



Escom House was effectively decorated on the occasion of the Royal Visit.  
(Photo: Martin Gibbs)

MEMBERS OF THE  
**Electricity Supply Commission.**

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Dr. HENDRIK JOHANNES VAN DER BIJL (Chairman).

ALBERT MICHAEL JACOBS.

ROBERT BURNS WATERSTON.

WILLIAM PLOWMAN MOYESE HENDERSON.

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# Electricity Supply Commission.

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Escom House,

Rissik Street,

Johannesburg.

23rd June, 1947.

To the Honourable

The Minister of Economic Development,  
Pretoria.

Sir,

In conformity with the provisions of Section 14 of the Electricity Act, No. 42 of 1922, the Commission has the honour to present its Twenty-fourth Annual Report, covering its operations for the year ended 31st December, 1946, together with a brief review of its activities up to 30th April, 1947.



## GENERAL.

### Electricity Demands.

During the period under review, the demand for electricity from all classes of consumers for new connections and extensions continued to increase.

While bearing in mind its statutory obligation to provide a cheap and abundant supply of electricity wherever required the Commission has found it possible to comply with only a fraction of the applications received. Most of the Commission's power stations are operating at maximum capacity, and the position as regards new plant, replacements and repairs, although showing some improvement as compared with the situation when the Commission's last Report was written, remains very difficult.

Plant on order from overseas is already long overdue and the earliest delivery offered in response to enquiries for additional generating plant is between  $2\frac{1}{2}$  to 3 years without any guarantee from manufacturers that these periods will not be exceeded. It is reliably estimated that under present conditions even a moderately sized power station could not be completed

in less than 4 to 5 years. Insulators for transmission line extensions all have to be imported and cannot be obtained in less than 2 years in even small quantities.

The burden of continually increasing costs was stressed in the preceding report, and advancing prices were again in evidence during the year under review.

As forecast last year, an increase in charges became inevitable at the Commission's Durban Undertaking. The increase became operative in August 1946, and is dealt with more fully later in this report. It is a matter of pride and satisfaction to the Commission that this is the only occasion in the whole of its history on which prices to consumers have been raised.

Partly owing to this adjustment, but mainly due to increased total sales of electricity, the Commission's total revenue for the year increased by 8.74 per cent. while total production costs on all Undertakings increased by 8.13 per cent. The previous year's deficit of £17,123 on all the Commission's operations was converted into a small overall surplus of £4,702 in 1946.

## NEW UNDERTAKINGS.

(a) East  
London.

The Commission has entered into an agreement with the Municipality of East London to take over its existing power station and supply the Municipality in bulk. The agreement has received the approval of the Administrator of the Cape Province, and an application to the Electricity Control Board for a Licence to supply East London and the adjoining areas will shortly be made by the Commission.

In conformity with Section 5 of the Electricity Act, 1922, a report containing the Commission's proposals has been prepared and will be submitted as soon as it has been printed.

On the granting of the Licence, the Commission will take over the assets and liabilities of the Municipality in respect of the generating station, and the Municipality will transfer to the Commission an area of land, adjacent to the existing power station on the Buffalo River and acquired from the South African Railways and Harbours Administration, for a new station site.

This Undertaking will be called the Border Undertaking which it is intended to develop to cope with demands for

electricity over a wide surrounding area. Preliminary meetings have already been held with a large number of interested local authorities and a careful investigation of the areas concerned will be undertaken by the Commission at the earliest opportunity.

The Commission's application to the Electricity Control Board for a licence to supply electricity within an area of approximately 16,000 square miles in the Transvaal, Orange Free State and Northern Cape Province has been granted. The territory concerned is contiguous on both the North and the South to the area of supply of the Rand Extension Undertaking, extending from the North West of Pretoria taking in Rustenburg, Zeerust and Lichtenburg to Mafeking in the North West. On the South it includes the new goldfields in the Free State and from the vicinity of Winburg it extends in a northerly direction to join the existing Rand Extension boundary North of Heilbron. In addition, an area around Cullinan is included. This Undertaking will be called the Greater Rand Extension Undertaking.

As well as the new goldfields in the Free State, this extension will include diamond and other mines, two cement factories and a number of municipalities. Initially, electricity will be supplied from the existing power stations of the Commission and The Victoria Falls and Transvaal Power Co. Ltd. in the Transvaal and the interconnected Vaal station just across the Orange Free State border.

It is estimated that six or eight new gold mines in the Orange Free State will require 100,000 kilowatts by 1955 and should the load from this source reach the figure estimated, it may be necessary to erect a new power station in that area. Capital expenditure on this Undertaking over the next four or five years is estimated at £1,250,000 to supply the requirements of consumers in the new areas, as distinct from the cost of constructing the new power station that may be required.

(c) Kimberley

Negotiations have been opened with de Beers Consolidated Mines Ltd., for the acquisition by the Commission of the Company's power station at Kimberley with a view not only to taking over the Company's contractual obligations for a bulk supply of electricity to the Kimberley Municipality but also to establish at that centre the nucleus of a larger undertaking to provide electricity for industrial projects in the neighbourhood. The development of a Farmers Electricity Supply Scheme in that area is also envisaged.

## NEW POWER STATION AT WORCESTER.

To meet continually increasing demands for electricity in the Western Cape Province, it has been decided to erect a new generating station at Worcester to supply power mainly for the electrification of the Cape Main Railway line from Bellville to Touws River and possibly later to Beaufort West.

The new station is estimated to cost eventually over £4,000,000 and will be designed, built and operated by the Commission's staff. The initial installation will be 60,000 kilowatts, to be increased later to 100,000 kilowatts, in each case one 20,000 kilowatt set will act as a standby.

Tenders have been invited for three 20,000 kilowatt turbo alternator sets and condensers. Each set will be designed for a maximum output at alternator terminals of 20,000 kilowatts, and will have an economic rating of 16,000 kilowatts. Tenders have also been invited for four boiler units each rated to supply 190,000 - 200,000 lbs. of steam per hour at maximum continuous output and 160,000 lbs. per hour at economic rating, at a pressure of 625 lbs. per square inch at 825° F, with water feed at 340° F.

The power station will feed a high tension transmission line connecting with the Commission's Salt River Power Station.

The intention is that electricity from this Power Station will also be supplied to the towns of Robertson and Ashton and probably also to Montagu. The development of further rural electrification schemes in the Western Cape province will also become possible as a result of this project.



## RAILWAY TRACTION SUBSTATIONS.

It has been agreed in principle that the South African Railways and Harbours Administration will take over all the Commission's mercury arc rectifier substations supplying electricity for traction purposes. Details are under consideration, and it is hoped that negotiations will shortly be concluded. These substations have been, and are, at present, operated by Railway personnel.

