand and O.F.S. Undertaking in the years 1955-1964.

The price of electricity is shown by the red line on the diagram, representing the average price per unit sold.

Details for the year 1964 of the units sold to the major classes of consumers, the revenue and working costs and statistics relating to the generation of electricity in the power stations of the Undertaking are given in the tables which are printed on pages 45 to 47.

Operation of the Pooled Power Stations

Under the Licences granted by the Electricity Control Board, the stations in this large Undertaking are operated together with Witbank and Komati power stations of the Eastern Transvaal Undertaking as a single system of pooled stations.

With Komati power station at 625,000 kW installed, the capacity of generating plant installed in the pooled power stations was raised to 3,243,400 kW. Plant under construction or on order at the 31st December, 1964, for Komati and Camden power stations will raise the total to about 4,600,000 kW.

The output from the pooled stations in 1964 was 18,047 million units (sent out), and reflected an increase of 7.9 per cent over the output for 1963. The maximum simultaneous demand on the system was 2,690,637 kW: and the supplies taken by the three Undertakings which draw their power from this pool were as follows:—

| | Maximum demand in the year | Total Units (millions) |
|------------------------------------|-------------------------------|---------------------------|
| Rand and O.F.S. Undertaking..... | 2,411,743 kW | 16,190 kWh |
| Eastern Transvaal Undertaking..... | 248,405 | 1,560 |
| Cape Northern Undertaking..... | 55,920 | 318 |

The average price per unit sent out from the pooled stations, including financial charges, amounted to 3009 cent per kWh.

Sales of Electricity and Compressed Air

The total sales of electricity to consumers in the Rand and O.F.S. Undertaking rose to 14,973 million units, an increase of 6.1 per cent; but sales of compressed air dropped from 115 million to 94 million air units.

Sales to the South African Railways for electric traction increased by 16.6 per cent; and the increase in bulk supplies to local authorities was again at the exceptionally high rate of 12.2 per cent.

Units sold to mines increased by 3.7 per cent over Springs and Randfontein is shown again in the table of units sold in the individual gold mining areas:—

| | Units sold (millions) | | | |
|------------------------|-----------------------|-------|-------|-------|
| | 1961 | 1962 | 1963 | 1964 |
| Witwatersrand..... | 3,089 | 2,934 | 2,815 | 2,716 |
| Klerksdorp..... | 1,194 | 1,350 | 1,412 | 1,488 |
| Far West Rand..... | 1,566 | 1,812 | 1,949 | 2,040 |
| Orange Free State..... | 2,131 | 2,225 | 2,282 | 2,449 |

Supply to consumers classed as Industrial increased by 7.2 per cent, the units sold to the main groups of industrial undertakings being as follows:—

| | Units sold (millions of kWh) | |
|---|---------------------------------|-------|
| | 1964 | 1963 |
| Building and Cement (including quarrying)..... | 305 | 267 |
| Chemical (including pharmaceutical)..... | 491 | 528 |
| Engineering (including the motor industry)..... | 343 | 192 |
| Foodstuffs, consumer goods and commercial..... | 501 | 464 |
| Iron, steel and base metals..... | 1,356 | 1,276 |
| Paper Production..... | 212 | 212 |

Rural Electrification

During the year construction work was spread over a wide area, and many farm schemes in country districts were started. Altogether 497 miles of new power lines of 11 kV and lower voltages were added to the Undertaking's rural circuits. The number of farm supplies given during 1964 was raised to 276; and in

the 1963 sales: but the now familiar pattern of power consumption declining in the old area between the rural areas 710 other consumers, for the most part owners of small holdings, were also connected up.

In the peri-urban areas 1,217 new consumers were added to the Undertaking's peri-urban reticulation networks.

Financial

As reported on page 16, a small reduction of 1 per cent in tariffs was made from January, 1964.

Total revenue for the year amounted to R62,666,000. A loss of R716,000 was shown on the year's accounts; and the accumulated surplus was thus reduced to R2,720,000.

RAND AND ORANGE FREE STATE UNDERTAKING

| CONSUMER | | Number | | SALES | | % Increase | | REVENUE FROM SALES | | AVERAGE PRICE PER UNIT SOLD | |
|--|--------|--------|----------------|----------------|-------|------------|---------|--------------------|------------|-----------------------------|--------|
| | | 1964 | 1963 | 1964 | 1963 | 64/63 | 63/62 | 1964 | 1963 | 1964 | 1963 |
| Class | | | | | Units | | | | | | |
| ELECTRICITY: | | | | | | | | | | | |
| Traction .. | 2 | 2 | 589,982,452 | 505,756,389 | | +16·653 | + 5·596 | 2,927,000 | 2,540,000 | 0·4961 | 0·5022 |
| Bulk..... | 99 | 100 | 1,933,998,566 | 1,741,779,559 | | +12·184 | +13·447 | 8,821,000 | 8,079,000 | 0·4514 | 0·4638 |
| Mining..... | 110 | 113 | 9,055,202,321 | 8,734,833,861 | | + 3·668 | + 2·051 | 35,570,000 | 34,968,000 | 0·3928 | 0·4003 |
| Industrial..... | 1,074 | 979 | 3,262,519,200 | 3,038,962,089 | | + 7·356 | +13·702 | 12,813,000 | 12,053,000 | 0·3927 | 0·3966 |
| Domestic and Street Light- ing..... | 11,210 | 9,020 | 111,719,084 | 86,511,372 | | +29·138 | +27·716 | 1,157,000 | 874,000 | 1·0357 | 1·0107 |
| Total Electricity..... | 12,495 | 10,214 | 14,973,421,623 | 14,107,843,270 | | + 6·135 | + 5·962 | 61,288,000 | 58,514,000 | 0·4093 | 0·4148 |
| AIR: | | | | | | | | | | | |
| Bulk..... | 1 | 1 | 4,535,098 | 4,037,856 | | +12·315 | +20·042 | | | | |
| Mining..... | 8 | 9 | 80,082,223 | 101,712,196 | | -27·010 | - 1·601 | | | | |
| Industrial..... | 21 | 22 | 9,296,888 | 9,453,554 | | - 1·685 | + 4·440 | | | | |
| Total Air..... | 30 | 32 | 93,914,209 | 115,203,606 | | -22·669 | - 0·500 | 1,078,000 | 1,601,000 | 1·1476 | 1·3898 |
| Total Electricity and Air.. | 12,525 | 10,246 | 15,067,335,832 | 14,223,046,876 | | + 5·936 | + 5·906 | 62,366,000 | 60,115,000 | 0·4139 | 0·4227 |
| | | | | | | | | | | Accumulated to 31.12.64 | |
| | | | | | | | | | | 1963 | |
| | | | | | | | | | | R | |
| | | | | | | | | | | 60,382,000 | |
| | | | | | | | | | | 60,000,000 | |
| | | | | | | | | | | 716,000 | |
| | | | | | | | | | | 382,000 | |
| | | | | | | | | | | 13,740,000 | |
| | | | | | | | | | | 2,720,000 | |
| | | | | | | | | | | 354,418,000 | |

Total Revenue.....
Working Costs.....
Deficit 1964/Surplus 1963.....
Capital Expenditure.....

RAND AND ORANGE FREE STATE UNDERTAKING

| | Highveld Power Station | | Klip Power Station | |
|-----------------------------------|------------------------|---------------|--------------------|---------------|
| | 1964 | 1963 | 1964 | 1963 |
| Electricity Units Sent Out..... | | | | |
| Maximum..... | 3,205,814,621 | 2,993,350,326 | 2,165,822,826 | 2,388,920,738 |
| Demand kW S.O. } 1 Hour..... | 465,709 | 459,650 | 363,380 | 375,927 |
| Load Factor %..... | 78.4 | 74.3 | 67.8 | 72.5 |
| Thermal Efficiency % S.O..... | 28.7 | 28.5 | 20.4 | 20.3 |
| FUEL: | | | | |
| Coal Consumed—tons..... | 2,189,899 | 2,050,504 | 1,935,109 | 2,096,275 |
| Average per unit sent out—lb..... | 1.369 | 1.370 | 1.787 | 1.755 |
| Calorific Value B. Th. U./lb..... | 8,700 | 8,740 | 9,410 | 9,590 |
| Total Cost—Rand..... | 3,625,000 | 3,173,000 | 3,913,000 | 4,280,000 |
| Cost per ton—Rand..... | 1.66 | 1.55 | 2.02 | 2.04 |

| | Rosherville Power Station | | Taaibos Power Station | |
|-----------------------------------|---------------------------|------------|-----------------------|---------------|
| | 1964 | 1963 | 1964 | 1963 |
| Electricity Units Sent Out..... | | | | |
| Maximum hour..... | 10,234,553 | 26,684,672 | 3,116,614,682 | 3,057,745,248 |
| Demand kW S.O. } 1 Hour..... | 20,906 | 30,257 | 449,716 | 441,885 |
| Load Factor %..... | 4.9 | 10.1 | 78.9 | 79.0 |
| Thermal Efficiency % S.O..... | 7.8 | 9.1 | 26.3 | 26.0 |
| FUEL: | | | | |
| Coal Consumed—tons..... | 22,970 | 51,217 | 2,283,675 | 2,247,275 |
| Average per unit sent out—lb..... | 3.636 | 3.839 | 1.465 | 1.470 |
| Calorific Value B. Th. U./lb..... | 9,540 | 9,760 | 8,850 | 8,910 |
| Total Cost—Rand..... | 206,000 | 273,000 | 3,602,000 | 3,819,000 |
| Cost per ton—Rand..... | 2.15 | 2.13 | 1.58 | 1.70 |

RAND AND ORANGE FREE STATE UNDERTAKING

| | Vaal Power Station | | Vereeniging Power Station | |
|------------------------------------|--------------------|---------------|---------------------------|-------------|
| | 1964 | 1963 | 1964 | 1963 |
| Electricity Units Sent Out | | | | |
| Maximum | 2,029,735,725 | 2,068,309,230 | 616,777,905 | 712,382,065 |
| Demand kW S.O. } 1 Hour | 292,052 | 291,842 | 138,900 | 135,805 |
| Load Factor % | 79.1 | 80.9 | 50.6 | 59.9 |
| Thermal Efficiency % S.O. | 20.8 | 21.0 | 14.5 | 15.0 |
| FUEL: | | | | |
| Coal Consumed—tons | 1,960,470 | 2,015,140 | 894,284 | 954,451 |
| Average per unit sent out—lb. | 1.932 | 1.949 | 2.900 | 2.680 |
| Calorific value B. Th. U./lb. | 8,500 | 8,330 | 8,230 | 8,490 |
| Total Cost—Rand.. .. . | 2,045,000 | 2,066,000 | 940,000 | 1,021,000 |
| Cost per ton—Rand | 1.04 | 1.03 | 1.05 | 1.07 |

| | Vierfontein Power Station | | Wilge Power Station | |
|------------------------------------|---------------------------|---------------|---------------------|---------------|
| | 1964 | 1963 | 1964 | 1963 |
| Electricity Units Sent Out | | | | |
| Maximum | 1,807,195,056 | 1,757,404,058 | 1,533,277,399 | 1,537,911,392 |
| Demand kW S.O. } 1 Hour | 330,590 | 310,891 | 224,834 | 221,448 |
| Load Factor % | 67.6 | 64.5 | 77.6 | 79.3 |
| Thermal Efficiency % S.O. | 22.4 | 22.4 | 24.8 | 25.1 |
| FUEL: | | | | |
| Coal Consumed—tons | 1,519,988 | 1,475,552 | 1,100,488 | 1,085,574 |
| Average per unit sent out—lb. | 1.682 | 1.679 | 1.436 | 1.412 |
| Calorific value B. Th. U./lb. | 9,040 | 9,080 | 9,640 | 9,610 |
| Total Cost—Rand.. .. . | 2,159,000 | 2,107,000 | 1,057,000 | 1,033,000 |
| Cost per ton—Rand | 1.42 | 1.43 | 0.96 | 0.95 |

MUNICIPAL ELECTRICITY SUPPLY SCHEMES

Reports submitted during the year by the Commission to the Administrators of the various Provinces and of South West Africa on the proposals of local authorities to establish electricity undertakings or to enlarge existing undertakings were as follows:—

| New Schemes | Extensions |
|--------------------|-------------------|
| CAPE: | |
| Strydenburg | Aliwal North |
| | Calitzdorp |
| | Lusikisiki |
| | Molteno |
| | Port Elizabeth |
| | Sterkstroom (2) |
| | Umtata |
| | Vredendal |
| TRANSVAAL | Bedfordview |
| | Nelspruit |
| | Piet Retief |
| | Pongola |
| | Pretoria. |
| | White River |

NATAL:

Colenso

ORANGE FREE STATE:

Hobhouse

Bloemfontein (2)
Deneysville
Ficksburg
Harrismith
Kroonstad (2)
Ladybrand
Rouxville
Smithfield
Virginia
Wepener
Zastron

SOUTH WEST AFRICA:

Windhoek

Up to the 31st December, 1964, a total of 1843 reports on municipal supply schemes had been submitted by the Commission. Of these 298 were in respect of new schemes, 917 were in respect of extension schemes and 628 were reports on tenders.

ANNEXURES

The Commission submits for the 1964 with this Report:—

ANNEXURE A: AUDITORS' REPORT AND ACCOUNTS

The Report of the Auditors

Balance Sheet

Schedule No. 1—Expenditure on Capital Account.

Schedule No. 2—Investments of the Redemption Fund.

Schedule No. 3—Loan Capital.

Account No. 1—Redemption Fund Account.

Account No. 2—Reserve Fund Account.

Revenue Accounts in respect of:

Account No. 3—Cape Western Undertaking.

Account No. 4—Cape Northern Undertaking.

Account No. 5—Cape Eastern Undertaking.

Account No. 6—Border Undertaking.

Account No. 7—Natal Undertaking.

Account No. 8—Natal Southern Undertaking.

Account No. 9—Natal Central Undertaking.

Statement of Pooled Costs and Allocation for Natal Southern and Natal Central Undertakings.

Account No. 10—Eastern Transvaal Undertaking.

Account No. 11—Rand and Orange Free State Undertaking.

Statement of Pooled Costs and Allocation for Rand and Orange Free State and Eastern Transvaal Undertakings.

ANNEXURE B: STATISTICAL AND OTHER STATEMENTS

Statement No. 1—Summary of principal plant and equipment installed at the Commission's undertakings as at 31st December, 1964.

Statement No. 2—Summary of principal plant and equipment in course of installation or on order as at 31st December, 1964.

Statement No. 3—Units sold to all consumers during the past forty years.

Statement No. 4—Units sold and number of consumers, 1964.

Statement No. 5—Power Station Statistics, 1964.

Statement No. 6—Power purchased, 1964.

Statement No. 7—Water consumed by power stations, 1964.


Statement No. 8—Showing the price or rent of land or rights or interests in or over land or other property acquired or hired by the Commission during the 1964.

Statement No. 9—Coal used at the Commission's steamdriven power stations.

ANNEXURE C: NATIONAL STATISTICS

Tables illustrating the production and distribution of electricity, incorporating information supplied by courtesy of the Bureau of Census and Statistics (Pretoria).

Yours faithfully,



Chairman.

THE REPORT OF THE AUDITORS

The Chairman and Members,
Electricity Supply Commission,
Johannesburg.

Johannesburg,
30th April, 1965.

Gentlemen,

We have completed the audit of the books and accounts of the Commission for the year ended 31st December, 1964.

Redemption Fund

In the course of our audit we have examined the position of the Redemption Fund established by the Commission in terms of the Schedule to the Electricity Act 1958 to provide for the redemption of the loans issued by the Commission.

In the records of the Commission the Fund is divided into sections corresponding to its Undertakings. The Commission has invested the moneys accruing to each section of the Fund in the investments prescribed in the Schedule to the Act, and in valuing the Fund at 31st December, 1964, we have taken into account the market value of the investments at that date. The value of the Fund at 31st December, 1964, was in excess of the sum required, in terms of the Schedule to the Act, for the redemption of the respective loans.

The redemption periods fixed by the Commission do not exceed 25 years from the dates of issue of the respective loans.

The Minister has fixed the dates from which provision for redemption of Loans Nos. 49, 50 and 51 commenced at 1st July, 1964, 1st September, 1964, and 1st February, 1965, respectively. In accordance with the usual practice provision has also been made for the redemption of moneys expended out of subsequent loans on works which had come into commercial operation before 31st December, 1964.

