

THE NEW POWER STATION to be erected by the Commission at WORCESTER. C.P.

MEMBERS OF THE
Electricity Supply Commission

Dr. HENDRIK JOHANNES VAN DER BIJL (Chairman).

ALBERT MICHAEL JACOBS

ROBERT BURNS WATERSTON

WILLIAM PLOWMAN MOYESE HENDERSON

CALVIN STOWE McLEAN

CONTENTS.

	Page
General :	
Twenty-fifth Anniversary	5
Demand for Electricity	5
Costs and Tariffs	6
New Undertakings :	
Border	7
Greater Rand Extension	7
The Victoria Falls & Transvaal Power Co. Ltd.	9
New Projects :	
Vierfontein Power Station	9
Worcester Power Station	11
Pinetown Power Station	11
Kimberley	11
Salt River "B" Power Station	11
Railway Traction Sub-Stations	13
Plant Capacity	13
Transmission System and Area of Supply	13
Output and Sales	15
Financial :	
Loan Capital	19
Reserve and Redemption Funds	19
Investments	19
Capital Expenditure	20
Assets and Liabilities	20
Summary of Operating Statistics	20
Staff :	
Home Ownership Scheme	20
Personnel	21
Commission's Undertakings :	
Natal Central	23
Witbank	29
Cape Town	33
Durban	39
Sabie	44
Klip Generating Station	45
Rand and Greater Rand Extensions	47
Vaal Generating Station	48
Border	51
Municipal Electricity Supply Schemes	54
Annexures :	
"A"—Auditors' Report and Accounts	59
"B"—Statistical and Other Statements	97
"C"—Union Statistics	109

Electricity Supply Commission

Escom House,

Rissik Street,

Johannesburg.

24th June, 1948.

To the Honourable
The Minister of Economic Development,
Pretoria.

Sir,

As required by Section 14 of the Electricity Act, No. 42 of 1922, the Commission has the honour to present its twenty-fifth Annual Report, covering its operations for the year ended 31st December, 1947, together with a brief review of its activities up to 30th April, 1948.

GENERAL.

Twenty-fifth Anniversary.

March 1st, 1948, marked the twenty-fifth anniversary of the establishment of the Commission. In that period the Commission has developed into an organisation which yearly distributes more than five thousand million units of electricity from power stations with an aggregate generating capacity of over one million kilowatts; with capital assets exceeding £40 million, and an annual revenue of more than £4 million. This Report will indicate that progress in the future is likely to be even greater than in the past.

**Demand for
Electricity.**

Public demand for electricity, from all classes of consumers, continues to increase; the Commission's problem is to keep pace with the demand, as post-war difficulties in obtaining plant and equipment still continue. Although deliveries showed some improvement in 1947, and the interval between the placing of orders and their anticipated dates of execution is rather less than it was a year ago, lack of supplies continues to retard

execution of the Commission's projects, and is likely to do so for some time to come.

Among the major items of plant and equipment received during 1947 were:--

One 33,000 kW turbo-alternator for Vaal Power Station, this being the last of three sets ordered from Sweden, delivery of which was delayed by transport difficulties arising from the war. It was put into commission on 25th March, 1947.

One 40,000 kW turbo-alternator for Congella Power Station, which is expected to be in operation shortly.

One 25,000 kW turbo-alternator for Colenso No. 2 Station, which should be in commission during the second half of 1948.

Two 28 MW step-up transformers, now on site at Colenso No. 2 Station.

The following items are among those still on order:—

One 40,000 kW turbo-alternator for Congella Power Station, for despatch from the United Kingdom early in 1949.

Four 33,000 kW main turbo-alternators and two 7,000 kW house sets for Vaal Power Station extensions.

Three 20,000 kW turbo-alternators for Worcester, and two 1,000 kW Diesel sets for use there while the new power station is being erected and equipped. Two similar Diesel sets will be installed at Port Shepstone, and a further 1,000 kW Diesel set, originally ordered for Port Shepstone, will be sent to Caledon to serve as a "stand-by."

COSTS AND TARIFFS.

The standard prices for the supply of electricity from the Commission's Undertakings and the conditions attaching thereto are embodied in the licences and permits granted to the Commission by the Electricity Control Board. These prices are subject to adjustment from time to time in terms of Section 10 of the Electricity Act of 1922.

The standard prices are subject, where necessary, to variation in terms of Section 26 of the Electricity Act, 1922, dependent upon the situation, extent and characteristics of consumers' loads.

From the figures on page 20 it will be seen that while net revenue for 1947 increased by £481,658 to £4,573,125, production

costs rose by £468,760 to £4,564,419. In each case the increase is approximately 11.5%, and the excess of revenue over production costs on all the Commission's operations in 1947 amounted to £8,706.

Deficits on the year's working at the Durban, Natal Central and Witbank Undertakings, and the surplus at the Cape Town Undertaking, are commented upon in the Auditors' Report and in the sections of this Report which deal with the Undertakings concerned.

NEW UNDERTAKINGS.

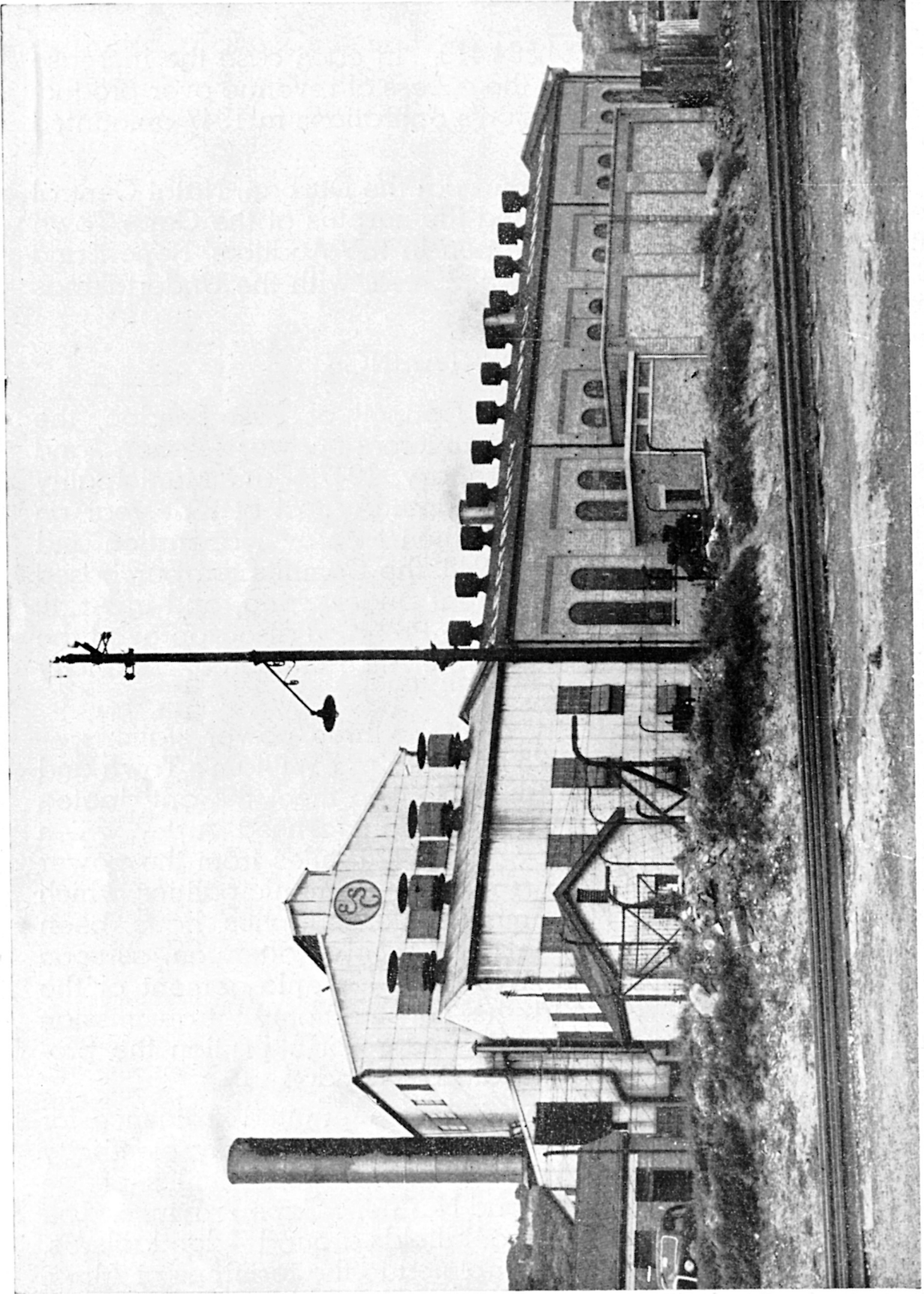
Border
Undertaking.

At the request of the City Council of East London, the Commission purchased the Municipal power station and assumed ownership from 1st January, 1947. The Municipality continued to operate the station until August of that year on behalf of the Commission, which then took over operation and complete control. In January, 1948, the Commission purchased the King William's Town Municipal Undertaking, and in April, 1948, the Administrator of the Cape Province also approved the acquisition by the Commission of the Alice Municipal Electricity Undertaking.

The generating capacity of these three power stations — 24,500 kW at East London, 4,250 kW at King William's Town and 285 kW at Alice — will be insufficient to meet the anticipated demand from the Border Undertaking Licensed Area, which extends to a radius of approximately 120 miles from the power station at East London, and a number of municipalities which have approached the Commission for supplies have been assured that their requirements will receive attention, as soon as plant and materials are available for enlargement of the existing power stations and the construction of transmission lines. The Commission also has under consideration the provision of a new power station at East London.

**Greater Rand
Extension
Undertaking.**

In May, 1947, the Commission was granted a licence for the Greater Rand Extension Undertaking, to supply electricity within an area of approximately 16,000 square miles of the Transvaal, Orange Free State and Northern Cape Province. The licensed area includes the new goldfields around Odendaalsrus, and an 88 kV line has been completed to the terminus at Alma, from which point subsidiary lines will provide power to the various mines in the vicinity, and a second similar line is to be



EAST LONDON POWER STATION, acquired by the Commission.

constructed. Electricity was first supplied to mines in this area in April, 1948.

By April, 1948, negotiations had reached an advanced stage whereby twenty-five years of close association and co-operation between the Commission and The Victoria Falls and Transvaal Power Company Limited should culminate in the purchase by the Commission of the Company's electricity undertaking in the Union.

The assets to be acquired from the Company by the Commission are:—

Power Stations at Rosherville, Simmer Pan, Vereeniging and Brakpan, with an aggregate generating capacity of 297,600 kW and compressed-air plant aggregating 117,600 kW.

41 Miles of air-pipe lines;

711 Miles of power, pilot and telephone lines;

1,309 Miles of transmission lines;

12 Major and 6 minor distributing sub-stations;

304 Consumer sub-stations;

918 Transformers aggregating 2,315,892 kW.

With this acquisition the installed capacity of the Commission's power stations will be 1,340,750 kW, and estimated annual sales will be in the region of 5,520 million units.

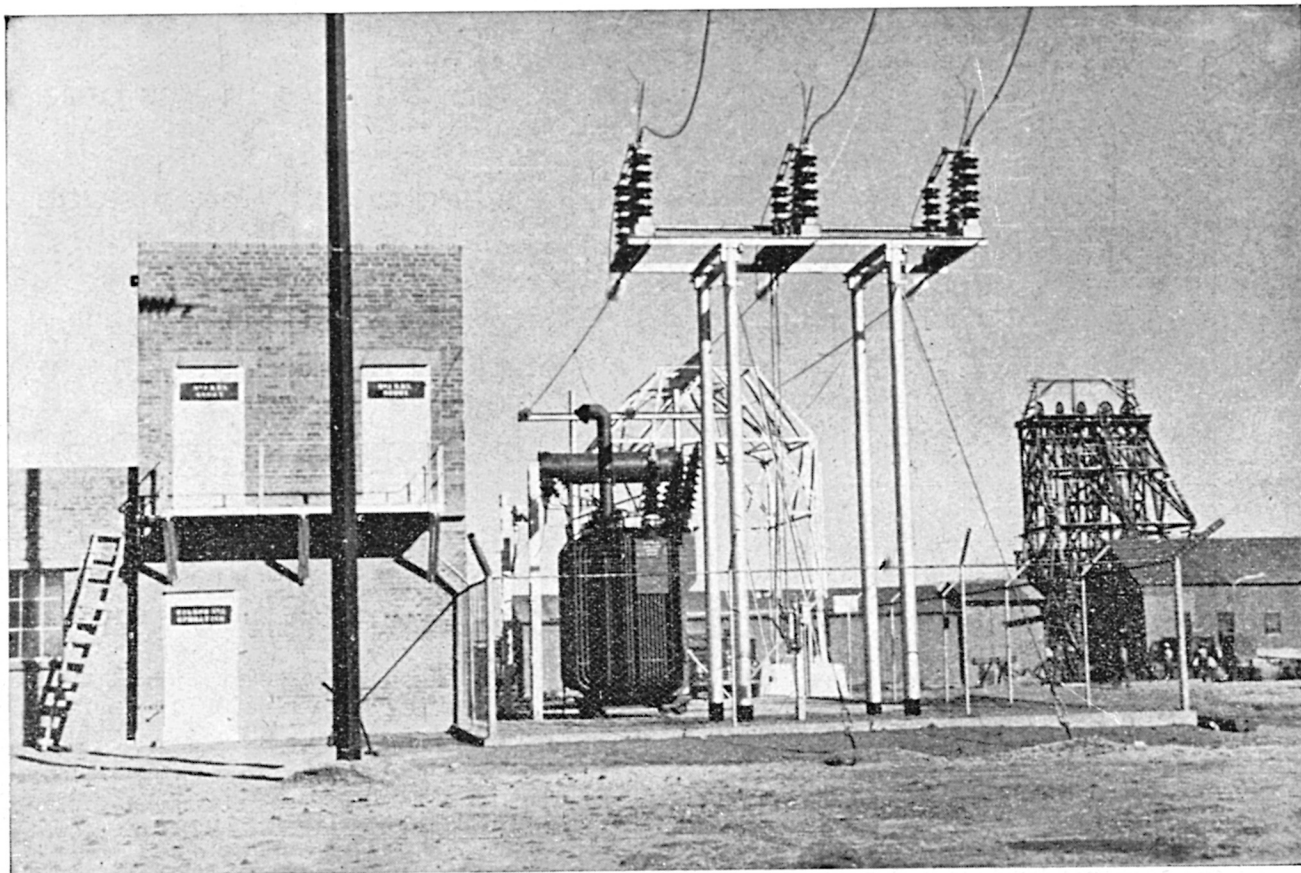
NEW PROJECTS.

The Commission's major projects include the construction of new power stations near Vierfontein, and at Worcester, Cape Town and Pinetown. Terms have been agreed with De Beers Consolidated Mines Limited for the acquisition of their power station at Kimberley, and the Municipality of Port Elizabeth has requested the Commission to submit terms for the supply of a base load of the order of 20,000 kW; this has been done and the proposals, which envisage a new power station to meet the expanding needs of the area, have been accepted in principle by the Municipality.

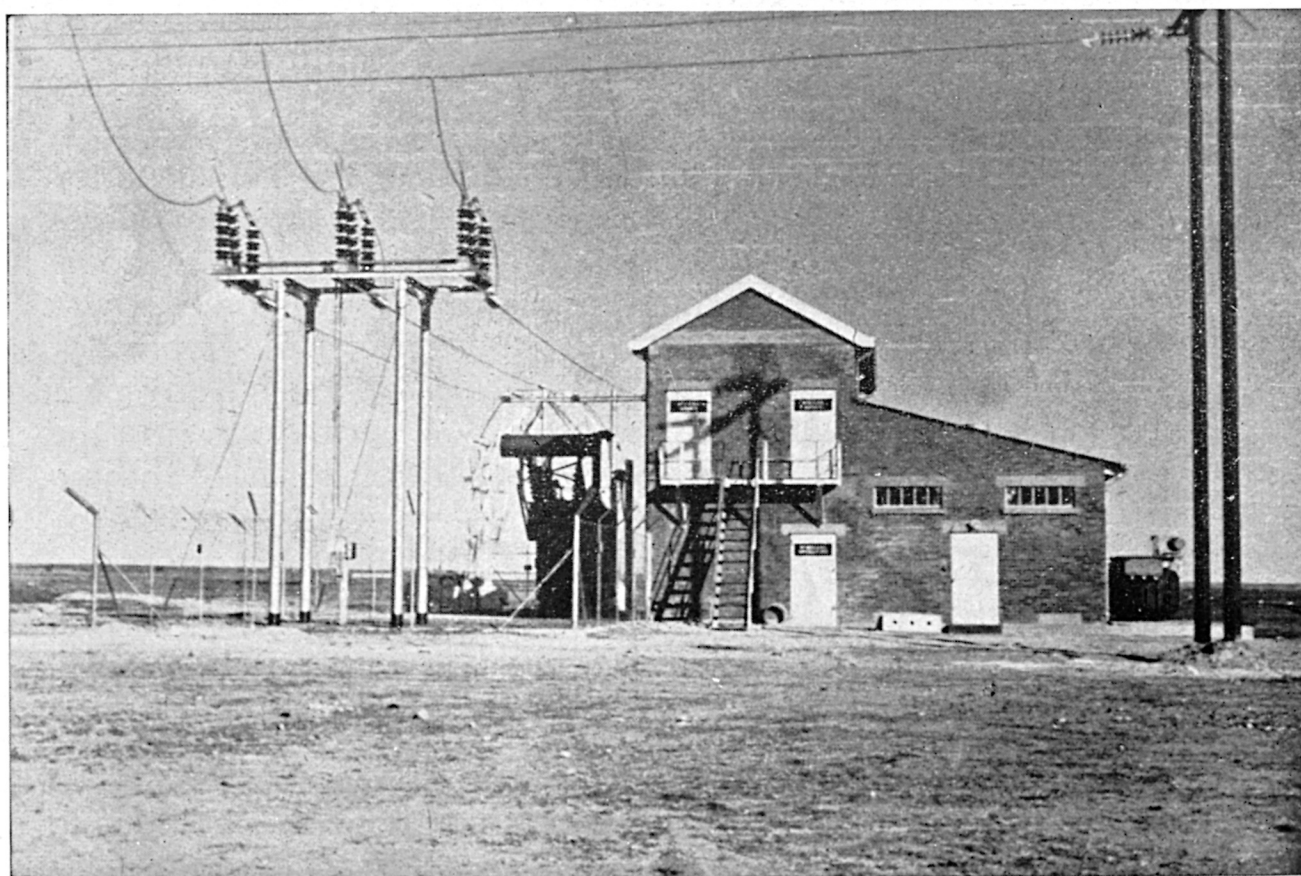
**Vierfontein
Power Station**

The opening-up of the new goldfields in the Orange Free State necessitated early action by the Commission to ensure that power should be available to this great new source of potential wealth to the Union. It was estimated that the new mines will require 100,000 kW by 1955, and, to meet this demand and the anticipated subsequent increase, it was decided to

POWER SUPPLY FOR THE NEW GOLDFIELDS OF THE O.F.S.



Above: Welkom G.M. Co. Ltd., No. 2 Shaft; sub-station and headgear.
Below: St. Helena Gold Mines Ltd., No. 2 Shaft sub-station.



build a new power station. It will be near Vierfontein, south of Klerksdorp, and about fifty miles north of Odendaalsrus. Work will begin as soon as plant and materials can be obtained. The new station will be designed for a maximum capacity of 165,000 to 200,000 kW plus house sets, probably starting with an installation of three 33,000 kW sets.

The primary object in constructing a new power station at Worcester is to provide power for the electrification of 195 miles of the main railway line from Bellville to Touws River, at the same time presenting opportunities for the extension of the system to many municipalities and farms, and to the numerous industries which, it is already evident, the provision of power will attract to this area. The new station, which will cost more than £4 million, will be designed and built by the Commission's staff. Initial installation will be 60,000 kW, to be increased later to 100,000 kW. Plant has been ordered, and it is hoped that the station will be in operation by 1952. Plans provide for interconnection with Salt River Power Station by high tension transmission line.

The demand for electricity in Natal continues to increase rapidly, and is likely within a comparatively short period to exceed the capacity of the existing power stations at Colenso and Congella. Plans have therefore been put in hand for the erection of a third station, and a site has been purchased near Pinetown.

The initial installation will be 60,000 kW, and at this stage the estimated cost is approximately £4,300,000, including the construction of two 132 kV single circuit transmission lines inter-connecting the three Natal stations. The installed capacity at Pinetown will later be increased to 240,000 kW.

Kimberley.

It is expected that ownership of the Kimberley Power Station of De Beers Consolidated Mines Limited will soon be assumed by the Commission, as the terms of purchase have already been agreed.

This station, originally constructed to provide power for the diamond mines, has for many years also supplied the Kimberley Municipality. To meet industrial and farming needs in the area it will be necessary considerably to expand the present generating capacity of 20,000 kW.

Salt River 'B'
Power Station.

In the Western Cape Province, as in many other parts of the Union, the need is urgent for expanded generating capacity.



Electricity Supply Commission

B E C H U A N A L A N D
P R O T E C T O R A T E

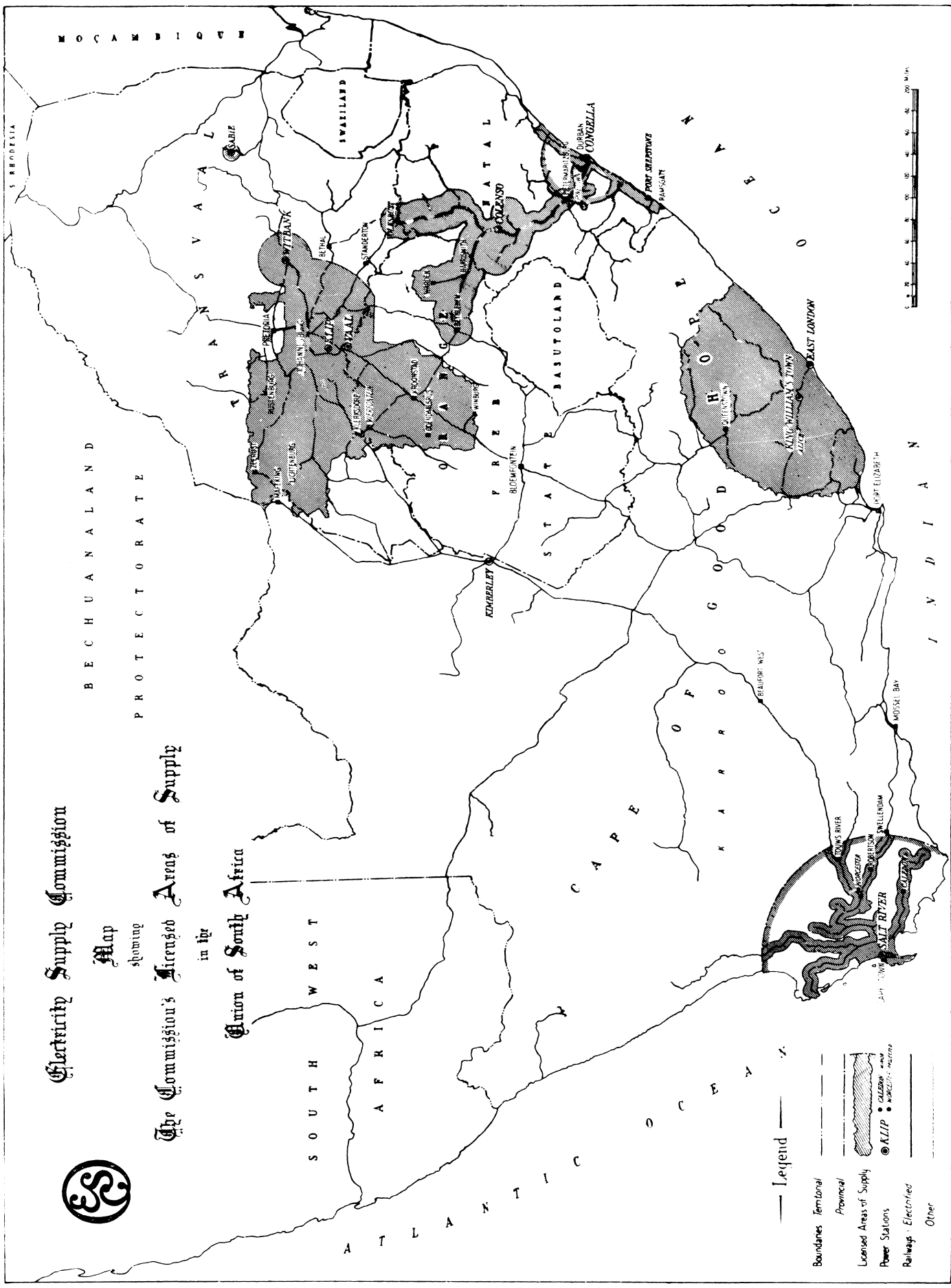
Map
showing

The Commission's Licensed Areas of Supply

in the

Union of South Africa

S O U T H
W E S T
A F R I C A



Legend

- Boundaries: Terminal (dashed line), Provincial (solid line)
- Licensed Areas of Supply: (shaded area)
- Power Stations: ● (KZIP), ● (KZIB), ● (KZIC)
- Railways: — (solid line), — (dashed line)
- Electricity: — (solid line), — (dashed line)
- Other: — (dotted line)

The anticipated maximum demand on the Cape Town pooled stations is expected to rise from 190,000 kW in 1949 to 253,000 kW in 1954, and to 326,000 kW in 1959. Plans, designed to supply these expected increases in demand, have therefore been prepared, and are under consideration by the Commission and the Cape Town City Council.

These plans envisage the erection by the Commission of a new power station on a site adjoining the Commission's existing station at Salt River (where ample provision was made for circulating water), starting with two 30,000 kW sets, with four additional sets to be installed later, at an estimated total cost of approximately £8 million.

RAILWAY TRACTION SUB-STATIONS.

By arrangement with the Commission, the South African Railways and Harbours Administration assumed control of the mercury arc rectifier sub-stations on the Natal main line and on the Reef from 1st November, 1947, and ownership of these sub-stations, which are used essentially for railway traction purposes, passed to the Administration on 1st April, 1948.

On the Cape Railway System, negotiations are well advanced for handing over the Milnerton Junction sub-station, and it is proposed that the Administration shall take over the remaining rotary converter stations from 1st November, 1948. When this has been done, the Railway Administration will own the whole of the D.C. system in the Cape, and the intention is to convert the traction system on the Cape suburban lines from 1,500 to 3,000 volts.