Rotary convertor substations on the Western Cape Railway system will also be transferred; but the motor generator substations on the Natal Main Line will be retained by the Commission.

## ROYAL VISIT.

On April 1st, 1947, the Commission was honoured by a visit from Their Majesties, the Princesses and other members of the Royal Party to Escom House to view from the best vantage point the fireworks display on the mine dumps stretching for 70 miles along the Reef. The display was arranged by the Transvaal Chamber of Mines as part of the Royal Tour celebrations.

Escom House was effectively decorated and illuminated for this occasion.

## PARLIAMENTARY VISIT.

In November, 1946, the Commission had the pleasure of being joint hosts with the S.A. Iron and Steel Industrial Corporation Ltd. and the Transvaal Chamber of Mines, to a party of 120 Senators and Members of Parliament, the Clerks of both Houses, and representatives of leading newspapers in the Union. During their tour of industrial undertakings in Pretoria, Vanderbijl Park, Vereeniging and on the Reef, the visitors were conducted over Klip Power Station. The tour presented an opportunity for the visitors to see for themselves the operation of a large modern power station and to get some idea of the importance of the Commission's activities on the Witwatersrand.

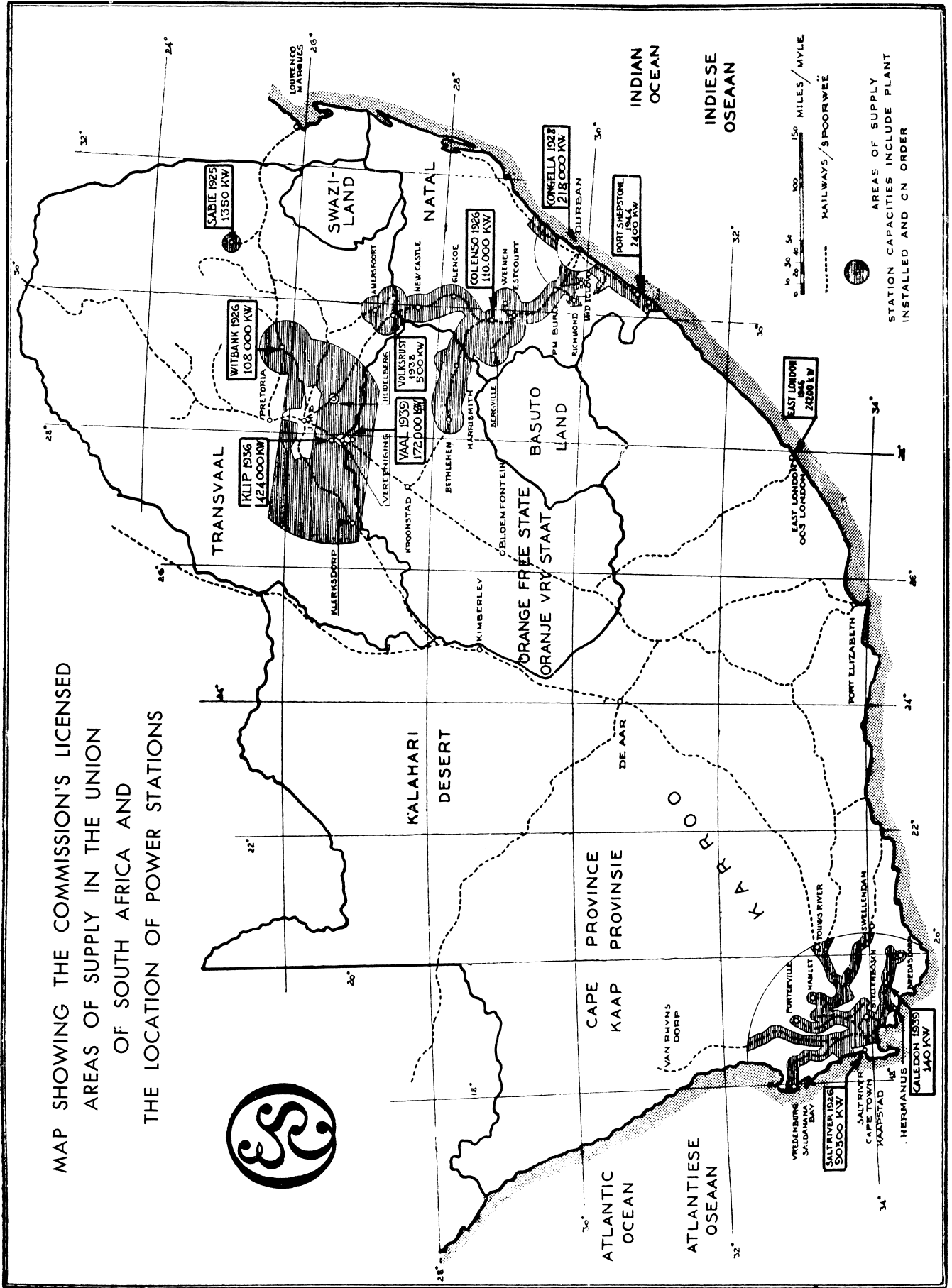
The value of such a tour, which was the second of its kind after an interval of 11 years, will no doubt be appreciated by the Union's legislators when matters affecting these specialised undertakings come up for consideration in Parliament.

## PLANT CAPACITY.

The aggregate of installed plant capacity in the main power stations owned by the Commission as at 31st December, 1946, was 985,650 kilowatts. In addition, 3,040 kilowatts of generating plant are installed in three small stand-by diesel stations at various centres. Plant under construction and on order at that date will increase the total to 1,086,690 kilowatts.

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

MAP SHOWING THE COMMISSION'S LICENSED  
 AREAS OF SUPPLY IN THE UNION  
 OF SOUTH AFRICA AND  
 THE LOCATION OF POWER STATIONS



AREAS OF SUPPLY  
 STATION CAPACITIES INCLUDE PLANT  
 INSTALLED AND IN ORDER

## TRANSMISSION SYSTEM AND AREA OF SUPPLY.

The Commission now owns approximately 2,939 route miles of transmission lines and cables, an increase of 254 miles on the previous year's figure. The installed transformer capacity increased during the year by 70,688 kVA to 1,931,794 kVA. The Commission's licensed area of supply throughout the Union was increased by approximately 16,000 square miles to over 50,000 square miles and this area is likely to be largely increased in the near future.

New lines under construction include the following major projects:—

- (a) An 88 kV single line from Coalbrook to the new gold-fields in the Orange Free State, a distance of approximately 120 miles.
- (b) An 88 kV single line from Blyvooruitzicht Gold Mine on the Far West Rand to Mafeking, over 125 miles.
- (c) A 30 mile 40 kV single line from Olifantsfontein on the Germiston-Pretoria Railway line to Premier Mine.