Overseas Loans

Repayment of capital, in respect of Loans Nos. 20, 24 and 30, as laid down in the Loan Agreements, take

the place of contributions to Redemption Fund normally required to be made for loans issued by the Commission.

Loan No. 41 raised in Switzerland, has to be repaid by ten annual instalments from 1965 to 1974 but provision is being made for repayment by setting aside amounts over the period of the loan, i.e. 15 years.

Loan No. 48 from the International Bank for Reconstruction and Development is repayable by half-yearly instalments over a period of 8½ years from 1st December, 1963, but contributions are charged to Revenue Accounts of Undertakings on a 25 year sinking fund basis, the shortfall being met from local loans raised partly for this purpose.

Verification of Landed Properties, Rights and Investments

We have verified the existence of the titles of the landed properties and of the rights and investments as shown in the records of the Commission.

Head office Administration, Engineering and General Expenses

The net expenditure under this heading, after crediting Fees for reporting on Power Schemes of Local Authorities and amounts chargeable to Revenue Accounts under other headings, has been allocated to—

- (a) Capital and Reserve Fund Expenditure.
- (b) Revenue Accounts of all Undertakings in commercial operation.

The amount allocated to Revenue Accounts of Undertakings has been apportioned by the Commission. We have no reason to disagree with the apportionment so made.

Revenue Accounts

The following is a summary of the operations of the Commission's Undertakings for 1963 and 1964—

| | Surplus + Deficit — (In R1,000) | | Amounts set aside to Reserve Fund (In R1,000) | |
|--|---------------------------------------|-------------------|---|-------------------|
| | 1963 | 1964 | 1963 | 1964 |
| Cape Western..... | + R198,000 | + R44,000 | R582,000 | R582,000 |
| Cape Northern..... | + 220,000 | + 137,000 | 192,000 | 210,000 |
| Cape Eastern..... | — | 1,000 | — | — |
| Border..... | + 17,000 | + 38,000 | 90,000 | 90,000 |
| Natal..... | + 475,000 | + 543,000 | 801,000 | 970,000 |
| Eastern Transvaal..... | + 99,000 | + 65,000 | 503,000 | 822,000 |
| Rand & O.F.S..... | + 382,000 | — 716,000 | 3,675,000 | 3,836,000 |
| | + <u>R1,391,000</u> | + <u>R110,000</u> | <u>R5,843,000</u> | <u>R6,510,000</u> |
| Brought Forward from Previous year..... | | R4,869,000 | | |
| Net Accumulated Surplus at end of year as detailed in Balance Sheet..... | | R4,979,000 | | |

The former Natal Southern and Natal Central Undertakings were merged on 1st April, 1964, to form the Natal Undertaking. For purposes of comparison the above summary shows the combined figures of these Undertakings for 1963 and 1964.

Operations commenced during the year at the Cape Eastern Undertaking and resulted in a small deficit. The Rand and Orange Free State Undertaking shows a deficit on the year's operations of R716,000 which reduced its accumulated surplus to R2,720,000. In the case of all other Undertakings, the year's operations resulted in surpluses. The accumulated surplus of the Cape Northern Undertaking, which at the end of 1963 was considered high in relation to the revenue being earned, was further increased during the year, despite a reduction in charges in January, 1964. A further reduction in charges became effective in January, 1965.

Charges were also reduced for 1965 at Cape Western and Rand and Orange Free State Undertakings.

General

As the result of our audit of the books and accounts of the Commission for the year 1964 and, subject to

the foregoing remarks, in terms of Section 18(8) of the Electricity Act, 1958, we certify as follows:—

- (a) We have found the Accounts of the Commission to be in order.
- (b) The Accounts issued present a true and correct view of the financial position of the Commission and its transactions and of the results of trading.
- (c) Due provision has been made for the redemption and repayment of moneys borrowed by or advanced to the Commission.
- (d) As formerly, the Land and Rights, Buildings and Civil Works and Machinery and Plant are set out in the Balance Sheet on a cost basis.
- (e) Sums fixed by the Commission have been set aside to the Reserve Fund under Section 13 as prescribed.
- (f) All our requirements as Auditors have been complied with and carried out.

Yours faithfully,

ALEX AIKEN & CARTER,
HALSEY BUTTON & PERRY.
*Registered Accountants and
Auditors.*

ACCOUNTS

STATISTICAL AND OTHER STATEMENTS
NATIONAL STATISTICS

Electricity Supply Commission

Established under the Electricity Act, 1922

BALANCE SHEET AT 31st DECEMBER, 1964

| | | | | | |
|----------------------|--|--|---------------------|--|----------------------|
| 1963 R612,475,000 | | Loans Outstanding | R640,201,000 | | 1963 R637,076,000 |
| 28,412,000 | | (Schedule No. 3) | | | |
| 43,092,000 | | Loans Repaid Less Assets Sold | 40,109,000 | | |
| 14,680,000 | | Loans repaid (Schedule No. 3)..... | R54,892,000 | | 6,848,000 |
| | | Less: Cost of Assets sold proceeds credited to Redemption Fund..... | 14,783,000 | | 135,007,000 |
| 161,671,000 | | | | | 495,221,000 |
| 42,643,000 | | Redemption Fund | 175,658,000 | | |
| 4,869,000 | | (Account No. 1) | | | 23,693,000 |
| | | Reserve Fund | 50,575,000 | | |
| | | (Account No. 2) | | | 20,277,000 |
| | | Balance on Revenue Accounts | 4,979,000 | | 3,416,000 |
| | | (Accounts Nos. 3 to 11) | | | |
| 404,000 | | Cape Western Undertaking..... | 448,000 | | |
| 581,000 | | Cape Northern Undertaking..... | 718,000 | | |
| Dr. 142,000 | | Cape Eastern Undertaking..... | Dr. 1,000 | | |
| | | Border Undertaking..... | Dr. 104,000 | | |
| 280,000 | | Natal Undertaking..... | 702,000 | | |
| Dr. 121,000 | | Natal Southern Undertaking..... | — | | |
| 431,000 | | Natal Central Undertaking..... | — | | |
| 3,436,000 | | Eastern Transvaal Undertaking..... | 496,000 | | |
| | | Rand & Orange Free State Undertaking..... | 2,720,000 | | |
| 28,244,000 | | | | | |
| | | Creditors and Provisions | 26,571,000 | | |
| 17,349,000 | | Creditors..... | 14,996,000 | | |
| 6,240,000 | | Interest accrued on loans..... | 6,407,000 | | |
| 4,655,000 | | Provisions including provisions for repayment of overseas loans..... | 5,168,000 | | |
| | | | | | |
| | | Temporary Borrowings | 3,246,000 | | |
| | | Amount due to Bankers less Cash on Current Accounts and on hand..... | | | |
| | | NOTE: | | | |
| | | In addition to the liabilities shown above the Commission is committed to the extent of approximately R196,200,000 expenditure on Capital Account, and R3,662,000 chargeable against Reserve Fund. | | | |
| | | In addition to the annual contributions the Commission is committed to pay R130,000 annually to the Electricity Supply Commission Pension and Provident Fund for the period ending 31st December, 1969, and R22,000 during 1970. | | | |
| | | As from the 1st April, 1964, the Natal Southern and Natal Central Undertakings were combined to form the Natal Undertaking. | | | |
| <u>R878,314,000</u> | | | <u>R941,339,000</u> | | <u>R878,314,000</u> |

Johannesburg,
31st March, 1965.

R. L. STRASZACKER *Chairman.*
J. VAN NIEKERK, *Chief Accountant.*

| | | | | | |
|--|--|---|---------------------|--|----------------------|
| | | Capital Expenditure at Cost | R679,193,000 | | 1963 R637,076,000 |
| | | (Schedule No. 1) | | | |
| | | Land and Rights..... | R 7,524,000 | | 6,848,000 |
| | | Buildings and Civil Works..... | 142,589,000 | | 135,007,000 |
| | | Machinery and Plant..... | 529,080,000 | | 495,221,000 |
| | | | | | |
| | | Stores and Movable Plant | 27,491,000 | | 23,693,000 |
| | | Stores and Materials at cost..... | 23,721,000 | | 20,277,000 |
| | | Movable plant and equipment at cost less depreciation..... | 3,770,000 | | 3,416,000 |
| | | | | | |
| | | Investment of Redemption Fund | 171,854,000 | | 160,224,000 |
| | | (Schedule No. 2) | | | |
| | | Nominal Value Market Value | | | |
| | | 1964 R173,323,000 R165,607,000 | | | |
| | | 1963 R161,629,000 R162,781,000 | | | |
| | | | | | |
| | | Investment of Reserve Fund | 49,306,000 | | 41,774,000 |
| | | Stocks of Electricity Supply Commission, Republic of South Africa and Municipalities including Interest Accrued | | | |
| | | Nominal Value Market Value | | | |
| | | 1964 R 49,555,000 R 48,059,000 | | | |
| | | 1963 R 41,931,000 R 43,443,000 | | | |
| | | | | | |
| | | Sundry Investments | 4,168,000 | | 4,032,000 |
| | | Electricity Supply Commission Swiss Loan Bonds including Interest Accrued..... | 1,247,000 | | 1,180,000 |
| | | Nominal Value Market Value | | | |
| | | 1964 R 1,328,000 R 1,373,000 | | | |
| | | 1963 R 1,262,000 R 1,248,000 | | | |
| | | Entire Share capital of the Rand Mines Power Supply Company Limited..... | 1,000 | | 1,000 |
| | | Housing Loans to Employees secured by First Mortgages..... | 2,920,000 | | 2,851,000 |
| | | | | | |
| | | Debtors and Payments in Advance | 9,327,000 | | 9,148,000 |
| | | Debtors..... | 9,144,000 | | 9,035,000 |
| | | Payments in advance..... | 183,000 | | 113,000 |
| | | | | | |
| | | Cash at Bankers and on Hand | | | 2,367,000 |
| | | | | | |
| | | | <u>R941,339,000</u> | | <u>R878,314,000</u> |

Referred to in our report of 30th April, 1965.

ALEX. AIKEN & CARTER,
HALSEY, BUTTON & PERRY
Registered Accountants and Auditors.

Electricity Supply Commission

SCHEDULE No. 1.

Schedule of Capital Expenditure at 31st December, 1964

| Expenditure in connection with Electricity Undertakings | Total at 31st December, 1963 | Year Ended 31st December, 1964 | Total at 31st December, 1964 |
|---|------------------------------|--------------------------------|------------------------------|
| Cape Western Undertaking | | | |
| Land and Rights..... | R 775,000 | R 52,000 | R 827,000 |
| Buildings and Civil Works..... | 13,890,000 | 300,000 | 14,190,000 |
| Machinery and Plant..... | 53,629,000 | 2,424,000 | 56,053,000 |
| | R 68,294,000 | R 2,776,000 | R 71,070,000 |
| Cape Northern Undertaking | | | |
| Land and Rights..... | R 128,000 | R 23,000 | R 151,000 |
| Buildings and Civil Works..... | 538,000 | 5,000 | 543,000 |
| Machinery and Plant..... | 10,393,000 | 3,913,000 | 14,306,000 |
| | R 11,059,000 | R 3,941,000 | R 15,000,000 |
| Cape Eastern Undertaking | | | |
| Land and Rights..... | 9,000 | R 4,000 | R 13,000 |
| Buildings and Civil Works..... | — | 17,000 | 17,000 |
| Machinery and Plant..... | 73,000 | 180,000 | 253,000 |
| | R 82,000 | R 201,000 | R 283,000 |
| Border Undertaking | | | |
| Land and Rights..... | R 42,000 | R 2,000 | R 44,000 |
| Buildings and Civil Works..... | 2,064,000 | Cr. 35,000 | 2,029,000 |
| Machinery and Plant..... | 9,833,000 | 283,000 | 10,116,000 |
| | R 11,939,000 | R 250,000 | R 12,189,000 |
| Natal Undertaking | | | |
| Land and Rights..... | R 1,041,000 | R 84,000 | R 1,125,000 |
| Buildings and Civil Works..... | 24,366,000 | 1,017,000 | 25,383,000 |
| Machinery and Plant..... | 85,476,000 | 3,368,000 | 88,844,000 |
| | R 110,883,000 | R 4,469,000 | R 115,352,000 |
| Eastern Transvaal Undertaking | | | |
| Land and Rights..... | R 1,072,000 | R 156,000 | R 1,228,000 |
| Buildings and Civil Works..... | 24,206,000 | 2,140,000 | 26,346,000 |
| Machinery and Plant..... | 63,537,000 | 15,070,000 | 78,607,000 |
| | R 88,815,000 | R 17,366,000 | R 106,181,000 |

Johannesburg,
31st March, 1965.

| Expenditure in connection with Electricity Undertakings | Total at 31st December, 1963 | Year Ended 31st December, 1964 | Total at 31st December, 1964 |
|---|------------------------------|--------------------------------|------------------------------|
| Rand and Orange Free State Undertaking | | | |
| Land and Rights..... | R 3,258,000 | R 355,000 | R 3,613,000 |
| Buildings and Civil Works..... | 65,767,000 | 4,137,000 | 69,904,000 |
| Machinery and Plant..... | 272,280,000 | 8,621,000 | 280,901,000 |
| | R 341,305,000 | R 13,113,000 | R 354,418,000 |
| Head Office | | | |
| Land..... | | | |
| Buildings and Equipment..... | R 523,000 | — | R 523,000 |
| | 4,176,000 | R 1,000 | 4,177,000 |
| | R 4,699,000 | R 1,000 | R 4,700,000 |
| Summary | | | |
| Land and Rights..... | R 6,848,000 | R 676,000 | R 7,524,000 |
| Buildings and Civil Works..... | 135,007,000 | 7,582,000 | 142,589,000 |
| Machinery and Plant..... | 495,221,000 | 33,859,000 | 529,080,000 |
| | R 637,076,000 | R 42,117,000 | R 679,193,000 |

J. VAN NIEKERK, *Chief Accountant.*

Electricity Supply Commission

SCHEDULE No. 3

Loans at 31st December, 1964

Loans Nos. 1 and 2 R16,000,000 repaid out of subsequent loans

| Loan No. | Local Registered Stocks | Outstanding | Repaid |
|----------|---|---------------------|--------------------|
| 3 | R1,000,000 4½ per cent 1953/63..... | | R 1,000,000 |
| 4 | R5,000,000 4½ per cent 1953..... | | 5,000,000 |
| 5 | R13,500,000 3½ per cent 1954/64..... | | 13,500,000 |
| 6 | R5,000,000 3½ per cent 1959/64..... | | 5,000,000 |
| 7 | R4,000,000 3½ per cent 1956/66..... | R 4,000,000 | |
| 8 | R4,000,000 3½ per cent 1957/67..... | 4,000,000 | |
| 9 | R4,000,000 3½ per cent 1959/64..... | | 4,000,000 |
| 10 | R3,000,000 3½ per cent 1960/65..... | 3,000,000 | |
| 11 | R4,000,000 3½ per cent 1961/66..... | 4,000,000 | |
| 12 | R5,000,000 3½ per cent 1965/70..... | 5,000,000 | |
| 13 | R6,000,000 3 per cent 1967/73..... | 6,000,000 | |
| 14 | R6,000,000 3 per cent 1968/74..... | 6,000,000 | |
| 15 | R30,000,000 3½ per cent 1968/73..... | 30,000,000 | |
| 16 | R6,000,000 3½ per cent 1969/74..... | 6,000,000 | |
| 17 | R6,000,000 3½ per cent 1969/74..... | 6,000,000 | |
| 18 | R10,500,000 3½ per cent 1965/67..... | 10,500,000 | |
| 19 | R6,000,000 3½ per cent 1964/67..... | 6,000,000 | |
| 21 | R10,000,000 3½ per cent 1964/68..... | 10,000,000 | |
| 22 | R9,000,000 4½ per cent 1964/67..... | 9,000,000 | |
| 23 | R10,000,000 5 per cent 1964/67..... | 10,000,000 | |
| 25 | R7,000,000 5 per cent 1966/68..... | 7,000,000 | |
| 26 | R8,000,000 5 per cent 1967/69..... | 8,000,000 | |
| 27 | R8,500,000 5 per cent 1968/70..... | 8,500,000 | |
| 29 | R16,000,000 5 per cent 1967/70..... | 16,000,000 | |
| 31 | R16,000,000 5 per cent 1971/74..... | 16,000,000 | |
| 32 | R20,000,000 5 per cent 1971/75..... | 20,000,000 | |
| 33 | R16,000,000 4½ per cent 1975/80..... | 16,000,000 | |
| 34 | R16,000,000 4½ per cent 1975/80..... | 16,000,000 | |
| 35 | R16,500,000 5½ per cent 1976/81..... | 16,500,000 | |
| 36 | R20,000,000 5½ per cent 1977/82..... | 20,000,000 | |
| 37 | R22,000,000 5½ per cent 1976/82..... | 22,000,000 | |
| 38 | R24,000,000 5½ per cent 1977/83..... | 24,000,000 | |
| 39 | R24,000,000 5½ per cent 1978/83..... | 24,000,000 | |
| 40 | R22,000,000 5½ per cent 1979/84..... | 22,000,000 | |
| 42 | R20,000,000 5½ per cent 1979/84..... | 20,000,000 | |
| 43 | R16,000,000 5½ per cent 1979/85..... | 16,000,000 | |
| 44 | R16,000,000 5½ per cent 1980/85..... | 16,000,000 | |
| 45 | R17,000,000 5½ per cent 1980/86..... | 17,000,000 | |
| 46 | R16,000,000 5½ per cent 1981/86..... | 16,000,000 | |
| 47 | R18,000,000 6¼ per cent 1981/86..... | 18,000,000 | |
| 49 | R18,000,000 6¼ per cent 1982/87..... | 18,000,000 | |
| 50 | R22,000,000 5½ per cent 1982/87..... | 22,000,000 | |
| 51 | R29,000,000 5 per cent 1983/88..... | 29,000,000 | |
| 52 | R40,000,000 5 per cent 1980/83..... | 40,000,000 | |
| 53 | R20,000,000 5 per cent 1982/84..... | 20,000,000 | |
| 54 | R20,000,000 5½ per cent 1982/84..... | 20,000,000 | |
| | (Payable in full not later than the 30th January, 1965, in terms of the Prospectus) | | |
| | Fully Paid..... | R18,097,000 | |
| | Partly Paid..... | 728,000 | |
| | | 18,825,000 | |
| | R636,000,000 Total Local Registered Stocks..... | R606,325,000 | R28,500,000 |