PLANT CAPACITY.

The aggregate installed plant capacity in the Commission's main power stations at 31st December, 1947, was 1,045,190 kW — an increase of 56,500 kW over the corresponding figure for the previous year. Small Diesel stations at Port Shepstone, Volksrust and Caledon provide an additional 2,040 kW, and plant under erection or on order will bring the total to 1,360,190 kW, against 1,086,690 kW at the end of 1946.

Details of plant and equipment installed in each of the Commission's power stations are given in Annexure "B" to this Report.

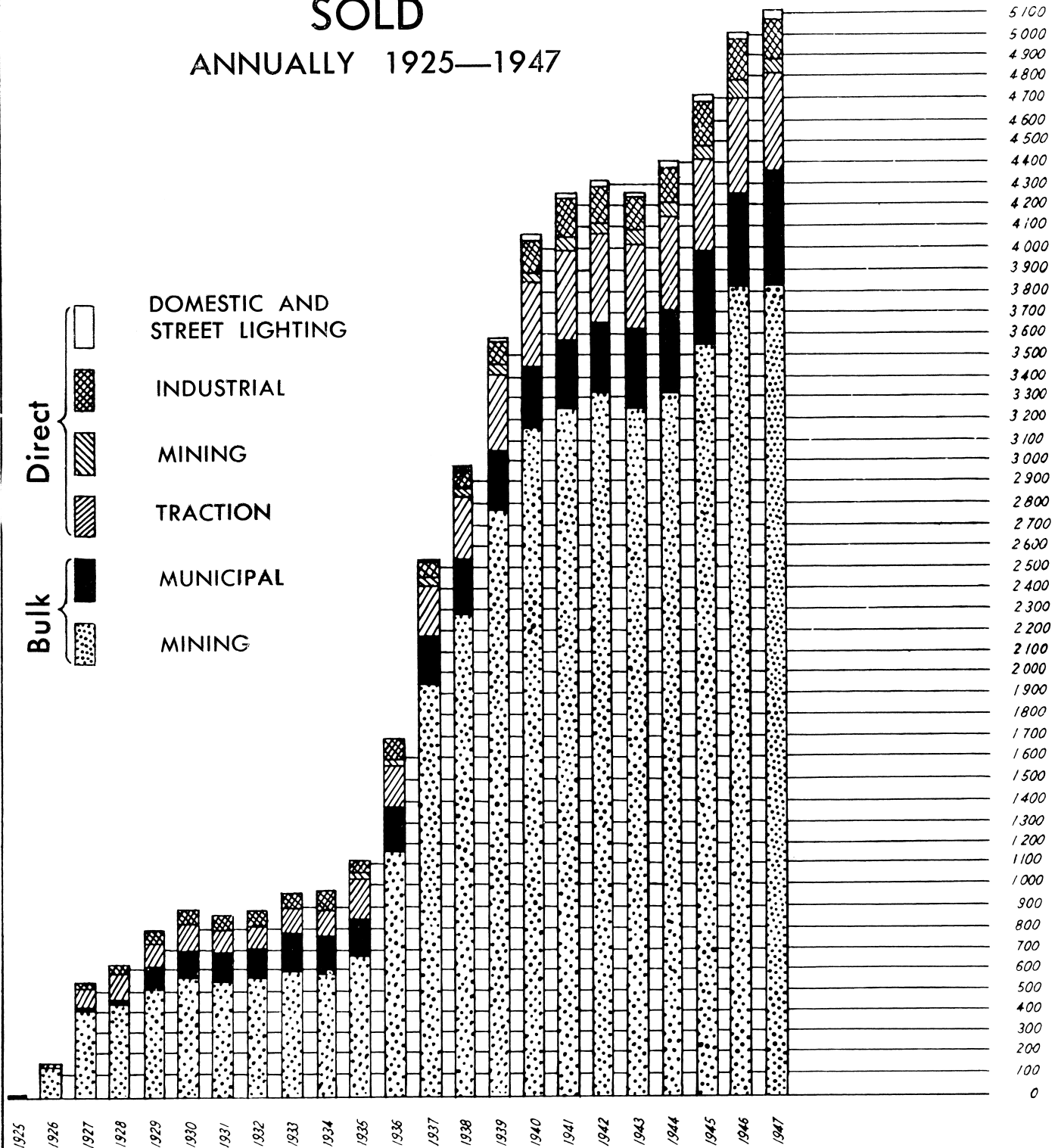
TRANSMISSION SYSTEM AND AREA OF SUPPLY

During the year 225 route miles were added to the Commission's transmission lines and cables, bringing the total at the



TOTAL NUMBER OF UNITS SOLD

ANNUALLY 1925—1947



year's end to 3,164 miles. The installed transformer capacity was increased by 39,155 kVA to 1,970,949 kVA. The Commission's licensed area of supply throughout the Union was increased by the 16,000 square miles of the Greater Rand Extension Undertaking, and Border Undertaking added 21,500. The total licensed area at 31st December, 1947, amounted to 72,300 square miles.

The 88 kV line from Vaal power station to Alma, (the main distributing terminus for the supply to the new goldfields in the Orange Free State), has been completed, as well as the 88 kV single line from Vaal to Blyvooruitzicht Distributing Station and the 40 kV single line from Olifantsfontein to Premier Mine.

The growing demand for electricity in all areas, and the Commission's activities in meeting it, are indicated by the following statement of some major lines now under construction or projected:—

Under Construction :

Congella to Port Shepstone	.....	.....	.....	.....	.....	88 kV,	74 route miles.
Oakdale to Wellington	.....	.....	.....	.....	.....	66 kV,	20 route miles.
Wellington to Worcester	.....	.....	.....	.....	.....	66 kV,	63 route miles.
Worcester to Robertson	.....	.....	.....	.....	.....	66 kV,	30 route miles, (duplicate).
Salt River to Oakdale	.....	.....	.....	.....	.....	33 kV,	12 route miles, (triplicate).
Salt River to Elsie's River	.....	.....	.....	.....	.....	33 kV,	8 route miles, (duplicate).
Witbank to Middeldrift and Bethal	.....	.....	.....	.....	.....	88 kV,	48 route miles.
Blyvooruitzicht to Mafeking	.....	.....	.....	.....	.....	88 kV,	128 route miles.

Projected :

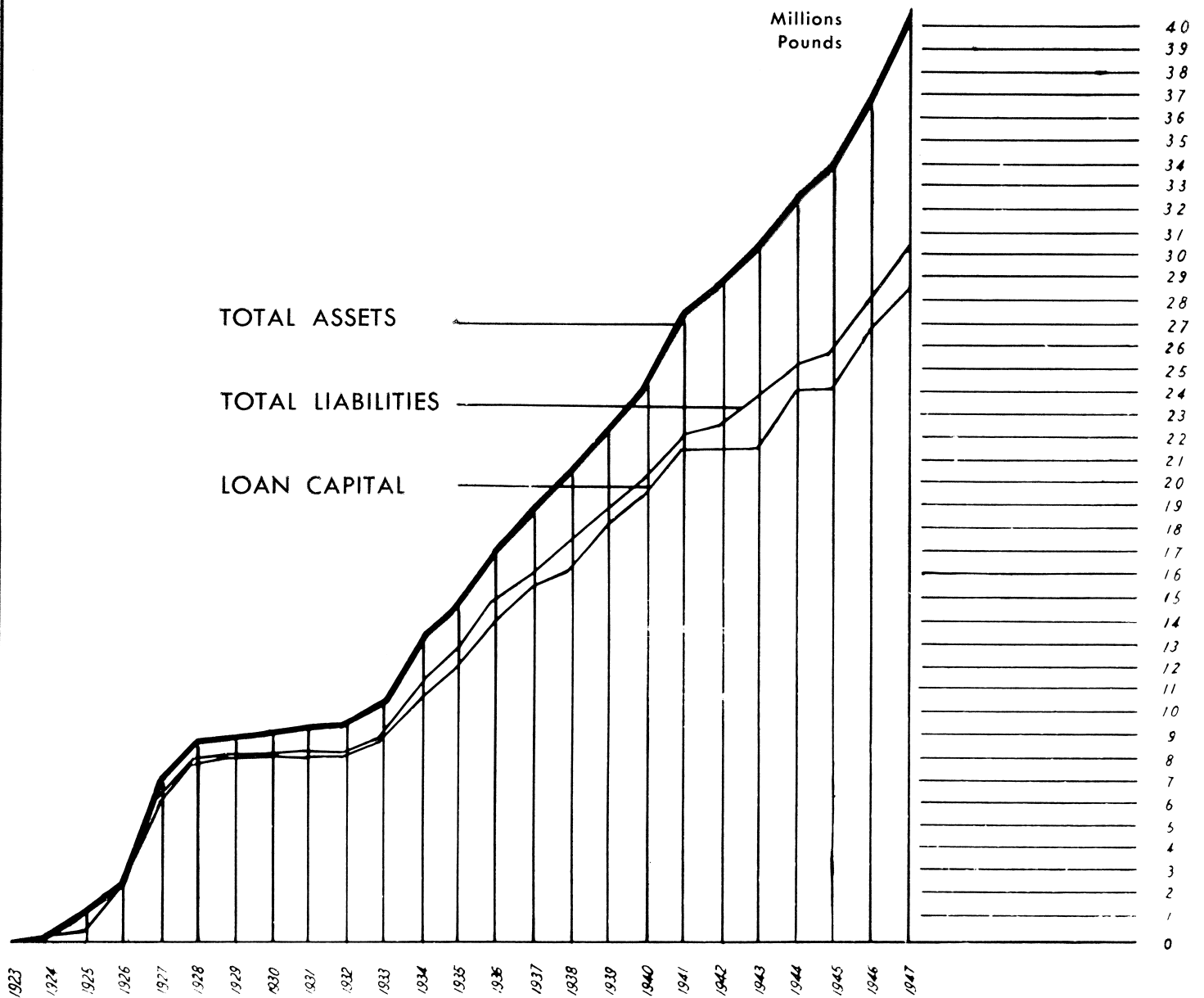
Colenso to Springfield	.....	.....	.....	.....	.....	132 kV,	140 route miles.
Colenso to Winterton and Bergville	.....	.....	.....	.....	.....	33 kV,	34 route miles.
Oakdale to Somerset West	.....	.....	.....	.....	.....	66 kV,	19 route miles.
Worcester to Touws River	.....	.....	.....	.....	.....	66kV or 88 kV,	42 route miles, (duplicate).

The existing line from Glencoe to Newcastle, 33 route miles, is at present under conversion from 33 to 88 kV. The projected line from Colenso to Springfield (near Durban) will connect with the new power station at Pinetown.

OUTPUT AND SALES.

Units generated by and sold from the Commission's power stations achieved new records in 1947; as has already been

Assets and Liabilities for the Years 1923—1947



indicated, generating capacity is at present the limiting factor. Aggregate figures for all power stations were:—

	1947	1946	Increase
Units Generated	5,298,765,123	5,178,043,034	2.331%
Units Sold	5,114,474,724	5,002,398,048	2.240%

A larger increase would have been recorded but for the strike of workers on some gold mines in February, 1947, which adversely affected the figures in that month for Klip, Vaal and Witbank power stations.

The following figures record units sold by individual undertakings:—

	1947	1946	Percentage
Border	56,170,900	—	—
Cape Town	198,640,259	184,618,905	+7.595
Durban	402,561,103	369,659,142	+8.901
Klip	2,547,186,151	2,614,328,036	—2.568
Natal Central	345,993,124	347,006,541	—0.292
Sabie	7,604,777	7,408,010	+2.656
Vaal	668,587,275	582,485,354	+14.782
Witbank	887,731,135	896,892,060	—1.021
	<u>5,114,474,724</u>	<u>5,002,398,048</u>	+2.240

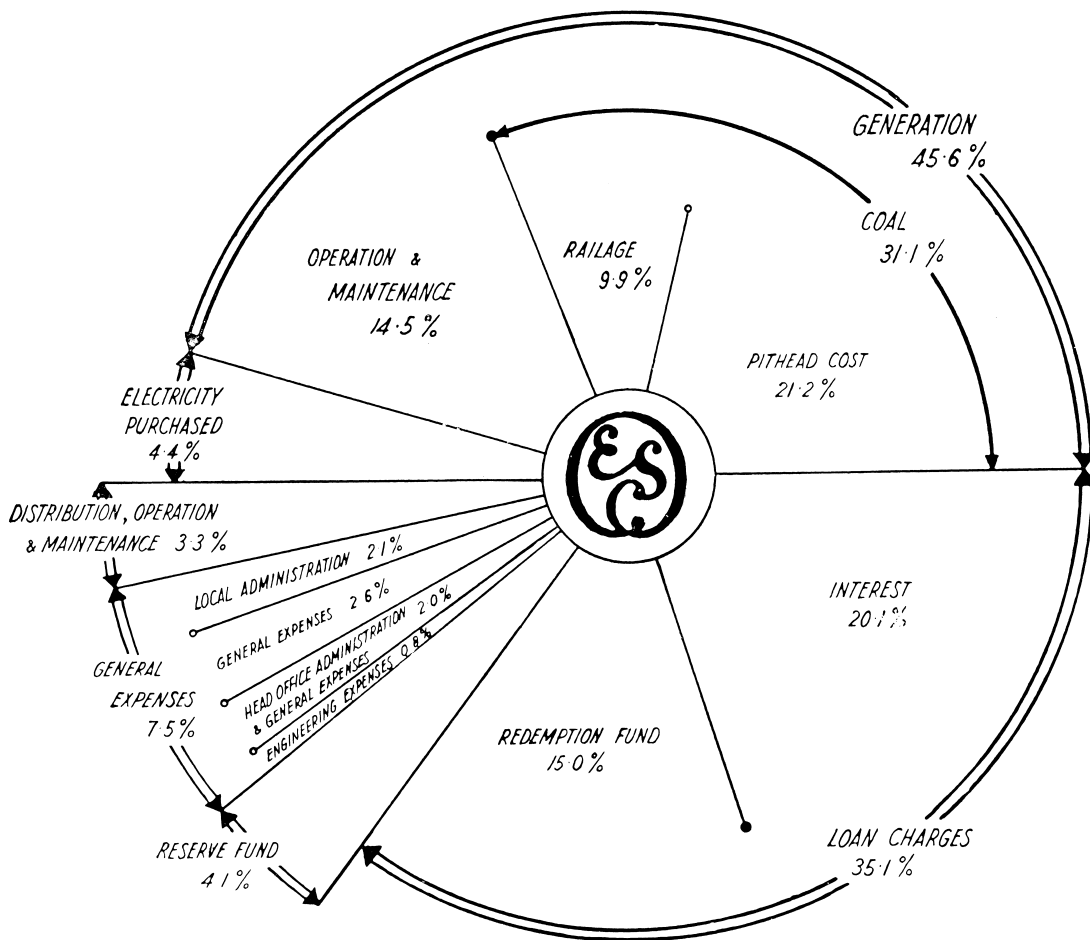
It will be seen that Klip accounts for approximately 50% of total sales, and that the increased output from Vaal, (to which station additional load was transferred following the starting-up of the new generator), more than offset the small decreases shown by Klip and Witbank. Combined figures for these three stations, which feed the Rand Grid System, were:—

1947	4,103,504,561 units;
1946	4,093,705,450 units.

Analysis of sales by classes of consumers shows the following:—

	1947	1946	Percentage
Bulk Supplies :			
Mining	3,819,269,018	3,813,114,693	+0.161
Municipal	534,161,654	434,739,226	+22.869
Direct Supplies for :			
Traction	454,255,098	457,868,639	—0.789
Mining	70,105,747	71,140,244	—1.454
Industrial	196,178,295	192,010,042	+2.171
Domestic and Street Lighting	40,504,912	33,525,204	+20.819
	<u>5,114,474,724</u>	<u>5,002,398,048</u>	+2.240

SUB-DIVISION OF
TOTAL PRODUCTION COSTS
 FOR THE YEAR 1947



The big increase in municipal consumption was largely due to supply to East London by the newly-acquired Border Undertaking. Increase in the Domestic and Street Lighting category was general. During 1947 domestic connections increased from 14,007 to 15,562.

A chart showing annual sales of electricity is on page 14 of this Report, and Statement No. 3 of Annexure "B" gives units sold to all consumers by each Undertaking during the past 23 years.

FINANCIAL.

Loan Capital.

A loan of £3,000,000 bearing interest at 3 per cent. per annum was raised at £101% on 18th December, 1947, redeemable on 30th November 1968/74. The loan was over-subscribed and the lists were open only from 9 a.m. to 1 p.m. on the date of issue. At the year's end £1,394,150 had been received, which increased the Commission's loan capital at the date of the Balance Sheet to £28,644,150. The amount outstanding at 31st December, 1947, was £1,605,850 and this has since been received.

**Reserve and
Redemption
Funds.**

The amount in the Reserve Fund at 31st December, 1947, stood at £2,267,586, and the Redemption Fund at that date amounted to £8,024,102, which exceeded the amount required for the redemption of the loans over the periods fixed by the Commission, as referred to in the Auditors' Report. This excess includes the proceeds from sales of assets, and profits on realisation of investments. Moreover, yields on securities purchased since June, 1941, for Redemption Fund investments were lower than the rate of $3\frac{1}{2}$ per cent. stipulated in the Act, on which the valuation of the Redemption Fund must be based, and in order to provide for this deficiency the excess has been retained in the Redemption Fund.

Investments.

The book value of securities, representing investments in Government, Municipal, Rand Water Board and Electricity Supply Commission stocks, and First Mortgages on Freehold Properties, held by the Commission on behalf of the various funds at 31st December, 1947, was £10,626,009, the nominal value being £10,631,096. The market value of these investments at that date was £11,130,740. In addition £700,000 nominal value of stock was held, on which £66,500 had been paid at the 31st December, 1947.

**Capital
Expenditure.**

Expenditure on Capital Account during the year amounted to £2,398,451, which brought the total capital expenditure at 31st December, 1947, to £28,824,847. Expenditure on Capital Account will amount to approximately £45,500,000 on completion of all the works to which the Commission is at present committed.

**Assets and
Liabilities.**

The Commission's total assets at 31st December, 1947, amounted to £40,725,284 and its total liabilities to £30,284,009, the excess of assets (as shown in the Balance Sheet) over liabilities being £10,441,275. A graph showing the growth of assets and liabilities since 1923 is reproduced on page 16.

**Assets and
Liabilities.**

The Commission's total assets at 31st December, 1947, amounted to £40,725,284 and its total liabilities to £30,284,009, the excess of assets (as shown in the Balance Sheet) over liabilities being £10,441,275. A graph showing the growth of assets and liabilities since 1923 is reproduced on page 16.

Revenue, production costs and other important figures relating to the operation of the Commission's Undertakings during the year 1947, with the comparative figures for 1946 are as follows:—

	<u>1947</u>	<u>1946</u>	<u>Increase</u>
Revenue as per Revenue Account	£4,573,125	£4,100,361	11.53%
Total Production Costs (including interest, redemption and reserve fund charges)	£4,564,419	£4,095,659	11.45%
Excess of Revenue over Production Costs	£8,706	£4,702	£4,004
Net Revenue	£4,573,125	*£4,091,467	11.77%
Average price per unit sold	0.2085d.	*0.1906d.	9.36%
Average revenue per unit sold (including Sundry Revenue)	0.2145d.	*0.1962d.	9.33%
Average cost per unit sold	0.2141d.	0.1964d.	9.00%
Total cost of coal consumed (including Railage)	£1,436,089	£1,284,463	11.80%
Railage on coal consumed	£458,735	£364,689	25.79%
Coal consumed (in tons of 2,000 lbs.)	4,331,825	4,208,008	2.94%

*After deducting a further adjustment of £8,894 in 1946 shown in the lower section of the Revenue Account of the Witbank Undertaking.

A diagram showing the sub-division of the Commission's total production costs for the year 1947 is reproduced on page 18.

STAFF.

Home Ownership Scheme.

Loans granted to employees, to enable them to acquire homes under the Commission's Home Ownership Scheme, in terms of the 1941 amendment to the Electricity Act, totalled £36,813 at 31st December, 1947, of which amount £29,828 had been repaid at that date.

The continuance of building and materials controls and the

high prices and shortage of building material and properties have restricted applications for loans under this scheme. A number of applications have, however, been received recently, following the reduction in the rate of interest from $4\frac{1}{2}$ to $3\frac{3}{4}$ per cent. and the extension of the maximum period for repayment from 20 to 30 years.

Personnel.

The staff employed by the Commission as at 31st December, 1947, numbered 2,169 (an increase of 333 during the year), made up as follows:—

Europeans increased from	.. .. .	794	to	919
Non-Europeans increased from	.. .. .	1,042	to	1,250
		<hr/>		<hr/>
		1,836		2,169

These figures exclude staff employed at the Commission's Klip, Witbank and Vaal Power Stations, which are operated by the Victoria Falls and Transvaal Power Company Limited on behalf of the Commission. The considerable increase in staff is largely due to the acquisition of the Border Undertaking.

The Commission desires to express to all members of the staff its appreciation of their loyal and conscientious efforts, which have contributed so largely to the achievements recorded herein.

COMMISSION'S UNDERTAKINGS.

The operations and developments of the individual Undertakings are reviewed in detail in the following pages.

[General Note applicable to all Undertakings: The expression "Working Costs" includes Interest charges and Redemption Fund contributions on loan capital and amounts set aside to Reserve Fund.]

NATAL CENTRAL UNDERTAKING.
Operating Statistics.

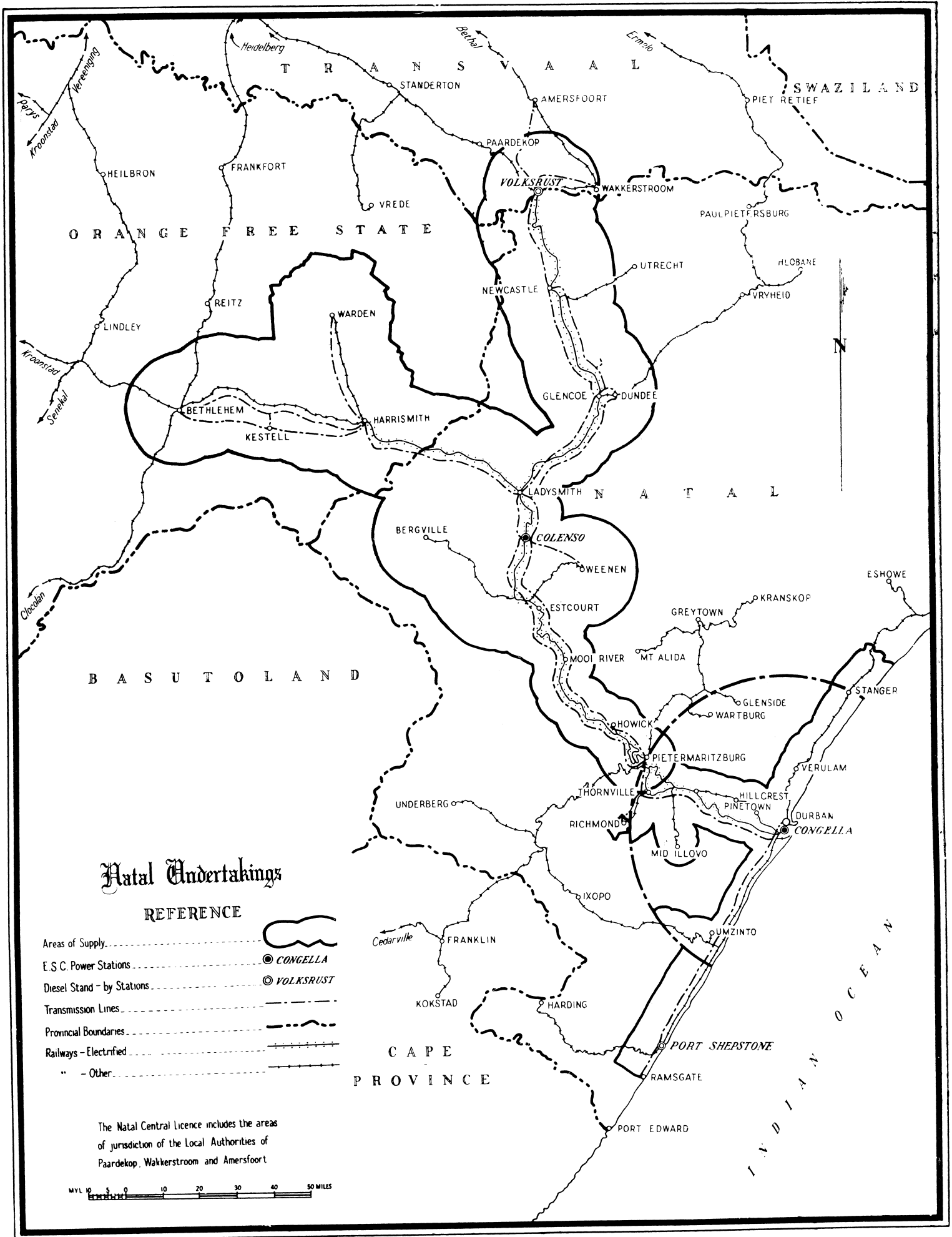
CONSUMERS		SALES		Revenue	Average Price per Unit Sold	
Class	No.	Units	Inc. or Dec.		1947	1946
			%	£	d.	d.
Traction	1	254,998,955	— 3.319	439,126	.4133	.4011
Bulk	11	62,916,127	+11.187	133,727	.5101	.5123
Industrial	269	23,199,978	+ 2.478	62,950	.6512	.6193
Domestic & Lighting	2,410	4,878,064	+21.068	35,855	1.7640	1.8657
	2,691	345,993,124	— 0.292	671,658	.4659	.4505
			1947	1946	To 31.12.47	
Revenue		£677,941		£658,690		
Working Costs		£686,242		£669,493		
Deficit		£8,301		£10,803		
Surplus					£3,407	
Capital Expenditure		£541,662		£261,206	£5,396,058	
Units Sent Out		366,436,820		367,023,210		
Maximum $\frac{1}{2}$ hour Demand kW		62,590		62,900		
Station Peak kW		82,000		75,000		
Load Factor %		66.8		66.6		
Thermal Efficiency %		17.92		17.62		
COAL:						
Consumption tons		286,152		289,668		
Average per unit sent out—lb		1.562		1.578		
Total Cost		£161,520		£157,987		
Cost per ton		11s. 4d.		10s. 11d.		

Colenso
Power Station
Extensions.