## 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 consumer's loads.

## OUTPUT AND SALES.

Output and sales of electricity from the Commission's power stations again established new records in 1946, and for the first time exceeded five thousand million units.

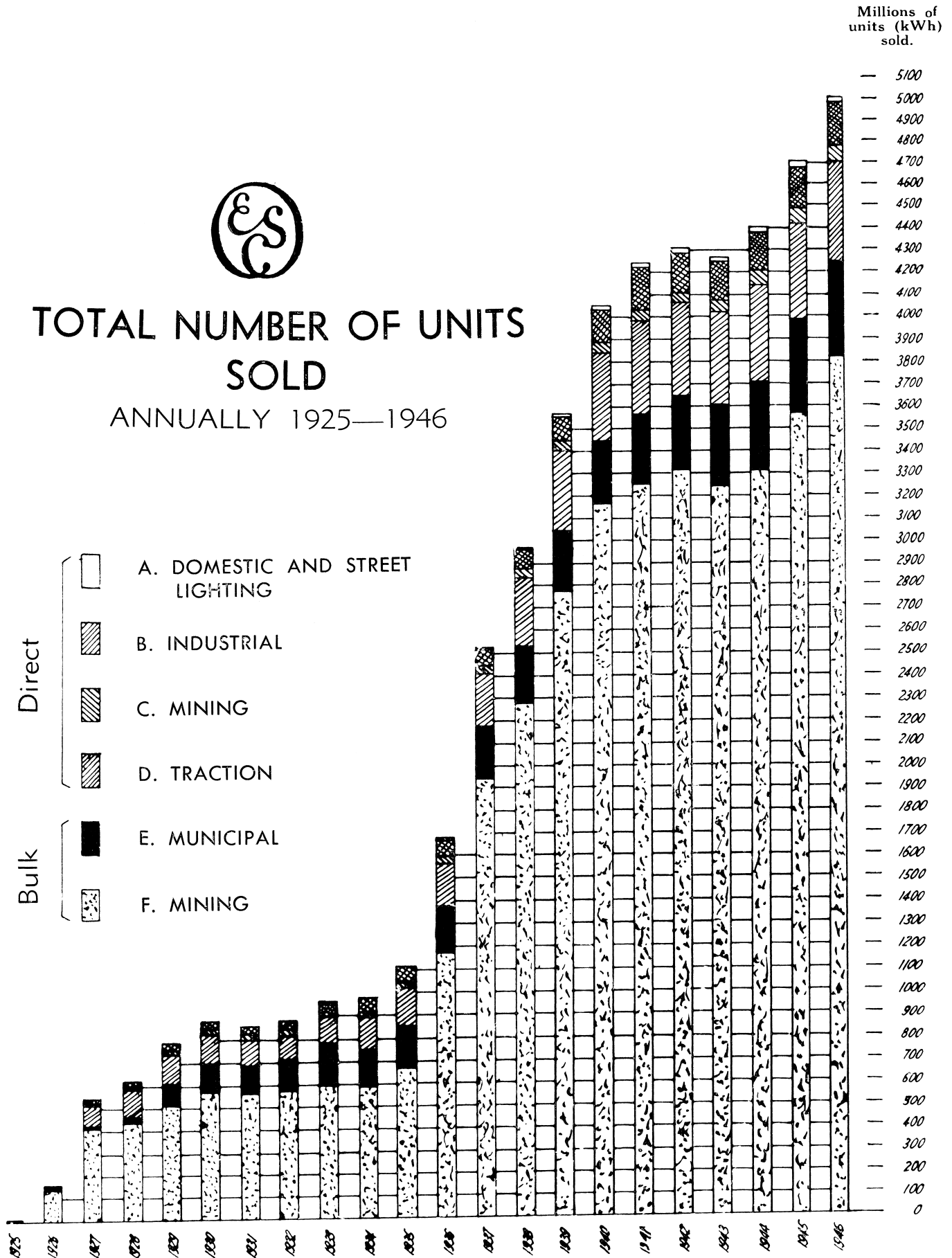
The units generated amounted to 5,178,043,034 units, exceeding the previous year's figure by 316,641,293 units, or 6.513 per cent. The increase was largely due to additional plant in oper-





# TOTAL NUMBER OF UNITS SOLD

ANNUALLY 1925—1946



ation at the Vaal Generating Station, which with an output of 582,485,354 units produced 54.137 per cent. more than in 1945.

In the aggregate, sales of electricity generated in power stations owned by the Commission, and purchased from other sources for consumers supplied by the Commission, increased during the year by 6.297 per cent. to 5,002,398,048 units. Sales declined at only one Undertaking, Klip, for reasons given under the appropriate heading of this Report.