| Loan No. | Description | Brought forward | Outstanding | Repaid |
|--|--|-------------------|---------------------|--------------------|
| | R636,000,000 | | R606,325,000 | R28,500,000 |
| INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT | | | | |
| 20 | R21,465,000 \$30,000,000 4 per cent. Repayable by half-yearly instalments 1954/70..... | | 9,266,000 | 12,199,000 |
| 28 | R2,822,000 \$30,000,000 4½ per cent. Repayable by half-yearly instalments 1955/63..... | R21,454,000 | | |
| | Less repaid out of local loans..... | 18,632,000 | | |
| | | <u>R2,822,000</u> | | 2,822,000 |
| 48 | R8,953,000 \$14,000,000 5½ per cent. Repayable by half-yearly instalments 1963/71..... | R10,012,000 | | |
| | Less repaid out of local loans..... | 1,059,000 | | |
| | | <u>R8,953,000</u> | 8,577,000 | 376,000 |
| EXPORT-IMPORT BANK OF WASHINGTON | | | | |
| 24 | R14,016,000 \$19,600,000 4 per cent. Repayable by half-yearly instalments 1956/70..... | | 6,618,000 | 7,398,000 |
| COMMONWEALTH DEVELOPMENT FINANCE COMPANY LIMITED | | | | |
| 30 | R4,000,000 5 per cent. Repayable by half-yearly instalments 1954/68..... | | 1,140,000 | 2,860,000 |
| SWISS LOAN | | | | |
| 41 | R8,275,000 Swiss Francs 50,000,000 5 per cent. Repayable by annual instalments 1965/74 | | 8,275,000 | |
| | | | <u>R640,201,000</u> | <u>R54,155,000</u> |
| | <i>Sundry Loans</i> | | | 737,000 |
| | | | | <u>R54,892,000</u> |

Johannesburg,
31st March, 1965.

J. VAN NIEKERK, Chief Accountant.

Electricity Supply Commission

ACCOUNT No. 1

Redemption Fund Account for the Year ended 31st December, 1964

| 1963 | | R |
|---------------------|--|---------------------|
| R13,500,000 | Repayment of Local Registered Stock..... | 9,000,000 |
| 13,500,000 | 3½ per cent 1954/64 (Loan No. 5)..... | 5,000,000 |
| | 3½ per cent 1959/64 (Loan No. 6)..... | 4,000,000 |
| | 3½ per cent 1959/64 (Loan No. 9)..... | — |
| 161,671,000 | Balance as per Balance Sheet..... | 175,658,000 |
| 16,969,000 | Cape Western Undertaking..... | 18,945,000 |
| 1,965,000 | Cape Northern Undertaking..... | 2,348,000 |
| | Cape Eastern Undertaking..... | 1,000 |
| 2,538,000 | Border Undertaking..... | 2,995,000 |
| | Natal Undertaking..... | 25,878,000 |
| 14,985,000 | Natal Southern Undertaking..... | — |
| 7,588,000 | Natal Central Undertaking..... | — |
| 6,212,000 | Eastern Transvaal Undertaking..... | 8,308,000 |
| 102,341,000 | Rand and Orange Free State Undertaking..... | 107,994,000 |
| 2,573,000 | Head Office..... | 2,689,000 |
| 6,500,000 | Original Cost of an Undertaking which has been sold..... | 6,500,000 |
| <u>R175,171,000</u> | | <u>R184,658,000</u> |

As from the 1st April, 1964, the Natal Southern and Natal Central Undertakings were combined to form the Natal Undertaking.

J. VAN NIEKERK, *Chief Accountant*

| | | R | 1963 |
|--|--|---------------------|---------------------|
| | Balance Brought Forward..... | R161,671,000 | R154,374,000 |
| | Cape Western Undertaking..... | R16,969,000 | 18,164,000 |
| | Cape Northern Undertaking..... | 1,965,000 | 1,611,009 |
| | Border Undertaking..... | 2,538,000 | 2,133,000 |
| | Natal Southern Undertaking..... | 14,985,000 | 13,840,000 |
| | Natal Central Undertaking..... | 7,588,000 | 13,700,000 |
| | Eastern Transvaal Undertaking..... | 6,212,000 | 6,266,000 |
| | Rand and Orange Free State Undertaking..... | 102,341,000 | 89,473,000 |
| | Head Office..... | 2,573,000 | 2,687,000 |
| | Assets Sold..... | 6,500,000 | 6,500,000 |
| | Amounts Contributed During the Year as per Revenue Accounts..... | 14,936,000 | 13,347,000 |
| | Cape Western Undertaking..... | 1,688,000 | 1,553,000 |
| | Cape Northern Undertaking..... | 276,000 | 268,000 |
| | Cape Eastern Undertaking..... | 1,000 | — |
| | Border Undertaking..... | 315,000 | 287,000 |
| | Natal Undertaking..... | 1,874,000 | — |
| | Natal Southern Undertaking..... | 324,000 | 1,296,000 |
| | Natal Central Undertaking..... | 213,000 | 698,000 |
| | Eastern Transvaal Undertaking..... | 1,827,000 | 1,103,000 |
| | Rand and Orange Free State Undertaking..... | 8,418,000 | 8,142,000 |
| | Other Contributions..... | 70,000 | 72,000 |
| | Proceeds of Sales of Fixed Property..... | 64,000 | 230,000 |
| | Profit on Redemption of Investments..... | 105,000 | 62,000 |
| | Interest Earned on Investments..... | 7,812,000 | 7,086,000 |
| | | <u>R184,658,000</u> | <u>R175,171,000</u> |

We hereby certify that we are satisfied as to the correctness of the Accounts and Books of the Redemption Fund and as to the maintenance of the Fund at the amount required by the Schedule to the Electricity Act 1958, subject to the remarks contained in our report dated 30th April, 1965.

ALEX. AIKEN & CARTER,
HALSEY, BUTTON & PERRY
Registered Accountants and Auditors.

Electricity Supply Commission

Reserve Fund Account for the Year Ended 31st December, 1964

| | | |
|--------------------|--|--------------------|
| 1963 R989,000 | | |
| | Expenditure During the Year on Replacements and Betterment..... | R973,000 |
| 217,000 | Cape Western Undertaking..... | R158,000 |
| 2,000 | Cape Northern Undertaking..... | 29,000 |
| 25,000 | Border Undertaking..... | 57,000 |
| | Natal Undertaking..... | 174,000 |
| 62,000 | Natal Southern Undertaking..... | 14,000 |
| 207,000 | Natal Central Undertaking..... | 21,000 |
| 21,000 | Eastern Transvaal Undertaking..... | 138,000 |
| 455,000 | Rand and Orange Free State Undertaking..... | 382,000 |
| | | <hr/> |
| 42,643,000 | Balance as per Balance Sheet..... | 50,575,000 |
| | | |
| 4,160,000 | Cape Western Undertaking..... | 4,815,000 |
| 940,000 | Cape Northern Undertaking..... | 1,175,000 |
| 615,000 | Border Undertaking..... | 682,000 |
| | Natal Undertaking..... | 6,901,000 |
| 2,915,000 | Natal Southern Undertaking..... | |
| 2,896,000 | Natal Central Undertaking..... | |
| 2,252,000 | Eastern Transvaal Undertaking..... | 3,070,000 |
| 28,865,000 | Rand and Orange Free State Undertaking..... | 33,932,000 |
| | | <hr/> |
| R43,632,000 | | R51,548,000 |

As from the 1st April, 1964, the Natal Southern and Natal Central Undertakings were combined to form the Natal Undertaking.

| | | |
|--|---|--------------------|
| | | |
| | Balance Brought Forward..... | R42,643,000 |
| | | |
| | Cape Western Undertaking..... | R4,160,000 |
| | Cape Northern Undertaking..... | 940,000 |
| | Border Undertaking..... | 615,000 |
| | Natal Southern Undertaking..... | 2,915,000 |
| | Natal Central Undertaking..... | 2,896,000 |
| | Eastern Transvaal Undertaking..... | 2,252,000 |
| | Rand and Orange Free State Undertaking..... | 28,865,000 |
| | | <hr/> |
| | Amounts set aside during the Year as per Revenue Accounts..... | 6,510,000 |
| | | |
| | Cape Western Undertaking..... | 582,000 |
| | Cape Northern Undertaking..... | 210,000 |
| | Border Undertaking..... | 90,000 |
| | Natal Undertaking..... | 602,000 |
| | Natal Southern Undertaking..... | 360,000 |
| | Natal Central Undertaking..... | 8,000 |
| | Eastern Transvaal Undertaking..... | 822,000 |
| | Rand and Orange Free State Undertaking..... | 3,836,000 |
| | | <hr/> |
| | Interest Earned on Investments..... | 2,395,000 |
| | Profit on Redemption of Investments..... | — |
| | | |
| | | <hr/> |
| | | R51,548,000 |

J. VAN NIEKERK, *Chief Accountant.*

Electricity Supply Commission

Cape Western Undertaking

Revenue Account for the year

Ended 31st December, 1964

| | | |
|--------------------|--|--------------------|
| 1963 | | R4,892,000 |
| R4,424,000 | Generation | |
| | Operation | |
| 3,495,000 | Fuel..... | R3,811,000 |
| 81,000 | Water and Stores..... | 87,000 |
| 351,000 | Salaries and Wages..... | 357,000 |
| 20,000 | Other Expenses..... | 55,000 |
| | Maintenance— | |
| 52,000 | Stores..... | 71,000 |
| 375,000 | Salaries and Wages..... | 415,000 |
| 50,000 | Other Expenses..... | 96,000 |
| | Distribution | 779,000 |
| 750,000 | Operation and Maintenance— | |
| 90,000 | Stores..... | 67,000 |
| 536,000 | Salaries and Wages..... | 564,000 |
| 124,000 | Other Expenses..... | 148,000 |
| | General Expenses | 1,227,000 |
| 1,101,000 | Local Administration and Technical Management..... | 443,000 |
| 392,000 | General Expenses (including Maintenance of Quarters, Stores Expenses, Rates, Claims, Insurance, Pension Fund Contributions, etc.)..... | 571,000 |
| 535,000 | Head Office Administration Expenses..... | 115,000 |
| 97,000 | Head Office Engineering Expenses..... | 98,000 |
| 77,000 | | |
| | Capital Charges | 5,524,000 |
| 5,159,000 | Interest..... | 3,095,000 |
| 2,864,000 | Redemption Fund..... | 1,688,000 |
| 1,553,000 | Instalments and Provision for Repayment of Overseas and Sundry Loans..... | 159,000 |
| 160,000 | Reserve Fund..... | 582,000 |
| 582,000 | | |
| | Balance carried down..... | 44,000 |
| 11,434,000 | | 12,422,000 |
| 198,000 | | 44,000 |
| <u>R11,632,000</u> | | <u>R12,466,000</u> |
| | Balance as per Balance Sheet..... | R448,000 |
| R404,000 | | R448,000 |
| <u>R404,000</u> | | <u>R448,000</u> |

| | | |
|------|-------------------------------------|--------------------|
| 1963 | | R11,593,000 |
| | Sales of Electricity | R12,428,000 |
| | Traction Supplies..... | R3,506,000 |
| | Bulk Supplies..... | 2,317,000 |
| | Industrial Supplies..... | 3,976,000 |
| | Domestic and Lighting Supplies..... | 2,629,000 |
| | Other Revenue | 38,000 |
| | Balance brought forward..... | R12,466,000 |
| | Balance brought down..... | 44,000 |
| | | <u>R11,632,000</u> |

Electricity Supply Commission

Cape Northern Undertaking

Revenue Account for the Year Ended 31st December, 1964

| | | |
|--|---|--|
| 1963 R1,257,000 791,000 92,000 225,000 30,000 61,000 12,000 3,000 38,000 5,000 105,000 25,000 53,000 27,000 127,000 53,000 50,000 13,000 11,000 988,000 528,000 268,000 192,000 2,477,000 220,000 <u>R2,697,000</u> R581,000 <u>R581,000</u> | Generation..... Proportion of Pooled Costs of Rand and Orange Free State and Eastern Transvaal Undertakings..... Proportion of Transmission Costs charged by Rand and Orange Free State Undertaking..... Operation— Fuel..... Water and Stores..... Salaries and Wages..... Other Expenses..... Maintenance— Stores..... Salaries and Wages..... Other Expenses..... Distribution..... Operation and Maintenance— Stores..... Salaries and Wages..... Other Expenses..... General Expenses..... Local Administration and Technical Management..... General Expenses (including Stores Expenses, Rates, Insurances, Pension Fund Contributions, etc.)..... Head Office Administration Expenses..... Head Office Engineering Expenses..... Capital Charges..... Interest..... Redemption Fund..... Reserve Fund..... Balance carried down..... Balance as per Balance Sheet..... | R1,481,000 R1,008,000 124,000 198,000 27,000 64,000 13,000 4,000 34,000 9,000 111,000 21,000 59,000 31,000 178,000 60,000 63,000 30,000 25,000 1,038,000 552,000 276,000 210,000 2,808,000 137,000 <u>R2,945,000</u> R718,000 <u>R718,000</u> |
|--|---|--|

| | | |
|--|--|---|
| 1963 R2,694,000 729,000 1,383,000 440,000 142,000 3,000 3,000 | Sales of Electricity..... Traction Supplies..... Bulk Supplies..... Mining Supplies..... Industrial Supplies..... Domestic and Lighting Supplies..... Other Revenue..... | R2,942,000 R24,000 775,000 1,496,000 491,000 156,000 3,000 3,000 R2,945,000 R581,000 137,000 <u>R718,000</u> |
|--|--|---|

| | | |
|---|--|---|
| 1963 R2,694,000 729,000 1,383,000 440,000 142,000 3,000 | Sales of Electricity..... Traction Supplies..... Bulk Supplies..... Mining Supplies..... Industrial Supplies..... Domestic and Lighting Supplies..... Other Revenue..... | R2,942,000 R24,000 775,000 1,496,000 491,000 156,000 3,000 3,000 R2,945,000 R581,000 137,000 <u>R718,000</u> |
|---|--|---|

Electricity Supply Commission

ACCOUNT No. 5

Cape Eastern Undertaking

Revenue account for the period from 1st June, 1964 to 31st December 1964

| | | | |
|--|----------------|-----------------------------------|----------------|
| Electricity Purchased | R6,000 | Sales of Electricity | R17,000 |
| Distribution | 2,000 | Bulk Supplies..... | R10,000 |
| Operation and Maintenance— | | Industrial Supplies..... | 6,000 |
| Salaries and Wages..... | R1,000 | Domestic Supplies..... | 1,000 |
| Other Expenses..... | 1,000 | | |
| General Expenses | 6,000 | Balance carried down..... | 1,000 |
| Local Administration and Technical Management..... | 3,000 | | |
| General Expenses (including Maintenance of Quarters, Stores Expenses, Rates, Claims, Insurance, Pension Fund Contributions, etc.)..... | 3,000 | | |
| Capital Charges | 4,000 | | |
| Interest..... | 3,000 | | |
| Redemption Fund..... | 1,000 | | |
| | <u>R18,000</u> | | <u>R18,000</u> |
| Balance brought down..... | R1,000 | Balance as per Balance Sheet..... | R1,000 |
| | <u>R1,000</u> | | <u>R1,000</u> |

Johannesburg,
31st March, 1965.