Throughout the year work has continued on the extensions to Colenso Power Station begun in 1945; but—as is the common experience almost everywhere—there have been delays due to late delivery of materials, and it is unlikely that the new 25,000 kW turbo-alternator will be in service until late in 1948. This unavoidable delay entails a heavy strain on plant in operation.








Increasing
Demand.

A substantial increase in industrial and domestic consumption is expected, owing to the establishment of new industries in the Natal interior and increased demand from collieries, but this will not be fully effective until towards the end of 1948, since consumers as well as suppliers are finding it difficult to

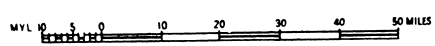


Natal Undertakings

REFERENCE

- Areas of Supply 
- E. S. C. Power Stations  CONGELLA
- Diesel Stand-by Stations  VOLKSRUST
- Transmission Lines 
- Provincial Boundaries 
- Railways - Electrified 
- " - Other 

The Natal Central Licence includes the areas of jurisdiction of the Local Authorities of Paardekop, Wakkerstroom and Amersfoort



obtain plant and apparatus. From the Commission's point of view this fact is important, because much-needed distribution plant is still awaited. For instance, three 9,000 kVA transformers expected in February, 1948, for Pietermaritzburg are now promised for June or July, and are not likely to be installed until September.

The total number of consumers has increased from 2,094 in 1944 to 2,691 at the close of 1947, and Industrial and Mining consumers from 180 to 269 over the same period.

Rural Supplies.

The Undertaking continues to receive large numbers of applications for connections from rural areas. The position as regards labour, transport and materials is easier although still difficult. A number of applications remain unavoidably outstanding, but that considerable progress has been made is shown by the following figures:—

Year	Miles of New Line, 6.6 and 11 kV	New Transformers	New Rural Consumers
1945	4	4	4
1946	23	24	35
1947	68	48	58

Housing.

Owing to increase in staff at Colenso, the housing problem remains. Of 19 houses authorised, (1 purchased, 8 for building departmentally and 10 by contract), twelve are occupied and six are under construction. The average price per house is £2,500.

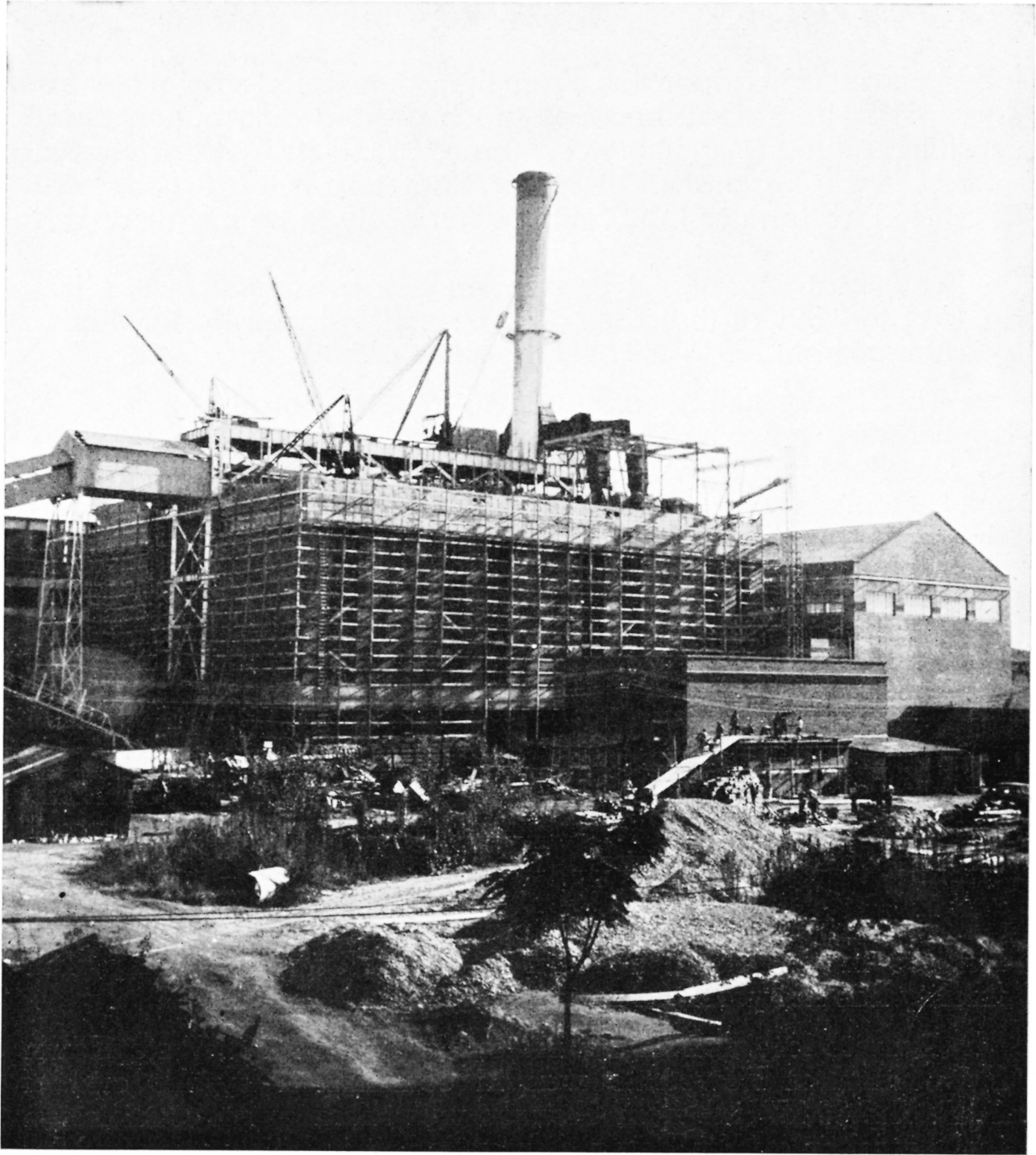
Negotiations continue in connection with the housing of Natives in the Colenso Town Board's Native Township, but finality has not yet been reached.

Distribution System.

Despite late delivery of materials the new 88 kV stepdown sub-station at Newcastle was in commission by the end of 1947. The 33 kV line from Glencoe was taken out of commission in December and is being dismantled; it is being replaced by an 88 kV line. Material from this line will be used for the line to Winterton and Bergville.

Building of the stepdown sub-station at Dannhauser has made good progress, and the transformers on order are due in October, 1949. Work has begun on the line to supply additional power to Durban Navigation Colliery.

Two 1,000 kVA transformers, stepping down to 11 kVA, have been received at Glencoe sub-station and are in position. Work has been commenced on the new 88 kV sub-station at



COLENZO POWER STATION EXTENSIONS.

(Photo by courtesy of Mr. B. D. Pickles).

Wessels Nek, and the transformers are expected in October, 1949.

Engineering of the sub-station at Estcourt is complete, with foundations laid for the transformers and steelwork in position. Completion of the work is delayed by the non-arrival of new transformers for Pietermaritzburg, which will release the 2,400 kV transformers at that station for Estcourt.

The 11 kV duplicate line from Cedara to the Rubber Works at Howick is almost completed.

Supply was given in November to the Durban Corporation for Umgeni Dam. Energy is supplied at Cato Ridge, the transmission line from there to the Dam having been constructed by the Municipality.

**Railway
Traction.**

Units supplied for traction amounted to approximately 73% of the total units sold.

The Railway Administration has not proceeded further with the scheme for electrification of the line from Rosburgh to Hillcrest, and there were no developments in this connection during the year.

From 1st November, 1947, the Administration, by arrangement with the Commission, took over control of the mercury-arc rectifier sub-stations on the Natal Main Line, and assumed ownership on 1st April, 1948. These sub-stations are used solely for railway traction and have always been operated and maintained by the Administration's staff.

Financial.

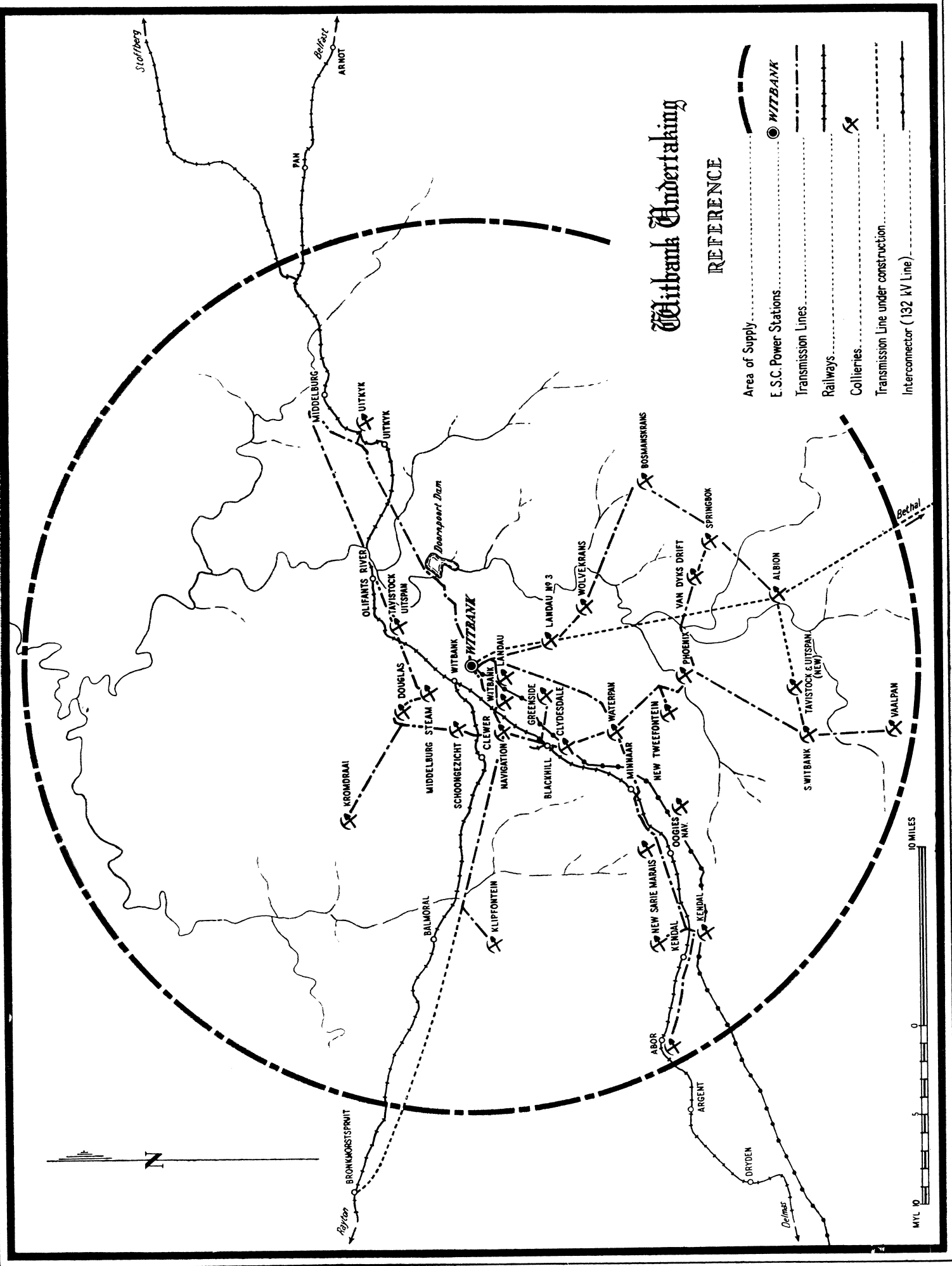
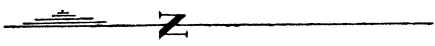
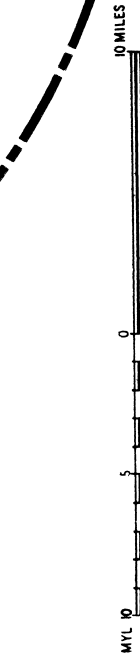
Although at the end of 1947 there was an accumulated surplus of £3,407 at this Undertaking, the last two years' working resulted in deficits amounting to £10,803 and £8,301 respectively. The Auditors' Report points out that an adjustment in tariffs may be necessary, particularly when capital charges are increased as a result of the commissioning of additional plant now under construction.

Witbank Undertaking

REFERENCE

- Area of Supply.....
- E.S.C. Power Stations.....
- Transmission Lines.....
- Railways.....
- Collieries.....
- Transmission Line under construction.....
- Interconnector (132 kV Line).....

WITBANK



WITBANK UNDERTAKING.
Operating Statistics.

CONSUMERS		SALES		Revenue	Average Price per Unit Sold	
Class	No.	Units	Inc. or Dec.		1947	1946
			%	£	d.	d.
Traction	1	131,880,298	+ 6.542	218,708	.3980	.3991
Bulk	2	605,494,442	— 2.033	269,553	.1068	.0953
Industrial	106	147,622,660	— 3.303	154,797	.2517	.2186
Domestic & Lighting	1,115	2,733,735	+14.634	11,562	1.0150	.9629
	1,224	887,731,135	— 1.021	654,620	.1770	.1605
				1947	1946	To 31.12.47
Revenue		£664,202		£609,362		
Working Costs		£670,352		£619,802		
Deficit		£6,150		£1,546		
Surplus						£2,627
Capital Expenditure		£75,685		£54,323		£2,869,470
Units Sent Out		756,926,220		772,752,268		
Maximum 1 hour } Demand kW }		106,157		108,547		
Load Factor %		81.4		81.3		
Thermal Efficiency %		17.02		17.35		
COAL:						
Consumption tons		688,365		688,831		
Average per unit sent out—lb		1.819		1.783		
Total Cost		£114,306		£95,021		
Cost per ton		3s. 4d.		2s. 9d.		

Output and Sales.

Units sent out from Witbank Power Station in 1947 totalled 756,926,220, against 772,752,268 in 1946, showing a decrease of 2.048%.

Units sold amounted to 887,731,135, including 131,880,298 units purchased by the Commission from the Victoria Falls and Transvaal Power Co., Ltd. and the Pretoria Municipality for railway traction supplies. Sales for traction and for domestic and lighting purposes show increases, while there were small decreases under the bulk and industrial categories. Bulk sales to the Falls Company, 603,495,592 units, representing 67.982% of total sales, were 2.078% below the previous year's figure, and

industrial consumption decreased by 3.303%. Total sales were 1.021% less than in 1946.

Sales statistics for Witbank Undertaking must, of course, be read in conjunction with those for Klip and Vaal, the Commission's other two stations which feed the Rand Grid System. Combined figures for the three undertakings are given in page 17 of this Report.

Distribution System.

The Undertaking received many applications for supply to new colliery projects, to a number of towns including Standerton, Ermelo and Hendrina, and to small industries and farmers, but lack of materials and long delivery periods have hampered progress. Late delivery of switchgear and accessories seriously affected the operation of the system, particularly temporary supplies to collieries.

The reinforced concrete masts have been erected for the 88 kV line from Middeldrift to Bethal, but insulators, required for the completion of this line, have not yet been received. Lack of insulators has also delayed construction of lines to a number of collieries and to Bronkhorstspuit, and lack of materials, mainly reinforcing steel, has held up work on the 88 kV line from Witbank to Middeldrift.

Several miles of cable have been laid in Witbank town, and many transformers and linking kiosks have been constructed, to complete the 6.6 kV scheme for the reticulation network. Owing to extension to the railway marshalling yards it became necessary to replace by underground cable the overhead line feeding the railways and the municipal location.

New connections during the year included Rand Collieries and Fuel, New Tavistock Colliery and Witbank Consolidated Coal Mines.

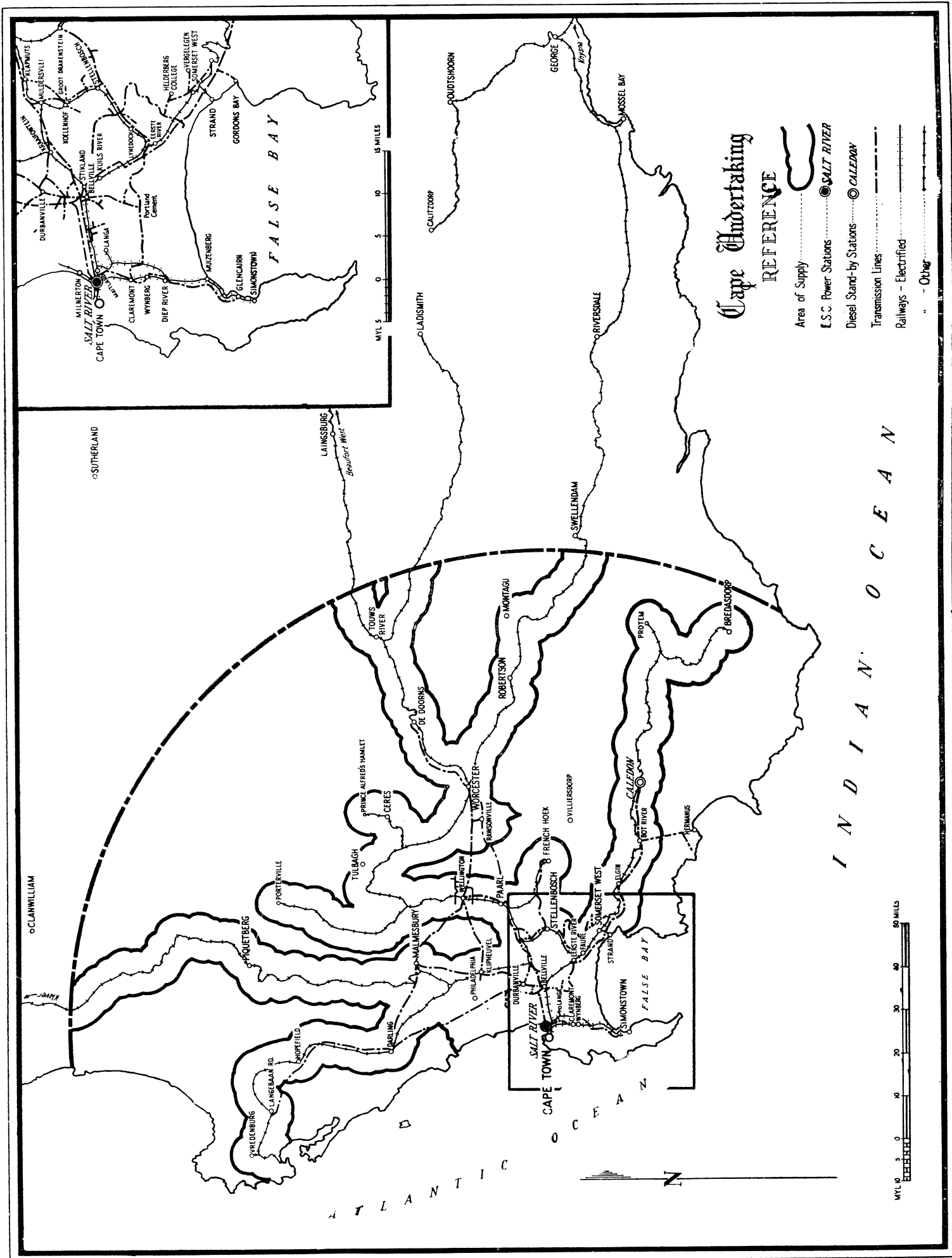
Water Supply.

Prolonged drought during 1947 resulted in the Doornpoort Dam reaching the lowest level since its first overflow, and another month of drought would have had very serious consequences for both the power station and Witbank Town. It is understood that the Municipality is now to proceed with the erection of its own dam, above the Commission's dam.

Financial.

A contract for the supply of coal to the power station expired at the end of 1946, and it was not possible to negotiate a new contract at equally favourable terms; consequently the cost

of coal rose from 2s. 9d. per ton in 1946 to 3s. 4d. per ton in 1947. This necessitated discontinuing the 10% special rebate on consumers' accounts and the imposition of a coal surcharge as from October, 1947, with a view to rectifying the position which resulted in a deficit of £6,150 during the year under review.

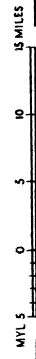
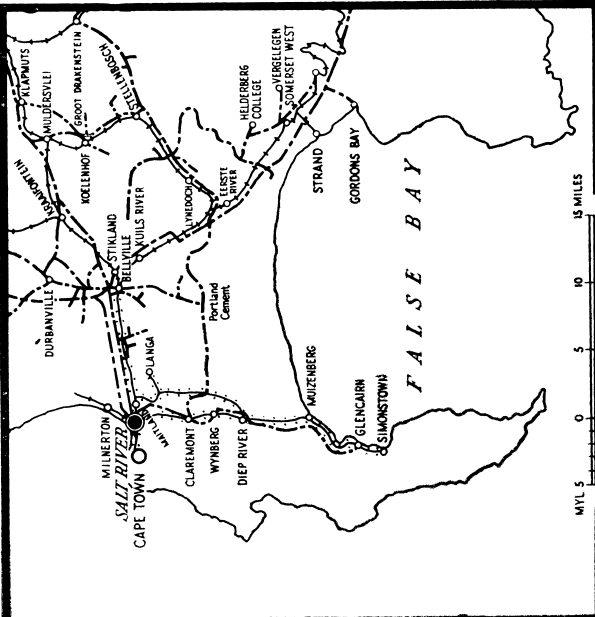
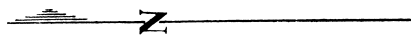


Cape Undertaking REFERENCE

- Area of Supply
- E.S.C. Power Stations
- Diesel Stand-by Stations
- Transmission Lines
- Railways - Electrified
- Other

I N D I A N O C E A N

A T L A N T I C



CAPE TOWN UNDERTAKING.
Operating Statistics.

CONSUMERS		SALES			Average Price per Unit Sold	
Class	No.	Units	Inc. or Dec.	Revenue	1947	1946
			%	£	d.	d.
Traction	1	67,375,845	— 4.205	192,602	.6861	.6558
Bulk	8	35,089,278	+16.925	96,260	.6584	.6709
Industrial	758	68,259,186	+11.375	215,215	.7567	.7457
Domestic & Lighting	10,358	27,915,950	+21.435	145,714	1.2527	1.2772
	11,125	198,640,259	+ 7.595	649,791	.7851	.7655
		1947		1946	To 31.12.47	
Revenue		£651,157		£590,925		
Working Costs		£624,423		£568,185		
Surplus		£26,734		£22,740		£72,286
Capital Expenditure		£179,671		£112,990		£3,482,008
Units sent out		171,871,318		149,438,371		
Maximum $\frac{1}{2}$ hour } Demand kW }		57,200		59,400		
Station Peak kW		61,000		63,500		
Load Factor %		34.2		28.8		
Thermal Efficiency %		17.08		16.91		
COAL:						
Consumption Tons		137,240		124,896		
Average per unit sent out—lb		1.597		1.672		
Total Cost		£192,869		£160,865		
Cost per Ton		28s. 1d.		25s. 9d.		

Pooled Stations.

Arrangements for pooled generation of electricity in terms of the "Pooling" Agreement entered into by the Commission and the Cape Town City Council in 1933 continued to work smoothly and satisfactorily.

Electricity Demand.

While pressure has continued from all quarters for supplies of electricity, particularly for new connections to small townships and groups of farmers, conditions governing the expansion and development of the Undertaking to meet the demand deteriorated rather than improved during 1947. Everything is being done which can be done, but it is a regrettable fact, perhaps not fully realised by the public, that rapid progress cannot be achieved until there is a marked improvement in the flow of necessary materials.

Despite all difficulties, units sold record an increase of 7.595% over the preceding year. Supplies to domestic consumers increased by approximately 21%, with the result that reticulation systems have been overloaded and there have been complaints of low voltage. This trouble has been overcome in a number of urban localities by the erection of outdoor step-down sub-stations as a temporary measure, pending the completion of a permanent programme to be carried out during 1948.

In rural areas lines have been extended up to or even beyond their effective current-carrying capacity, and a stage has been reached where any further connections might jeopardise the general security of the subsidiary network. Owing to the high cost of land, farms have been subdivided with the result that the new farms thus created become potential consumers, and loads have increased as farmers learn by experience the usefulness of electricity. The long delivery period required by suppliers of transformers constitutes a major handicap in accelerating rural electrification.

At the year's end farm connections on the Cape Town Undertaking numbered 608, an increase of 59 on the previous year. Agreements had been completed for an additional 120 connections, and investigations were proceeding in connection with a further 140 applicants.

**Table Bay
Extensions.**

Largely owing to the building contracting firm responsible for the civil work having been placed under judicial management, and to the dislocation thus entailed, the urgently required extensions to Table Bay Power Station have not proceeded as rapidly as was hoped. Erection of the fourth 40,000 kW turbo-alternator has consequently been delayed, and it will not be available for service by the winter of 1948. The peak period of 1947 was successfully "weathered", but the position in 1948 will be extremely difficult, and no effort is being spared to ensure that the maximum of generating plant will be available in the power stations feeding the pooled system. A fifth 40,000 kW turbo-alternator has been ordered, to bring Table Bay Power Station to its designed capacity of 200,000 kW. When this is installed, much needed relief will be obtained.

**Coal
Supplies.**

The year under review brought no improvement in the position as regards coal supplies for the pooled power stations. Owing to shortage of railway trucks, reserve stocks remained at

a low level, and again round coal had to be accepted in lieu of pea coal, entailing local crushing and consequent increased expense and decreased combustion efficiency. As will be seen from the statistics given earlier, the cost per ton of coal rose from 25s. 9d. in 1946 to 28s. 1d. in 1947.

Output.

The total number of units sent out from the pooled power stations during 1947 was 672,043,710. Of this total the Commission's Salt River Power Station sent out 171,871,318 units, representing an increase of 15% over the previous year.