The following figures show details for each Undertaking:—

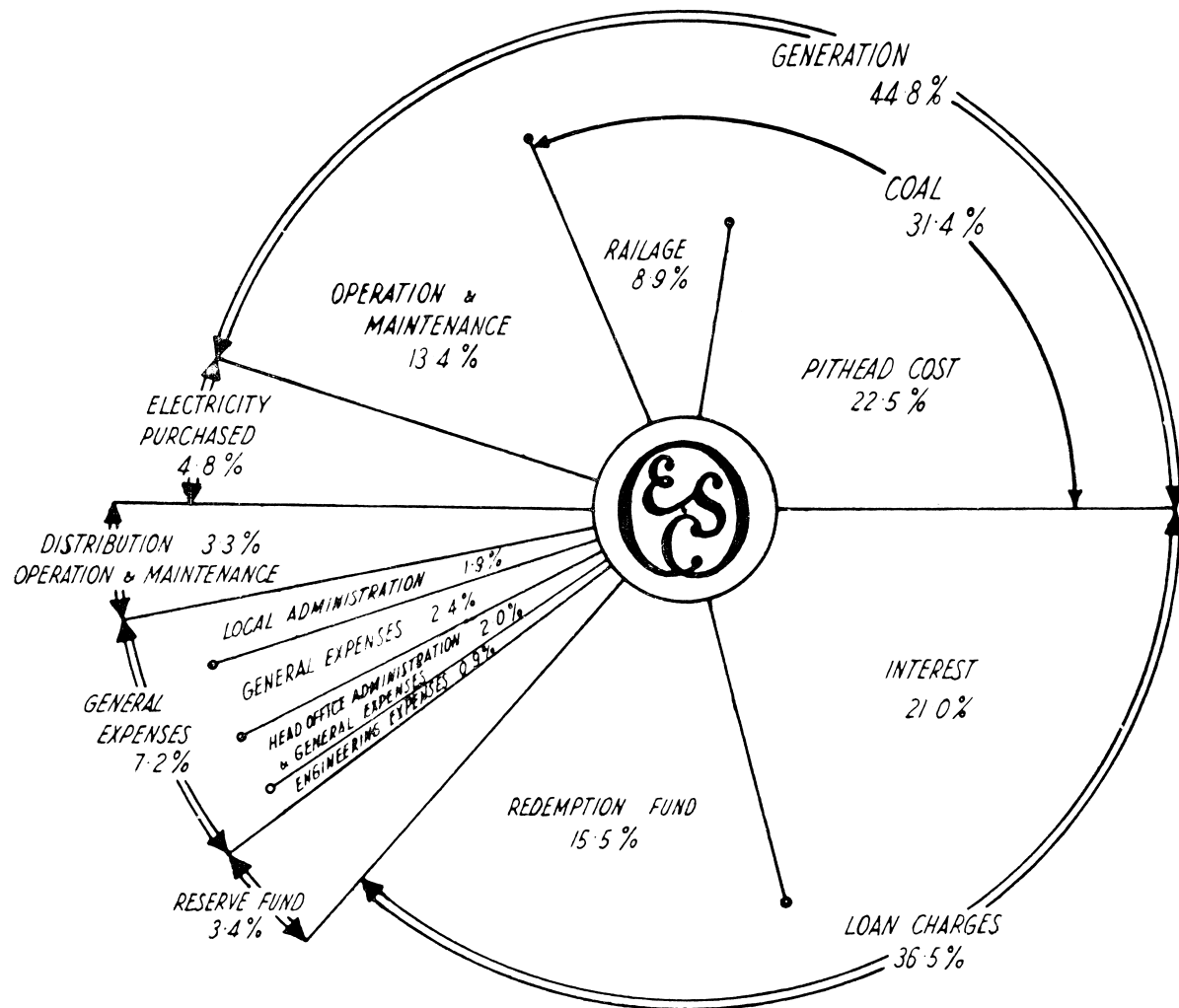
Undertaking.	Units Sold during 1946.	Compared with 1945.	
		Units.	Percentage.
Cape Town .. .. .	184,618,905	+ 18,761,295	+11.312
Durban .. .. .	369,659,142	+ 20,918,213	+ 5.998
Klip .. .. .	2,614,328,036	—28,711,669	—1.086
Natal Central .. .. .	347,006,541	+13,813,781	+ 4.146
Sabie .. .. .	7,408,010	+ 811,151	+12.296
Vaal .. .. .	582,485,354	+204,583,319	+54.137
Witbank .. .. .	896,892,060	+66,157,454	+ 7.964
<b>TOTALS .. .. .</b>	<b>5,002,398,048</b>	<b>+296,333,544</b>	<b>+6.297</b>

Units sold in 1946 to the various classes of consumers, and the comparison with the previous year's sales are shown in the following table:—

Class of Supply	1946.	Percentage Increase over 1945.
<b>Bulk Supplies :</b>		
Mining, etc. ....	3,813,114,693	6.656
Municipal .....	434,739,226	5.928
<b>Direct Supplies for :</b>		
Traction .....	457,868,639	5.143
Mining .....	71,140,244	6.921
Industrial .....	192,010,042	1.107
Domestic and Street Lighting .....	33,525,204	17.318
	<b>5,002,398,048</b>	<b>6.297</b>

"Bulk Supplies for Mining, etc.," represents practically the whole output of the Commission's Klip and Vaal Power Stations, and a large proportion of the output of its Witbank Power Station. These stations supplied approximately 66 per cent. of the 6,019 million units of electricity consumed by the gold mining and other industries and municipalities along the Witwatersrand during 1946.

SUB-DIVISION OF  
**TOTAL PRODUCTION COSTS**  
 FOR THE YEAR 1946



A large proportion of the electricity supplied in bulk to municipalities was used for domestic and lighting purposes.

The following figures show the increase in production of electricity by the Commission's power stations connected to the Rand Grid System, and emphasise the value of Vaal Power Station which commenced operation in January, 1945:—

Year.	Klip.	Witbank.	Vaal.	Total.
1944 ... ..	2,703,638,629	769,926,928	—	3,473,565,557
1945 ... ..	2,643,039,705	709,541,784	377,902,035	3,730,483,524
1946 ... ..	2,614,328,036	772,752,268	582,485,354	3,969,565,658

A chart showing the development of electricity sales year by year is reproduced on page 12. Units sold to all consumers during the past 22 years from the Commission's various Undertakings are shown in Statement No. 3 of Annexure "B" to this Report.

## FINANCIAL.

### Loan Capital.

A loan of £3,000,000 bearing interest at 3 per cent. per annum was raised at par on 26th September, 1946, redeemable on 28th February, 1967/73. The loan was heavily 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 £2,752,262 had been received, which increased the Commission's loan capital at the date of the Balance Sheet to £27,002,262. The amount outstanding at 31st December, 1946, was £247,738 and this has since been received.

Reserve  
and  
Redemption  
Funds.

The amount in the Reserve Fund at 31st December, 1946, stood at £2,202,165, and the Redemption Fund at that date amounted to £7,094,645, 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.