J. VAN NIEKERK, *Chief Accountant.*

Referred to in our Report of 30th April, 1965.

ALEX. AIKEN & CARTER,
HALSEY, BUTTON & PERRY
Registered Accountants and Auditors.

Electricity Supply Commission

ACCOUNT No. 6

Border Undertaking

Revenue Account for the Year ended 31st December, 1964

| | | |
|--------------------|--|-------------------|
| 1963 R1,001,000 | Generation | R1,144,000 |
| | Operation— | |
| 735,000 | Fuel..... | R804,000 |
| 11,000 | Water and Stores..... | 12,000 |
| 128,000 | Salaries and Wages..... | 146,000 |
| 2,000 | Other Expenses..... | 9,000 |
| | Maintenance— | |
| 25,000 | Stores..... | 37,000 |
| 84,000 | Salaries and Wages..... | 106,000 |
| 16,000 | Other Expenses..... | 30,000 |
| | Electricity Purchased | |
| 1,000 | | |
| 115,000 | Distribution | 131,000 |
| | Operation and Maintenance— | |
| 16,000 | Stores..... | 19,000 |
| 77,000 | Salaries and Wages..... | 86,000 |
| 22,000 | Other Expenses..... | 26,000 |
| | General Expenses | 180,000 |
| 166,000 | | |
| 63,000 | Local Administration and Technical Management..... | 72,000 |
| 85,000 | General Expenses (including Maintenance of Quarters, Stores Expenses, Rates, Claims, Insurance, Pension Fund Contributions, etc.)..... | 87,000 |
| 10,000 | Head Office Administration Expenses..... | 11,000 |
| 8,000 | Head Office Engineering Expenses..... | 10,000 |
| | Capital Charges | 990,000 |
| 924,000 | | |
| 545,000 | Interest..... | 584,000 |
| 287,000 | Redemption Fund..... | 315,000 |
| 2,000 | Instalments and Provision for Repayment of Overseas and Sundry Loans..... | 1,000 |
| 90,000 | Reserve Fund..... | 90,000 |
| | Balance carried down..... | 2,445,000 |
| 2,207,000 | | 38,000 |
| 17,000 | | <u>R2,483,000</u> |
| <u>R2,224,000</u> | | |
| R159,000 | Balance brought forward..... | R142,000 |
| R159,000 | | <u>R142,000</u> |

| | | | |
|--|-------------------------------------|-------------------|--------------------|
| | Sales of Electricity | R2,479,000 | 1963 R2,221,000 |
| | Bulk Supplies..... | R1,963,000 | 1,774,000 |
| | Industrial Supplies..... | 239,000 | 193,000 |
| | Domestic and Lighting Supplies..... | 277,000 | 254,000 |
| | Other Revenue | 4,000 | 3,000 |
| | Balance brought down..... | <u>R2,483,000</u> | <u>R2,224,000</u> |
| | Balance as per Balance Sheet..... | R38,000 | R17,000 |
| | | 104,000 | 142,000 |
| | | <u>R142,000</u> | <u>R159,000</u> |

Johannesburg,
31st March, 1965.

J. VAN NIEKERK, *Chief Accountant.*

Referred to in our report of 30th April, 1965.

ALEX. AIKEN & CARTER,
HALSEY, BUTTON & PERRY
Registered Accountants and Auditors.

Electricity Supply Commission

ACCOUNT No. 7

Natal Undertaking

Revenue Account for the period

1st April to 31st December, 1964

| | | |
|--|------------|-------------|
| Generation | | R7,070,000 |
| Operation— | | |
| Fuel..... | R5,374,000 | |
| Stores..... | 171,000 | |
| Salaries and Wages..... | 584,000 | |
| Other Expenses..... | 114,000 | |
| Maintenance— | | |
| Stores..... | 223,000 | |
| Salaries and Wages..... | 511,000 | |
| Other Expenses..... | 93,000 | |
| Electricity Purchased | | 122,000 |
| Electricity Supplied by Rand and Orange Free State Undertaking | | 4,000 |
| Distribution | | 760,000 |
| Operation and Maintenance— | | |
| Stores..... | 194,000 | |
| Salaries and Wages..... | 429,000 | |
| Other Expenses..... | 137,000 | |
| General Expenses | | 988,000 |
| Local Administration and Technical Management..... | 353,000 | |
| General Expenses (including Maintenance of Quarters, Stores Expenses, Rates, Claims, Insurance, Pension Fund Contributions, etc.)..... | 409,000 | |
| Head Office Administration Expenses..... | 122,000 | |
| Head Office Engineering Expenses..... | 104,000 | |
| Capital Charges | | 6,277,000 |
| Interest..... | 3,590,000 | |
| Redemption Fund..... | 1,874,000 | |
| Instalments and Provision for Repayment of Overseas Loans..... | 211,000 | |
| Reserve Fund..... | 602,000 | |
| | | 15,221,000 |
| Balance carried down..... | | 702,000 |
| | | R15,923,000 |
| Balance as per Balance Sheet..... | | R702,000 |

| | | |
|-------------------------------------|------------|-------------|
| Sales of Electricity | | R15,847,000 |
| Traction Supplies..... | R2,917,000 | |
| Bulk Supplies..... | 9,537,000 | |
| Mining Supplies..... | 424,000 | |
| Industrial Supplies..... | 2,277,000 | |
| Domestic and Lighting Supplies..... | 692,000 | |
| Other Revenue | | 76,000 |
| | | R15,923,000 |
| Balance brought down..... | | R702,000 |

Johannesburg,
31st March, 1965.

J. VAN NIEKERK, *Chief Accountant.*

Referred to in our Report of 30th April, 1965.

ALEX. AIKEN & CARTER,
HALSEY, BUTTON & PERRY
Registered Accountants and Auditors.

Electricity Supply Commission

ACCOUNT No. 8.

Natal Southern Undertaking

Revenue Account for the Period 1st January to 31st March, 1964

| | | | |
|--------------------|--|-------------------|--|
| 1963 | | | |
| R10,036,000 | Generation | R2,605,000 | |
| 10,032,000 | Proportion of Pooled Costs (statement attached)..... | R2,604,000 | |
| 1,000 | Other Operation and Maintenance Costs | | |
| 2,000 | Operation— | | |
| 1,000 | Fuel | | |
| | Salaries and Wages..... | 1,000 | |
| | Maintenance— | | |
| | Salaries and Wages | | |
| 110,000 | Electricity Purchased | 26,000 | |
| 531,000 | Distribution | 142,000 | |
| 90,000 | Operation and Maintenance— | | |
| 211,000 | Stores..... | 25,000 | |
| 252,000 | Salaries and Wages..... | 58,000 | |
| | Other Expenses..... | 62,000 | |
| 553,000 | | 145,000 | |
| 22,000 | Less Charged to Pooled Costs (Interconnector)..... | 3,000 | |
| 244,000 | General Expenses | 56,000 | |
| 255,000 | Local Administration and Technical Management..... | 60,000 | |
| 240,000 | General Expenses (including Maintenance of Quarters, Stores Expenses, Rates, | | |
| 97,000 | Claims, Insurance, Pension Fund Contributions, etc.)..... | 63,000 | |
| 77,000 | Head Office Administration Expenses..... | 24,000 | |
| | Head Office Engineering Expenses..... | 20,000 | |
| 669,000 | | 167,000 | |
| 425,000 | Less Charged to Pooled Costs..... | 111,000 | |
| 725,000 | Capital Charges | 425,000 | |
| 2,509,000 | Interest..... | 631,000 | |
| 1,296,000 | Redemption Fund..... | 324,000 | |
| 201,000 | Instalments and Provision for Repayment of Overseas Loans..... | 51,000 | |
| 501,000 | Reserve Fund..... | 360,000 | |
| 4,507,000 | | 1,366,000 | |
| 3,782,000 | Less Charged to Pooled Costs..... | 941,000 | |
| 11,646,000 | Balance carried down | | |
| 187,000 | | | |
| <u>R11,833,000</u> | | <u>R3,254,000</u> | |
| R280,000 | Balance brought down..... | R280,000 | |
| <u>R280,000</u> | Balance as per Balance Sheet | <u>R280,000</u> | |

| | | | |
|--------------------|-------------------------------------|-------------------|--|
| 1963 | | | |
| R11,826,000 | Sales of Electricity | R2,971,000 | |
| 1,164,000 | Traction Supplies..... | R295,000 | |
| 8,573,000 | Bulk Supplies..... | 2,134,000 | |
| 1,551,000 | Industrial Supplies..... | 410,000 | |
| 538,000 | Domestic and Lighting Supplies..... | 132,000 | |
| 7,000 | Other Revenue | 3,000 | |
| 15,000 | Other Revenue..... | 4,000 | |
| 8,000 | Less Credited to Pooled Costs..... | 1,000 | |
| | Balance carried down..... | 2,974,000 | |
| | | 280,000 | |
| <u>R11,833,000</u> | | <u>R3,254,000</u> | |
| R93,000 | Balance brought forward..... | R280,000 | |
| 187,000 | Balance brought down..... | <u>R280,000</u> | |
| <u>R280,000</u> | | <u>R280,000</u> | |

Johannesburg,
31st March, 1965.

J. VAN NIEKERK, *Chief Accountant.*

Referred to in our Report of 30th April, 1965.

ALEX. AIKEN & CARTER,
HALSEY, BUTTON & PERRY
Registered Accountants and Auditors.

Electricity Supply Commission

ACCOUNT No. 9.

Natal Central Undertaking

Revenue Account for the Period 1st January to 31st March, 1964

| | | | | |
|------------|--|---------|------------|--|
| 1963 | | | | |
| R4,777,000 | Generation | | R1,178,000 | |
| | Proportion of Pooled Costs (Statement attached) | | | |
| 376,000 | Distribution | | 113,000 | |
| 73,000 | Operation and Maintenance— | | | |
| 277,000 | Stores..... | R29,000 | | |
| 43,000 | Salaries and Wages..... | 73,000 | | |
| | Other Expenses..... | 14,000 | | |
| 393,000 | | 116,000 | | |
| 17,000 | Less Charged to Pooled Costs (Interconnector)..... | 3,000 | | |
| 294,000 | General Expenses | | 65,000 | |
| 169,000 | Local Administration and Technical Management..... | 40,000 | | |
| 271,000 | General Expenses (including Maintenance of Quarters, Stores Expenses, Rates, Claims, Insurance, Pension Fund Contributions, etc.)..... | 73,000 | | |
| 87,000 | Head Office Administration Expenses..... | 21,000 | | |
| 69,000 | Head Office Engineering Expenses..... | 18,000 | | |
| 596,000 | | 152,000 | | |
| 302,000 | Less Charged to Pooled Costs..... | 87,000 | | |
| 703,000 | Capital Charges | | 112,000 | |
| 1,399,000 | Interest..... | 393,000 | | |
| 698,000 | Redemption Fund..... | 213,000 | | |
| 71,000 | Instalments and Provision for Repayment of Overseas Loans..... | 18,000 | | |
| 300,000 | Reserve Fund..... | 8,000 | | |
| 2,468,000 | | 632,000 | | |
| 1,765,000 | Less Charged to Pooled Costs..... | 520,000 | | |
| 6,150,000 | | | 1,468,000 | |
| 288,000 | Balance carried down..... | | 121,000 | |
| R6,438,000 | | | R1,589,000 | |
| R409,000 | Balance brought forward..... | | R121,000 | |
| R409,000 | | | R121,000 | |

| | | | | |
|--|-------------------------------------|----------|------------|------------|
| | | | | 1963 |
| | Sales of Electricity | | R1,580,000 | R6,388,000 |
| | Traction Supplies..... | R613,000 | | 2,370,000 |
| | Bulk Supplies..... | 585,000 | | 2,498,000 |
| | Mining Supplies..... | 134,000 | | 520,000 |
| | Industrial Supplies..... | 168,000 | | 677,000 |
| | Domestic and Lighting Supplies..... | 80,000 | | 323,000 |
| | Other Revenue | | 9,000 | 50,000 |
| | Other Revenue..... | 19,000 | | 82,000 |
| | Less Credited to Pooled Costs..... | 10,000 | | 32,000 |
| | | | | |
| | Balance brought down..... | | R1,589,000 | R6,438,000 |
| | Balance as per Balance Sheet..... | | R121,000 | R288,000 |
| | | | R121,000 | 121,000 |
| | | | R121,000 | R409,000 |

Johannesburg,
31st March, 1965.

J. VAN NIEKERK, *Chief Accountant.*

Referred to in our Report of 30th April, 1965.

ALEX. AIKEN & CARTER,
HALSEY, PERRY & BUTTON
Registered Accountants and Auditors.

Electricity Supply Commission

Natal Southern and Natal Central Undertakings

Statement of Pooled Costs and Allocation for the period 1st January to 31st March, 1964

| 1963 | | | | | 1963 |
|--------------------|---|------------|-------------------|---------------------------------|--------------------|
| R8,536,000 | Generation | | R2,128,000 | Sundry Revenue | R11,000 |
| | Operation— | | | Natal Southern Undertaking..... | R1,000 |
| 6,693,000 | Fuel..... | R1,636,000 | | Natal Central Undertaking..... | 10,000 |
| 216,000 | Water and Stores..... | 56,000 | | | |
| 654,000 | Salaries and Wages..... | 171,000 | | Allocation | 3,782,000 |
| 80,000 | Other Expenses..... | 33,000 | | Natal Southern Undertaking..... | 2,604,000 |
| | Maintenance— | | | Natal Central Undertaking..... | 1,178,000 |
| 263,000 | Stores..... | 67,000 | | | |
| 575,000 | Salaries and Wages..... | 155,000 | | | |
| 55,000 | Other Expenses..... | 10,000 | | | |
| 39,000 | Interconnector | | 6,000 | | |
| | Operation and Maintenance— | | | | |
| 2,000 | Stores..... | | | | |
| 11,000 | Salaries and Wages..... | 1,000 | | | |
| 26,000 | Other Expenses..... | 5,000 | | | |
| 727,000 | General Expenses | | 198,000 | | |
| | Local Administration and Technical Management..... | 60,000 | | | |
| 181,000 | General Expenses (including Stores Expenses, Rates, Insurance, Pension Fund Contributions, etc.)..... | 73,000 | | | |
| 288,000 | Head Office Administration and Engineering Expenses..... | 65,000 | | | |
| 258,000 | | | | | |
| 5,547,000 | Capital Charges | | 1,461,000 | | |
| | Interest..... | 799,000 | | | |
| 3,006,000 | Redemption Fund..... | 433,000 | | | |
| 1,630,000 | Instalments and Provision for Repayment of Overseas Loans..... | 69,000 | | | |
| 272,000 | Reserve Fund..... | 160,000 | | | |
| 639,000 | | | | | |
| <u>R14,849,000</u> | | | <u>R3,793,000</u> | | <u>R3,793,000</u> |
| | | | | | <u>R14,849,000</u> |

Johannesburg,
31st March, 1965.

J. VAN NIEKERK, *Chief Accountant.*

Referred to in our Report of 30th April, 1965.

ALEX AIKEN & CARTER,
HALSEY, BUTTON & PERRY
Registered Accountants and Auditors.