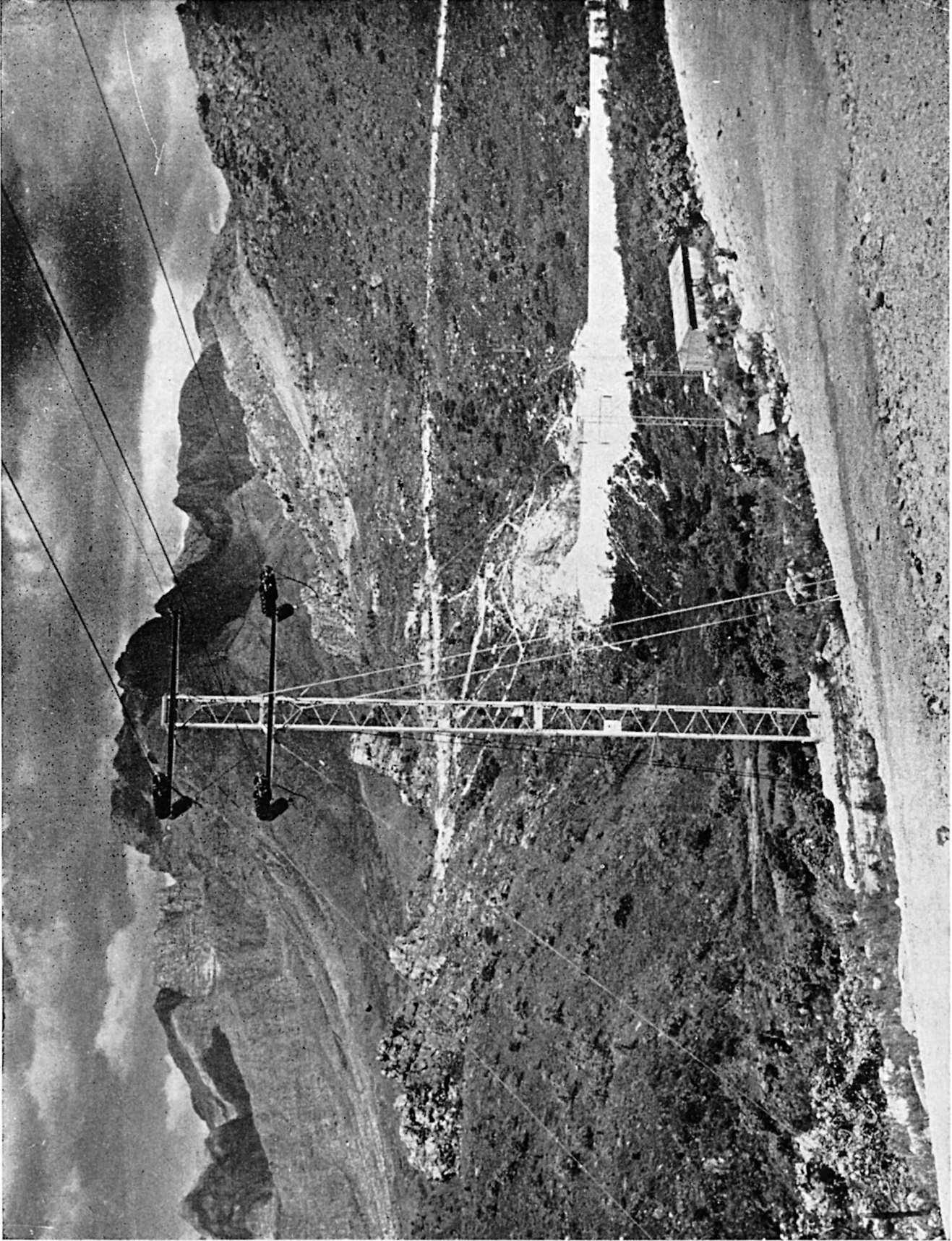
Distribution System.

Reference has already been made to the strain which present conditions place on the existing transmission system in many areas. A complete scheme of reconstruction and consolidation has been prepared, involving the provision of a 33 kV cable system from Salt River to Elsie's River and from Salt River to Bellville, and the conversion from 33 to 66 kV of the major transmission network from Bellville northwards via Worcester to Touws River. The existing substation site at Bellville is unsuitable for these major developments, and a 5 acre site has accordingly been purchased at Oakdale. The earliest date by which relief may be expected from these plans will be towards the end of 1950. Meanwhile it is proposed to install two 1,000 kW Diesel sets in a temporary power station at Worcester, and to use these to relieve pressure on the existing system in that area. Work is proceeding on planning the routes and negotiating servitudes for the new 66 kV lines between Oakdale and Wellington, and Oakdale via Tulbagh to Worcester.

Negotiations with the Municipality of Robertson for bulk supply of electricity reached finality in November, 1947. Orders for the necessary material have been placed, but owing to the long delivery period required by manufacturers, it will be difficult to commence supplies earlier than mid-1949. An agreement with the Montagu Municipality for the provision of bulk supplies was signed early in 1948.

The transmission line to Langebaanweg Aerodrome was placed in commission in August, 1947. Applications for supply to a number of industries and farms along the route are the subject of discussion between the Commission and the Department of Defence.

The change in the system of supply at Caledon from direct to alternating current has been practically completed, and by



CAPE TOWN UNDERTAKING; Truscon strain tower on Wellington/Worcester line.

early 1948 almost all consumers' installations had been changed over to alternating current.

The erection of eight additional local reticulation 12 kV sub-stations, to cater for the increased demand in the Goodwood, Elsie's River, Parow and Bellville areas, is nearing completion.

At the end of the year 866 houses of the Citizens' Housing League and Utility Construction Company at Epping Garden Village were being supplied, 20 of which had been connected during 1947. Owing to difficulty in obtaining material, 221 houses still awaited connection. The Housing League proposes to build another 600 houses, and steps are being taken to enable these to be connected as and when they are completed.

Traction
Supplies.

Considerable difficulties were encountered early in 1947 due to serious breakdowns of the Milnerton Junction Traction Sub-station. The origin of these breakdowns proved most difficult to diagnose, but the Commission's staff and officials of the Railways Administration agreed that the whole of the Cape Suburban Traction System was overloaded in relation to available equipment, and that facilities were inadequate for sectionalising the circuits, to permit the service to be maintained in the event of a local breakdown. To improve the position in the latter respect, a new D.C. breaker switchhouse with multiple sectionalising arrangement was erected by the Administration adjacent to Milnerton Junction sub-station, and put into service during July, 1947.

In anticipation of the conversion of the Cape Suburban Traction System from 1,500 to 3,000 volts, negotiations are proceeding for the Administration to assume control and ownership of the existing D.C. equipment, beginning with the Milnerton Junction Sub-station.

The development of supplies to rural and urban areas is indicated by the fact that the number of connections to reticulation schemes increased from 6,452 in 1941 to 10,321 in 1947.

Financial.

Surplus of revenue over expenditure for the year amounted to £26,734, which, with credit balances from previous years, brings the accumulated surplus to £72,286. As, however, heavy expenditure on plant and equipment, replacements and renewals, has been delayed only because of difficulties in obtaining supplies, and as this expenditure will increase future charges

to the Revenue Account, it is considered that any downward revision of tariffs at present would be premature.

During the year the Pool Cost Allocation Formula has been under review by the Pooling Committee, and a satisfactory adjustable formula was devised to ensure the equitable allocation between the Commission and the City Council of the savings effected by "pooling".

**Worcester
Power Station.**

The projected new power station at Worcester has been mentioned earlier in this Report. A site comprising 25 morgen measuring 900 ft. by 2,400 ft. has been purchased from the Worcester Municipality. Initial installation will be three 20,000 kW turbo-alternator units designed to generate at 11 kV with steam at a pressure of 600 psi and a temperature of 825 degrees F. The cooling system will be by cooling towers, and agreement has been reached with the Municipality for water supply.

During 1947 the Manager of the Commission's Cape Town Undertaking visited the United Kingdom and the United States of America to obtain information regarding the latest and most suitable types of plant and equipment, and orders have been placed for turbo-alternators and boiler plant.

The station will be designed and constructed by the Commission's staff, and the target date for putting it into commercial operation is early in 1952.

DURBAN UNDERTAKING.
Operating Statistics.

CONSUMERS		SALES			Revenue	Average Price per Unit Sold	
Class	No.	Units	Inc.	1947		1946	
			%	£	d.	d.	
Bulk	2	377,986,499	9.123	582,386	.3698	.3389	
Industrial	96	19,597,441	2.331	37,355	.4575	.4141	
Domestic & Lighting	1,735	4,977,163	20.720	37,464	1.8065	1.7349	
	1,833	402,561,103	8.901	657,205	.3918	.3584	
		1947		1946	To 31.12.47		
Revenue		£662,150		£556,760			
Working Costs		£673,353		£562,425			
Deficit		£11,203		£5,665		£44,178	
Capital Expenditure		£506,575		£231,185		£3,753,242	
Units sent out		397,485,159		364,119,270			
Maximum $\frac{1}{2}$ hour } Demand kW		95,060		89,380			
Station Peak kW		105,100		99,700			
Load Factor %		47.7		46.5			
Thermal Efficiency %		19.23		18.32			
COAL:							
Consumption Tons		288,800		274,890			
Average per unit sent out—lb		1.453		1.510			
Total Cost		£235,699		£214,058			
Cost per Ton		16s. 4d.		15s. 7d.			

System
Performance.

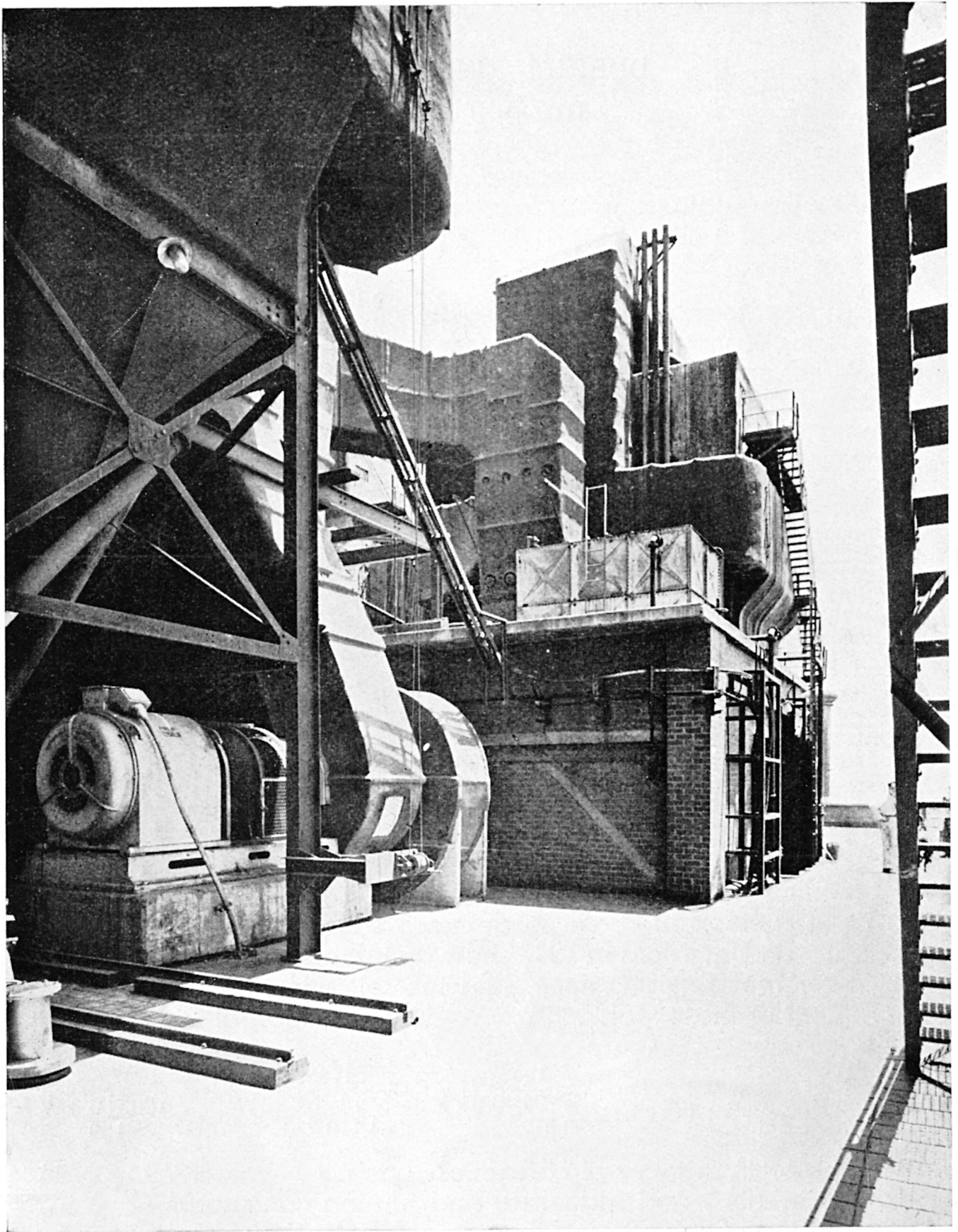
At Durban, as elsewhere, 1947 was a year of constant effort to meet a steep increase in demand with available plant and equipment. Units sold in 1947 show an increase of approximately 9% over the previous year, and the following figures indicate the result of the expansion and industrialisation of Durban and its environs:—

	1945	1946	1947
System 2-minute peak	94,400 kW	101,100 kW	106,700 kW
Units sent out	338,012,581	364,119,270	397,485,159

Consumers
and New
Connections.

The total number of consumers has risen from 1319 in 1944 to 1833 in 1947, and Industrial and Mining consumers have increased from 66 to 96 over the same period. New connections in 1947 numbered 180.

On the South Coast 7,595,744 units were sold in 1947; an



CONGELLA POWER STATION; electro-static precipitator, No. 11 boiler.

increase of 15.72% on the 1946 figure. 8,634,450 units were purchased at Warner Beach from the Durban Corporation for supply to this area, and 799,390 units were sent out from Port Shepstone Power Station.

**Power
Stations.**

With plant working at extreme pressure, some troubles were inevitably experienced, it having been difficult to find opportunities for overhauls and renewals. At Congella during the year No. 1 turbine was almost completely rebladed, boilers 11, 12 and 13 were given a general overhaul and modifications to precipitators, and air-heaters on boilers 6 and 8 were renewed. Work has begun on the increased workshop accommodation. The statistics given earlier show that the efficiency of the station has improved by 0.91% now that No. 2 Station is in operation.

The strain on existing plant will be relieved when the new 40,000 kW turbo-alternator, now in course of erection, is commissioned; but the situation will not be entirely satisfactory until a further similar generating set, due for despatch from the United Kingdom early in 1949, can be started up.

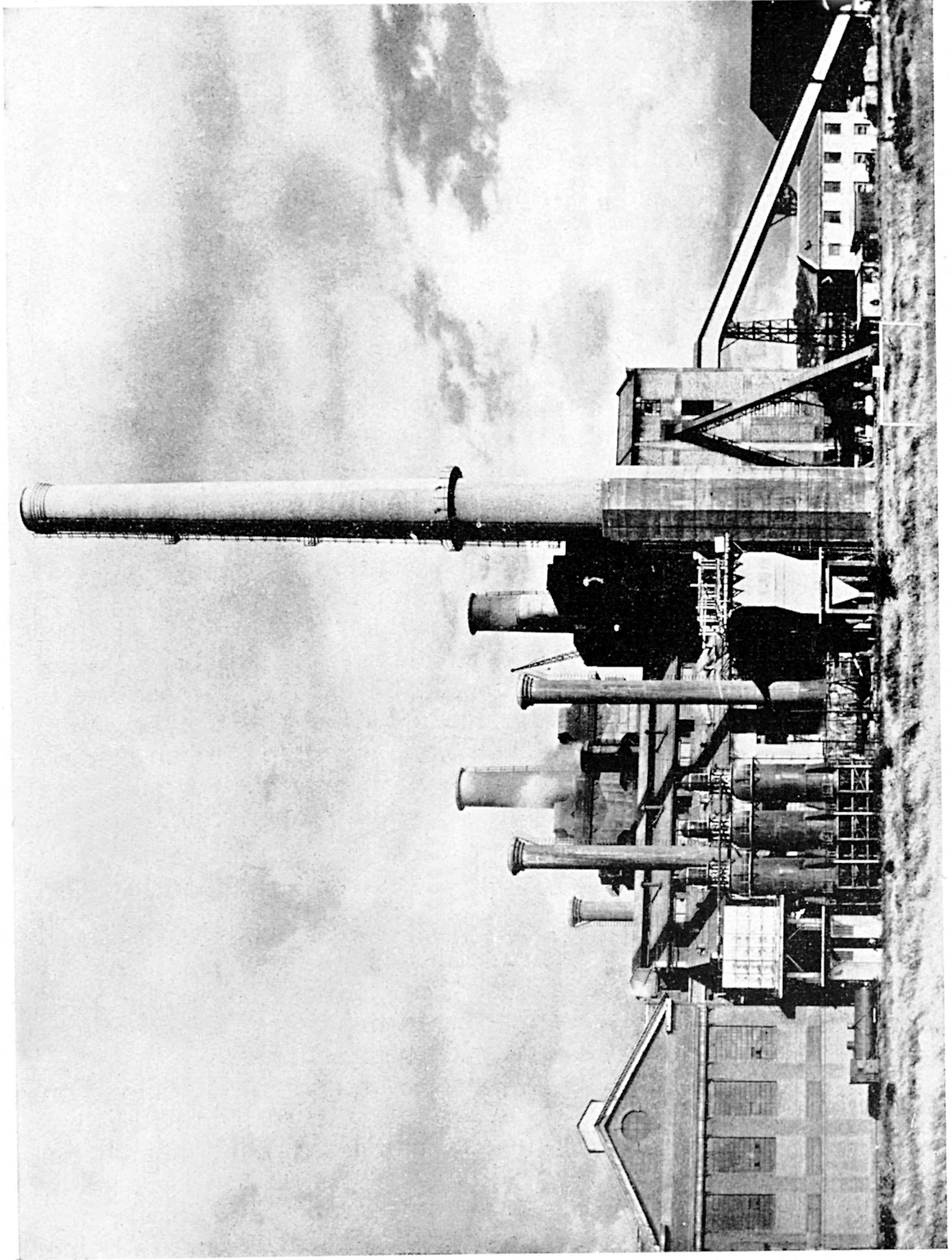
The generating station at Port Shepstone was handicapped by delay in arrival of the new plant which is on order. Two 1,000 kW General Motors units are expected shortly from the United States; one to cope with the increased load, and the other to supply the Natal Portland Cement Co. Ltd., about 12 miles inland from Port Shepstone. The 1,000 kW set from the English Electric Co. Ltd., originally intended for Port Shepstone (it was due in 1946 but has not yet been received), will be diverted to Caledon.

When the new plant for Port Shepstone is received and installed, reliability of supply along the lower South Coast will be considerably improved.

**Distribution
System.**

Good progress has been made with the extension lines to Southport, Anerley, Sea Park and Sunwich Port. During the year 50 new consumers were connected in this area. The line from Port Shepstone to Margate is nearing completion.

To provide adequately for existing and potential demand on the South Coast it has been decided to construct an 88 kV line from Durban to Port Shepstone, as the first of a pair of such lines. The route will lie inland, where the line will be less exposed to adverse climatic conditions than the existing line along the railway. Contracts have been placed, and servitudes are being negotiated. This programme also includes 12 miles of 11 kV



CONGELLA POWER STATION; showing one of the two new 300 feet concrete and brick chimneys.

line to be constructed departmentally from Port Shepstone to the Cement Works.

Pending the building of the new 88 kV South Coast line, continual work has been necessary on the existing 33 kV line, including the construction of deviations, the replacement of masts and repainting the whole line.

The year under review has seen steady progress with the plans made for mitigating the inconvenience caused to residents in the vicinity of Congella Power Station by the emission of coal dust and fly ash.

One of the two new 300 ft. concrete and brick chimneys, to take the outlet gases from No. 1 boiler house, has been completed, and the other is nearing completion. No. 7 electrostatic precipitator is expected to be operating by July, 1948, and further modifications have been carried out to the precipitators of boilers 11, 12 and 13. The final acceptance tests showed 97% efficiency. The steps taken have resulted in a marked improvement, and it is anticipated that, when the work planned has been completed, the Congella dust nuisance will be eliminated.

Although revenue for 1947 showed an increase of £105,390 compared with 1946, working costs increased by no less than £110,928. The year's working resulted in a deficit of £11,203, and the accumulated deficit at the year's end amounted to £44,178. Additional plant for Congella Power Station will entail increased charges to Revenue Account, and, as the Auditors point out in their Report, it appears that the adjustment in tariffs made in August, 1946, has proved insufficient and that a further adjustment is called for, to make provision for increasing charges and to reduce the accumulated deficit.

As the present office accommodation in Durban is inadequate for present needs and more space will be required for future expansion, a $\frac{1}{4}$ -acre site has been purchased in Acutt Street, and plans for building are under consideration by the Commission.

Dust
Nuisance.

Financial.

Office
Accommo-
dation.

SABIE UNDERTAKING.
Operating Statistics.

CONSUMERS		SALES		Revenue	Average Price per Unit Sold	
Class	No.	Units	Inc. %		1947	1946
Industrial	2	7,604,777	2.656	£13,404	d. 4230	d. 4694
		1947		1946	To 31.12.47	
Revenue		£13,404		£14,487		
Working Costs		£13,361		£14,511		
Surplus		£43				£122
Deficit				£24		
Capital Expenditure		Nil		Nil		£96,170
Maximum $\frac{1}{2}$ hour } Demand kW }		1,300		1,280		
Station Peak kW }		1,540		1,420		
Load Factor %		69.7		69.2		

Electricity Sales.

The three 450 kW sets installed at Sabie hydro-electric station continued to operate satisfactorily, and the 7,604,777 units sold in 1947 constitute a record for the Undertaking, being 2.656% higher than the previous year's figure. The whole of the output is supplied to two gold mines.

Financial.

At 31st December, 1947, capital expenditure in respect of Sabie Undertaking had been amortised, and from that date the interest and redemption fund charges, amounting to £6,441 in 1947, will be reduced to £662, representing the difference between interest payable on loan moneys and interest earned on the relative investments of the redemption fund.

Due to this reduction, the charges to consumers for power will be reduced by about 40 per cent. as from January, 1948.

KLIP GENERATING STATION UNDERTAKING.

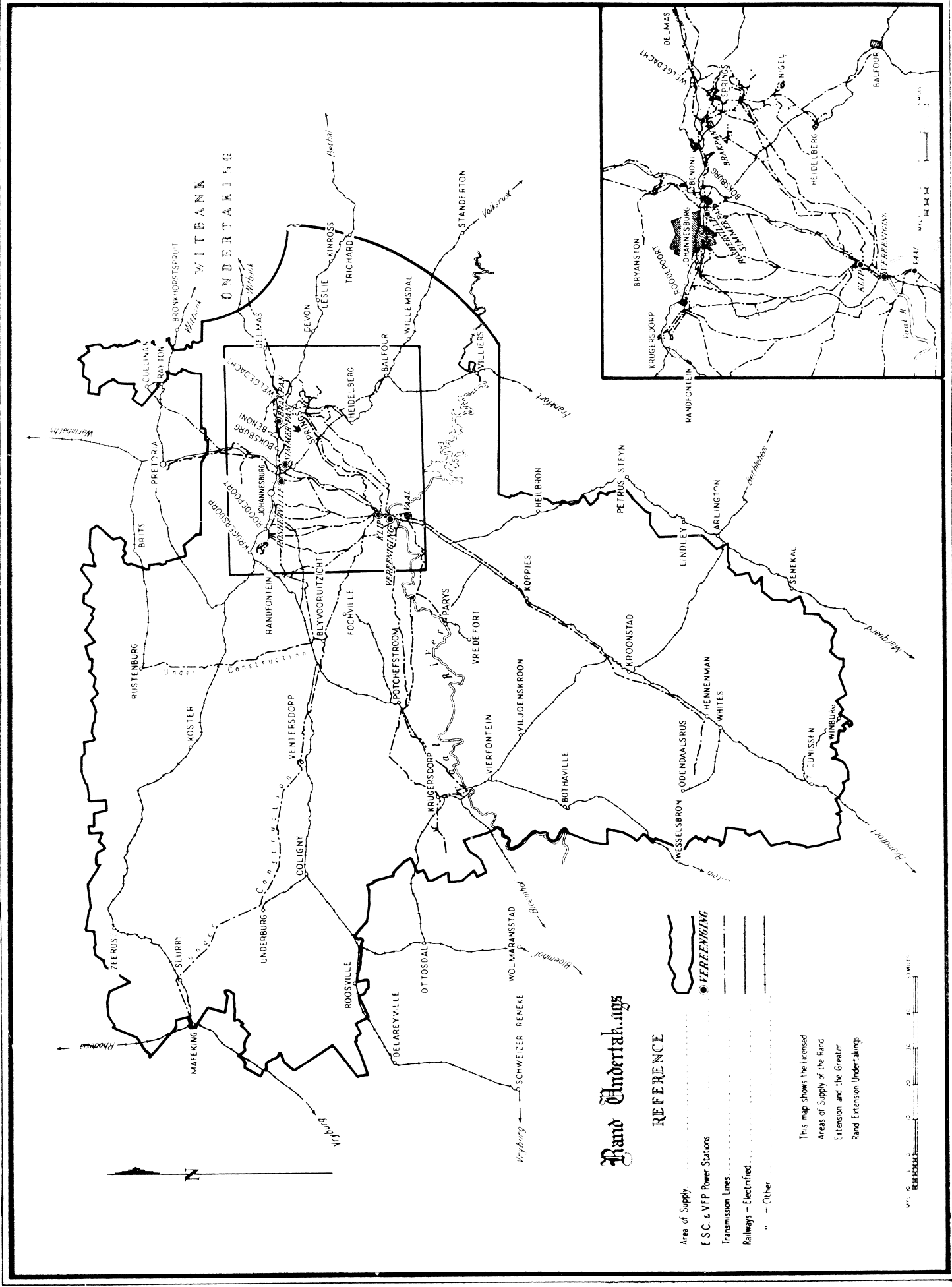
Operating Statistics.

CONSUMERS		SALES		Revenue	Average Price per Unit Sold	
Class	No.	Units	Inc. Dec.		1947	1946
Bulk	1	2,547,186,151	2.568 %	£ 1,202,652	d. 1.133	d. 1.084
		1947		1946	To 31.12.47	
Revenue		£1,208,854		£1,186,875		
Working Costs		£1,208,854		£1,186,875		
Capital Expenditure		£9,306		£33,289		£6,579,245
Units sent out		2,547,186,151		2,614,328,036		
Maximum 1 hour Demand kW		355,410		361,350		
Load Factor %		81.8		82.6		
Thermal Efficiency %		20.64		20.73		
COAL:						
Consumption tons		2,334,079		2,354,804		
Average per unit sent out—lb		1.833		1.801		
Total Cost		£515,763		£514,245		
Cost per ton		4s. 5d.		4s. 4d.		

Output and Sales.

Klip Generating Station was responsible for approximately half of the Commission's total sales of electricity in 1947. This Station is operated on the Commission's behalf by the Victoria Falls and Transvaal Power Co. Ltd., which purchases the whole of the output, to be fed into the Reef Grid System. Operating costs and capital charges are paid to the Commission by the Company. These arrangements will cease on July 1st, 1948, in terms of the agreement which has practically been completed with the Company for the purchase of its undertakings by the Commission.