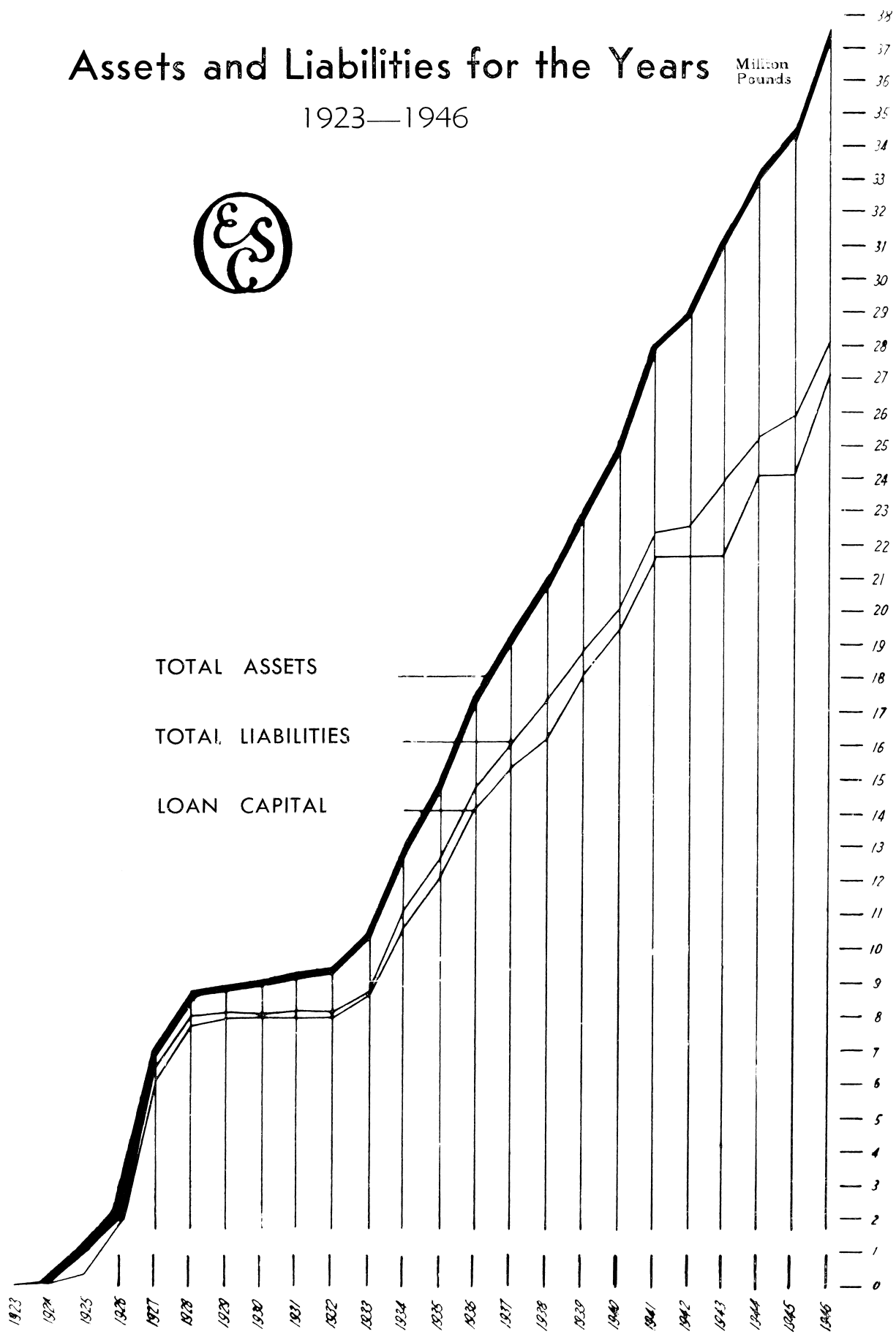
**Investments.**

The book value of securities, representing investments in Government, Municipal, Rand Water Board and Electricity Supply Commission stocks, and First Mortgages on Freehold

# Assets and Liabilities for the Years

1923—1946

Million Pounds





Properties, held by the Commission on behalf of the various funds at 31st December, 1946, was £9,624,920, the nominal value being £9,633,112. The market value of these investments at that date was £10,134,353.

**Capital  
Expenditure.**

Expenditure on Capital Account during the year amounted to £1,469,648, which brought the total capital expenditure at 31st December, 1946, to £26,426,396. Expenditure on Capital Account will amount to approximately £30,900,000 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, 1946, amounted to £37,517,409, and its total liabilities to £28,104,360, the excess of assets (as shown in the Balance Sheet) over liabilities being £9,413,049. A graph showing the growth of assets and liabilities since 1923 is reproduced on the opposite page.

Revenue, production costs and other important figures relating to the operation of the Commission's Undertakings during the year 1946, with the comparative figures for 1945, are as follows:—

	1946.	1945.	Increase.
Revenue as per Revenue Account .....	*£4,100,361	£3,770,631	8.74%
Total Production Costs (including interest, redemption and reserve fund charges) .....	£4,095,659	£3,787,754	8.13%
Excess of Revenue over Production Costs .....	£4,702	£17,123	£21,825
		(Deficit)	
Net Revenue .....	*£4,091,467	*£3,753,660	9.00%
Average price per unit sold .....	*0.1906d.	*0.1862d.	2.40%
Average revenue per unit sold (including Sundry Revenue) .....	*0.1962d.	*0.1912d.	2.59%
Average cost per unit sold .....	0.1964d.	0.1930d.	1.77%
Total cost of coal consumed (including Railage) .....	£1,284,463	£1,169,445	9.84%
Railage on coal consumed .....	£364,689	£340,032	7.25%
Coal consumed (in tons of 2,000 lbs.)	4,208,008	4,010,683	4.92%

\*After deducting further adjustments of £8,894 in 1946, and £16,971 in 1945, shown in lower sections of the Revenue Accounts of the Witbank Undertaking.

A diagram showing the sub-division of the Commission's total production costs for the year 1946 is reproduced on page 14.

## 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 £36,063 at 31st December, 1946, of which amount £26,120 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.

**Personnel.**

The staff employed by the Commission as at 31st December, 1946, numbered 1,836 (an increase of 305 during the year), made up as follows:—

Europeans increased from .....	707	to	794
Non-Europeans increased from .....	824	to	1,042
	<u>1,531</u>		<u>1,836</u>
	==		==

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 Co. Ltd. on behalf of the Commission.

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.

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COMMISSION'S UNDERTAKINGS.