Electricity Supply Commission

Eastern Transvaal

Undertaking

Revenue Account for the Year

ended 31st December, 1964

| 1963 | | R4,781,000 |
|------------|--|------------|
| R3,763,000 | Generation | |
| 3,746,000 | Proportion of Pooled Costs (Statement attached)..... | R4,761,000 |
| | Other Operation and Maintenance Costs— | |
| | Operation— | |
| 12,000 | Salaries and Wages..... | 13,000 |
| 1,000 | Other Expenses..... | 5,000 |
| | Maintenance— | |
| 1,000 | Stores..... | |
| 3,000 | Salaries and Wages..... | 2,000 |
| 263,000 | Electricity Purchased | 230,000 |
| 46,000 | Electricity Purchased..... | 2,000 |
| 217,000 | Electricity Supplies by Rand and Orange Free State Undertaking..... | 228,000 |
| 283,000 | Distribution | 391,000 |
| | Operation and Maintenance— | |
| 36,000 | Stores..... | 57,000 |
| 175,000 | Salaries and Wages..... | 234,000 |
| 72,000 | Other Expenses..... | 100,000 |
| 328,000 | General Expenses | 399,000 |
| 184,000 | Local Administration and Technical Management..... | 257,000 |
| 282,000 | General Expenses (including Maintenance of Quarters, Stores Expenses, Rates, Insurance, Pension Fund Contributions, etc.)..... | 384,000 |
| 110,000 | Head Office Administration Expenses..... | 137,000 |
| 88,000 | Head Office Engineering Expenses..... | 116,000 |
| 664,000 | | 894,000 |
| 336,000 | Less Charged to Pooled Costs..... | 495,000 |
| 1,473,000 | Capital Charges | 1,981,000 |
| 2,487,000 | Interest..... | 3,849,000 |
| 1,103,000 | Redemption Fund..... | 1,827,000 |
| 118,000 | Instalments and Provision for Repayment of Overseas Loans..... | 161,000 |
| 503,000 | Reserve Fund..... | 822,000 |
| 4,211,000 | | 6,659,000 |
| 2,738,000 | Less Charges to Pooled Costs..... | 4,678,000 |
| 6,110,000 | | 7,782,000 |
| 99,000 | Balance carried down..... | 65,000 |
| R6,209,000 | | R7,847,000 |
| R431,000 | Balance as per Balance Sheet..... | R496,000 |
| R431,000 | | R496,000 |

| 1963 | | R7,752,000 |
|------------|-------------------------------------|------------|
| R6,115,000 | Sales of Electricity | |
| 459,000 | Traction Supplies..... | R488,000 |
| 342,000 | Bulk Supplies..... | 426,000 |
| 2,602,000 | Mining Supplies..... | 2,960,000 |
| 2,396,000 | Industrial Supplies..... | 3,509,000 |
| 316,000 | Domestic and Lighting Supplies..... | 369,000 |
| 94,000 | Other Revenue | 95,000 |
| 139,000 | Other Revenue..... | 154,000 |
| 45,000 | Less Credited to Pooled Costs..... | 59,000 |
| R6,209,000 | | R7,847,000 |
| R332,000 | Balance brought forward..... | R431,000 |
| 99,000 | Balance brought down..... | 65,000 |
| R431,000 | | R496,000 |

Johannesburg,
31st March, 1965.

J. VAN NIEKERK, *Chief Accountant.*

Referred to in our Report of 30th April, 1965.

ALEX. AIKEN & CARTER,
HALSEY, BUTTON & PERRY
Registered Accountants and Auditors.

Electricity Supply Commission

ACCOUNT No. 11

Rand and Orange Free State Undertaking

Revenue Account for the Year ended 31st December, 1964

| | | |
|---------------------|---|-------------|
| 1963 R46,923,000 | Generation | R49,058,000 |
| 46,428,000 | Proportion of Pooled Costs (Statement attached)..... | R48,610,000 |
| | Other Operation and Maintenance Costs | |
| | Operation— | |
| 165,000 | Fuel..... | 157,000 |
| 29,000 | Water and Stores..... | 31,000 |
| 120,000 | Salaries and Wages..... | 122,000 |
| 2,000 | Other Expenses..... | 2,000 |
| | Maintenance— | |
| 30,000 | Stores..... | 24,000 |
| 146,000 | Salaries and Wages..... | 109,000 |
| 3,000 | Other Expenses..... | 3,000 |
| 2,285,000 | Distribution | 2,476,000 |
| | Operation and Maintenance— | |
| 524,000 | Stores..... | 601,000 |
| 1,813,000 | Salaries and Wages..... | 1,924,000 |
| 112,000 | Other Expenses..... | 152,000 |
| 2,449,000 | | 2,677,000 |
| | Less charged to:— | |
| 72,000 | Pooled Costs (Interconnector)..... | 77,000 |
| 92,000 | Cape Northern Undertaking..... | 124,000 |
| 1,023,000 | General Expenses | 1,099,000 |
| 903,000 | Local Administration and Technical Management..... | 937,000 |
| 1,728,000 | General Expenses (including Maintenance of Quarters, Stores Expenses, Rates, Claims, Insurance, Pension Fund Contributions, etc.)..... | 1,753,000 |
| 254,000 | Head Office Administration Expenses..... | 281,000 |
| 202,000 | Head Office Engineering Expenses..... | 239,000 |
| 3,087,000 | | 3,210,000 |
| 2,064,000 | Less Charged to Pooled Costs..... | 2,111,000 |
| 9,769,000 | Capital Charges | 10,749,000 |
| 14,729,000 | Interest..... | 15,253,000 |
| 8,142,000 | Redemption Fund..... | 8,418,000 |
| 2,685,000 | Instalments and Provision for Repayment of Overseas Loans..... | 2,770,000 |
| 3,675,000 | Reserve Fund..... | 3,836,000 |
| 29,231,000 | | 30,277,000 |
| 19,462,000 | Less Charged to Pooled Costs..... | 19,528,000 |
| 60,000,000 | Balance carried down | R63,382,000 |
| 382,000 | | R716,000 |
| R60,382,000 | Balance brought down..... | 2,720,000 |
| R3,436,000 | Balance as per Balance Sheet..... | R3,436,000 |
| R3,436,000 | | |

| | | |
|---------------------|---|-------------|
| 1963 R58,514,000 | Sales of Electricity | R61,288,000 |
| 2,540,000 | Traction Supplies..... | R2,927,000 |
| 8,079,000 | Bulk Supplies..... | 8,821,000 |
| 34,968,000 | Mining Supplies..... | 35,570,000 |
| 12,053,000 | Industrial Supplies..... | 12,813,000 |
| 874,000 | Domestic and Lighting Supplies..... | 1,157,000 |
| 1,601,000 | Sales of Air and Steam | 1,078,000 |
| 60,115,000 | Electricity Supplied to Undertakings | 62,366,000 |
| 217,000 | | 232,000 |
| 217,000 | Eastern Transvaal Undertaking..... | 228,000 |
| 50,000 | Natal Undertaking..... | 4,000 |
| 254,000 | Other Revenue | 68,000 |
| 204,000 | Other Revenue..... | 268,000 |
| | Less Credited to Pooled Costs..... | 200,000 |
| | Balance carried down..... | 62,666,000 |
| | | 716,000 |
| | Balance brought forward..... | R63,382,000 |
| | Balance brought down..... | R3,436,000 |
| | | R3,054,000 |
| | | 382,000 |
| | | R3,436,000 |

Johannesburg,
31st March, 1965.

J. VAN NIEKERK, *Chief Accountant.*

Referred to in our Report of 30th April, 1965.

ALEX. AIKEN & CARTER,
HALSEY, BUTTON & PERRY
Registered Accountants and Auditors.

Electricity Supply Commission

Rand and Orange Free State and Eastern Transvaal Undertakings

Statement of Pooled Costs and Allocation for the Year Ended 31st December, 1964

| | | |
|---------------------|---|--------------------|
| 1963 R26,528,000 | | R27,670,000 |
| | Generation..... | |
| | Operation— | |
| 19,950,000 | Fuel..... | R20,696,000 |
| 317,000 | Water and Stores..... | 439,000 |
| 2,446,000 | Salaries and Wages..... | 2,551,000 |
| 189,000 | Other Expenses..... | 312,000 |
| | Maintenance— | |
| 1,332,000 | Stores..... | 1,334,000 |
| 2,154,000 | Salaries and Wages..... | 2,221,000 |
| 140,000 | Other Expenses..... | 117,000 |
| | Electricity Purchased..... | 79,000 |
| 14,000 | Interconnector..... | 77,000 |
| | Operation and Maintenance— | |
| 16,000 | Stores..... | 17,000 |
| 52,000 | Salaries and Wages..... | 55,000 |
| 4,000 | Other Expenses..... | 5,000 |
| | General Expenses..... | 2,606,000 |
| | Local Administration and Technical Management..... | 788,000 |
| 719,000 | General Expenses (including Stores Expenses, Rates, Insurance, Pension Fund Contributions, etc.)..... | 1,330,000 |
| 1,254,000 | Head Office Administration and Engineering Expenses..... | 488,000 |
| 427,000 | | |
| | Capital Charges..... | 24,206,000 |
| | Interest..... | 12,309,000 |
| 11,201,000 | Redemption Fund..... | 6,374,000 |
| 5,818,000 | Instalments and Provision for Repayment of Overseas Loans..... | 2,674,000 |
| 2,568,000 | Reserve Fund..... | 2,849,000 |
| 2,613,000 | | |
| R51,214,000 | | R54,638,000 |

| | | |
|--|---|--------------------|
| | | R259,000 |
| | Sundry Revenue..... | |
| | Allocation..... | 54,379,000 |
| | Rand and Orange Free State Undertaking..... | R48,610,000 |
| | Eastern Transvaal Undertaking..... | 4,761,000 |
| | Cape Northern Undertaking..... | 1,008,000 |
| | | R51,214,000 |

| |
|------------------|
| 1963 R249,000 |
| 50,965,000 |
| 46,428,000 |
| 3,746,000 |
| 791,000 |

Electricity Supply Commission

ANNEXURE B

POWER STATIONS: PRINCIPAL EQUIPMENT INSTALLED AS AT 31ST DECEMBER 1964

| Undertaking and Area (Sq. Miles) | Electric Power Station | Type | STATION CAPACITY | | BOILERS | | MAIN GENERATORS | | HOUSE SETS | |
|-----------------------------------|---------------------------------------|----------------|----------------------------------|-------------------------------|------------------|--|------------------|------------------------------|------------|-----------------------|
| | | | Boilers Thousand lb/hr. | Generators MW | No. | Continuous Maximum Rating Each Thousand lb/hr. | No. | Normal Rating Each MW | No. | Normal Rating Each MW |
| Border (21,500) | King William's Town | Steam... | 10·0 36·0 | 3·0 0·5 | 1 3 | 10·0 12·0 | 2 1 | 1·5 0·5 | | |
| | King William's Town | Oil..... | 46·0 — | 3·5 1·0 | 4 — | — | 3 1 | 1·0 | | |
| | King William's Town Total..... | | 46·0 | 4·5 | 4 | — | 4 | | | |
| | West Bank No. 1 | Steam... | 129·0 220·0 | 1·5 8·0 22·5 | 6 4 | 21·5 55·0 | 1 2 3 | 1·5 4·0 7·5 | | |
| | West Bank No. 2 | Steam... | 349·0 510·0 | 32·0 45·0 | 10 3 | 170·0 | 6 3 | 15·0 | | |
| | West Bank No. 1 and No. 2 Total | | 859·0 | 77·0 | 13 | | 9 | | | |
| | Total Border Undertaking..... | Steam & Oil... | 905·0 | 81·5 | 17 | | 13 | | | |
| Cape Eastern (3,100) | No generating plant. | | | | | | | | | |
| Cape Western Undertaking (23,600) | Salt River No. 1 | Steam... | 120·0 600·0 | 30·0 60·0 0·3 | 2 6 | 60·0 100·0 | 3 3 | 10·0 20·0 | 1 | 0·3 |
| | Salt River No. 1 Total..... | | 720·0 | 90·3 | 8 | | 6 | | 1 | |
| | Salt River No. 2 | Steam... | 1 560·0 | 120·0 | 6 | 260·0 | 4 | 30·0 | | |
| | Salt River No. 1 and No. 2 Total..... | | 2 280·0 | 210·3 | 14 | | 10 | | 1 | |
| | Hex River..... | Steam... | 800·0 550·0 | 60·0 60·0 | 4 2 | 200·0 275·0 | 3 2 | 20·0 30·0 | | |
| | Hex River Total... | | 1 350·0 | 120·0 | 6 | | 5 | | | |
| | Total Cape Western Undertaking..... | Steam... | 3 630·0 | 330·3 | 20 | | 15 | | 1 | 0·3 |
| Natal Undertaking (32,050) | Colenso No. 1 and No. 2..... | Steam... | 480·0 320·0 900·0 400·0 | 60·0 75·0 30·0 | 8 4 5 2 | 60·0 80·0 180·0 200·0 | 5 3 1 | 12·0 25·0 30·0 | | |
| | Colenso No. 1 and No. 2 Total..... | | 2 100·0 | 165·0 | 19 | | 9 | | | |
| | Ingagane..... | Steam... | 1 800·0 | 200·0 | 2 | 900·0 | 2 | 100·0 | | |
| | Congella No. 1 and No. 2..... | Steam... | 360·0 400·0 1 600·0 | 36·0 20·0 30·0 120·0 | 6 4 8 | 60·0 100·0 200·0 | 3 1 1 3 | 12·0 20·0 30·0 40·0 | | |
| | Congella No. 1 and No. 2 Total..... | | 2 360·0 | 206·0 | 18 | | 8 | | | |

| Undertaking and Area (Sq. Miles) | Electric Power Station | Type | STATION CAPACITY | | BOILERS | | MAIN GENERATORS | | HOUSE SETS | |
|---|------------------------|----------|-------------------------|---------------|---------|--|-----------------|-----------------------|------------|-----------------------|
| | | | Boilers Thousand lb/hr. | Generators MW | No. | Continuous Maximum Rating Each Thousand lb/hr. | No. | Normal Rating Each MW | No. | Normal Rating Each MW |
| Natal Undertaking (32,050) | Umgeni..... | Steam... | 1 440·0 | 120·0 | 8 | 180·0 | 4 | 30·0 | | |
| | | | 1 300·0 | 120·0 | 5 | 260·0 | 2 | 60·0 | | |
| | Umgeni Total..... | | 2 740·0 | 240·0 | 13 | | 6 | | | |
| | Port Shepstone..... | Oil..... | | 1·4 | | | 2 | 0·7 | | |
| | | | | 2·0 | | | 2 | 1·0 | | |
| Port Shepstone Total | | | 3·4 | | | 4 | | | | |
| Total Natal Undertaking..... | Steam & Oil | | 9 000·0 | 814·4 | 52 | | 29 | | | |
| Eastern Transvaal Undertaking (35,700) | Komati..... | Steam... | 4 500·0 | 500·0 | 5 | 900·0 | 5 | 100·0 | | |
| | | | 2 250·0 | 125·0 | 2 | 1 125·0 | 1 | 125·0 | | |
| | Komati Total..... | | 6 750·0 | 625·0 | 7 | | 6 | | | |
| | Witbank..... | Steam... | 1 120·0 | 120·0 | 16 | 70·0 | 6 | 20·0 | | |
| | | | 160·0 | 8·0 | 2 | 80·0 | | | 1 | 8·0 |
| Witbank Total..... | | 1 280·0 | 128·0 | 18 | | 6 | | 1 | | |
| Total Eastern Transvaal..... | Steam... | | 8 030·0 | 753·0 | 25 | | 12 | | 1 | |
| R. & O.F.S. Undertaking. (55,700) | Highveld..... | Steam... | 4 400·0 | 480·0 | 8 | 550·0 | 8 | 60·0 | | |
| | Klip..... | Steam... | 4 500·0 | 396·0 | 25 | 180·0 | 12 | 33·0 | | |
| | | | | 28·0 | | | | | 4 | 7·0 |
| | Klip Total..... | | 4 500·0 | 424·0 | 25 | | 12 | | 4 | |
| | Rosherville..... | Steam... | 456·0 | 38·4 | 12 | 38·0 | 4 | 9·6 | | |
| | | | 336·0 | | 7 | 48·0 | | | | |
| | Rosherville Total... | | 792·0 | 38·4 | 19 | | 4 | | | |
| | Taaibos..... | Steam... | 4 640·0 | 480·0 | 8 | 580·0 | 8 | 60·0 | | |
| | Vaal..... | Steam... | 3 420·0 | 297·0 | 18 | 190·0 | 9 | 33·0 | | |
| | | | | 21·0 | | | | | 3 | 7·0 |
| | Vaal Total..... | | 3 420·0 | 318·0 | 18 | | 9 | | 3 | |
| | Vereeniging..... | Steam... | 900·0 | 60·0 | 20 | 45·0 | | | | |
| | | | 120·0 | 90·0 | 2 | 60·0 | 3 | 20·0 | | |
| | | 1 080·0 | | 6 | 180·0 | 3 | 30·0 | | | |
| Vereeniging Total... | | 2 100·0 | 150·0 | 28 | | 6 | | | | |
| Vierfontein..... | Steam... | 3 990·0 | 360·0 | 19 | 210·0 | 12 | 30·0 | | | |
| Wilge..... | Steam... | 500·0 | | 4 | 125·0 | | | | | |
| | | 1 600·0 | 60·0 | 4 | 400·0 | 2 | 30·0 | | | |
| | | 580·0 | 180·0 | 1 | 580·0 | 3 | 60·0 | | | |
| Wilge Total..... | | 2 680·0 | 240·0 | 9 | | 5 | | | | |
| Total R. & O.F.S. Undertaking..... | Steam | | 26 522·0 | 2 490·4 | 134 | | 64 | | 7 | |

| Undertaking and Area (Sq. Miles) | Electric Power Station | Type | STATION CAPACITY | | BOILERS | | MAIN GENERATORS | | HOUSE SETS | |
|------------------------------------|---------------------------------------|----------|-------------------------|---------------|---------|--|-----------------|-----------------------|------------|-----------------------|
| | | | Boilers Thousand lb/hr. | Generators MW | No. | Continuous Maximum Rating Each Thousand lb/hr. | No. | Normal Rating Each MW | No. | Normal Rating Each MW |
| Cape Northern Undertaking (26,700) | Central Kimberley.. | Steam... | 240·0 | 3·0 | 8 | 30·0 | 1 | 3·0 | | |
| | | | 300·0 | 15·0 | 4 | 75·0 | 3 | 5·0 | | |
| | Central Kimberley Total..... | | 540·0 | 30·0 | 12 | | 2 | 6·0 | | |
| | Total E.T.U. + R. & O.F.S.U. + C.N.U. | Steam... | 35 092·0 | 3 273·4 | 171 | | 82 | | 8 | |
| | Total All Escom.... | Oil..... | | 4·4 | | | 5 | | | |
| | | Steam... | 48 627·0 | 4 437·9 | 260 | | 134 | | 9 | |
| | | Steam... | 48 627·0 | 4 499·6 | 260 | | 139 | | 9 | |