Following the opening-up in 1945 of Vaal Power Station and the transfer to it of off-peak loading, the output from Klip Power Station has shown some decline, from 2,703,638,629 units in 1944 to 2,547,186,151 units in 1947. The 1947 figure shows a decline of 2.568% compared with 1946, but this is more than compensated by increased output by the Vaal Station.



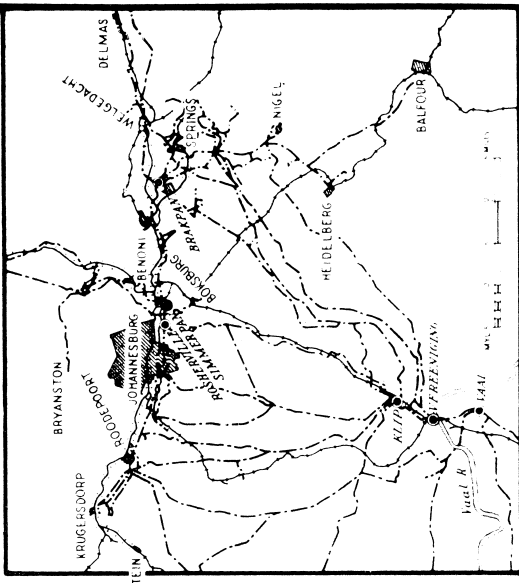
WITBANK UNDERTAKING

Rand Undertakings

REFERENCE

- Area of Supply
- E. S. C. & V.F.P. Power Stations
- Transmission Lines
- Railways - Electrified
- Other

This map shows the licensed Areas of Supply of the Rand Extension and the Greater Rand Extension Undertakings



RAND AND GREATER RAND
EXTENSION UNDERTAKINGS.

By a licence granted to the Commission in May, 1947, for the Greater Rand Extension Undertaking, an area of approximately 16,000 square miles was added to the 11,200 square miles of the existing Rand Extension Undertaking. The combined areas now extend from Winburg in the south to Mafeking and Rustenburg in the north, including on the west the new goldfields around Odendaalsrus, and approaching but excluding Bethal on the east.

The Undertakings comprise a transmission and distribution system operated on the Commission's behalf by the Victoria Falls and Transvaal Power Co. Ltd., under licences ceded by the Commission to the Company. These licences will revert to the Commission on 1st July, 1948.

At 31st December, 1947, 549 route miles of transmission lines and cables were in operation on this system, with a further 262 route miles under construction, including the 88 kV line to Odendaalsrus, which has since been energised. At the year's end installed transformer capacity was 369,640 kVA, an increase of 21,600 kVA during the year.

Capital expenditure on the Undertakings is financed by the Commission, and charges for interest, redemption, reserve and administration are recovered from the Company. These charges for 1947 amounted to:—

Rand Extension Undertaking	£92,414
Greater Rand Extension Undertaking	£ 3,135

The Falls Company, under existing arrangements, bears its own cost of operation and maintenance.

Capital expenditure to 31st December, 1947, was:—

Rand Extension Undertaking	£1,452,262
Greater Rand Extension Undertaking	£ 295,093

VAAL GENERATING STATION UNDERTAKING.

Operating Statistics.

Class	CONSUMERS		SALES		Revenue £	Average Price per Unit Sold	
	No.	Units	Inc. %	1947		1946	d.	d.
Bulk	1	668,587,275	14.782		460,734	.1654	.1592
				1947	1946	To 31.12.47	
Revenue				£466,611	£391,652		
Working Costs				£466,611	£391,652		
Capital Expenditure				£442,792	£569,541	£4,278,666	
Units sent out				668,587,275	582,485,354		
Maximum 1 hour Demand kW				123,398	103,979		
Load Factor %				61.9	63.9		
Thermal Efficiency %				22.37	22.48		
COAL:							
Consumption tons				549,941	474,919		
Average per unit sent out—lb				1.645	1.631		
Total Cost				£153,055	£142,287		
Cost per ton				5s. 7d.	6s. 0d.		

The foregoing statistics clearly show the continued expansion at Vaal Generating Station. Sales increased from 582,485,354 units in 1946 to 668,587,275 units in 1947. The corresponding figures for revenue were £391,652 and £466,611, while the maximum one-hour demand grew from 103,979 kW to 123,398 kW.

That working costs exactly balance revenue is explained by the fact that the Undertaking, owned by the Commission, is operated by the Victoria Falls and Transvaal Power Co. Ltd., which pays to the Commission the operating costs and capital charges. (In this connection see remarks on pages 9 and 45 of this Report).

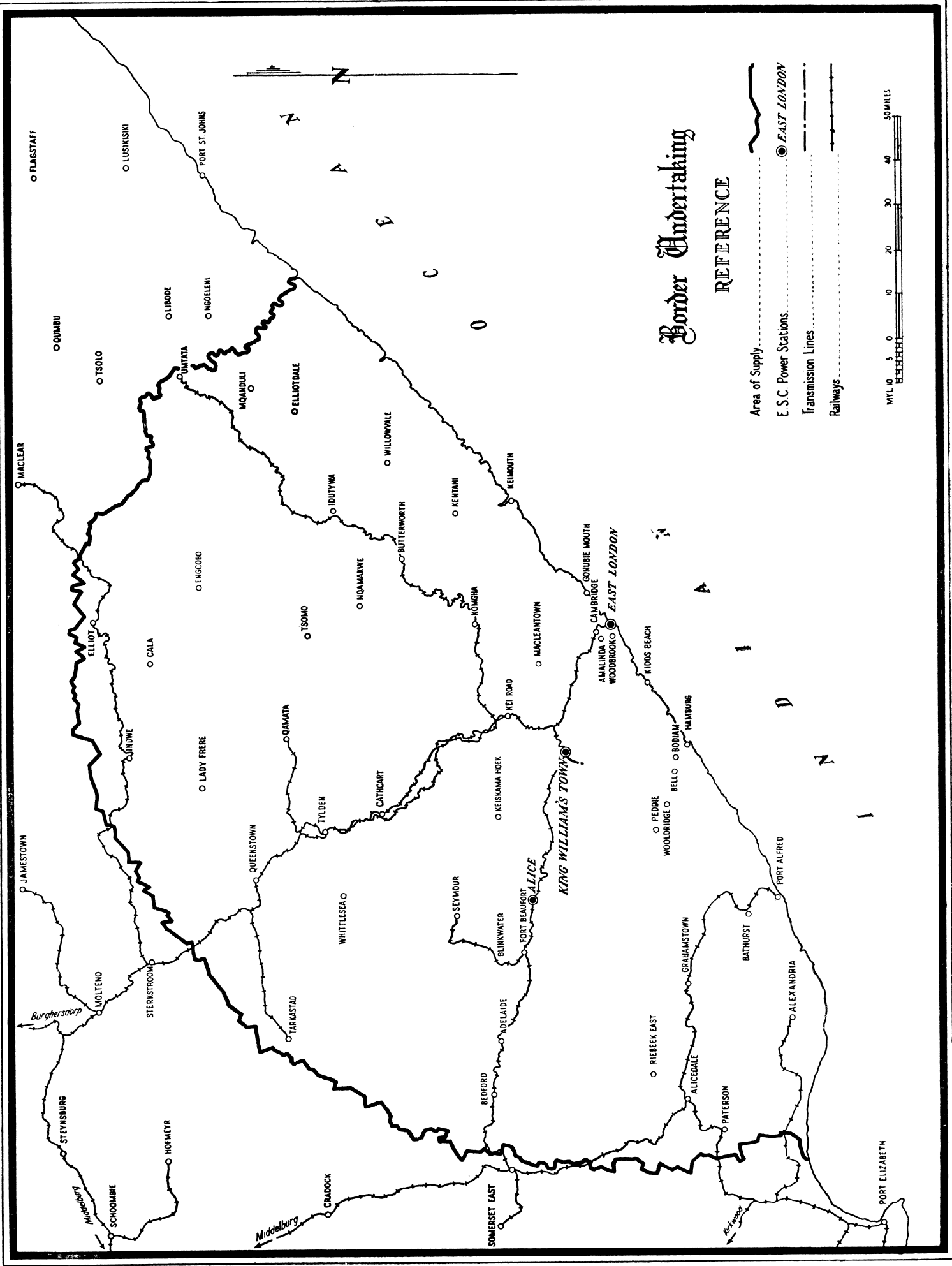
The decrease in the cost of coal (5s. 7d. per ton in 1947 against 6s. per ton in 1946) is due to larger output from the colliery.

The third of the three 33,000 kW Ljungstrom generating sets, delivery of which was long delayed by war conditions, was

commissioned during March, 1947, bringing the main installation up to five 33,000 kW sets. Four additional 33,000 kW sets and two 7,000 kW house sets are on order. The increased installation will entail the provision of twelve additional boilers each rated at 190,000 lb per hour at 360 psi, and two new cooling towers, similar to those already built.

On completion of present plans for this station its equipment will be:—

- 9 generating sets, each 33,000 kW;
- 3 house sets, each 7,000 kW;
- 18 boilers, each 190,000 lb per hour.



Border Bantustan

REFERENCE

- Area of Supply
- E. S. C. Power Stations. ● EAST LONDON
- Transmission Lines
- Railways



FLAGSTAFF

QUMBU

OTSOLO

LUSIKSINI

OLIBODE

URUKATA

FORT ST. JOHNS

NGOLENI

MCAMDJU

ELLIOTDALE

IDUTYWA

WILLOWVALE

BUTTERWORTH

KENTANI

KEIMOUTH

ENGCOBO

OTSONO

NOAMANEWE

KONGHA

MACLEANTOWN

AMALINDA

CLIMBRIDGE

WOODBRIDGE

EAST LONDON

KIDDS BEACH

BODIAM

HAMBURG

LADY FRERE

QAMATA

TYLDEN

CATHICART

KESIKAMA HOEK

MACLEANTOWN

KING WILLIAM'S TOWN

PEDDIE

WOOLDRIDGE

BELLO

HAMBURG

BATHURST

ALEXANDRIA

PORT ALFRED

JAMESTOWN

MOLTENO

STERNSTROOM

QUEENSTOWN

WHITTLESEA

TYLDEN

CATHICART

SEYMOUR

BLINKWATER

FORT BEAUFORT

ALICE

ALICE

RIEBEEK EAST

ALICE DALE

PATERSON

GRAHAMSTOWN

BATHURST

ALEXANDRIA

PORT ALFRED

STEYNSBURG

SCHOOMBIE

HOFMEYR

GRADDOCK

SOMERSET EAST

BEDFORD

ADELAIDE

ALICE DALE

PATERSON

ALICE DALE

PATERSON

ALICE DALE

PATERSON

ALICE DALE

PATERSON

PORT ELIZABETH

Middelburg

Middelburg

Kilnwood

Burghersdorp

BORDER UNDERTAKING.

Operating Statistics.

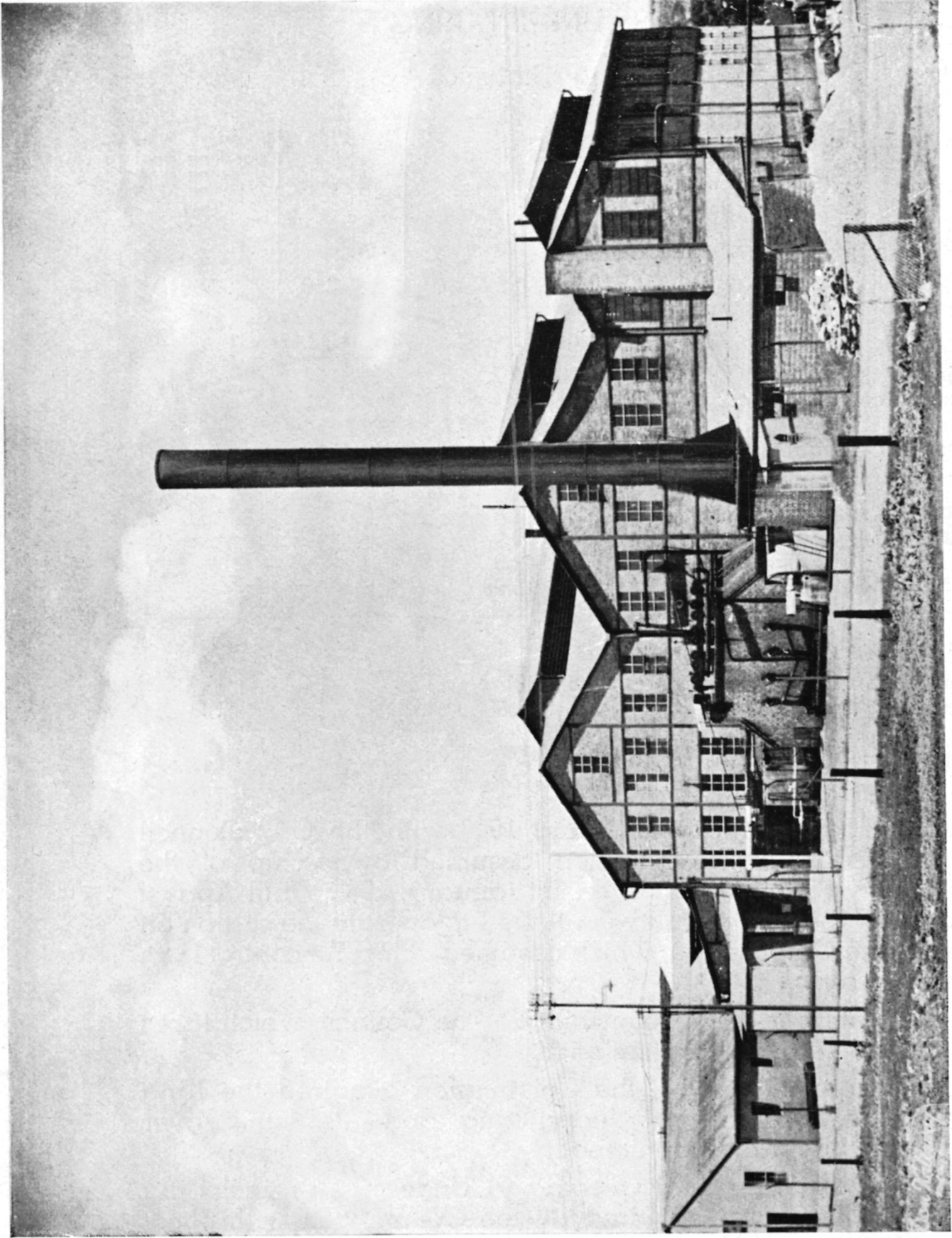
CONSUMERS		SALES		Revenue	Average Price per Unit Sold
Class	No.	Units	Inc. or Dec.		1947
Bulk	1	56,170,900	% —	£ 133,256	d. 0.5694
		1947		To 31.12.47	
Revenue		£133,257			
Working Costs		£125,674			
Surplus		£7,583		£7,583	
Capital Expenditure		£231,153		£231,153	
Maximum $\frac{1}{2}$ hour Demand kW		15,860			
Load Factor %		42.0			
Thermal Efficiency %		15.98			
COAL:					
Consumption tons		47,248			
Average per unit sent out—lb		1.692			
Total Cost		£62,877			
Cost per ton		26s. 7d.			

Following negotiations during 1946 with the City Council of East London, the Commission assumed ownership of the Municipality's power station on 1st January, 1947. Until August of that year the Municipality continued to operate the station on behalf of the Commission, which assumed complete control from September 1st.

Reticulation is the responsibility of the Council, which takes supply in bulk from the Commission.

On January 1st, 1948, the Commission acquired the King William's Town Municipal Undertaking and also took over reticulation within that municipality.

The Alice Municipal Electricity Undertaking, including reticulation, was also acquired by the Commission with effect from 1st January, 1948.



KING WILLIAM'S TOWN POWER STATION, acquired by the Commission.

Installed capacity of the respective power stations is:—

East London—24,500 kW.

King William's Town—3,500 kW.

Alice—285 kW.

As soon as the supply position permits, installations will be enlarged to meet the needs of the licensed area, which extends to a radius of approximately 120 miles from the power station at East London, embracing an area of 21,500 square miles.

The Commission takes this opportunity of welcoming those employees who have transferred to its service.

MUNICIPAL ELECTRICITY SUPPLY SCHEMES.

Reports submitted during the year by the Commission, in terms of Section 38 of the Electricity Act, to the Administrators of the various Provinces on the proposals of urban local authorities to establish electricity undertakings or to enlarge existing undertakings, were as follows:—

TRANSVAAL.

New Schemes:

Ravensklip.

Extensions:

Nelspruit.
Potgietersrust.
Venterspost.
Warmbaths.
Wolmaransstad.
Zeerust.

Tenders:

Balfour.
Meyerton.
Naboomspruit.
Pietersburg.
Piet Retief.
Venterspost.
Warmbaths.

NATAL.

Ladysmith.
Stanger.

ORANGE FREE STATE.

Boshof.
Brandfort.
Harrismith.
Hoopstad.
Marquard.
Trompsburg.
Wepener.
Winburg.

Brandfort.
Kroonstad.
Marquard.
Villiers.
Viljoenskroon.
Winburg.

CAPE.

Citrusdal.
Despatch.
Gansbaai.
Keimoes.
Komgha.
Postmasburg.

Albertinia
Britstown.
Butterworth.
Carnarvon.
Ceres.
Douglas.
Fort Beaufort.
Graaff-Reinet.
Grahamstown.
Humansdorp.
Idutywa.
Kokstad.
Ladismith.
Matatiele.
Oudtshoorn.
Prieska.

Beaufort West.
Britstown.
George.
Grahamstown.
Idutywa.
Jansenville.
Kenhardt.
Komgha.
Ladismith.
Matatiele.
Oudtshoorn.
Pearston.
Somerset East.
Upington.
Vryburg.
Willowmore.

CAPE (Continued)

New Schemes:**Extensions:****Tenders:**

Riviersonderend.
 Robertson.
 Victoria West.
 Villiersdorp.
 Vryburg.
 Willowmore.

Wolseley.

SOUTH-WEST AFRICA.

Otjiwarongo.

Up to 31st December, 1947, 616 reports on Municipal Electricity Supply Schemes, of which 192 were in respect of new schemes, had been submitted by the Commission. In addition, the Commission had issued at that date 298 supplementary reports on tenders.

ANNEXURES.

The Commission submits for the year 1947 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 and Sundry Loans and Amounts
Outstanding for Rights Acquired.

Account No. 1—Redemption Fund Account.

Account No. 2—Reserve Fund Account.

Revenue and Expenditure Accounts in respect of:—

Account No. 3—Natal Central Undertaking.

Account No. 4—Witbank Undertaking.

Account No. 5—Cape Town Undertaking.

Statement of Pooled Costs, Cape Town.

Account No. 6—Durban Undertaking.

Account No. 7—Sabie Undertaking.

Account No. 8—Klip Generating Station Undertaking.

Account No. 9—Rand Extension Undertaking.

Account No. 10—Vaal Generating Station Undertaking.

Account No. 11—Greater Rand Extension Undertaking.

Account No. 12—Border Undertaking.

ANNEXURE "B"—STATISTICAL AND OTHER STATEMENTS.

Statement No. 1—Summary of principal plant and equipment installed at the Commission's several Undertakings as at 31st December, 1947.

Statement No. 2—Summary of principal plant and equipment in course of installation or on order as at 31st December, 1947.

Statement No. 3—Units sold to all consumers during the past twenty-three years.

Statement No. 4—Distribution of units sold during 1947 as between the various classes of consumers.

Statement No. 5—Power Station Statistics, 1947.

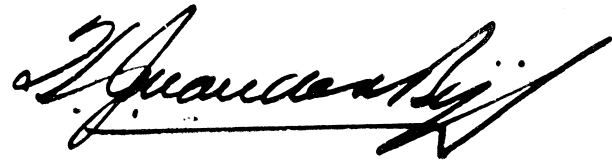
Statement No. 6—Particulars of coal used at the Commission's Steam-raising Power Stations during 1947.

Statement No. 7—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 year 1947.

ANNEXURE "C"—UNION STATISTICS.

Union Statistics relating to the production and distribution of electricity. This information, which was extracted from the 1945/1946 Industrial Census, is published in this Report by the courtesy of the Union Census and Statistics Office.

Yours faithfully,

A handwritten signature in black ink, appearing to read 'H. J. Van der Bijl', written in a cursive style with a horizontal line underneath.

H. J. VAN DER BIJL,
CHAIRMAN.

INDEX TO ANNEXURE "A" (AUDITORS' REPORT AND ACCOUNTS).

	Pages
Auditor's Report	59
Balance Sheet	64—65
Expenditure on Capital Account	66—67
Details of Investments of Redemption Fund	68—69
Loan Capital	70
Redemption Fund Account	71
Reserve Fund Account	72—73
Revenue and Expenditure Accounts :	
Natal Central Undertaking	74—75
Witbank Undertaking	76—77
Cape Town Undertaking	78—79
Statement of Pooled Costs—Cape Town	80—81
Durban Undertaking	82—83
Sabie Undertaking	84—85
Klip Generating Station Undertaking	86—87
Rand Extension Undertaking	88—89
Vaal Generating Station Undertaking	90—91
Greater Rand Extension Undertaking	92—93
Border Undertaking	94—95

ANNEXURE "A"
THE REPORT OF THE AUDITORS.

Johannesburg.
21st May, 1948.

The Chairman and Members,
Electricity Supply Commission,
Johannesburg.

Gentlemen,

We have completed the audit of the books and accounts of the Commission for the year ended 31st December, 1947.

REDEMPTION FUND

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

We find that, in the aggregate, the amount in the Fund at 31st December, 1947, is materially in excess of the sum required to provide for the redemption of the respective loans over the maximum periods laid down in terms of issue. For reasons which appear to us to be justifiable and sound the Commission has in certain cases, caused provision to be made for the redemption of the loans over a shorter period than the maximum prescribed. The amount in the Fund at 31st December, 1947, is in excess of the amount required to provide for redemption of the loans over the shorter periods so fixed by the Commission. Investments purchased for the redemption fund since June, 1941, have shown an interest yield of less than $3\frac{1}{2}$ per cent. per annum, the rate prescribed by Clause 16 (2) of the Schedule to the Electricity Act. The last-mentioned excess is being used to provide for the difference between the rate of $3\frac{1}{2}$ per cent. per annum and that actually being obtained on these later investments.

Application will require to be made in due course to the Minister to fix the dates from which provision for redemption shall commence, in terms of Clause 16 (2) of the Schedule to the Electricity Act, in respect of Loan No. 13, which was issued in September, 1946, and Loan No. 14, which was issued in December, 1947. Provision has been made, however, for the redemption of moneys expended out of these loans on works and plant

which had come into commercial operation prior to 31st December, 1947.

HEAD OFFICE ADMINISTRATION, ENGINEERING AND GENERAL EXPENSES, INCLUDING PUBLICITY.

Expenditure under this heading shows an increase over that of the previous year. We have received satisfactory explanations for the increase, which, in general, is occasioned by expansion in the activities of the Commission and by advancing prices.

Against the total expenditure has been set off or credited:

- (1) Fees accruing to the Commission in connection with extensions to the Rand Extension Undertaking and Greater Rand Extension Undertaking and the Vaal Generating Station in terms of agreements with The Victoria Falls and Transvaal Power Company Limited.
- (2) Other amounts transferred to cost of capital works at Undertakings for services of Head Office Staff.
- (3) Fees for reporting on Power Schemes of Local Authorities.
- (4) Amounts chargeable to Revenue Accounts under other headings.

The amount remaining has been charged against the Revenue Accounts of all the Undertakings in commercial operation. In the case of the Witbank (Power Station), Klip, Vaal, Rand Extension and Greater Rand Extension Undertakings, the amount is determined by agreements with The Victoria Falls and Transvaal Power Company Limited. The expenditure charged to the other Undertakings has been apportioned by the Commission. We have no reason to disagree with the allocation so made.

REVENUE ACCOUNTS.

Natal Central Undertaking.

The result of the year's operations at this undertaking reflects an excess of expenditure over revenue amounting to £8,300.6s.7d. The amount set aside to Reserve Fund during 1947 was £20,000 as compared with an amount of £27,000 during the previous year. It would appear that some adjustment in tariffs may be necessary particularly when capital charges are

increased as a result of the bringing into commission of additional plant now under construction.

Witbank Undertaking.

As a result of increasing costs it was found necessary to discontinue from the 1st of October, 1947, the rebate which had previously been granted to consumers in the Local and Municipal Supplies area, and further, from that date the increase in coal costs has been recovered from Bulk and Industrial consumers in that area.

Cape Town Undertaking.

After setting aside to Reserve Fund the sum of £51,602.14s.0d., as compared with £6,962.15s.0d. during 1946, the year's operations at this undertaking reflect an excess of Revenue over Expenditure of £26,734.0s.8d. resulting in an accumulated surplus of £72,286.1s.1d. We understand that substantial sums will have to be expended both from Reserve Fund and on Capital Account and as this expenditure will increase future charges to the Revenue Account, any revision of tariffs at the present stage would appear to be premature.

Durban Undertaking.

The year's operations at this undertaking reflect an excess of expenditure over revenue amounting to £11,203.0s.2d. resulting in an accumulated deficit of £44,178.9s.1d. It is now evident that the tariff adjustment made on the 1st of August, 1946, has been insufficient to meet increased costs. We understand that further plant will shortly be commissioned and it appears that a further adjustment in tariffs is called for in order to make provision for the increasing charges to Revenue Account including the setting aside of an adequate sum to Reserve Fund and for a reduction in the accumulated deficit.

Klip and Vaal Undertakings.

We have accepted the accounts rendered by the Victoria Falls and Transvaal Power Company Limited, which Company, in terms of agreements with the Commission, operates the stations and is the sole consumer on a cost basis. The Capital Charges made by the Commission have been verified by us. The resulting figures have been summarised in the respective Revenue Accounts.

Rand Extension and Greater Rand Extension Undertakings.

In terms of agreements between The Victoria Falls and Transvaal Power Company Limited, and the Commission, the Company is sole user of these Undertakings under cession of the licences and operates and maintains them at its own cost. The expenditure of the Commission in connection with these Undertakings (including Capital Charges) is recovered from the Company, and the figures relating thereto are shown in the Revenue Accounts of the Undertakings.

Other Undertakings.

In the case of the other Undertakings, operated by the Commission, we are satisfied on the information supplied to us that at the present time no alterations in the existing charges for electricity are required.