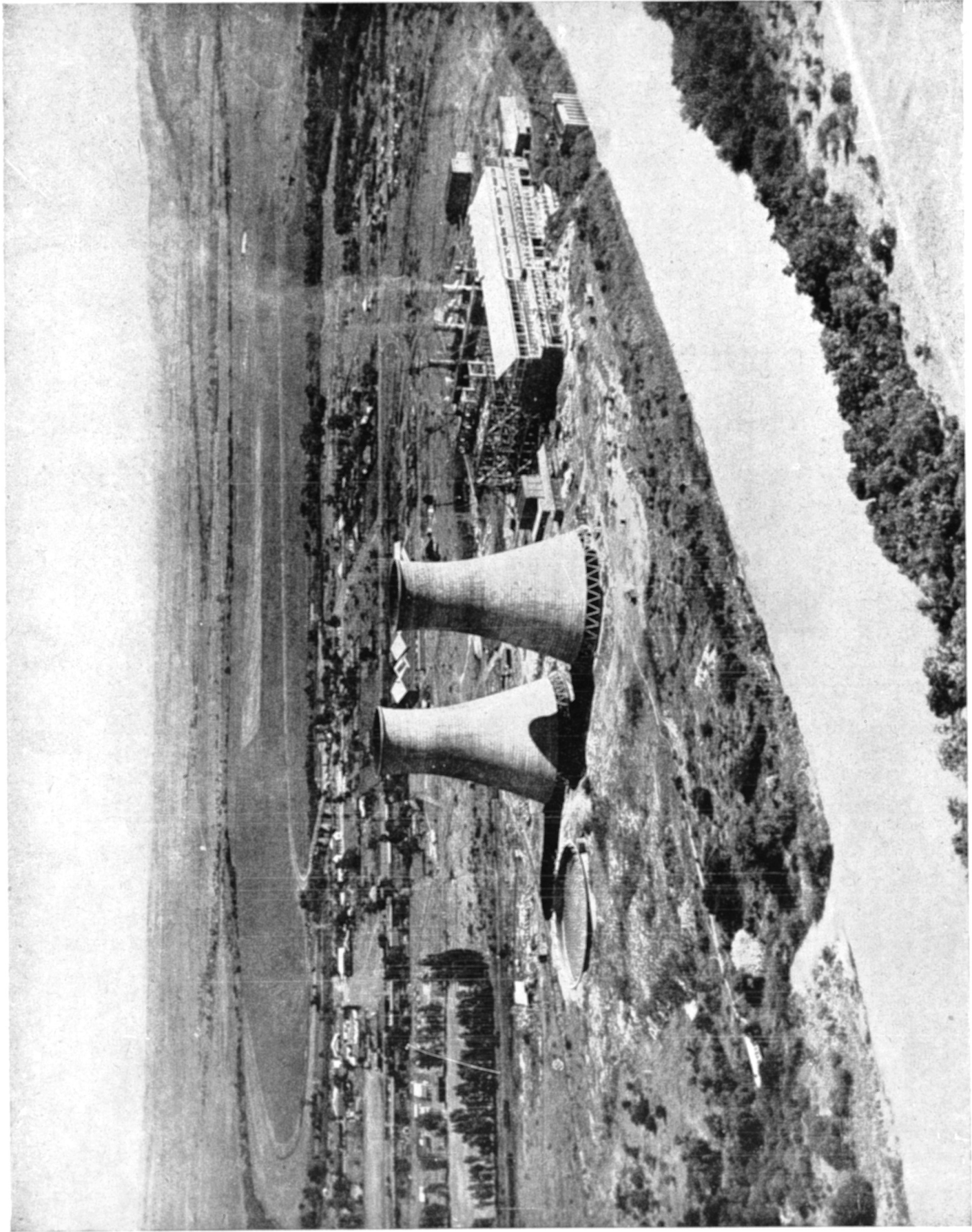
The operations and developments of the individual Undertakings are reviewed in detail in the following pages.

[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.]

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Aerial view of the Colenso Power Station showing the new extensions, cooling towers and pond for future cooling tower.

(Photo by courtesy of Claud L. Woodroffe, Dundee, Natal)

## NATAL CENTRAL UNDERTAKING.

Colenso  
Power  
Station  
Extensions.

Work has proceeded steadily on the Colenso Power Station extensions started in 1945, comprising one 25,000 kW alternator and two 180,000 lb. per hour boilers, with two cooling towers and the necessary ancillaries. The plant is now arriving on site, and good progress is being made with the erection of the steelwork of the boiler house, and the turbine house brickwork.

In last year's Report it was stated that the new plant should be in service by the end of 1947, but delays in manufacture overseas necessitate advancing this date to about mid-1948.

Harrismith-  
Bethlehem  
88 kV Line  
Reconstruction

During the period under review, work was completed on the new 88 kV line from Harrismith to Bethlehem on reinforced concrete structures, and the line has been in service since 3rd November, 1946. This new line, in place of the old one along the railway, was commissioned in order to free the telecommunication service from inductive interference. The original line, on track structures, is being retained as an emergency standby to the new line and will not normally be energised.

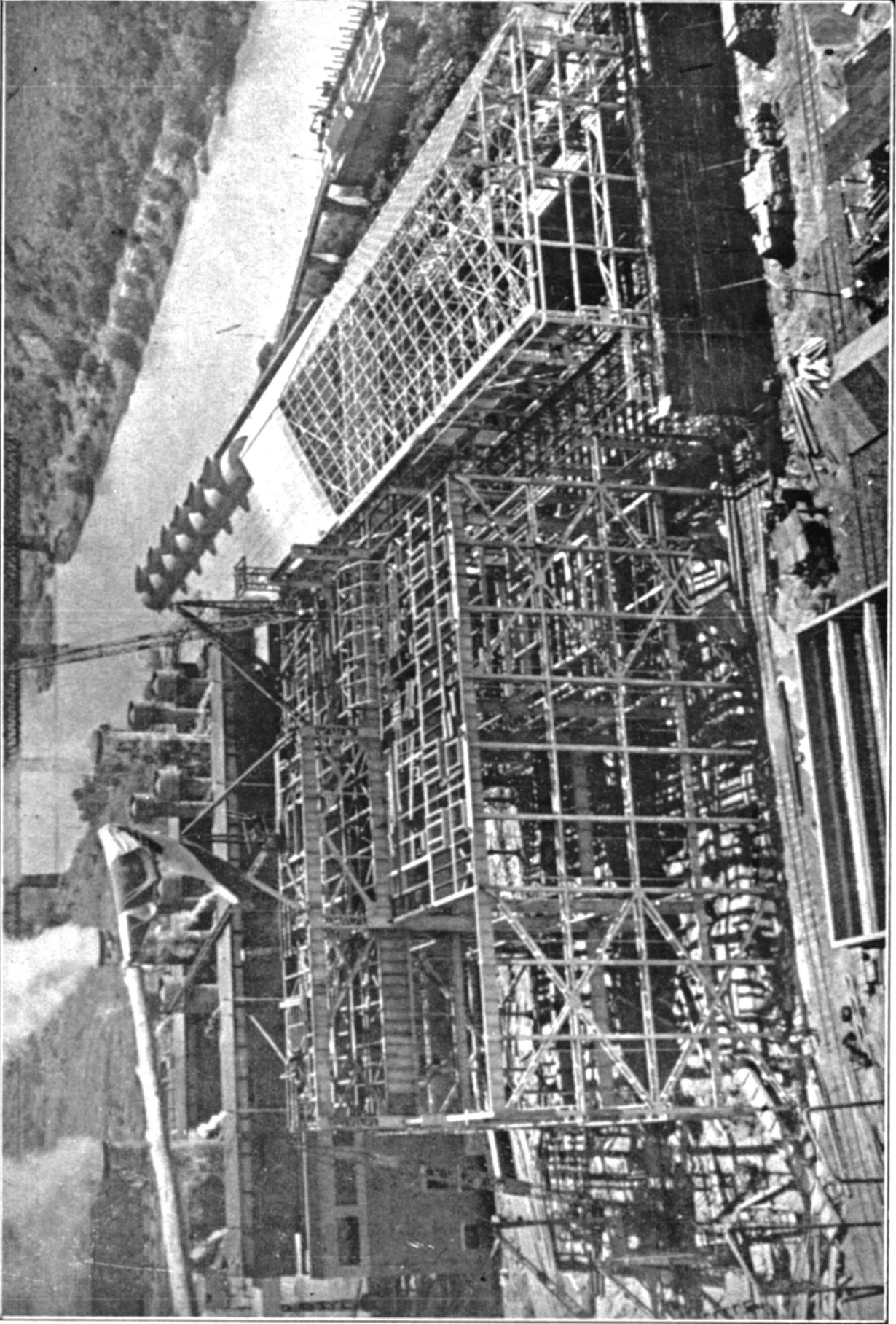
Glencoe-  
Newcastle  
88 kV  
lines.