Major Items of Plant Commissioned 1964

| | | | | | | | | | | |
|-------------------|---------------------|----------|---------|-------|---|---------|---|-------|--|--|
| Natal | Ingagane..... | Steam... | 900·0 | 100·0 | 1 | 900·0 | 1 | 100·0 | | |
| Eastern Transvaal | Komati..... | Steam... | 900·0 | 100·0 | 1 | 900·0 | 1 | 100·0 | | |
| | | | 2 250·0 | 125·0 | 2 | 1 125·0 | 1 | 125·0 | | |
| | Komati Total..... | | 3 150·0 | 225·0 | 3 | | 2 | | | |
| | Total All Escom.... | Steam... | 4 050·0 | 325·0 | 4 | | 3 | | | |

**TRANSMISSION LINES AND CABLES: CIRCUIT MILES (EXCLUDING SERVICE CONNECTIONS
ON RETICULATION SYSTEMS) AT 31ST DECEMBER, 1964.**

(a) TRANSMISSION LINES

| Undertaking | 275kV | 132kV | 88kV | 66kV | 42kV | 33kV | 22kV 21kV | 11kV | 6·6kV | 3·3kV | 2·0kV 2·1kV 2·2kV | 380/220V | Total |
|---------------------|--------|----------|----------|-----------|----------|---------|--------------|-----------|---------|-------|-------------------------|-----------|------------|
| Border..... | | | | 139·10 | | 35·70 | 94·51 | 564·13 | | 4·92 | | 86·66 | 925·02 |
| Cape Eastern..... | | 378·08 | | 287·15 | | | 26·00 | 33·00 | | | | 21·41 | 59·00 |
| Cape Northern..... | | 497·107 | | 653·166 | | | 23·35 | 660·10 | | | | 1,053·491 | 1,370·09 |
| Cape Western..... | | 317·13 | | 380·05 | 89·13 | | 57·824 | 1,763·012 | 293·008 | | | 150·69 | 4,464·076 |
| Eastern Transvaal.. | 120·6 | 200·24 | 886·93 | | | | 884·96 | 972·66 | 39·88 | 8·40 | 47·47 | 437·39 | 3,010·97 |
| NATAL..... | 332·03 | | | | | | 34·30 | 2,020·08 | 272·70 | 1·55 | 0·95 | | 4,536·34 |
| Rand & O.F.S..... | 478·81 | 1,342·11 | 2,738·24 | | 1,266·70 | | 171·44 | 1,517·40 | 215·42 | | 5·62 | 529·53 | 8,265·27 |
| Totals..... | 931·44 | 2,734·66 | 3,625·17 | 1,459·466 | 1,355·83 | 532·338 | 1,292·384 | 7,530·382 | 821·008 | 14·87 | 54·04 | 2,279·171 | 22,630·766 |

(b) UNDERGROUND CABLES

| | | | | | | | | | | | | | |
|---------------------|--|-------|--|--------|------|--------|--------|---------|---------|-------|-------|---------|---------|
| Border..... | | | | | | | 0·82 | 24·56 | | 2·34 | | 6·50 | 34·22 |
| Cape Eastern..... | | | | | | | | | | | | | — |
| Cape Northern..... | | | | | | | | | | | | | — |
| Cape Western..... | | 4·081 | | 23·324 | | 67·792 | 19·24 | 121·645 | 4·661 | 2·128 | | 117·338 | 340·969 |
| Eastern Transvaal.. | | | | | | 4·73 | | 16·44 | 1·57 | 1·04 | 1·01 | 66·81 | 106·11 |
| NATAL..... | | | | | 4·76 | | 82·80 | 50·94 | 5·45 | 0·32 | 0·010 | 29·41 | 90·86 |
| Rand & O.F.S..... | | | | 23·324 | 4·76 | | | 64·21 | 175·99 | | | 71·42 | 399·18 |
| Totals..... | | 4·081 | | 23·324 | 4·76 | 72·522 | 102·86 | 277·795 | 187·671 | 5·828 | 1·02 | 291·478 | 971·339 |

CAPACITY OF TRANSFORMERS IN SERVICE AT 31ST DECEMBER, 1964.

| Undertaking | Number | MVA |
|-----------------------------------|---------------|-------------------|
| Border..... | 463 | 1,124·25 |
| Cape Eastern..... | 54 | 37·75 |
| Cape Northern..... | 1,117 | 464·26 |
| Cape Western..... | 4,052 | 1,491·751 |
| Eastern Transvaal..... | 2,386 | 1,132·254 |
| NATAL..... | 3,741 | 2,490·04 |
| Rand & O.F.S..... | 6,622 | 15,934·69 |
| At Compressor Stations, Rand..... | 39 | 306·2 |
| TOTALS..... | 18,474 | 22,981·195 |

| | | |
|---------------------------------------|---------------|--------------|
| 10 kVA and under..... | 6,186 | Transformers |
| Over 10 and under 100..... | 6,685 | „ |
| 100 and over but under 200..... | 1,143 | „ |
| 200 and over but under 500..... | 922 | „ |
| 500 and over but under 1,000..... | 701 | „ |
| 1,000 and over but under 10,000..... | 2,357 | „ |
| 10,000 and over but under 20,000..... | 246 | „ |
| 20,000 and over..... | 234 | „ |
| TOTAL..... | 18,474 | „ |

STATEMENT No. 2

PRINCIPAL EQUIPMENT ON ORDER AS AT 31ST DECEMBER, 1964.

| Undertaking | Electric Power Stations | BOILERS | | GENERATORS | |
|------------------------|-------------------------|---------|--|------------|-----------------------|
| | | No. | Continuous Maximum Rating Each Thousand lb/hr. | No. | Normal Rating Each MW |
| Border..... | West Bank No. 2 | 1 | 170 | — | — |
| Cape Eastern..... | — | — | — | — | — |
| Cape Northern..... | — | — | — | — | — |
| Cape Western..... | Salt River No. 2 | 4 | 260 | 2 | 60 |
| Eastern Transvaal..... | Komati | 2 | 1,125 | 3 | 125 |
| Natal..... | Ingagane | 2 | 900 | 2 | 100 |
| Rand..... | Camden | 5 | 1,800 | 5 | 200 |

SUMMARY:

| | | |
|------------------------------|------------|--------------------------|
| Number of boilers | 14 | C.M.R. 14,260,000 lb/hr. |
| Number of Generators | 12 | Total Rating 1,695 MW. |

UNITS SOLD BY UNDERTAKINGS TO ALL CONSUMERS DURING PAST FORTY YEARS.
(MILLION UNITS)

| Year | Border | Cape Eastern | Cape Northern | Cape Western | Eastern Transvaal | Klip | Natal Central | Natal Southern | Natal U. | Rand & O.F.S. | Sabie | Vaal | Total |
|------|--------|--------------|---------------|--------------|-------------------|---------|---------------|----------------|----------|---------------|-------|-------|----------|
| 1926 | | | | 0.3 | 160.0 | | 0.7 | | | | 0.7 | | 161.7 |
| 1927 | | | | 5.8 | 439.1 | | 104.2 | | | | 1.9 | | 551.0 |
| 1928 | | | | 31.0 | 464.3 | | 114.2 | 15.6 | | | 2.8 | | 627.9 |
| 1929 | | | | 47.9 | 543.1 | | 123.9 | 78.9 | | | 3.2 | | 797.0 |
| 1930 | | | | 49.8 | 619.0 | | 117.1 | 99.2 | | | 4.6 | | 889.6 |
| 1931 | | | | 52.1 | 603.4 | | 101.1 | 103.9 | | | 6.6 | | 867.1 |
| 1932 | | | | 64.3 | 610.3 | | 100.3 | 109.8 | | | 6.1 | | 890.7 |
| 1933 | | | | 100.7 | 639.4 | | 109.2 | 118.5 | | | 6.3 | | 974.1 |
| 1934 | | | | 73.6 | 648.2 | | 124.9 | 131.1 | | | 7.3 | | 985.2 |
| 1935 | | | | 80.0 | 727.9 | | 154.3 | 149.9 | | | 7.2 | | 1,119.2 |
| 1936 | | | | 85.8 | 696.4 | 557.0 | 171.5 | 170.5 | | | 6.9 | | 1,688.0 |
| 1937 | | | | 94.0 | 684.5 | 1,349.9 | 210.6 | 189.4 | | | 7.2 | | 2,535.6 |
| 1938 | | | | 98.8 | 768.1 | 1,666.9 | 234.9 | 209.5 | | | 7.2 | | 2,985.5 |
| 1939 | | | | 106.5 | 767.7 | 2,193.2 | 266.2 | 233.7 | | | 6.4 | | 3,573.7 |
| 1940 | | | | 119.8 | 853.3 | 2,566.5 | 281.1 | 242.7 | | | 6.7 | | 4,070.2 |
| 1941 | | | | 136.2 | 862.6 | 2,675.9 | 302.4 | 270.3 | | | 6.6 | | 4,254.0 |
| 1942 | | | | 151.8 | 873.4 | 2,707.8 | 307.7 | 273.7 | | | 6.3 | | 4,320.8 |
| 1943 | | | | 145.7 | 849.1 | 2,669.1 | 312.4 | 293.4 | | | 5.9 | | 4,275.6 |
| 1944 | | | | 158.7 | 889.2 | 2,703.6 | 336.0 | 321.6 | | | 6.7 | | 4,415.8 |
| 1945 | | | | 156.9 | 830.7 | 2,643.0 | 333.2 | 348.8 | | | 6.6 | 377.9 | 4,706.1 |
| 1946 | | | | 184.6 | 896.9 | 2,614.3 | 347.0 | 369.7 | | | 7.4 | 582.5 | 5,002.4 |
| 1947 | 56.2 | | | 198.6 | 887.7 | 2,547.2 | 346.0 | 402.6 | | | 7.6 | 668.6 | 5,114.5 |
| 1948 | 69.2 | | | 222.4 | 633.2 | 1,207.4 | 367.9 | 448.7 | | 2,185.7 | 7.3 | 435.1 | 5,576.9 |
| 1949 | 68.7 | | | 249.5 | 358.2 | | 371.8 | 513.0 | | 4,653.9 | 7.0 | | 6,222.2 |
| 1950 | 79.9 | | 53.9 | 271.9 | 378.5 | | 406.5 | 561.8 | | 5,151.8 | 6.3 | | 6,910.6 |
| 1951 | 88.1 | | 58.5 | 303.5 | 386.8 | | 433.4 | 617.0 | | 5,563.2 | 6.1 | | 7,456.5 |
| 1952 | 97.7 | | 61.3 | 341.2 | 425.0 | | 454.0 | 655.6 | | 6,039.6 | 6.1 | | 8,080.6 |
| 1953 | 107.8 | | 67.1 | 375.5 | 409.9 | | 492.3 | 713.2 | | 6,559.9 | 6.4 | | 8,732.2 |
| 1954 | 118.2 | | 70.7 | 436.2 | 270.5 | | 532.5 | 777.7 | | 7,465.2 | 5.6 | | 9,676.6 |
| 1955 | 130.8 | | 73.2 | 527.1 | 394.6 | | 546.4 | 870.0 | | 8,416.3 | 5.7 | | 10,964.0 |
| 1956 | 139.1 | | 78.7 | 585.1 | 505.9 | | 595.4 | 957.7 | | 9,151.6 | 6.0 | | 12,019.5 |
| 1957 | 143.1 | | 86.1 | 698.6 | 536.6 | | 621.7 | 1,018.7 | | 9,625.5 | 5.9 | | 12,763.1 |
| 1958 | 152.9 | | 115.2 | 826.0 | 584.1 | | 616.1 | 1,104.1 | | 10,200.6 | 3.0 | | 13,602.2 |
| 1959 | 165.0 | | 171.4 | 861.8 | 633.3 | | 629.4 | 1,228.6 | | 11,034.8 | | | 14,724.5 |
| 1960 | 172.3 | | 185.2 | 871.6 | 762.0 | | 649.3 | 1,409.0 | | 12,044.8 | | | 16,094.1 |
| 1961 | 178.8 | | 191.3 | 860.0 | 901.5 | | 684.0 | 1,497.5 | | 12,700.0 | | | 17,013.2 |
| 1962 | 188.6 | | 224.9 | 945.0 | 1,012.2 | | 731.0 | 1,589.5 | | 13,429.8 | | | 18,121.0 |
| 1963 | 204.9 | 0.4 | 264.9 | 1,051.4 | 1,212.1 | | 779.0 | 1,764.6 | | 14,223.1 | | | 19,500.0 |
| 1964 | 228.8 | | 311.4 | 1,163.9 | 1,553.6 | | — | — | 2,922.1 | 14,973.4 | | | 21,153.6 |

Notes:—(1) Klip and Vaal are now included in Rand and O.F.S. Undertaking.

(2) Sabie Undertaking incorporated in Eastern Transvaal Undertaking since 1st July, 1958, in terms of the Amended Licence. De-commissioned November, 1964.

(3) Natal Central and Southern one Undertaking as from 1st April, 1964.