When the Border Undertaking was acquired the Commission took over from the East London Municipality in terms of the agreement a Renewals Fund amounting to £39,450.1s.0d. This fund has been added to the Commission's Reserve Fund in respect of the Border Undertaking.

GENERAL.

As the result of our audit of the books and accounts of the Commission for the year 1947, and, subject to the foregoing remarks, in terms of Clause 13 (4) of the Electricity Act, 1922, 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 of its transactions and of the result of trading.
- (c) Due provision has been made for the redemption and repayment of moneys borrowed.
- (d) As formerly, the Land and Rights, Buildings and Civil Works and Machinery and Plant are set out in the Balance Sheet as on a cost basis. This expenditure is being amortised over a period not exceeding the currency of the loans by the operation of the Redemption Fund.

The value of the other assets of the Commission is correctly stated.

- (e) Sums fixed by the Commission have been set aside to the Reserve Fund under Section 9 as prescribed.
- (f) All our requirements and recommendations as Auditors have been complied with and carried out.

Yours faithfully,

(Sgd.) HALSEY, BUTTON & PERRY,

(Sgd.) ALEX. AIKEN & CARTER.

Electricity Supply

Incorporated under the

BALANCE SHEET AT

Loan Capital	£28,644,150	0 0
(As per Schedule No. 3)		
Interest Accrued on Loan Capital	167,178	19 2
Sundry Loans and Amounts Outstanding for Rights Acquired	257,991	15 6
(As per Schedule No. 3)		
Sundry Creditors and Credit Balances	757,521	13 9
Current Liabilities and Provisions.		
Barclays Bank (Dominion, Colonial and Overseas)	122,928	4 4
Temporary Advances, less Cash on Current Account		
Pension Fund	334,238	1 7
Redemption Fund (as per Account No. 1)	8,024,102	5 8
Sinking Fund (Umkomaas Town Board Loans)	4,559	19 5
Sundry Loans Repaid	103,179	12 3
Reserve Fund (as per Account No. 2)	2,267,586	0 9
Balance on Revenue Accounts (as per Accounts Nos. 3 to 12)	41,847	2 2
Natal Central Undertaking	£3,407	11 8
Witbank Undertaking	2,626	14 9
Cape Town Undertaking	72,286	1 1
Durban Undertaking	44,178	9 1
Sabie Undertaking	122	4 3
Border Undertaking	7,582	19 6
	£40,725,283	14 7

Note.—In addition to the liabilities shown above, the Commission is committed to the extent of approximately £15,669,500 for expenditure on Capital Account and £557,500 chargeable against Reserve Fund.

Johannesburg.
14th April, 1948.

H. J. VAN DER BIJL, Chairman.
J. VAN NIEKERK, Chief Accountant.

Commission

Electricity Act, 1922

31st DECEMBER, 1947

Expenditure on Capital Account (at Cost)		£28,824,847	1 2
(as per Schedule No. 1).			
Land and Rights	£327,424	19 8	
Buildings and Civil Works	6,828,533	11 0	
Machinery and Plant	21,668,888	10 6	
Movable Plant and Equipment (less Depreciation)		132,945	3 4
Workshop Equipment, Instruments, Tools and Loose Plant	39,778	12 10	
Transportation Equipment	46,408	17 4	
Furniture and Office Equipment	46,757	13 2	
Stores and Materials		679,268	13 7
Sundry Debtors and Debit Balances		395,714	1 7
Current Debtors less Reserves	360,366	11 10	
Expenditure on Investigations in terms of Section 3 (b) of the Act and Payments in Advance	35,347	9 9	
Investment of Pension Fund		335,512	13 1
Amount invested in Stocks and Securities of Electricity Supply Commission, Municipalities and Rand Water Board and First Mortgages on Freehold Properties, less Reserve	333,720	7 2	
Interest Accrued	1,792	5 11	
Investment of Redemption Fund		8,081,455	8 11
(As per Schedule No. 2).			
Investment of Sinking Fund		4,625	15 2
Amount invested in Stocks of Electricity Supply Com- mission, the Government of the Union of South Africa and Municipalities	4,601	4 9	
Interest Accrued	24	10 5	
Investment of Reserve Fund		2,270,914	17 9
Amount invested in Stocks and Securities of Electricity Supply Commission, the Government of the Union of South Africa and Municipalities	2,256,355	7 1	
Interest Accrued	14,559	10 8	
	£40,725,283	14 7	

Referred to in our Report of 21st May, 1948.

ALEX. AIKEN & CARTER }
HALSEY, BUTTON & PERRY } Auditors.

Electricity

SCHEDULE OF EXPENDITURE ON CAPITAL

Expenditure in connection with Electricity Undertakings.	Total at 31st December, 1946.	Year ended 31st December, 1947.	Total at 31st December, 1947.
NATAL CENTRAL UNDERTAKING:			
Land and Rights	£28,787 14 5	£327 10 11	£29,115 5 4
Buildings and Civil Works	1,027,203 5 5	132,398 10 2	1,159,601 15 7
Machinery and Plant	3,798,404 9 3	408,936 5 3	4,207,340 14 6
	£4,854,395 9 1	£541,662 6 4	£5,396,057 15 5
WITBANK UNDERTAKING:			
Land and Rights	£10,421 13 2	£149 13 2	£10,571 6 4
Buildings and Civil Works	649,792 11 5	566 9 4	650,359 0 9
Machinery and Plant	2,133,570 15 5	74,968 4 0	2,208,538 19 5
	£2,793,785 0 0	£75,684 6 6	£2,869,469 6 6
CAPE TOWN UNDERTAKING:			
Land and Rights	£31,631 7 0	£4,114 18 5	£35,746 5 5
Buildings and Civil Works	993,258 1 8	14,302 18 6	1,007,561 0 2
Machinery and Plant	2,277,447 15 11	161,252 14 4	2,438,700 10 3
	£3,302,337 4 7	£179,670 11 3	£3,482,007 15 10
DURBAN UNDERTAKING:			
Land and Rights	£31,143 6 6	£15,441 6 3	£46,584 12 9
Buildings and Civil Works	870,830 6 11	30,285 2 3	901,115 9 2
Machinery and Plant	2,344,693 1 10	460,849 0 4	2,805,542 2 2
	£3,246,666 15 3	£506,575 8 10	£3,753,242 4 1
SABIE UNDERTAKING:			
Land and Rights	£510 0 0	—	£510 0 0
Buildings and Civil Works	60,490 11 3	—	60,490 11 3
Machinery and Plant	35,169 14 10	—	35,169 14 10
	£96,170 6 1	—	£96,170 6 1
KLIP GENERATING STATION UNDERTAKING:			
Land and Rights	£127,975 0 0	—	£127,975 0 0
Buildings and Civil Works	1,587,273 14 8	£1,262 6 3	1,588,536 0 11
Machinery and Plant	4,854,690 5 1	8,043 12 1	4,862,733 17 2
	£6,569,938 19 9	£9,305 18 4	£6,579,244 18 1

Johannesburg.
14th April, 1948.

Supply Commission

ACCOUNT AT 31st DECEMBER, 1947

Expenditure in connection with Electricity Undertakings	Total at 31st December, 1946.	Year ended 31st December, 1947.	Total at 31st December, 1947.
RAND EXTENSION UNDERTAKING:			
Land and Rights	£11,394 4 7	£175 0 0	£11,569 4 7
Buildings and Civil Works	26,157 18 5	6,792 16 8	32,950 15 1
Machinery and Plant	1,298,195 2 6	109,546 12 1	1,407,741 14 7
	£1,335,747 5 6	£116,514 8 9	£1,452,261 14 3
VAALE GENERATING STATION UNDERTAKING:			
Land and Rights	£5,768 2 3	—	£5,768 2 3
Buildings and Civil Works	1,062,707 4 10	£25,956 19 5	1,088,664 4 3
Machinery and Plant	2,767,399 1 11	416,834 18 0	3,184,233 19 11
	£3,835,874 9 0	£442,791 17 5	£4,278,666 6 5
GREATER RAND EXTENSION UNDERTAKING:			
Buildings and Civil Works	—	£3 6 9	£3 6 9
Machinery and Plant	—	295,089 17 8	295,089 17 8
	—	£295,093 4 5	£295,093 4 5
BORDER UNDERTAKING:			
Buildings and Civil Works	—	£7,356 4 5	£7,356 4 5
Machinery and Plant	—	223,797 0 0	223,797 0 0
	—	£231,153 4 5	£231,153 4 5
ESCOM HOUSE:			
Land	£59,585 3 0	—	£59,585 3 0
Building and Equipment	331,895 2 8	—	331,895 2 8
	£391,480 5 8	—	£391,480 5 8
SUMMARY:			
Land and Rights	£307,216 10 11	£20,208 8 9	£327,424 19 8
Buildings and Civil Works	6,609,608 17 3	218,924 13 9	6,828,533 11 0
Machinery and Plant	19,509,570 6 9	2,159,318 3 9	21,668,888 10 6
	£26,426,395 14 11	£2,398,451 6 3	£28,824,847 1 2

J. VAN NIEKERK, Chief Accountant.

Electricity

Supply Commission

Schedule Showing Details of

Investments of the Redemption Fund at 31st December, 1947

	Nominal Amount.	Totals.	Loan No. 3. £500,000 4¼% Local Registered Stock, 1953/63.	Loan No. 4. £2,500,000 4½% Local Registered Stock, 1953.	Loan No. 5. £6,750,000 3½% Local Registered Stock, 1954/64.	Loan No. 6. £2,500,000 3½% Local Registered Stock, 1959/64.	Loan No. 7. £2,000,000 3¼% Local Registered Stock, 1956/66.	Loan No. 8. £2,000,000 3½% Local Registered Stock, 1957/67.	Loan No. 9. £2,000,000 3¼% Local Registered Stock, 1959/64.	Loan No. 10. £1,500,000 3¼% Local Registered Stock, 1960/65.	Loan No. 11. £2,000,000 3¼% Local Registered Stock, 1961/66.	Loan No. 12. £2,500,000 3¼% Local Registered Stock, 1965/70.	Loan No. 13. £3,000,000 3% Local Registered Stock, 1967/73.
LOCAL REGISTERED STOCKS :													
Electricity Supply Commission :													
4½ per cent., 1953/63	£108,275 0 0	£108,275 0 0	£42,825 0 0	—	£65,450 0 0	—	—	—	—	—	—	—	—
4½ per cent., 1953	289,959 0 0	289,959 0 0	1,500 0 0	£268,459 0 0	15,500 0 0	£4,500 0 0	—	—	—	—	—	—	—
3¾ per cent., 1954/64	859,606 0 0	859,440 3 10	10,000 0 0	—	775,006 0 0	53,721 15 9	£17,000 0 0	£3,518 13 3	—	£193 14 10	—	—	—
3 per cent., 1959/64	168,597 0 0	168,597 0 0	—	—	35,000 0 0	118,297 0 0	5,600 0 0	5,400 0 0	£4,300 0 0	—	—	—	—
3¼ per cent., 1956/66	344,050 0 0	333,116 2 11	16,490 0 0	92,767 3 9	143,560 0 0	19,400 0 0	60,898 19 2	—	—	—	—	—	—
3 per cent., 1957/67	355,677 0 0	347,895 15 0	24,287 10 0	85,565 5 0	77,628 10 0	77,628 10 0	21,922 0 0	77,377 0 0	1,072 10 0	—	—	—	—
3¾ per cent., 1959/64	521,310 0 0	510,407 2 6	19,482 19 9	90,028 0 2	180,286 8 3	62,540 7 8	55,274 6 4	45,785 0 4	57,010 0 0	—	—	—	—
3 per cent., 1960/65	439,900 0 0	431,185 7 0	17,640 0 0	60,270 0 0	140,630 0 0	72,030 0 0	48,020 0 0	52,430 0 0	33,810 0 0	6,355 7 0	—	—	—
3¼ per cent., 1961/66	513,350 0 0	503,450 0 0	23,520 0 0	96,040 0 0	136,220 0 0	80,360 0 0	45,080 0 0	56,840 0 0	30,380 0 0	16,660 0 0	£18,350 0 0	—	—
3¾ per cent., 1965/70	550,500 0 0	550,500 0 0	17,000 0 0	87,000 0 0	129,700 0 0	61,000 0 0	62,000 0 0	67,000 0 0	65,000 0 0	8,000 0 0	19,000 0 0	£34,800 0 0	—
3 per cent., 1967/73	626,500 0 0	623,367 10 0	19,402 10 0	92,037 10 0	189,050 0 0	72,137 10 0	52,237 10 0	45,272 10 0	43,780 0 0	34,327 10 0	45,272 10 0	27,362 10 0	£2,487 10 0
3 per cent., 1968/74	442,000 0 0	442,000 0 0	13,000 0 0	74,000 0 0	151,000 0 0	26,500 0 0	34,000 0 0	5,000 0 0	36,000 0 0	27,000 0 0	38,000 0 0	17,000 0 0	20,500 0 0
3 per cent., 1968/74 (partly paid).	700,000 0 0	66,500 0 0	—	1,900 0 0	17,385 0 0	—	17,195 0 0	6,460 0 0	1,805 0 0	6,270 0 0	5,035 0 0	10,450 0 0	—
The Government of the Union of South Africa :													
3¾ per cent., 1948/58	2,725 0 0	2,725 0 0	—	—	2,725 0 0	—	—	—	—	—	—	—	—
3¾ per cent., 1950	21,000 0 0	21,000 0 0	—	17,000 0 0	4,000 0 0	—	—	—	—	—	—	—	—
4½ per cent., 1953	356,265 0 0	356,265 0 0	—	356,265 0 0	—	—	—	—	—	—	—	—	—
3¼ per cent., 1953	5,000 0 0	5,000 0 0	—	—	5,000 0 0	—	—	—	—	—	—	—	—
3½ per cent., 1953/58	25,000 0 0	25,000 0 0	3,000 0 0	11,000 0 0	11,000 0 0	—	—	—	—	—	—	—	—
3½ per cent., 1955/65	2,300 0 0	2,300 0 0	—	—	2,300 0 0	—	—	—	—	—	—	—	—
3 per cent., 1956/61	40,000 0 0	40,000 0 0	—	10,000 0 0	10,000 0 0	5,000 0 0	5,000 0 0	5,000 0 0	5,000 0 0	—	—	—	—
3 per cent., 1957/66	535,000 0 0	534,974 18 1	17,997 19 10	89,995 9 8	159,998 19 11	79,994 9 7	56,995 19 8	46,400 0 0	51,995 19 8	16,997 9 10	7,998 9 11	6,600 0 0	—
3 per cent., 1958/68	15,000 0 0	15,000 0 0	—	1,000 0 0	11,000 0 0	—	1,000 0 0	—	—	—	—	—	—
3 per cent., 1959/69	100,000 0 0	100,000 0 0	6,000 0 0	36,000 0 0	44,000 0 0	20,000 0 0	—	—	—	—	—	—	—
3 per cent., 1960/70	343,700 0 0	343,700 0 0	12,000 0 0	66,000 0 0	125,600 0 0	54,000 0 0	19,900 0 0	21,100 0 0	18,600 0 0	10,700 0 0	13,100 0 0	2,700 0 0	—
Municipal :													
Johannesburg :													
3¼ per cent., 1956/66	1,600 0 0	1,600 0 0	—	—	—	—	1,600 0 0	—	—	—	—	—	—
3¾ per cent., 1959	6,200 0 0	6,200 0 0	—	—	—	—	—	1,900 0 0	4,300 0 0	—	—	—	—
3¾ per cent., 1960/65	20,000 0 0	20,000 0 0	—	8,000 0 0	12,000 0 0	—	—	—	—	—	—	—	—
3¼ per cent., 1962/67	129,000 0 0	126,531 5 10	18,620 0 0	42,140 0 0	16,660 0 0	32,424 13 11	16,686 11 11	—	—	—	—	—	—
3½ per cent., 1965	1,200 0 0	1,200 0 0	—	—	—	—	—	—	—	1,200 0 0	—	—	—
3¼ per cent., 1965/70	294,000 0 0	294,000 0 0	8,000 0 0	44,000 0 0	86,000 0 0	29,000 0 0	26,000 0 0	26,000 0 0	26,000 0 0	21,000 0 0	22,000 0 0	6,000 0 0	—
3 per cent., 1967/77	30,000 0 0	30,000 0 0	—	—	—	—	—	5,000 0 0	5,000 0 0	5,000 0 0	5,000 0 0	5,000 0 0	5,000 0 0
Cape Town :													
3¾ per cent., 1960/65	2,000 0 0	2,000 0 0	—	—	—	—	—	—	—	2,000 0 0	—	—	—
3¼ per cent., 1962/67	225,000 0 0	222,567 15 8	—	—	—	—	38,998 7 11	46,828 7 11	58,108 7 11	40,122 11 11	27,000 0 0	11,500 0 0	—
3 per cent., 1976	100,000 0 0	99,750 0 0	2,992 10 0	14,962 10 0	30,423 15 0	11,471 5 0	8,478 15 0	6,982 10 0	6,982 10 0	5,486 5 0	7,481 5 0	4,488 15 0	—
Durban													
3¼ per cent., 1962/72	115,500 0 0	115,211 5 0	—	115,211 5 0	—	—	—	—	—	—	—	—	—
3¼ per cent., 1965/75	45,000 0 0	45,000 0 0	2,500 0 0	14,500 0 0	28,000 0 0	—	—	—	—	—	—	—	—
3¼ per cent., 1966/76	50,000 0 0	50,000 0 0	—	—	—	—	—	10,000 0 0	10,000 0 0	10,000 0 0	10,000 0 0	10,000 0 0	—
3 per cent., 1967/77	334,000 0 0	334,000 0 0	10,000 0 0	48,000 0 0	96,000 0 0	35,000 0 0	25,000 0 0	24,000 0 0	23,000 0 0	19,000 0 0	14,000 0 0	30,000 0 0	10,000 0 0
	£8,719,214 0 0	£8,028,718 5 10	£286,258 9 7	£1,816,141 3 7	£2,701,123 13 2	£897,420 1 11	£618,887 10 0	£558,304 1 6	£482,144 7 7	£230,312 18 7	£234,237 4 11	£165,901 5 0	£37,987 10 0
Interest Accrued	—	52,737 3 1	1,867 5 9	9,835 18 4	18,063 18 10	5,956 17 6	4,718 15 2	3,937 18 6	3,902 3 6	1,658 11 3	1,671 17 6	1,039 18 9	83 18 0
	£8,719,214 0 0	£8,081,455 8 11	£288,125 15 4	£1,825,977 1 11	£2,719,187 12 0	£903,376 19 5	£623,606 5 2	£562,242 0 0	£486,046 11 1	£231,971 9 10	£235,909 2 5	£166,941 3 9	£38,071 8 0

The outstanding balance of £637,000 in respect of £700,000 Electricity Supply Commission Stock, 1968/74, has since been paid.

Johannesburg,
14th April, 1948.

Electricity Supply Commission

Schedule No. 3

LOAN CAPITAL AT 31st DECEMBER, 1947.

Loan No. 1: Government of the Union of South Africa	£3,000,000	0	0
Loan No. 2: Government of the Union of South Africa	5,000,000	0	0
	<u>8,000,000</u>	<u>0</u>	<u>0</u>
Less—Repaid during 1933 and 1934	8,000,000	0	0

LOCAL REGISTERED STOCKS.

Loan No. 3: £500,000 4 $\frac{3}{4}$ per cent. 1953/63	£500,000	0	0
Loan No. 4: £2,500,000 4 $\frac{1}{2}$ per cent. 1953	2,500,000	0	0
Loan No. 5: £6,750,000 3 $\frac{3}{4}$ per cent. 1954/64	6,750,000	0	0
Loan No. 6: £2,500,000 3 $\frac{1}{2}$ per cent. 1959/64	2,500,000	0	0
Loan No. 7: £2,000,000 3 $\frac{1}{4}$ per cent. 1956/66	2,000,000	0	0
Loan No. 8: £2,000,000 3 $\frac{1}{2}$ per cent. 1957/67	2,000,000	0	0
Loan No. 9: £2,000,000 3 $\frac{3}{4}$ per cent. 1959/64	2,000,000	0	0
Loan No. 10: £1,500,000 3 $\frac{3}{4}$ per cent. 1960/65	1,500,000	0	0
Loan No. 11: £2,000,000 3 $\frac{1}{4}$ per cent. 1961/66	2,000,000	0	0
Loan No. 12: £2,500,000 3 $\frac{1}{4}$ per cent. 1965/70	2,500,000	0	0
Loan No. 13: £3,000,000 3 per cent. 1967/73	3,000,000	0	0
Loan No. 14: £3,000,000 3 per cent. 1968/74 (Payable in full not later than the 31st March, 1948, in terms of Prospectus)	1,394,150	0	0
Partly Paid: Deposits due and Payments in Advance	£221,750		
Fully Paid	1,172,400		
	<u>£30,250,000</u>	<u>£28,644,150</u>	<u>0 0</u>

SUNDRY LOANS AND AMOUNTS.

OUTSTANDING FOR RIGHTS ACQUIRED AT 31st DECEMBER, 1947.

Umkomaas Town Board	£8,380	0	0
Volksrust Municipality	12,377	9	4
Rand Water Board	59,927	8	5
Caledon Municipality	4,607	11	8
Rawsonville Village Management Board	4,426	2	6
East London Municipality	168,273	3	7
	<u>£257,991</u>	<u>15</u>	<u>6</u>

Johannesburg.
14th April, 1948.