The first cross-country 88 kV line between Glencoe and Newcastle is to be built by converting the existing 33 kV line to the higher voltage. At the date of this Report, not all the material for the work had yet reached the site, but it is expected that the conversion will be completed by the end of 1947.

Due to the prevailing acute shortage of materials, the Commission has decided to await more favourable conditions before proceeding with the construction of the second cross-country 88 kV line between the two towns. Only when this second line is in service will it be feasible to remove the existing line from its route along the railway.

Reticulation  
of electricity  
in Newcastle  
Municipality.

After an agreement had been successfully negotiated with the Newcastle Municipality whereby the Commission was to undertake the distribution of electricity within the Borough, the Administrator of Natal, whose sanction to the agreement was required, decided that it would be in the best interests of the Municipality to continue to take a bulk supply of electricity from the Commission and, although the Commission and the Borough Council disagreed with this view, the scheme was abandoned.



Good progress is being made with the construction of the boiler house and turbine house at the Colenso Power Station. (Photo by courtesy of B. D. Pickles)

**Newcastle  
Substation.**

Work is well in hand with the construction of an 88 kV substation at Newcastle, which will be the main distribution centre for this part of Natal. The steelwork has been erected, and the building is complete. The plant is arriving from overseas at a satisfactory rate.

**Other  
major  
developments.**

Since the establishment of the Undertaking, most industrial loads have been within the capacity of the transformers installed at substations for traction supplies to the Railways. The establishment of new industries, and rapid growth in the demand now render inadequate the existing equipment. Extensions are therefore being undertaken at Estcourt, Cedara and Wessels Nek, to provide for expansion. In addition, the six 2,400 kVA local supply transformers at Pietermaritzburg are being replaced by three units each of 9,000 kVA capacity, to provide for growth of load. The replaced transformers will be readily absorbed elsewhere on the system.

**Railway  
Electrification:  
Rossburgh-  
Hillcrest.**

Work on the installation of the rectifier plant in the two substations on the Rossburgh-Hillcrest section is still in abeyance, as the Railway Administration has in hand major alterations to the track, involving a considerable amount of civil work, and the electrification of this section will not be proceeded with until these alterations have been completed.

**Ladysmith-  
Harrismith  
Section.**

Modification of the existing substation at Colworth was completed, and the substation put into service, on September 9th, 1946. Thus the redistribution and modification of existing rectifier equipment and the provision of new substations, begun in 1939, has now been completed, with the exception of the new substation at Swinburne, erection of which has been delayed owing to shortage of building materials; its completion is, however, expected during 1947.

**Natal  
Main  
Line.**

Early in 1946 it was decided to embark on a comprehensive programme of reconstruction and modernisation of plant at rectifier traction substations on the Natal main line, most of which has been in service since 1936.

As a result of frequent failures of the rectifier transformers at these substations, even after repairs and improvements had been effected locally, certain inherent weaknesses in design were brought to light. In view of the vital importance of these transformers to the electrified railway system, it was decided.

with the concurrence of the Railway Administration, that new ones should be purchased.

Accordingly a new and comprehensive specification, based on operating experience, was drawn up, and tenders were invited for new transformers.

The makers, in addition to tendering for new ones, made an alternative offer for the complete reconstruction of the transformers at their factory in England, with an assurance that they would then meet all the requirements of the new specification. The offer was very attractive, as it avoided the scrapping of the existing transformers.

To decide whether the proposed reconstruction could be satisfactorily carried out, one of the faulty transformers was sent to the makers' factory for experimental reconstruction. On completion of the work, one of the Commission's engineers, accompanied by an engineer of the Railway Administration, proceeded overseas to inspect the transformer and to witness works tests on it.

These engineers were fully satisfied with the design and workmanship, and expressed their confidence that transformers so reconstructed would be equal to, if not better than, new transformers manufactured by any other firm which had not had the gruelling experience of the original makers.

Accordingly an order was placed for the reconstruction of the seventeen transformers concerned, and this resulted in a saving of over £35,000 as compared with the cost of new equipment.

As it is essential that supply to the traction system be maintained, the transformers can be sent overseas only two or three at a time. This being so, and in view of inevitable transport delays under prevailing conditions, it is not anticipated that this work will be completed before 1948.

Thus reconstructed transformers will become available from time to time, and it will be possible gradually to improve the reliability of the substation plant. In view of the shortages of steel and other raw materials which overseas manufacturers are at present experiencing, the manufacture of new transformers would inevitably have been considerably delayed, and



delivery, even by the end of 1948, would have been most unlikely, judging by the Commission's experience with orders for new rectifier transformers for use elsewhere, delivery of which is expected to be at least eighteen months later than promised.

**Capital Expenditure.**

The capital expenditure on the Natal Central Undertaking during the year amounted to £261,206, bringing the total as at 31st December, 1946, up to £4,854,396.

**Output.**

The units sent out from Colenso Power Station in 1946 totalled 367,023,210, an increase of 2.53 per cent. over the output for the previous year.

**Sales.**

The total sales of electricity from the Undertaking for the year amounted to 347,006,541 units, and show an increase of 4.146 per cent. by comparison with the previous year's sales. Traction supplies were up by 2.8 per cent. and sales to all other classes of consumers show an increase. Electricity supplied to the Durban Undertaking under the interchange arrangements amounted to 708,200 as against 4,198,100 units in 1945. These units are not included in the total sales.

Sales to the various classes of consumers, the corresponding revenue, and the average price per unit sold are summarised hereunder:—

CONSUMERS.		SALES.		Revenue	Average Price Per Unit Sold.	
Class.	No.	Units.	Increase.		1945.	1946.
			%	£	d.	d.
Traction .....	1	263,752,629	2.80	440,840	.4049	.4011
Bulk .....	11	56,585,802	8.85	120,789	.5170	.5123
Industrial ...	221	22,638,932	7.90	58,418	.6218	.6193
Domestic & Lighting	2,215	4,029,178	9.88	31,322	1.9052	1.8657
	2,448	347,006,541	4.146	651,369	.4526	.4505

Of the total number of consumers supplied by the Undertaking at 31st December, 1946, 163 comprised farm connections, an increase of 25 on last year.