UNITS SOLD AND NUMBER OF CONSUMERS (Electricity and Air)

STATEMENT No. 4

Energy Used:—
ELECTRICITY = 99.558 % of Total

| Undertakings. | TRACTION | | | BULK | | | MINING | | |
|------------------------|---------------|-------------------|-----------|---------------|---------------|-----------|---------------|-----------------|-----------|
| | Units | Per cent Traction | No. Cons. | Units | Per cent Bulk | No. Cons. | Units | Per cent Mining | No. Cons. |
| Border..... | | | | 201,721,800 | 4.488 | 14 | | | |
| Cape Eastern..... | | | | 300,520 | 0.006 | 1 | | | |
| Cape Northern..... | 1,759,296 | 0.113 | 2 | 97,597,630 | 2.172 | 8 | 144,174,112 | 1.464 | 49 |
| Cape Western..... | 356,489,436 | 22.872 | 3 | 258,023,440 | 5.741 | 32 | | | |
| Eastern Transvaal.... | 89,048,650 | 5.713 | 1 | 78,350,075 | 1.744 | 12 | 575,349,954 | 5.843 | 62 |
| Natal..... | 521,314,806 | 33.448 | 1 | 1,904,045,462 | 42.369 | 21 | 72,519,243 | 0.736 | 19 |
| Rand & O.F.S..... | 589,982,452 | 37.854 | 2 | 1,953,998,566 | 43.480 | 99 | 9,055,202,321 | 91.957 | 110 |
| Total Electricity..... | 1,558,594,640 | 100.000 | 9 | 4,494,037,493 | 100.000 | 187 | 9,847,245,630 | 100.000 | 240 |
| Per cent of Total..... | 7.368 | | | 21.245 | | | 46.550 | | |

AIR — 0.442 % of Total

| | | | | | | | | | |
|----------------------------|--|--|--|-----------|--|---|------------|--|---|
| Rand & O.F.S.— Air..... | | | | 4,535,098 | | 1 | 80,082,223 | | 8 |
| Total Air..... | | | | 4,535,098 | | 1 | | | |
| Per cent of Total..... | | | | 4.829 | | | 85.272 | | |

ELECTRICITY AND AIR = 100%

| | | | | | | | | | |
|-------------------------|---------------|--|---|---------------|--|-----|---------------|--|-----|
| Grand Total all Sales.. | 1,558,594,640 | | 9 | 4,498,572,591 | | 188 | 9,927,327,853 | | 248 |
| Per cent of Grand Total | 7.335 | | | 21.172 | | | 46.723 | | |

Energy used by Provinces:—
ELECTRICITY AND AIR:

| | | | | | | | | | |
|----------------|---------------|---------|---|---------------|---------|-----|---------------|---------|-----|
| Cape..... | 357,648,732 | 22.947 | 4 | 577,230,249 | 12.831 | 55 | 143,777,272 | 1.448 | 48 |
| Natal..... | 493,285,889 | 31.649 | 1 | 1,864,073,292 | 41.437 | 15 | 72,519,243 | 0.731 | 19 |
| O.F.S..... | 53,503,236 | 3.433 | 1 | 275,632,680 | 6.127 | 42 | 2,525,851,816 | 25.443 | 16 |
| Transvaal..... | 654,156,783 | 41.971 | 3 | 1,781,636,370 | 39.605 | 76 | 7,185,179,522 | 72.378 | 165 |
| Total..... | 1,558,594,640 | 100.000 | 9 | 4,498,572,591 | 100.000 | 188 | 9,927,327,853 | 100.000 | 248 |

| INDUSTRIAL | | | DOMESTIC AND STREET LIGHTING | | | TOTAL UNITS SOLD | | Total Number of Consumers |
|---------------|----------------|-----------|------------------------------|----------------------|-----------|------------------|---------------------------|---------------------------|
| Units | Per cent. Ind. | No. Cons. | Units | Per cent Dom. & S.L. | No. Cons. | Units | Per cent Total Units sold | |
| 654,419 | 0.239 | 331 | 15,391,537 | 4.043 | 3,118 | 228,767,756 | 1.081 | 3,463 |
| 11,124,605 | 0.003 | 13 | 14,944 | 0.004 | 38 | 440,069 | 0.002 | 52 |
| 60,313,516 | 1.238 | 200 | 7,558,808 | 1.986 | 1,638 | 311,403,362 | 1.472 | 1,897 |
| 375,626,698 | 7.708 | 3,705 | 173,770,113 | 45.645 | 34,487 | 1,163,909,687 | 5.502 | 38,227 |
| 790,038,530 | 16.212 | 818 | 20,799,610 | 5.464 | 3,735 | 1,553,586,819 | 7.344 | 4,628 |
| 372,780,818 | 7.650 | 1,641 | 51,438,442 | 13.512 | 12,171 | 2,922,098,771 | 13.814 | 13,853 |
| 3,262,519,200 | 66.950 | 1,074 | 111,719,084 | 29.346 | 11,210 | 14,973,421,623 | 70.785 | 12,495 |
| 4,873,057,786 | 100.000 | 7,782 | 380,692,538 | 100.000 | 66,397 | 21,153,628,087 | 100.000 | 74,615 |
| 23.037 | | | 1.800 | | | 100.000 | | |

| | | | | | | | | |
|-----------|--|----|--|--|--|------------|--|----|
| 9,296,888 | | 21 | | | | 93,914,209 | | 30 |
| 9,296,888 | | 21 | | | | 93,914,209 | | 30 |
| 9.899 | | | | | | 100.0 | | |

| | | | | | | | | |
|---------------|--|-------|-------------|--|--------|----------------|--|--------|
| 4,882,354,674 | | 7,803 | 380,692,538 | | 66,397 | 21,247,542,296 | | 74,645 |
| 22.978 | | | 1.792 | | | 100.000 | | |

| | | | | | | | | |
|---------------|---------|-------|-------------|---------|--------|----------------|---------|--------|
| 447,639,505 | 9.169 | 4,238 | 196,359,632 | 51.580 | 39,192 | 1,722,655,390 | 8.108 | 43,537 |
| 368,608,282 | 7.550 | 1,413 | 44,626,300 | 11.722 | 9,838 | 2,843,113,006 | 13.381 | 11,286 |
| 131,743,744 | 2.698 | 144 | 4,666,645 | 1.226 | 1,027 | 2,991,398,121 | 14.079 | 1,230 |
| 3,934,363,143 | 80.583 | 2,008 | 135,039,961 | 35.472 | 16,340 | 13,690,375,779 | 64.432 | 18,592 |
| 4,882,354,674 | 100.000 | 7,803 | 380,692,538 | 100.000 | 66,397 | 21,247,542,296 | 100.000 | 74,645 |

POWER STATION OPERATING STATISTICS YEAR 1964

STATEMENT No. 5.

ELECTRICITY GENERATION

1-1 STEAM ELECTRIC Stations at 31/12 —(The number of Stations, those with separate Turbine Houses, i.e. not under same roof, are counted as two.

| Power Station | Units Generated | Units sent out | MAXIMUM DEMANDS | | Stn. L.F. U.S.O. % |
|---------------------------------------|-----------------------|-----------------------|---------------------------------------|----------------------|--------------------------|
| | | | ½ Hour (or Hour) sent out kW | 2 Min. Peak kW | |
| Border Undertaking: | | | | | |
| King William's Town..... | — | — | | | |
| West Bank Nos. 1 and 2..... | 245,867,750 | 232,883,480 | 47,110 | 50,100 | 56.3 |
| Total..... | 245,867,750 | 232,883,480 | | | |
| Cape Western Undertaking: | | | | | |
| Hex River..... | 501,048,800 | 474,348,690 | 111,400 | — | 48.4 |
| Salt River No. 1..... | 59,733,316 | 54,997,971 | 51,205 | 58,500 | 12.2 |
| Salt River No. 2..... | 773,907,100 | 739,451,640 | 119,022 | 129,000 | 70.7 |
| Total..... | 1,334,689,216 | 1,268,798,301 | | | |
| Natal Undertaking: | | | | | |
| Colenso Nos. 1 and 2..... | 637,958,650 | 595,313,590 | 119,020 | 143,000 | 56.9 |
| Congella Nos. 1 and 2..... | 743,498,900 | 689,271,700 | 128,095 | 148,000 | 53.2 |
| Ingagane..... | 629,813,150 | 584,448,800 | 152,000 | 160,000 | 43.8 |
| Umgeni..... | 1,211,905,216 | 1,142,049,716 | 223,200 | 237,000 | 58.3 |
| Total..... | 3,223,175,916 | 3,011,083,806 | | | |
| Eastern Transvaal Undertaking: | | | | | |
| Komati..... | 3,246,797,629 | 2,999,191,458 | 489,642 | — | 69.7 |
| Witbank..... | 609,149,984 | 562,582,527 | 113,311 | — | 66.7 |
| Total..... | 3,855,947,613 | 3,561,773,985 | | | |
| Rand and O.F.S. Undertaking: | | | | | |
| Highveld..... | 3,417,944,105 | 3,205,814,621 | 465,709 | — | 78.4 |
| Klip..... | 2,326,535,342 | 2,165,822,826 | 363,380 | — | 67.8 |
| Rosherville..... | 11,522,785 | 10,234,553 | 20,906 | — | 4.9 |
| Taaibos..... | 3,367,686,495 | 3,116,614,682 | 449,716 | — | 78.9 |
| Vaal..... | 2,159,648,428 | 2,029,735,725 | 292,052 | — | 79.1 |
| Vereeniging..... | 670,041,007 | 616,777,905 | 138,900 | — | 50.6 |
| Vicfontein..... | 1,940,048,741 | 1,807,195,056 | 330,590 | — | 67.6 |
| Wilge..... | 1,659,465,561 | 1,533,277,399 | 224,834 | — | 77.6 |
| Total..... | 15,552,892,464 | 14,485,472,767 | | | |
| Cape Northern Undertaking: | | | | | |
| Central Kimberley..... | 38,587,100 | 31,612,818 | 23,680 | 25,700 | 22.8 |
| Total..... | 38,587,100 | 31,612,818 | | | |
| Total CNU \| E.T.U.+R. & O.F.S. U. | 19,447,427,177 | 18,078,859,570 | | | |
| GRAND TOTAL..... | 24,251,160,059 | 22,591,625,157 | | | |

| Coal Burnt Tons (2,000 lbs.) | LB OF COAL | | Calorific Value of Coal B. Th. U. As Rec'd (Wt. Ave.) | B. Th. U. per Unit | | OVERALL THERMAL EFFICIENCY | |
|------------------------------------|-----------------------|----------------------|---|--------------------|----------|-------------------------------|---------------|
| | Per Unit Generated | Per Unit Sent out | | Generated | Sent Out | Gen. % | Sent Out % |
| — | | | | | | | |
| 160,415 | 1.305 | 1.378 | 11,540 | 15,060 | 15,900 | 22.7 | 21.5 |
| 160,415 | | | | | | | |
| 277,574 | 1.108 | 1.170 | 11,610 | 12,860 | 13,580 | 26.5 | 25.1 |
| 31,373 | 1.643 | 1.784 | 11,570 | 19,010 | 20,640 | 17.9 | 16.5 |
| 415,604 | 1.039 | 1.087 | 11,570 | 12,020 | 12,580 | 28.4 | 27.1 |
| 724,551 | | | | | | | |
| 487,808 | 1.529 | 1.639 | 11,400 | 17,430 | 18,680 | 19.6 | 18.3 |
| 491,110 | 1.341 | 1.451 | 11,300 | 15,150 | 16,400 | 22.5 | 20.8 |
| 319,162 | 1.014 | 1.092 | 10,910 | 11,060 | 11,910 | 30.9 | 28.6 |
| 692,693 | 1.143 | 1.213 | 11,720 | 13,400 | 14,220 | 25.5 | 24.0 |
| 1,990,773 | | | | | | | |
| 1,781,328 | 1.097 | 1.188 | 10,020 | 10,990 | 11,900 | 31.1 | 28.7 |
| 571,094 | 1.876 | 2.030 | 10,830 | 20,320 | 21,970 | 16.8 | 15.5 |
| 2,352,422 | | | | | | | |
| 2,189,899 | 1.284 | 1.369 | 8,700 | 11,170 | 11,910 | 30.6 | 28.7 |
| 1,935,109 | 1.664 | 1.787 | 9,410 | 15,660 | 16,810 | 21.8 | 20.4 |
| 22,970 | 3.541 | 3.636 | 9,540 | 33,780 | 34,690 | — | 7.8 |
| 2,283,675 | 1.356 | 1.465 | 8,850 | 12,000 | 12,970 | 28.5 | 26.3 |
| 1,960,470 | 1.816 | 1.932 | 8,500 | 15,440 | 16,420 | 22.1 | 20.8 |
| 894,284 | 2.669 | 2.900 | 8,230 | 21,970 | 23,890 | 15.7 | 14.5 |
| 1,519,988 | 1.567 | 1.682 | 9,040 | 14,170 | 15,150 | 24.1 | 22.4 |
| 1,100,488 | 1.327 | 1.436 | 9,640 | 12,700 | 13,740 | 26.8 | 24.8 |
| 11,906,883 | | | | | | | |
| 48,384 | 2.599 | 3.223 | 11,230 | 28,600 | 35,090 | 12.0 | 9.9 |
| 48,384 | | | | | | | |
| 14,307,689 | | | | | | | |
| 17,183,428 | | | | | | | |

POWER PURCHASED FROM OUTSIDE SOURCES IN 1964

STATEMENT NO. 6

| Undertaking | Purchased from | Maximum Demands | | Units |
|----------------------------------|---|-----------------|--------|----------------|
| | | (kVA) | | |
| Cape Eastern..... | Port Elizabeth..... | 490 | | 500 331 |
| Natal..... | Durban Navigation Collieries, Ltd.... | 264 | | 344 436 |
| | Durban—Canelands..... | 3 892 | | 16 894 575 |
| | S.A. Pulp and Paper Industries, Ltd.... | — | | 44 796 |
| Rand and O.F.S. Undertaking..... | Pretoria Municipality..... | kW | 38 700 | 22 153 194 |
| | Johannesburg Municipality..... | kW | 29 059 | 1 013 255 |
| Total Units purchased..... | | | | 40 950 587 |
| Total Units sold—1964..... | | | | 21 247 542 296 |
| Purchased as % of Sales..... | | | | 0.193 |

STATEMENT No. 7

WATER (OTHER THAN SEA WATER) CONSUMED BY POWER STATIONS FOR THE YEAR 1964

(Millions of Gallons)

| Undertakings | Potable Water | | Crude River Water | | Water from Other Sources including Boreholes, Dams and Sewage | |
|---|---------------|------|-------------------|--------|---|------|
| | 1963 | 1964 | 1963 | 1964 | 1963 | 1964 |
| Border..... | 28 | 28 | — | — | — | — |
| Cape Eastern..... | — | 88 | — | — | — | — |
| Cape Northern..... | 88 | 80 | — | — | — | — |
| Cape Western..... | 278 | 369 | — | — | — | — |
| Natal Central..... | 91 | — | 476 | — | 412 | — |
| Natal Southern..... | 954 | — | — | — | — | — |
| Natal Undertaking..... | — | 941 | — | 483 | — | 397 |
| Rand (including Komati and Witbank Power Stations)..... | 315 | 316 | 17 391 | 18 205 | 178 | 95 |

Note: These figures include water blown down from cooling tower ponds and returned to source of supply.

1-2 HYDRO ELECTRIC

| Power Station* | Units Generated | Units Sent Out | Maximum Demands—kW | | Station Load Factor Sent Out | Rain | |
|------------------|-----------------|----------------|--------------------|--------------|------------------------------|--------|---|
| | | | ½ Hour S.O. | 2 Mins. Gen. | | Inches | |
| Sabie Gorge..... | 4,403,300 | 4,223,700 | 1,000 | 900 | 70.00 | — | — |
| Sabie Falls..... | 293,510 | 293,510 | 190 | 200 | 97.50 | — | — |
| Total..... | 4,696,810 | 4,517,210 | | | | | |

* Station shut down 5/11/64

1-3 DIESEL ELECTRIC

| Power Station | ½ Units Generated | Units Sent Out | Maximum Demands kW | | | Fuel Consumed | | Lub. Oil gal. |
|--------------------------|-------------------|----------------|--------------------|---------|-----------|------------------|---|---------------|
| | | | ½ Hour | 2 Mins. | Total lb. | Per kWh Sent Out | | |
| King William's Town..... | 3,000 | 3,000 | — | — | 2,075 | 0.692 | — | |
| Port Shepstone..... | 23,964 | 23,262 | 2,950 | 3,100 | 14,830 | 0.638 | — | |
| Totals..... | 26,964 | 26,262 | — | — | 16,905 | — | — | |

(2) COMPRESSED AIR GENERATION

| Station | *Type | Units Generated | Air Units Sent Out | | Coal Burnt lb Coal/Units Sent Out | Electric Input | | Max. Sust. Ld. over 1 Hour | L.F. |
|---|----------|-----------------|--------------------|-------|-----------------------------------|----------------------|--------------|----------------------------|------|
| | | | Units | % | | Total kWh excl. Loss | U.S.O./kWh % | | |
| Central Rand Compressed Air System: Rosherville..... | Steam | 42,614,800 | 42,475,100 | 42.8 | 12,868 | 3,431 | — | — | — |
| Robinson..... | Electric | 34,467,300 | 34,467,300 | 34.7 | — | — | 44,359,125 | 33,680 January | 33.5 |
| Canada Dam..... | Electric | 22,306,000 | 22,306,000 | 22.5 | — | — | 27,151,871 | — | — |
| Air Pipeline Totals..... | | 99,388,100 | 99,248,400 | 100.0 | 72,868 | — | 71,510,996 | — | — |

*Electrically driven compressors are fed from the electric distribution system of the Rand Undertaking.