J. VAN NIEKERK,
Chief Accountant.

Electricity Supply Commission

Redemption Fund Account for the Year Ended 31st December, 1947

	Totals.	Loan No. 3. £500,000 4¼% Local Registered Stock, 1953/63.	Loan No. 4. £2,500,000 4½% Local Registered Stock, 1953	Loan No. 5. £6,750,000 3¾% Local Registered Stock, 1954/64.	Loan No. 6. £2,500,000 3¼% Local Registered Stock, 1959/64.	Loan No. 7. £2,000,000 3¼% Local Registered Stock, 1956/66.	Loan No. 8. £2,000,000 3¼% Local Registered Stock, 1957/67.	Loan No. 9. £2,000,000 3¼% Local Registered Stock, 1959/64.	Loan No. 10. £1,500,000 3¼% Local Registered Stock, 1960/65.	Loan No. 11. £2,000,000 3¼% Local Registered Stock, 1961/66.	Loan No. 12. £2,500,000 3¼% Local Registered Stock, 1965/70.	Loan No. 13. £3,000,000 3% Local Registered Stock, 1967/73.
Cr.												
Balance at 31st December, 1946, brought forward:												
Natal Central Undertaking	£1,376,673 1 5	£896 19 10	£51,193 8 2	£1,202,341 2 6	—	£45,030 13 2	£13,887 8 11	£14,113 5 9	£12,976 7 5	£28,489 3 1	£7,720 13 10	£23 18 9
Witbank Undertaking	1,544,428 19 7	1,557 1 11	1,033,339 3 0	406,173 9 1	—	50,213 12 5	23,762 15 7	7,822 12 9	13,613 4 5	698 7 0	7,187 11 2	61 2 3
Cape Town Undertaking	1,067,662 15 4	184,271 9 3	98,780 9 2	624,041 3 2	—	12,110 7 2	12,758 1 9	69,300 10 6	26,679 7 11	32,167 7 7	7,446 15 8	107 3 2
Durban Undertaking	810,558 15 10	76,127 19 5	438,300 12 7	157,402 8 3	—	4,466 19 1	74,140 2 4	17,658 8 6	21,706 2 7	7,892 6 0	10,998 18 7	1,864 18 6
Sabie Undertaking	93,927 13 2	—	70,611 3 2	22,996 6 7	—	—	—	—	—	320 3 5	—	—
Klip Generating Station Undertaking	1,712,256 9 7	—	—	—	£740,988 1 4	342,398 13 0	295,493 13 1	268,004 16 9	32,988 0 10	548 1 4	31,835 3 3	—
Rand Extension Undertaking	226,109 6 4	—	—	—	71,883 16 10	18,467 15 0	68,982 11 9	40,148 11 4	1,043 11 9	2,904 18 11	22,337 15 8	340 5 1
Vaal Generating Station Undertaking	156,031 8 10	—	—	—	—	—	—	1,441 15 8	64,221 11 10	86,641 17 6	3,726 3 10	—
Head Office	106,996 1 1	—	3,422 2 11	34,341 16 3	—	67,758 2 4	—	790 11 9	570 14 10	73 17 3	38 15 9	—
	£7,094,644 11 2	£262,853 10 5	£1,695,646 19 0	£2,447,296 5 10	£812,871 18 2	£540,446 2 2	£489,024 13 5	£419,280 13 0	£173,799 1 7	£159,736 2 1	£91,291 17 9	£2,397 7 9
Amounts Contributed During the Year out of Revenue:												
Natal Central Undertaking	£117,379 9 3	£52 4 11	£3,398 2 10	£92,233 7 2	—	£4,198 4 8	£1,459 5 1	£1,728 17 7	£1,996 12 6	£7,430 6 9	£3,210 4 9	£1,672 3 0
Witbank Undertaking	70,941 13 8	86 14 9	37,639 1 9	17,857 2 9	—	4,522 12 4	2,595 16 6	994 10 7	2,392 2 4	128 8 10	4,089 10 7	635 13 3
Cape Town Undertaking	94,888 16 9	11,195 11 2	6,472 2 9	48,013 0 4	—	1,118 4 8	1,385 10 5	8,879 16 0	2,686 18 9	8,362 8 8	4,306 11 2	2,463 12 10
Durban Undertaking	85,034 4 0	4,264 12 0	19,064 19 9	7,595 15 10	—	441 10 8	7,871 11 3	2,252 9 3	3,521 12 9	2,243 14 4	12,942 6 4	24,835 11 10
Sabie Undertaking	2,159 10 10	—	638 1 6	830 9 7	—	—	—	—	—	690 19 9	—	—
Klip Generating Station Undertaking	166,346 4 10	—	—	—	£58,176 13 3	30,111 17 7	30,828 1 7	32,728 1 9	4,563 14 7	93 12 5	9,715 2 8	129 1 0
Rand Extension Undertaking	32,960 4 10	—	—	—	5,548 6 9	1,713 5 3	7,207 16 8	4,830 2 8	145 2 3	428 6 6	10,520 12 10	2,563 11 11
Vaal Generating Station Undertaking	101,212 3 6	—	—	—	—	—	—	723 16 5	31,993 4 9	48,367 0 11	19,502 2 3	625 19 2
Greater Rand Extension Undertaking	1,267 8 0	—	—	—	—	—	—	—	—	—	—	1,267 8 0
Border Undertaking East London	296 15 4	—	—	—	—	—	—	—	—	—	—	296 15 4
Head Office	9,629 6 5	—	149 6 11	3,313 5 1	—	5,888 5 2	—	97 2 5	91 0 1	13 1 7	28 6 6	48 18 8
	£682,115 17 5	£15,599 2 10	£67,361 15 6	£169,843 0 9	£63,725 0 0	£47,994 0 4	£51,348 1 6	£52,234 16 8	£47,390 8 0	£67,757 19 9	£64,314 17 1	£34,546 15 0
Net Proceeds of Sales of Fixed Property:												
Natal Central Undertaking	£63 15 10	—	—	£63 15 10	—	—	—	—	—	—	—	—
Cape Town Undertaking	3,908 0 0	—	—	3,154 10 11	—	£753 9 1	—	—	—	—	—	—
Klip Generating Station Undertaking	162 0 0	—	—	—	£162 0 0	—	—	—	—	—	—	—
Rand Extension Undertaking	720 0 0	—	—	—	—	—	—	—	—	—	—	—
Head Office	15 0	—	—	15 0	—	—	—	—	—	—	—	—
	£4,854 10 10	—	—	£3,219 1 9	£162 0 0	£753 9 1	—	—	—	—	£720 0 0	—
Net Interest Earned on Investments, after deducting amounts appropriated in writing off premiums on investments purchased:												
Natal Central Undertaking	£47,396 3 1	£31 5 4	£1,914 10 8	£41,699 12 2	—	£1,501 1 10	£446 8 9	£460 18 6	£394 7 2	£751 12 4	£193 14 10	£2 11 6
Witbank Undertaking	55,452 2 11	54 5 8	38,177 7 5	13,900 8 10	—	1,673 0 9	765 0 2	256 1 2	416 11 3	18 0 10	189 14 0	1 12 10
Cape Town Undertaking	36,708 14 4	6,441 6 4	3,692 16 11	21,645 4 8	—	403 10 4	410 12 4	2,268 5 3	794 3 8	850 18 6	197 16 5	3 19 11
Durban Undertaking	28,666 16 11	2,656 0 1	16,239 15 5	5,399 2 7	—	149 5 5	2,384 4 5	577 19 1	661 2 3	210 9 3	313 4 3	75 14 2
Sabie Undertaking	3,383 2 1	—	2,584 5 3	784 7 2	—	—	—	—	—	14 9 8	—	—
Klip Generating Station Undertaking	55,103 1 1	—	—	—	£23,690 15 4	11,389 6 6	9,495 15 4	8,751 6 1	996 14 8	14 0 6	764 19 2	3 6
Rand Extension Undertaking	7,123 3 1	—	—	—	2,296 9 2	615 10 9	2,216 17 6	1,310 0 5	31 9 11	73 12 1	572 9 11	6 13 4
Vaal Generating Station Undertaking	5,026 12 6	—	—	—	—	—	—	54 1 3	2,218 0 1	2,546 14 11	207 2 2	14 1
Greater Rand Extension Undertaking	1 2 0	—	—	—	—	—	—	—	—	—	—	1 2 0
Border Undertaking East London	8	—	—	—	—	—	—	—	—	—	—	8
Head Office	3,626 7 7	—	126 10 11	1,200 6 8	—	2,252 19 8	—	25 16 0	17 5 9	1 17 9	1 0 7	2 3
	£242,487 6 3	£9,182 17 5	£62,735 14 7	£84,629 2 1	£25,987 4 6	£17,984 15 3	£15,718 18 6	£13,704 7 9	£5,529 14 9	£4,481 15 10	£2,440 1 4	£92 14 3
GRAND TOTAL	£8,024,102 5 8	£287,635 10 8	£1,825,744 9 1	£2,704,987 10 5	£902,746 2 8	£607,178 6 10	£556,091 13 5	£485,219 17 5	£226,719 4 4	£231,975 17 8	£158,766 16 2	£37,036 17 0
Dr.												
Balance as per Balance Sheet:												
Natal Central Undertaking	£1,541,512 9 7	£980 10 1	£56,506 1 8	£1,336,337 17 8	—	£50,729 19 8	£15,793 2 9	£16,303 1 10	£15,367 7 1	£36,671 2 2	£11,124 13 5	£1,698 13 3
Witbank Undertaking	1,670,822 16 2	1,698 2 4	1,109,155 12 2	437,931 0 8	—	56,409 5 6	27,123 12 3	9,073 4 6	16,421 18 0	844 16 8	11,466 15 9	698 8 4
Cape Town Undertaking	1,203,168 6 5	201,908 6 9	108,945 8 10	696,853 19 1	—	14,385 11 3	14,554 4 6	80,448 11 9	30,160 10 4	41,380 14 9	11,951 3 3	2,579 15 11
Durban Undertaking	924,259 16 9	83,048 11 6	473,605 7 9	170,397 6 8	—	5,057 15 2	84,395 18 0	20,488 16 10	25,888 17 7	10,346 9 7	24,254 9 2	26,776 4 6
Sabie Undertaking	99,470 6 1	—	73,833 9 11	24,611 3 4	—	—	—	—	—	1,025 12 10	—	—
Klip Generating Station Undertaking	1,933,867 15 6	—	—	—	£823,017 9 11	383,899 17 1	335,817 10 0	309,484 4 7	38,548 10 1	655 14 3	42,315 5 1	129 4 6
Rand Extension Undertaking	266,912 14 3	—	—	—	79,728 12 9	20,796 11 0	78,407 5 11	46,288 14 5	1,220 3 11	3,406 17 6	34,150 18 5	2,913 10 4
Vaal Generating Station Undertaking	262,270 4 10	—	—	—	—	—	—	2,219 13 4	98,432 16 8	137,555 13 4	23,435 8 3	626 13 3
Greater Rand Extension Undertaking	1,268 10 0	—	—	—	—	—	—	—	—	—	—	1,268 10 0
Border Undertaking East London	296 16 0	—	—	—	—	—	—	—	—	—	—	296 16 0
Head Office	120,252 10 1	—	3,698 8 9	38,856 3 0	—	75,899 7 2	—	913 10 2	679 0 8	88 16 7	68 2 10	49 0 11
	£8,024,102 5 8	£287,635 10 8	£1,825,744 9 1	£2,704,987 10 5	£902,746 2 8	£607,178 6 10	£556,091 13 5	£485,219 17 5	£226,719 4 4	£231,975 17 8	£158,766 16 2	£37,036 17 0

J. VAN NIEKERK, Chief Accountant.

We hereby certify that we are satisfied, both 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, 1922, subject to the remarks contained in our report dated 21st May, 1948.

ALEX. AIKEN & CARTER)
HALSEY, BUTTON & PERRY) Auditors.

Electricity Supply Commission

Dr.	Reserve Fund Account for the Year Ended 31st December, 1947	Cr.
To Expenditure During the Year on Replacements and Betterment Natal Central Undertaking £106,327 8 0 Witbank Undertaking 20,312 16 11 Cape Town Undertaking 7,843 9 3 Durban Undertaking 61,319 10 3 Klip Generating Station Undertaking 30,213 1 9 Rand Extension Undertaking 12,451 3 6 Vaal Generating Station Undertaking 2,385 7 10 Border Undertaking 7,117 14 5 „ Balance as Per Balance Sheet 2,267,586 0 9 Natal Central Undertaking 442,057 10 4 Witbank Undertaking 326,584 18 5 Cape Town Undertaking 446,996 8 7 Durban Undertaking 211,672 6 5 Sabie Undertaking 17,261 1 8 Klip Generating Station Undertaking 675,652 0 4 Rand Extension Undertaking 81,419 6 5 Vaal Generating Station Undertaking 32,863 7 0 Greater Rand Extension Undertaking 496 11 5 Border Undertaking 32,582 10 2 <div style="text-align: right; border-top: 1px solid black; border-bottom: 3px double black; width: 100px; margin-left: auto;">£2,515,556 12 8</div>	By Balance at 31st December, 1946, brought forward £2,202,165 7 6 Natal Central Undertaking £510,613 17 1 Witbank Undertaking 329,686 9 2 Cape Town Undertaking 388,172 10 1 Durban Undertaking 253,859 11 6 Sabie Undertaking 16,632 16 0 Klip Generating Station Undertaking 606,363 8 0 Rand Extension Undertaking 76,848 2 1 Vaal Generating Station Undertaking 19,988 13 7 Amounts Set Aside During the Year as per Revenue Accounts 191,165 7 2 Natal Central Undertaking 20,000 0 0 Witbank Undertaking 4,891 7 3 Cape Town Undertaking 51,602 14 0 Durban Undertaking 10,000 0 0 Klip Generating Station Undertaking 75,825 6 3 Rand Extension Undertaking 14,043 8 0 Vaal Generating Station Undertaking 14,308 18 8 Greater Rand Extension Undertaking 493 13 0 Other Contributions 39,450 1 0 Border Undertaking Interest Earned on Investments 82,775 17 0 <div style="text-align: right; border-top: 1px solid black; border-bottom: 3px double black; width: 100px; margin-left: auto;">£2,515,556 12 8</div>	

Johannesburg.

14th April, 1948.

J. VAN NIEKERK, Chief Accountant.

Electricity Supply NATAL CENTRAL

Dr.	Revenue Account for the Year			
Generation of Electricity.				
To Operation—				
Fuel	£161,559	3	4	
Water, Oil, Waste and Stores	2,934	10	9	
Salaries and Wages	37,347	5	6	
Other Expenses	90	3	11	
„ Maintenance—				
Stores	15,922	1	1	
Salaries and Wages	23,166	17	9	
Other Expenses	1,869	3	6	£242,889 5 10
„ Electricity Interchanged				1,941 12 7
Distribution of Electricity.				
„ Operation and Maintenance—				
Stores	9,525	16	3	
Salaries and Wages	40,359	3	0	
Other Expenses	5,892	2	9	55,777 2 0
General Expenses.				
„ Local Administration and Technical Management	22,931	15	4	
„ General Expenses (including Maintenance of Quarters, Stores Expenses, Rates, Insurance, Pension Fund Contributions, Payment to Durban Undertaking under Agreement, etc.)	25,105	15	2	
„ Investigations and Development Expenses	190	6	3	
„ Head Office Administration and General Expenses, including Publicity	16,328	8	6	
„ Engineering Expenses	6,664	5	7	71,220 10 10
„ Deferred Payment Scheme, including Propaganda and Showroom Expenses				121 0 0
				371,949 11 3
„ Interest				175,063 19 1
„ Redemption Fund				117,379 9 3
„ Instalments paid on Volksrust Municipality Loan				1,848 15 8
„ Amount set aside to Reserve Fund				20,000 0 0
				£686,241 15 3
To Balance brought down				£8,300 6 7
„ Balance as per Balance Sheet				3,407 11 8
				£11,707 18 3

Johannesburg.
14th April, 1948

J. VAN NIEKERK, Chief Accountant

Commission UNDERTAKING

Ended 31st December, 1947

									Cr.
By Sales of Electricity—									
Traction Supplies						£439,125	19	9	
Bulk Supplies						133,726	15	2	
Industrial Supplies						62,950	3	5	
Domestic and Lighting Supplies						35,854	6	10	
Electricity Interchanged						104	5	7	£671,761 10 9
Other Revenue									6,179 17 11
Balance carried down									8,300 6 7
									£686,241 15 3
By Balance at 31st December, 1946, brought forward									£11,707 18 3
									£11,707 18 3

Referred to in our Report of 21st May, 1948.

ALEX. AIKEN & CARTER }
HALSEY, BUTTON & PERRY } Auditors.

Electricity Supply Commission

WITBANK UNDERTAKING

Dr.	Revenue Account for the Year			
	Generation of Electricity.			
To Operation—				
Fuel	£114,305	16	0	
Water, Oil, Waste and Stores	8,537	16	9	
Salaries and Wages	48,037	8	2	
Other Expenses	2,620	18	2	
„ Maintenance—				
Stores	14,051	0	9	
Salaries and Wages	27,600	19	9	
Other Expenses	12,180	3	3	£227,334 2 10
„ Electricity Purchased			184,335 9 4	
	Distribution of Electricity.			
„ Operation and Maintenance—				
Stores	4,875	11	1	
Salaries and Wages	7,778	2	4	
Other Expenses	570	9	10	13,224 3 3
	General Expenses.			
„ Local Administration and Technical Management	12,233	13	11	
„ General Expenses (including Maintenance of Quarters, Stores Expenses, Rates, Insurance, Pension Fund Contributions, etc.)	15,767	11	6	
„ Administration, Engineering and General Expenses of Operating Party (The Victoria Falls and Transvaal Power Company, Limited)	7,000	0	0	
„ Head Office Administration and General Expenses, including Publicity	11,268	4	0	
„ Engineering Expenses	4,599	0	1	50,868 9 6
„ Deferred Payment Scheme, including Propaganda and Showroom Expenses			56 1 0	
			475,818 5 11	
„ Interest			118,701 13 3	
„ Redemption Fund			70,941 13 8	
„ Amount set aside to Reserve Fund			4,891 7 3	
			£670,353 0 1	
To Balance brought down			£6,150 4 4	
„ Balance as per Balance Sheet			2,626 14 9	
			£8,776 19 1	

Johannesburg.
14th April, 1948.

J. VAN NIEKERK, Chief Accountant.

	Ended 31st December, 1947			Cr.
By Sales of Electricity—				
Traction Supplies	£218,708	9	4	
Bulk Supplies	269,799	6	7	
Industrial Supplies	167,242	11	0	
Domestic and Lighting Supplies	12,497	7	10	
			668,247 14 9	
LESS—Adjustment in terms of Section 10 of the Electricity Act, 1922			13,627 11 1	£654,620 3 8
„ Other Revenue				9,582 12 1
„ Balance carried down				6,150 4 4
				£670,353 0 1
By Balance at 31st December, 1946, brought forward				£8,776 19 1
				£8,776 19 1

Referred to in our Report of 21st May, 1948.

ALEX. AIKEN & CARTER }
HALSEY, BUTTON & PERRY } Auditors.

Electricity Supply Commission

CAPE TOWN UNDERTAKING

Dr.	Revenue Account for the Year		
	Generation of Electricity.		
To Proportion of Pooled Costs (as per attached Statement)	£306,718 7 6		
„ Other Operation and Maintenance Costs	265 14 6	£306,984 2 0	
„ Electricity Purchased		35 16 8	
	Distribution of Electricity.		
„ Operation and Maintenance—			
Stores	7,486 18 10		
Salaries and Wages	46,761 13 6		
Other Expenses	7,918 12 8	62,167 5 0	
	General Expenses.		
„ Local Administration and Technical Management	25,829 4 7		
„ General Expenses (including Maintenance of Quarters, Stores Expenses, Rates, Insurance, Pension Fund Contributions, etc.)	23,431 1 10		
„ Head Office Administration and General Expenses, including Publicity	13,168 1 8		
„ Engineering Expenses	5,374 8 5		
	67,802 16 6		
LESS—Charged to Pooled Costs	5,362 19 1	62,439 17 5	
„ Deferred Payment Scheme, including Propaganda and Showroom Expenses		227 6 4	
		431,854 7 5	
„ Interest	128,310 9 6		
„ Redemption Fund	94,888 16 9		
„ Instalments on Caledon Municipality and Rawsonville Village Management Board Loans	906 17 2		
„ Amount set aside to Reserve Fund	51,602 14 0		
	275,708 17 5		
LESS—Charged to Pooled Costs	83,140 4 1	192,568 13 4	
„ Balance carried down		26,734 0 8	
		£651,157 1 5	
To Balance as per Balance Sheet		£72,286 1 1	
		£72,286 1 1	

Johannesburg.
14th April, 1948.

J. VAN NIEKERK, Chief Accountant.

Ended 31st December, 1947

Cr.

By Sales of Electricity—			
Traction Supplies	£192,601 13 4		
Bulk Supplies	96,260 0 10		
Industrial Supplies	215,214 14 1		
Domestic and Lighting Supplies	145,714 14 11	£649,791 3 2	
Other Revenue	2,103 12 9		
LESS—Credited to Pooled costs	737 14 6	1,365 18 3	
		£651,157 1 5	
By Balance at 31st December, 1946, brought forward	£45,552 0 5		
Balance brought down	26,734 0 8		
		£72,286 1 1	

Referred to in our Report of 21st May, 1948.

ALEX. AIKEN & CARTER }
HALSEY, BUTTON & PERRY } Auditors.

Electricity Supply Commission and City of Cape Town

Dr. Statement of Pooled Costs for the Year Ended

Pooled Generation of Electricity.			
To	Operation and Maintenance—		
	Fuel	£602,855 4 3	
	Water, Oil, Waste and Stores	39,771 7 9	
	Salaries, Wages and Other Expenses	160,781 9 5	£803,408 1 5
	General Expenses (including Stores Expenses, Rates, Insurance, Pension Fund Contributions, etc.)		22,372 16 6
	Interest		120,864 9 10
	Redemption Fund		113,717 4 1
	Reserve Fund		20,558 14 7
			£1,080,921 6 5

Cape Town
14th April, 1948

31st December, 1947, and Allocation Thereof

Cr.

Allocation of Pooled Costs in terms of Agreement—			
	Electricity Supply Commission	£306,718 7 6	
	City of Cape Town	771,779 7 9	£1,078,497 15 3
	Surplus Revenue		2,423 11 2
			£1,080,921 6 5

H. A. EASTMAN,
Manager of the Pooled Stations

Electricity Supply DURBAN

Dr.	Revenue Account for the Year			
	Generation of Electricity.			
To Operation—				
Fuel	£237,592	7	3	
Water, Oil, Waste and Stores	11,302	2	7	
Salaries and Wages	50,195	0	4	
Other Expenses	10,163	14	8	
„ Maintenance—				
Stores	16,596	9	7	
Salaries and Wages	43,629	4	3	
Other Expenses	2,426	11	9	£371,905 10 5
„ Operation and Maintenance, Alice Street Power Station				6,289 18 2
„ Electricity Purchased				17,191 8 2
„ Electricity Interchanged				104 5 7
	Distribution of Electricity.			
„ Operation and Maintenance—				
Stores	7,783	17	5	
Salaries and Wages	9,978	8	8	
Other Expenses	1,633	10	3	19,395 16 4
	General Expenses.			
„ Local Administration and Technical Management	12,668	3	9	
„ General Expenses (including Maintenance of Quarters, Stores Expenses, Rates, Insurance, Pension Fund Contributions, etc.)	21,117	3	9	
„ Head Office Administration and General Expenses, including Publicity	11,587	18	4	
„ Engineering Expenses	4,729	9	9	50,102 15 7
				464,989 14 3
„ Interest				113,209 1 2
„ Redemption Fund				85,034 4 0
„ Sinking Fund				120 0 0
„ Amount set aside to Reserve Fund				10,000 0 0
				£673,352 19 5
To Balance at 31st December, 1946, brought forward				£32,975 8 11
„ Balance brought down				11,203 0 2
				£44,178 9 1

Johannesburg.
14th April, 1948.

J. VAN NIEKERK, Chief Accountant.

Commission UNDERTAKING

Ended 31st December, 1947

Cr.

By Sales of Electricity—				
Bulk Supplies	£582,386	9	10	
Industrial Supplies	37,355	3	5	
Domestic and Lighting Supplies	37,463	14	11	
Electricity Interchanged	1,941	12	7	£659,147 0 9
Other Revenue				3,002 18 6
Balance carried down				11,203 0 2
				£673,352 19 5
By Balance as per Balance Sheet				£44,178 9 1
				£44,178 9 1

Referred to in our Report of 21st May, 1948.

ALEX, AIKEN & CARTER }
HALSEY, BUTTON & PERRY } Auditors.

Electricity Supply Commission

SABIE UNDERTAKING

Dr.	Revenue Account for the Year	Ended 31st December, 1947	Cr.
Generation of Electricity.			
To Operation—			
Water, Oil, Waste and Stores	£136 2 2		
Salaries and Wages	2,744 12 6		
„ Maintenance—			
Stores	117 9 8		
Salaries and Wages	325 10 0		
Other Expenses	51 1 8	£3,374 16 0	
Distribution of Electricity.			
„ Operation and Maintenance—			
Stores	12 17 9		
Salaries and Wages	570 0 0		
Other Expenses	138 18 7	721 16 4	
General Expenses.			
„ Local Administration and Technical Management	284 1 2		
„ General Expenses (including Maintenance of Quarters, Insurance, Pension Fund Contributions, etc.)	313 12 4		
„ Head Office Administration and General Expenses, including Publicity	1,580 3 5		
„ Engineering Expenses	644 18 7	2,822 15 6	
		6,919 7 10	
„ Interest		4,281 12 10	
„ Redemption Fund		2,159 10 10	
„ Balance carried down		43 0 1	
		£13,403 11 7	
To Balance as per Balance Sheet	£122 4 3		
		£122 4 3	
By Sales of Electricity—			
			£13,403 11 7
			£13,403 11 7
			£79 4 2
			43 0 1
			£122 4 3

Johannesburg
14th April, 1948

I. VAN NIEKERK, Chief Accountant

Referred to in our Report of 21st May, 1948

ALEX. AIKEN & CARTER /
HALSEY, BUTTON & PERRY } Auditors.

Electricity Supply Commission

KLIP GENERATING STATION UNDERTAKING

Dr.	Revenue Account for the Year Ended 31st December, 1947	Cr.
Generation of Electricity.		
To Operation—		
Fuel	£515,762 14 8	
Water, Oil, Waste and Stores	9,927 2 11	
Salaries and Wages	69,508 9 1	
Other Expenses	1,781 4 2	
„ Maintenance—		
Stores	21,751 11 4	
Salaries and Wages	45,790 2 11	
Other Expenses	8,631 10 4	
	£673,152 15 5	
General Expenses.		
„ Local Administration and Technical Management	10,423 9 8	
„ General Expenses (including Maintenance of Quarters, Stores Expenses, Rates, Insurance, Pension Fund Contributions, etc.)	16,867 9 1	
„ Administration, Engineering and General Expenses of Operating Party (The Victoria Falls and Transvaal Power Company, Limited)	17,325 0 0	
„ Head Office Administration and General Expenses, including Publicity	7,279 18 10	
„ Engineering Expenses	2,971 4 8	
	54,867 2 3	
	728,019 17 8	
„ Interest	232,315 17 7	
„ Redemption Fund	166,346 4 10	
„ Provision for Repayment of Amounts Outstanding (Rand Water Board)	6,346 5 2	
„ Amount set aside to Reserve Fund	75,825 6 3	
	75,825 6 3	
	£1,208,853 11 6	
		£1,208,853 11 6

Johannesburg.
14th April, 1948.

J. VAN NIEKERK, Chief Accountant.

Referred to in our Report of 21st May, 1948.

ALEX. AIKEN & CARTER }
HALSEY, BUTTON & PERRY } Auditors.

ACCOUNT No. 9

Electricity Supply Commission

RAND EXTENSION UNDERTAKING

Dr.	Revenue Account for the Year		
To General Expenses (Insurance)	£212 18 7		
„ Head Office Administration and General Expenses, including Publicity	1,073 11 5		
„ Engineering Expenses	438 3 4	£1,724 13 4	
„ Interest		43,686 1 4	
„ Redemption Fund		32,960 4 10	
„ Amount set aside to Reserve Fund		14,043 8 0	
		£92,414 7 6	

Johannesburg.
14th April, 1948.

J. VAN NIEKERK, Chief Accountant.

Ended 31st December, 1947

Cr.

Amount recovered from The Victoria Falls and Transvaal Power Company, Limited	£92,414 7 6
	£92,414 7 6

Referred to in our Report of 21st May, 1948.

ALEX. AIKEN & CARTER }
HALSEY, BUTTON & PERRY } Auditors.

Electricity Supply VAAL GENERATING

Dr. Revenue Account for the Year

Generation of Electricity.			
To Operation—			
Fuel	£153,054 18 9		
Water, Oil, Waste and Stores	2,707 3 9		
Salaries and Wages	31,032 16 0		
Other Expenses	549 4 9		
„ Maintenance—			
Stores	7,669 9 1		
Salaries and Wages	14,822 18 3		
Other Expenses	3,369 4 4	£213 205 14 11	
General Expenses.			
„ Local Administration and Technical Management	8,248 13 5		
„ General Expenses (including Maintenance of Quarters, Stores Expenses, Rates, Insurance, Pension Fund Contributions, etc.)	11,277 5 9		
„ Administration, Engineering and General Expenses of Operating Party (The Victoria Falls and Transvaal Power Company, Limited)	9,900 0 0		
„ Head Office Administration and General Expenses, including Publicity	5,259 13 7		
„ Engineering Expenses	2,146 13 8	36,832 6 5	
„ Interest		250,038 1 4	
„ Redemption Fund		99,464 15 10	
„ Provision for Repayment of Amounts Outstanding (Rand Water Board)		101,212 3 6	
„ Amount set aside to Reserve Fund		1,586 10 11	
		14,308 18 8	
		£466,610 10 3	

Johannesburg,
14th April, 1948.

J. VAN NIEKERK, Chief Accountant.

ACCOUNT NO. 10

Commission STATION UNDERTAKING

Ended 31st December, 1947

Cr.

Sales of Electricity—	
Bulk Supplies	£460,734 0 6
Other Revenue	5,876 9 9
	£466,610 10 3

Referred to in our Report of 21st May, 1948.

ALEX. AIKEN & CARTER /
HALSEY, BUTTON & PERRY } Auditors.

ACCOUNT NO. 11

Electricity Supply Commission
GREATER RAND EXTENSION UNDERTAKING

Dr.	Revenue Account for the Year	
To General Expenses (Insurance)	£9 4 8	
„ Head Office Administration and General Expenses, including Publicity	35 1 3	
„ Engineering Expenses	14 6 2	£58 12 1
„ Interest		1,315 5 11
„ Redemption Fund		1,267 8 0
„ Amount set aside to Reserve Fund		493 13 0
		£3,134 19 0

Johannesburg,
14th April, 1948.

J. VAN NIEKERK, Chief Accountant.

Ended 31st December, 1947

	Cr.
By Amount recovered from The Victoria Falls and Transvaal Power Company, Limited	£3,134 19 0
	£3,134 19 0

Referred to in our Report of 21st May, 1948.