(3) GENERATION SUMMARY

| | Steam Hydro Diesel | Units Generated | Units Sent Out | Coal Burnt |
|---|--------------------------|--------------------------------------|---------------------------------------|------------|
| Electricity Total Units..... | | 24 251 160 59 4 696 810 26 964 | 22 591 625 157 4 517 210 26 262 | 17 183 428 |
| | | 24 255 883 833 | 22 596 168 629 | 17 183 428 |
| Air Units at Steam Driven Stations..... | | 99 388 100 | 99 248 400 | 72 868 |
| Steam Units Brakpan..... | | — — — — | — — — — | — — — — |
| GRAND TOTAL 1964..... | | 24 355 271 933 | 22 695 417 029 | 17 256 296 |
| Total for 1963..... | | 22 312 389 427 | 20 793 543 262 | 16 227 185 |
| Change on 1963 (Units or Tons)..... | | 2 042 882 506 | 1 901 873 767 | 1 029 111 |
| Per cent..... | | + 9·156 | + 9·146 | + 6·342 |

STATEMENT No. 8

STATEMENT SHOWING THE PRICE OR RENT OF LAND OR INTERESTS IN OR OVER LAND OR OTHER PROPERTY ACQUIRED OR HIRED BY THE COMMISSION DURING THE YEAR 1964.

(See previous Annual Reports for Rights or Interests in or over land acquired prior to 1964).

Cape Western Undertaking

| | |
|---|------------|
| Immovable property acquired for considerations amounting to | R13,660.00 |
| Servitudes acquired — capitalised payments amounting to | R4,081.45 |

Cape Northern Undertaking

| | |
|---|---------|
| Immovable property acquired for considerations amounting to | R200.00 |
| Servitudes acquired — capitalised payments amounting to | R222.96 |

Cape Eastern Undertaking

| | |
|---|------------|
| Immovable property acquired for considerations amounting to | R12,600.00 |
|---|------------|

Natal Central Undertaking

| | |
|---|-----------|
| Immovable property acquired for considerations amounting to | R3,240.00 |
| Servitudes acquired — capitalised payments amounting to | R5,834.47 |

Natal Southern Undertaking

| | |
|---|-----------|
| Immovable property acquired for considerations amounting to | R5,828.00 |
| Servitudes acquired — capitalised payments amounting to | R4,867.15 |

Eastern Transvaal Undertaking

| | |
|---|------------|
| Immovable property acquired for considerations amounting to | R62,600.00 |
| Servitudes acquired — capitalised payments amounting to | R3,212.46 |

Border Undertaking

| | |
|---|-----------|
| Immovable property acquired for considerations amounting to | R1,200.00 |
| Servitudes acquired — capitalised payments amounting to | R51.58 |
| Leases acquired for annual rentals amounting to | R36.50 |

Rand and O.F.S. Undertaking

| | |
|---|-------------|
| Immovable property acquired for considerations amounting to | R100,383.80 |
| Servitudes acquired — capitalised payments amounting to | R207,718.70 |
| Servitudes acquired — options moneys paid amounting to | R22,565.10 |
| Leases acquired for annual rentals amounting to | R2,185.94 |

**COAL USED AT COMMISSION'S POWER STATIONS
AVERAGE COST PER TON (2,000 lb.)**

STATEMENT No. 9.

| Power Station | 1954 | | 1955 | | 1956 | | 1957 | | 1958 | | 1959 | | 1960 | | 1961 | | 1962 | | 1963 | | 1964 | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R |
| Brakpan..... | 1.33 | 1.42 | 1.50 | 1.65 | 1.73 | 1.87 | 1.92 | 1.92 | 1.73 | 1.93 | 1.70 | 1.77 | 1.82 | 1.70 | 1.77 | 1.82 | 1.83 | 1.82 | 1.83 | 1.83 | 1.83 | 1.83 |
| Colenso..... | 2.15 | 2.52 | 2.71 | 3.08 | 3.28 | 3.40 | 3.59 | 3.40 | 2.97 | 3.17 | 3.12 | 3.11 | 3.36 | 3.12 | 3.11 | 3.36 | 3.48 | 3.36 | 3.48 | 3.48 | 3.48 | 3.48 |
| Congella..... | 2.72 | 3.13 | 3.25 | 3.45 | 3.58 | 3.76 | 3.84 | 4.38 | 3.58 | 3.82 | 3.79 | 3.75 | 3.91 | 3.79 | 3.75 | 3.91 | 3.59 | 3.91 | 3.59 | 3.59 | 3.59 | 3.59 |
| Hex River..... | 3.70 | 3.89 | 4.06 | 4.57 | 4.54 | 4.17 | 4.54 | 4.17 | 4.54 | 4.70 | 4.68 | 4.76 | 4.93 | 4.68 | 4.76 | 4.93 | 5.21 | 4.93 | 5.21 | 5.21 | 5.21 | 5.21 |
| Highveld..... | — | — | — | — | — | — | — | — | — | — | 1.45 | 1.60 | 1.53 | 1.45 | 1.60 | 1.53 | 1.55 | 1.53 | 1.55 | 1.55 | 1.55 | 1.55 |
| Ingagane..... | — | — | — | — | — | — | — | — | — | — | 3.78 | 3.75 | — | 3.78 | 3.75 | — | 2.27 | — | 2.27 | 2.27 | 2.27 | 2.27 |
| Kimberley Central..... | 2.91 | 3.08 | 3.28 | 3.08 | 3.28 | 3.40 | 3.59 | 3.40 | 3.59 | 3.83 | 3.78 | 3.75 | 3.90 | 3.78 | 3.75 | 3.90 | 4.12 | 3.90 | 4.12 | 4.12 | 4.12 | 4.12 |
| Klip..... | 1.31 | 1.45 | 1.61 | 1.45 | 1.61 | 1.73 | 1.79 | 1.73 | 1.79 | 1.82 | 2.09 | 2.14 | 2.13 | 2.09 | 2.14 | 2.13 | 2.04 | 2.13 | 2.04 | 2.04 | 2.04 | 2.04 |
| King William's Town..... | 4.24 | 4.57 | 4.68 | 4.57 | 4.68 | 4.84 | 4.81 | 4.84 | 4.81 | 4.54 | — | 4.58 | — | — | 4.58 | — | 4.58 | — | 4.58 | 4.58 | — | — |
| Komatati..... | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Rosherville..... | 1.55 | 1.65 | 1.72 | 1.65 | 1.72 | 1.87 | 1.92 | 1.87 | 1.92 | 2.04 | 1.86 | 1.90 | 1.29 | 1.86 | 1.90 | 1.29 | 1.53 | 1.29 | 1.53 | 1.53 | 1.53 | 1.53 |
| Salt River..... | 4.10 | 4.07 | 4.22 | 4.07 | 4.22 | 4.38 | 4.57 | 4.38 | 4.57 | 4.86 | 4.83 | 4.85 | 5.03 | 4.83 | 4.85 | 5.03 | 2.13 | 5.03 | 2.13 | 2.13 | 2.13 | 2.13 |
| Taaibos..... | .89 | .87 | .73 | .87 | .84 | .76 | .84 | .76 | .84 | .93 | 1.83 | 1.98 | 1.75 | 1.83 | 1.98 | 1.75 | 2.04 | 1.75 | 2.04 | 2.04 | 2.04 | 2.04 |
| Umgeni..... | 3.07 | 3.28 | 3.31 | 3.28 | 3.31 | 3.49 | 3.72 | 3.49 | 3.72 | 4.05 | 4.04 | 4.01 | 4.28 | 4.04 | 4.01 | 4.28 | 4.37 | 4.28 | 4.37 | 4.37 | 4.37 | 4.37 |
| Vaal..... | .68 | .71 | .71 | .71 | .71 | .73 | .73 | .73 | .73 | .74 | .79 | .93 | .95 | .79 | .93 | .95 | 1.03 | .95 | 1.03 | 1.03 | 1.03 | 1.03 |
| Vereeniging..... | .76 | .82 | .85 | .82 | .85 | .92 | .98 | .92 | .98 | .91 | .87 | .96 | 1.02 | .87 | .96 | 1.02 | 1.07 | 1.02 | 1.07 | 1.07 | 1.07 | 1.07 |
| Vierfontein..... | .82 | .83 | .96 | .83 | .96 | 1.10 | 1.23 | 1.10 | 1.23 | 1.23 | 1.50 | 1.56 | 1.46 | 1.50 | 1.56 | 1.46 | 1.43 | 1.46 | 1.43 | 1.43 | 1.43 | 1.43 |
| West Bank..... | 3.78 | 4.18 | 4.08 | 4.18 | 4.08 | 4.17 | 4.39 | 4.17 | 4.39 | 4.66 | 4.61 | 4.59 | 4.77 | 4.61 | 4.59 | 4.77 | 5.02 | 4.77 | 5.02 | 5.02 | 5.02 | 5.02 |
| Wilge..... | .81 | .78 | .79 | .78 | .79 | .89 | .91 | .89 | .91 | .97 | .90 | .94 | .97 | .90 | .94 | .97 | .95 | .97 | .95 | .95 | .95 | .95 |
| Witbank..... | .70 | .76 | 1.03 | .76 | 1.03 | 1.03 | 1.05 | 1.03 | 1.05 | 1.11 | 1.06 | 1.05 | 1.14 | 1.06 | 1.05 | 1.14 | 1.15 | 1.14 | 1.15 | 1.15 | 1.15 | 1.15 |

POWER SUPPLY IN SOUTH AFRICA:
ESCOM AND REPUBLIC

| | Escom | | Units Generated (kWh) (millions) | | Escom Coal Burnt (Thousands) (Thousands) | Sales (kWh) (millions) | | Escom Total Staff | Sales Escom + V.F.P. kWh millions | |
|------|----------------------------|-------------------------|----------------------------------|----------------------|--|------------------------|----------|-------------------|-----------------------------------|------------------|
| | Capital Expenditure (Rand) | Installed Capacity (MW) | Escom + V.F.P. (X) | Republic of S.A. (Y) | | (X) (Y) | Escom | | | Republic of S.A. |
| | | | | | | | | | | |
| 1925 | | | | | | | 0.1 | | | |
| 1926 | | 1.35 | | | | | 161.7 | | 1,376.4 | |
| 1927 | | 61.35 | | | | | 1,516.9 | | 1,516.9 | |
| 1928 | | 121.35 | | | | | 551.0 | | 1,694.2 | |
| 1929 | 1,399,678 | 175.65 | 1,422.2 | 2,109.6 | 1,934.9 | 67.4 | 627.9 | 633 | 1,807.4 | |
| | 1,573,492 | 194.65 | 1,516.7 | 2,300.1 | 2,086.1 | 66.0 | 797.0 | | 2,007.6 | |
| 1930 | | 215.65 | 1,766.3 | 2,453.7 | 2,166.4 | 72.0 | 889.6 | | 2,126.8 | |
| 1931 | | 16,591,164 | 1,857.4 | N.A. | 2,237.2 | — | 867.1 | | N.A. | |
| 1932 | | 16,823,332 | 2,028.7 | N.A. | 2,388.0 | — | 890.7 | | N.A. | |
| 1933 | | 17,273,780 | 2,246.4 | 2,946.6 | 2,542.0 | 76.2 | 974.1 | | 2,462.2 | |
| 1934 | | 18,786,190 | 2,525.9 | 3,308.6 | 2,831.3 | 76.3 | 985.2 | | 2,853.9 | |
| 1935 | | 22,980,968 | 2,848.4 | 3,772.5 | 3,152.3 | 75.5 | 1,119.2 | | 3,246.2 | |
| 1936 | | 27,103,556 | 3,406.7 | 4,602.9 | 3,584.3 | 74.0 | 1,688.0 | | 3,767.9 | |
| 1937 | | 30,563,380 | 3,980.6 | 5,336.0 | 3,844.2 | 74.6 | 2,535.6 | | 4,361.3 | |
| 1938 | | 34,296,968 | 4,452.8 | 5,933.0 | 4,176.4 | 75.1 | 2,985.4 | | 4,898.2 | |
| 1939 | | 36,645,076 | 4,740.7 | 6,574.3 | 4,409.2 | 72.1 | 3,573.7 | | 5,453.4 | |
| 1940 | | 38,661,664 | 5,098.3 | 7,167.8 | 4,626.0 | 71.1 | 4,070.2 | | 6,121.9 | |
| 1941 | | 40,808,068 | 5,444.9 | 7,592.1 | 4,903.7 | 71.7 | 4,254.0 | | 6,504.7 | |
| 1942 | | 43,762,646 | 5,538.9 | 7,798.5 | 5,111.9 | 71.0 | 4,320.8 | | 6,767.7 | |
| 1943 | | 46,573,506 | 5,404.0 | 7,699.8 | 4,977.6 | 70.2 | 4,275.6 | | 6,638.4 | |
| 1944 | | 48,036,044 | 5,597.8 | 8,042.9 | 5,164.2 | 69.6 | 4,415.8 | | 6,919.7 | |
| 1945 | | 49,913,496 | 5,748.7 | 8,328.5 | 5,309.2 | 69.0 | 4,706.1 | | 7,142.4 | |
| 1946 | | 52,852,490 | 5,895.6 | 8,556.9 | 5,321.9 | 68.9 | 5,002.4 | | 7,338.3 | |
| 1947 | | 57,649,694 | 6,035.9 | 8,787.8 | 6,000.3 | 68.7 | 5,144.5 | | 7,493.6 | |
| 1948 | | 90,815,886 | 6,553.5 | 9,480.7 | 6,126.0 | 69.1 | 5,576.9 | | 8,089.2 | |
| 1949 | | 100,234,082 | 7,075.3 | 10,013.3 | 6,365.6 | 70.7 | 6,222.2 | | 8,829.0 | |
| 1950 | | 115,128,520 | 7,773.6 | 11,187.0 | 6,970.4 | 69.5 | 6,910.6 | | 9,749.8 | |
| 1951 | | 137,283,154 | 8,326.6 | 11,895.0 | 7,344.8 | 70.0 | 7,456.5 | | 10,473.9 | |
| 1952 | | 176,559,102 | 8,778.0 | 12,517.0 | 7,841.1 | 70.1 | 8,080.6 | | 11,233.5 | |
| 1953 | | 218,739,074 | 9,442.0 | 13,744.0 | 8,150.3 | 68.7 | 8,732.2 | | 11,806.3 | |
| 1954 | | 270,621,248 | 10,651.9 | 15,184.0 | 8,846.0 | 70.2 | 9,676.6 | | 12,811.9 | |
| 1955 | | 304,341,966 | 12,214.5 | 17,172.0 | 9,920.5 | 71.1 | 10,964.0 | | 14,309.9 | |
| 1956 | | 342,068,024 | 13,578.4 | 18,535.0 | 10,679.8 | 73.2 | 12,019.5 | | 15,782.0 | |
| 1957 | | 377,265,178 | 14,388.1 | 19,954.0 | 11,266.2 | 73.4 | 12,763.1 | | 17,140.0 | |
| 1958 | | 417,700,898 | 15,582.6 | 20,133.0 | 11,887.4 | 77.4 | 13,602.2 | | 17,321.0 | |
| 1959 | | 453,130,370 | 16,926.5 | 21,165.0 | 12,730.3 | 80.0 | 14,724.5 | | 18,132.0 | |
| 1960 | | 491,471,208 | 18,543.3 | 22,561.0 | 13,792.8 | 82.2 | 16,094.1 | | N.A. | |
| 1961 | | 529,565,151 | 19,575.4 | 24,556.0 | 14,544.8 | 79.7 | 17,013.2 | | 16,139.6 | |
| 1962 | | 581,579,266 | 20,805.3 | 26,105.0 | 15,383.3 | 79.7 | 18,121.0 | | 17,035.5 | |
| 1963 | | 637,076,261 | 22,312.4 | 28,828.0 | 16,227.2 | 80.2 | 19,500.0 | | 18,205.0 | |
| 1964 | | 679,193,261 | 24,355.3 | 30,422.0 | 17,256.3 | 80.1 | 21,153.6 | | 19,500.0 | |
| | | | | | | | | | 21,153.6 | |

1) N.A. = Not available.
2) V.F.P. taken over by Escom 1/7/48.