ALEX. AIKEN & CARTER }
 HALSEY, BUTTON & PERRY } Auditors

Electricity Supply Commission

BORDER UNDERTAKING

Dr.	Revenue Account for the Year ended 31st December, 1947			
	Generation of Electricity.			
To Operation—				
Fuel	£62,877	2 10		
Water, Oil, Waste and Stores	1,414	7 10		
Salaries and Wages	19,497	5 10		
Other Expenses	578	11 11		
„ Maintenance—				
Stores	3,239	9 0		
Salaries and Wages	5,143	17 11		
Other Expenses	931	14 3	£93,682	9 7
	General Expenses.			
„ Local Administration and Technical Management	3,385	8 8		
„ General Expenses (including Stores Expenses, Rates, Insurance, Pension Fund Contributions, etc.)	4,202	7 2		
„ Head Office Administration and General Expenses, including Publicity	1,580	3 5		
„ Engineering Expenses	644	18 7	9,812	17 10
			103,495	7 5
„ Interest			13,592	16 3
„ Redemption Fund			296	15 4
„ Sinking Fund (Amount paid to East London Municipality)			8,289	0 0
„ Balance as per Balance Sheet			7,582	19 6
			£133,256	18 6

Johannesburg.
14th April, 1948

J. VAN NIEKERK, Chief Accountant.

ACCOUNT No. 12

Electricity Supply Commission

BORDER UNDERTAKING

	Revenue Account for the Year ended 31st December, 1947			Cr.
	Sales of Electricity—			
Bulk Supplies			£133,256	2 6
Other Revenue				16 0
			£133,256	18 6

Referred to in our Report of 21st May, 1948.

ALEX. AIKEN & CARTER }
HALSEY, BUTTON & PERRY } Auditors.

INDEX TO ANNEXURE "B" (STATISTICAL AND OTHER STATEMENTS).

	Page
Statement No. 1. —Summary of Principal Plant and Equipment installed at the Commission's several undertakings as at 31st December, 1947	97
Statement No. 2. —Summary of Principal Plant and Equipment in course of installation or on order as at 31st December, 1947	100
Statement No. 3. —Units sold to all consumers during the past twenty-three years	101
Statement No. 4. —Distribution of units sold during 1947 as between the various classes of consumers	102
Statement No. 5. —Power Station Statistics, 1947	102
Statement No. 6. —Particulars of coal used at the Commission's Steam raising Power Stations during 1947	103
Statement No. 7. —Statement showing the price of land or rights or interests in or over land or other property acquired or hired by the Commission during the year 1947	104

ANNEXURE "B"

Electricity Supply Commission

STATEMENT No. 1.

Summary of principal plant and equipment installed at the Commission's several undertakings as at 31st December, 1947:

POWER STATIONS.

Caledon (Cape Town Undertaking) .....	.....	Oil
Colenso (Natal Central Undertaking) .....	.....	Steam
Congella (Durban Undertaking) .....	.....	Steam
East London (Border Undertaking) .....	.....	Steam
Klip .....	.....	Steam
Port Shepstone (Durban Undertaking) .....	.....	Oil
Sabie .....	.....	Hydro
Salt River (Cape Town Undertaking) .....	.....	Steam
Vaal .....	.....	Steam
Volksrust (Natal Central Undertaking) .....	.....	Oil
Witbank .....	.....	Steam

BOILER PLANT.

Power Station.	Number of Boilers.	Normal Rating of each Boiler, lb. of steam per hour.	Total Rating of all Boilers, lb. of steam per hour.	Pressure psi
Colenso	{ 8 4	{ 60,000 90,000	840,000	290
Congella	{ 6 4 3	{ 60,000 100,000 200,000	1,360,000	{ 270 270 625
East London	{ 4 2 2	{ 21,500 27,500 55,000	251,000	220
Klip	24	180,000	4,320,000	355
Salt River	{ 2 6	{ 60,000 100,000	720,000	{ 270 425
Vaal	6	190,000	1,140,000	360
Witbank	20	70,000	1,400,000	225
Totals	91		10,031,000	

GENERATING PLANT.

Power Station.	No. of Generators	Normal Rating of each Generator		Rating of Generator House		Voltage of Generation.	Rating of House Sets Kilowatts
		Kilo-watts.	Kilovolt-amperes.	Kilo-watts.	Kilovolt-amperes.		
Caledon	1	140	—	140	—	500/250 D.C.	
Colenso	{ 5 1	12,000 25,000	13,330 27,800	85,000	94,450	6,600 A.C.	
Congella	{ 2 3 1 1 1	6,000 12,000 20,000 30,000 40,000	7,500 15,000 25,000 37,500 47,000	138,000	169,500	{ 6,600 A.C. 6,600 A.C. 6,600 A.C. 33,000 A.C. 33,000 A.C.	
East London ...	{ 1 2 2	1,500 4,000 7,500	1,875 4,700 8,825	24,500	28,925	6,600 A.C.	
Klip	12	33,000	40,000	396,000	480,000	10,500 A.C.	28,000
Port Shepstone	2	700	875	1,400	1,750	380/220 A.C.	
Sabie	3	450	600	1,350	1,800	3,300 A.C.	
Salt River	{ 3 3	10,000 20,000	11,000 25,000	90,000	108,000	{ 12,000 A.C. 33,000 A.C.	300
Vaal	5	33,000	40,000	165,000	200,000	10,500 A.C.	7,000
Volkswrust	2	250	300	500	600	3,300 A.C.	
Witbank	5	20,000	23,500	100,000	117,500	6,600 A.C.	8,000
Totals	55			1,001,890	1,202,525		43,300

Total Station Capacity: 1,045,190 kilowatts (including House Sets).

TRANSMISSION LINES AND CABLES.

UNDERTAKING.	88,000 volts. Route Miles.	40,000 volts. Route Miles.	33,000 volts. Route Miles.	22,000, 21,000 20,000 volts. Route Miles.	10,000, 11,000 12,000 volts. Route Miles.	6,600, 3,300, 2,200. 2,000 volts. Route Miles.	460/230 and 380/220 volts. Route Miles.	Total Route Miles
Cape Town	—	—	400	—	177	193	234	1,004
Durban (South Coast)	—	—	58	—	34	31	63	186
Natal Central	610	—	—	69	157	217	98	1,151
Rand Extension and Greater Rand Extension	347	118	—	9	4	43	27	548
Sabie	—	—	—	7	—	—	1	8
Witbank	—	22	—	172	—	39	34	267
Totals	957	140	458	257	372	523	457	3,164

STATIC TRANSFORMERS AT POWER STATIONS AND SUB-STATIONS.
(Step-up and Step-down, including Spares.)

Undertaking.	Capacity. Kilovolt-amperes.
Cape Town	182,373
Durban	74,525
East London	1,500
Klip	549,633
Natal Central	260,470
Rand Extension and Greater Rand Extension	369,640
Sabie	3,140
Vaal	234,914
Witbank (including Reef, 73,305)	294,754
	Total 1,970,949

CONVERTING SUB-STATIONS.

Type.	Number of Sub-stations	Number of Units.	Total Rating.
Motor Generators	14	24	48,000 kW
Rotary Converters	8	15	28,150 kW
Rectifiers	32	†60	*74,837 kW
Totals	54	99	—

† Of these some are equipped for rectifying and inverting — the total inverted rating is 11,500 kW.

* Forward rating.

Electricity Supply Commission

STATEMENT No. 2.

Summary of principal plant and equipment in course of installation or on order at 31st December, 1947.

BOILER PLANT.

Power Station	Number of Boilers	Each.	Total.	Capacity in lb. of steam per hour. (Normal Rating).	Pressure. p s i
Colenso	2	180,000	360,000		290
Congella	2	200,000	400,000		625
East London	1	55,000	55,000		220
Vaal	12	190,000	2,280,000		360
Worcester	4	200,000	800,000		625
			<u>3,895,000</u>		

GENERATING PLANT.

Power Station.	Number of Sets.	Capacity. Each.	Total Kilowatts.
Colenso	1	25,000 kW	25,000
Congella	2	40,000 kW	80,000
Vaal	{ 4	33,000 kW	146,000
	{ 2	7,000 kW	
Port Shepstone	2	1,000 kW	2,000
Worcester	{ 3	20,000 kW	62,000
	{ 2	1,000 kW	
			<u>315,000</u>

TRANSMISSION LINES AND CABLES.

Overhead Lines: 609 miles.

TRANSFORMERS.

(Step-up and Step-down.)

Kilovolt-amperes

Total capacity in course of installation or on order 332,460

CONVERTING SUB-STATIONS.

Type.	Number of Sub-stations.	Number of Units.	Total Rating.
Mercury Arc Rectifiers	4	4	6,668 kW Forward

STATEMENT No. 3.

Units sold to all consumers during the past twenty-three years

Year.	Border	Cape Town	Durban	Klip	Natal Central	Sabie	Vaal	Witbank	Total.
	Undertaking.	Undertaking.	Undertaking.	Undertaking.	Undertaking	Undertaking	Undertaking	Undertaking	
1925	—	—	—	—	—	75,943	—	—	75,943
1926	—	280,242	—	—	719,666	651,458	—	160,031,213	161,682,579
1927	—	5,811,836	—	—	104,206,235	1,938,940	—	439,061,722	551,018,733
1928	—	31,038,697	15,563,460	—	114,213,037	2,829,888	—	464,267,213	627,912,295
1929	—	47,945,690	78,873,576	—	123,911,774	3,176,173	—	543,091,138	796,998,351
1930	—	49,772,016	99,228,000	—	117,075,484	4,585,060	—	618,951,364	889,611,924
1931	—	52,109,958	103,899,765	—	101,131,880	6,585,553	—	603,359,113	867,086,269
1932	—	64,268,873	109,808,223	—	100,292,933	6,080,010	—	610,285,123	890,735,162
1933	—	100,685,629	118,538,312	—	109,186,538	6,349,651	—	639,368,114	974,128,244
1934	—	73,583,974	131,104,182	—	124,898,129	7,329,679	—	648,245,530	985,161,494
1935	—	80,020,511	149,874,024	—	154,278,600	7,181,282	—	727,888,529	1,119,242,946
1936	—	85,840,383	170,493,987	556,997,155	171,476,131	6,863,253	—	696,376,199	1,688,047,108
1937	—	94,038,449	189,412,691	1,349,853,464	210,632,827	7,166,684	—	684,516,633	2,535,620,748
1938	—	98,801,619	209,495,780	1,666,852,594	234,948,157	7,240,167	—	768,114,272	2,985,452,589
1939	—	106,451,848	233,677,491	2,193,206,661	266,238,056	6,380,657	—	767,741,727	3,573,696,440
1940	—	119,770,941	242,741,129	2,566,536,197	281,121,807	6,669,552	—	853,317,743	4,070,157,369
1941	—	136,240,415	270,316,419	2,675,943,959	302,395,900	6,565,110	—	862,562,248	4,254,024,051
1942	—	151,769,902	273,748,608	2,707,829,911	307,724,141	6,335,396	—	873,440,460	4,320,848,418
1943	—	145,739,820	293,366,350	2,669,086,704	312,387,660	5,930,089	—	849,119,231	4,275,629,854
1944	—	158,673,418	321,583,537	2,703,638,629	335,977,438	6,723,791	—	889,205,914	4,415,802,727
1945	—	165,857,610	348,740,929	2,643,039,705	333,192,760	6,596,859	377,902,035	830,734,606	4,706,064,504
1946	—	184,618,905	369,659,142	2,614,328,036	347,006,541	7,408,010	582,485,354	896,892,060	5,002,398,048
1947	56,170,900	198,640,259	402,561,103	2,547,186,151	345,993,124	7,604,777	668,587,275	887,731,135	5,114,474,724

NOTE.—The Units sold at Cape Town do not include the units supplied to Cape Town Corporation under the Pooling Agreement.

STATEMENT No. 4.

Distribution of the units sold during 1947 as between the various classes of consumers.

UNITS SOLD, 1947.

UNDERTAKING.	Traction.	Bulk.	Industrial and Mining.	Domestic and Street Lighting.	TOTAL.
Border		56,170,900			56,170,900
Cape Town	67,375,845	35,089,278	68,259,186	27,915,950	198,640,259
Durban		377,986,499	19,597,441	4,977,163	402,561,103
Klip		2,547,186,151			2,547,186,151
Natal Central	254,998,955	62,916,127	23,199,978	4,878,064	345,993,124
Sabie			7,604,777		7,604,777
Vaal		668,587,275			668,587,275
Witbank	131,880,298	605,494,442	147,622,660	2,733,735	887,731,135
TOTALS	454,255,098	4,353,430,672	266,284,042	40,504,912	5,114,474,724

STATEMENT No. 5.

POWER STATION STATISTICS, 1947.

POWER STATION.	Units Generated.	Maximum Half-hourly Demand. Kilowatts (Sent Out).	Load Factor on Units Sent Out. Per Cent.
Caledon*	—	—	—
Colenso	386,281,050	62,590	66.8
Congella	430,009,500	95,060	47.7
East London	58,505,710	15,860	42.0
Klip	2,711,119,567	355,410 (Hour)	81.8
Port Shepstone*	805,295	1,694	—
Sabie	8,034,400	1,300	69.7
Salt River	185,088,965	57,200	34.2
Vaal	711,039,455	123,398 (Hour)	61.9
Volkstrust*	8,974	—	—
Witbank	807,872,207	106,157 (Hour)	81.4
	<u>5,298,765,123</u>		

*Standby plants.

STATEMENT No. 6.

Particulars of coal used at the Commission's Steam-raising Power Stations during 1947.

POWER STATION.	COAL CONSUMED.			Average per lb. of Coal. (as fired)	B.Th.U.		Thermal Efficiency on Units Sent Out. Per Cent.
	Tons (2,000 lb.)	Per Unit Generated lb.	Per Unit Sent Out. lb.		Average per unit. Sent Out.		
Colenso	286,152	1.482	1.562	12,190	19,040	17.92	
Dongella	238,800	1.343	1.453	12,210	17,740	19.23	
East London	47,248	1.615	1.692	12,620	21,350	15.98	
Tip	2,334,079	1.722	1.833	9,020	16,530	20.64	
Tilt River	137,240	1.483	1.597	12,510	19,980	17.08	
Paul	549,941	1.547	1.645	9,270	15,250	22.37	
Witbank	688,365	1.704	1.819	11,020	20,050	17.02	
	<u>4,331,825</u>						

Average Cost per Ton (2,000 lbs.)

	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947
Colenso	10/9	10/9	11/-	10/10	10/9	10/11	10/11	11/-	10/11	10/10	10/4	10/8	10/11	11/4
Dongella	15/4	15/-	15/5	15/2	15/-	15/3	15/2	15/3	15/2	14/9	14/6	15/4	15/7	16/4
East London	—	—	—	—	—	—	—	—	—	—	—	—	—	26/7
Tip	—	—	3/2	3/-	3/3	3/4	3/6	3/6	3/7	3/9	3/11	4/2	4/4	4/5
Tilt River	25/6	25/4	25/4	24/8	25/1	25/6	25/7	25/7	25/3	25/-	23/4	25/4	25/9	28/1
Paul	—	—	—	—	—	—	—	—	—	—	—	5/10	6/-	5/7
Witbank	2/3	2/3	2/2	2/2	2/1	2/1	2/-	2/-	2/1	2/1	2/4	2/4	2/9	3/4

Electricity Supply Commission

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 1947.

(See previous Annual Reports for Rights or Interests in or over Land acquired prior to 1947.)

NATAL CENTRAL UNDERTAKING

FARM OR LOT	DISTRICT	Title	Purchase Price or Rental	Acquired From	Purpose for Which Required
Certain remaining portion of "Toekomst" No. 1041	Harrismith	Servitude of right of way in perpetuity	£19 12 6	A. P. Fourie	Power Conductors
"Geluk" No. 35	do.	do.	£76 8 11	S. M. Schoeman	do.
Remainder of Portion D of "Krieger Holm" No. 3340	Klip River	do.	£5 0 0	J. G. P. Becker	do.
"Strydfontein" No. 268	Harrismith	do.	£31 5 11	H. J. van Wyk	do.
"Koelfontein" No. 1248	Bethlehem	do.	£29 11 1	J. J. le Roux	do.
Subdivisions 4, 6, 8, 10 of Subdivision N.G.R. No. 2; and subdivision D of "Samsonsklip" No. 3312	Klip River	do.	£7 15 0	P. J. H. Maartens	do.
Remainder of "Mooiplaats" No. 666	Bethlehem	do.	£81 16 11	L. J. Jansen van Rensburg	do.
Remainder of Subdivision "Redmain" of C of "Jordans Stroom" No. 3310	Klip River	do.	£5 5 0	F. R., D.R., J., B. G. and L. Green Tompson	do.
Remainder of "Korfskop" No. 1788 and "Driefontein" No. 125	Harrismith	do.	£86 15 10	C. J. de N. de Jager	do.
Subdivision 2 of "Mooiplaats" No. 666	Bethlehem	Purchase	£45 0 0	L. J. Jansen van Rensburg	Substation
Lots 131, 139, 149, 150, 151, 163, 164, 166, 167, 168, 169, 170, 171, 172 and 173 of Colenso Township	Weenen	do.	£1,590 5 0	Colenso Town Board	Housing Accommodation
Lots 127 and 130 Colenso Township	do.	do.	£1,400 0 0	Estate J. F. Mitchell	do.
Lot 162 Colenso Township	do.	do.	£1,000 0 0	C. Mitchell	do.

WITBANK SUPPLY SYSTEM

FARM OR LOT	DISTRICT	Title	Purchase Price or Rental	Acquired From	Purpose for Which Required
Portion of "Witbank" No. 61	Witbank	Surface Right Permit Purchase	Nil	Department of Mines	Substation
Portion of "Witbank" No. 61	do.		£38 6 4	Witbank Colliery Ltd.	Extension to Power Station
Remaining Portion of Portion marked "E" of the Northern half of "Elandsfontein" No. 8	do.	Servitude of right of way in perpetuity	£11 4 0	G. L. J. Strydom	Power Conductors
Portion of "Heuvelfontein" No. 48	do.	do.	Nil	} A. H. and J. P. Visagie }	do
Portions E and F of "Heuvelfontein" No. 48	do.	do.	Nil		do.
Portion C of Portion of "Enkeldebosch" No. 295	Middelburg	do.	£7 10 0	Mrs. A. M. Swart	do
Portion B of Portion of "Enkeldebosch" No. 295	do.	do.	£3 10 6	P. J. J. Louw	do
Remaining extent of "Blacauwkrans" No. 62	Witbank	do.	£3 6 8	P. J. de Wet	do
Remaining Portion of Portion "Doornbult" of "Doornrug" No. 3	do.	do.	£6 6 8	Mrs. H. C. Hertzog	do
Portion A of Portion of "Enkeldebosch" No. 295	Middelburg	do.	£3 5 6	Mr. H. N. and Mrs. M. E. J. Jan-sen van Rensburg	do
Remaining Portion of Portion of "Enkeldebosch" No. 295 and "Ex-celsior" of "Enkeldebosch" No. 295	do	do.	£2 10 0	M. J. de Villiers and S. J. Mostert	do

CAPE TOWN UNDERTAKING

FARM OR LOT	DISTRICT	Title	Purchase Price or Rental	Acquired From	Purpose for Which Required
Lot "E.S.C." of The Hope Part of "Langeberg" Remaining extent of Lots 718, 719 and 720, block K of a portion of lots 9 to 14 "Tygervally"	Bellville Malmesbury	Purchase do.	£1,500 0 0 £125 0 0	Mrs. A. Kuffner J. Baard	Substation do.
Lots 107, 108 and 109 Elsie's River Estate	Parow	do.	£2,350 0 0	R. P. Chapman	Housing Accommodation
Portion G of Lots 142a, 143a, 144a, 145a, 146a and 147a Glen Lily Estate	Elsies River	do.	£150 0 0	G. H. Stark, Ltd.	Substation
Portion of Lange Valley	Parow Paarl	do. Servitude of right of way in perpetuity	£350 0 0 £28 1 4	G. Batt J. J. P. Wiehahn	do. Power Conductors
Portions "Modder Kloof" and "Hoogstede" of Paarl Diamant Land called "Radio"	do. Cape	do. do.	£36 0 4 Nil	A. C. Hauptfleisch Cable & Wireless of S.A. Ltd.	do. do.
Portion 1 of "Boontjies River" and "Goudyn"	Worcester	do.	£3 0 6	S. J. du Preez	do.
Remaining extent of "Merwes Hoop," a portion of "Boontjies River"	do.	do.	£24 15 1	W. D. van der Merwe	do.
Portion of "Middelburg" and adjoining land	Paarl	do.	£31 18 9	W. D. Dreyer Jnr.	do.
1. Piece freehold land remainder of portion of "Middelburg"	do.	do.	£19 4 0	Dreyer Bros.	do.
2. Remainder of piece of redeemed quitrent land					
3. Remainder of portion called "Leeuwkuil"					
4. Portion redeemed quitrent land surrounding "Leeuwkuil"					
"Wellington Distillery"	Malmesbury Paarl	do.	£4 10 3	J. Sedgwick & Co. Ltd.	do.
Portion of "Lange Valley"	do.	do.	£34 14 4	H. J. Wiehahn	do.

DURBAN UNDERTAKING

FARM OR LOT	DISTRICT	Title	Purchase Price or Rental	Acquired From	Purpose for Which Required
Remainder of Subdivisions F and G of Lot 5 Block 1 Durban	Durban	Purchase	£15,000 0 0	Estate late A. M. Wackernow	Office Accommodation

RAND EXTENSION UNDERTAKING

FARM OR LOT	DISTRICT	Title	Purchase Price or Rental	Acquired From	Purpose for Which Required
"Rietkuil" No. 86	Klerksdorp	Surface Right Permit	Nil	Department of Mines	Power Conductors
"Gemspost" No. 134 and "Gemsbokfontein" No. 1	Krugersdorp	do.	Nil	do.	do.

KLIP UNDERTAKING

FARM OR LOT	DISTRICT	Title	Purchase Price or Rental	Acquired From	Purpose for Which Required
Portion 9 of "Uitgevallen" No. 75	Vereeniging	Servitude of Option for Railway Line	£9.18.0. p.a. rental. Option to purchase. £45.0.0.	J. C. and M. M. Botha	Railway Line
Portion A of Portion of "Badfontein" No. 85	do.	do.	£5.5.0 p.a. rental. Option to purchase. £35.0.0.	P. J. du Toit	do.

INDEX TO ANNEXURE "C."

	Page
Statistics relating to the production and supply of electricity in the Union of South Africa	109—111
Units generated	109
Consumers and sales	109
Installed capacity of plants	110
Size and type of generating units	110
Fuel consumed	110
Coal consumption	111
Transformers	111
Value of land, etc	111
Average number of persons employed	111
Salaries and wages paid	111

ANNEXURE "C"

**STATISTICS RELATING TO THE PRODUCTION AND SUPPLY OF ELECTRICITY IN THE
UNION OF SOUTH AFRICA.**

Extracted from the 1945-46 Industrial Census and published by courtesy of the Department
of Census and Statistics (Pretoria).

UNITS GENERATED.

Province.	Private Companies.	Local Authorities.
Cape	260,289,189	752,326,304
Natal	940,145,473	20,050,040
O.F.S.	647,725,502	53,458,259
Transvaal	5,109,697,571	773,207,428
Total	6,957,857,735	1,599,042,031
	<u>8,556,899,766</u>	

CONSUMERS AND SALES.

	PROVINCE.				
	Cape.	Natal.	O.F.S.	Transvaal.	Totals.
Total Number of Consumers	162,755	63,607	18,127	171,661	416,150
Total Units Consumed	866,232,696	816,420,998	98,057,767	5,557,575,705	7,338,287,166
Number of Domestic Con- sumers	137,473	48,798	15,860	145,765	347,896
Units Sold and Used For Domestic Consumption	402,940,584	174,073,652	19,418,381	420,408,018	1,016,840,635
Average Units Sold per Domestic Consumer	2,931	3,567	1,224	2,884	2,923

**STATISTICS RELATING TO THE PRODUCTION AND SUPPLY OF ELECTRICITY IN THE UNION
OF SOUTH AFRICA—(Continued)**

INSTALLED CAPACITY OF PLANTS.

CAPACITY.	Number of Power Stations.	Total Installed. Capacity—Kilowatts.
50,000 kilowatts and over	14	1,673,000
20,000 kilowatts and over, but below 50,000 kilowatts	6	208,500
10,000 kilowatts and over, but below 20,000 kilowatts	5	69,600
5,000 kilowatts and over, but below 10,000 kilowatts	6	45,877
1,000 kilowatts and over, but below 5,000 kilowatts	46	98,544
Below 1,000 kilowatts	238	53,210
	<u>315</u>	<u>2,148,731</u>

SIZE AND TYPE OF GENERATING UNITS.

SIZE OF SETS.	Steam Turbines.	Steam Re- ciprocating Engines.	Diesel, Petrol, Paraffin, Light Oil Engines.	Gas Engines.	Water Wheels and Turbines.	Total Number of Sets. Local Authori- ties.	Private Com- panies.
(1) A.C. Plants:							
Below 250 kilowatts	3	70	327	8	26	342	92
250 kilowatts and over, but below 1,000 kilowatts	34	67	22	8	12	39	104
1,000 kilowatts and over, but below 5,000 kilowatts	88	—	1	—	—	34	55
5,000 kilowatts and over	104	—	—	—	—	26	78
(2) D.C. Plants:							
Below 250 kilowatts	—	26	170	8	—	141	63
250 kilowatts and over, but below 1,000 kilowatts	1	15	1	3	—	2	18
1,000 kilowatts and over	—	—	—	—	—	—	—

FUEL CONSUMED.

TYPE OF FUEL	Quantity (Tons of 2,000 lb.)	Costs.
Coal	7,240,432	£3,076,719
Other Fuel	—	238,486

**STATISTICS RELATING TO THE PRODUCTION AND SUPPLY OF
ELECTRICITY IN THE UNION OF SOUTH AFRICA.—(Continued).**

COAL CONSUMPTION.

Average Coal Consumption per Unit Generated	Number of Undertakings.
Under 2 lb.	23
2 lb. and over, but under 3 lb.	23
3 lb. and over, but under 4 lb.	16
4 lb. and over, but under 6 lb.	18
6 lb. and over, but under 8 lb.	6
8 lb. and over	17

TRANSFORMERS.

Total installed capacity	8,514,500 kVA
--------------------------------	---------------

Total value of land, buildings, machinery, plant and tools	£73,707,468
Total average number of persons employed in the electricity industry (generation and distribution)	18,632
Total salaries and wages and allowances paid for the year	£4,291,899