Other Farm Supply Schemes will be undertaken as and when the necessary material and labour become available. No early improvement in this connection can, however, be expected as the indications are that most of the materials which have to be imported will still be in short supply for some time.

**Working  
Results.**

The total working costs for the year amounted to £669,493 and the revenue to £658,690. The deficit of £10,803 on the year's working of the Undertaking reduced the brought forward surplus to £11,708.

The maximum half-hourly demand sent out was 62,900 kW and the load factor was 66.6 per cent. The thermal efficiency of the power station on units sent out dropped from 17.82 per cent. in 1945 to 17.62 per cent. in 1946.

**Coal  
Consumption.**

The coal consumption for the year 1946 amounted to 289,668 tons (or an average of 1.578 lbs. per unit sent out) at a total cost of £157,987. The average price per ton of coal delivered increased by 3d. from 10s. 8d. in 1945 to 10s. 11d. in 1946.

## WITBANK UNDERTAKING.

While the year under review has seen no major developments at this Undertaking there have been a number of important new connections and work has proceeded on projects mentioned in the last report to supply the increasing demand from collieries.

All materials are now on order for the scheme to augment supplies to the South-Western coal mining areas and work should be completed during the coming year. Twenty-five miles of 88 kV line from Witbank are involved to feed a step-down substation on the farm Middeldrift which will be a main distribution centre for the surrounding district.

The Bethal Municipality has approached the Commission for a bulk supply of electricity as its own generating plant was not in a position to meet increased demands. An emergency supply will be made available towards the end of 1947 by the erection of approximately 25 miles of 88 kV line from Middeldrift where, as a temporary measure, it will be connected to the existing 21 kV network.

Owing to the acute shortage of steel in the Union the whole of the new Witbank-Middeldrift-Bethal line will be carried on reinforced concrete masts built up on site.

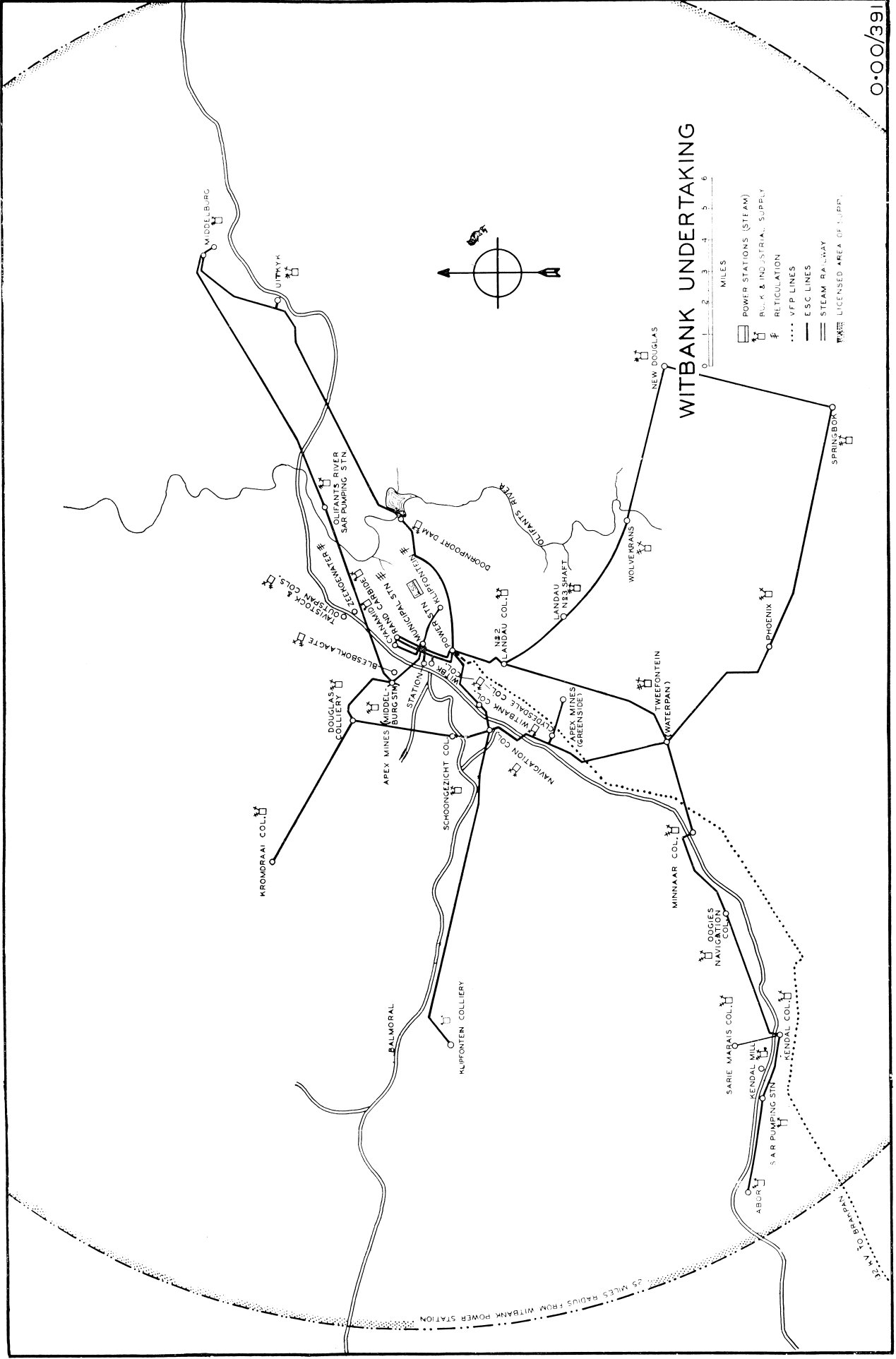
At this Undertaking, as elsewhere, work has been hampered by late delivery of materials, but most of the schemes for collieries reported last year have been completed, although in some cases on a temporary basis, and development work is proceeding. New connections include the South Witbank and New Albion Collieries.

The 21 kV transmission line to the new Klipfontein Colliery will shortly be extended to Bronkhorstspruit, and it is expected that supplies for this town, where distribution will be undertaken by the Commission, will be available early in 1948. It is expected that the necessary agreement will shortly be signed.

The new traction substation at Elandsfontein was completed and put into commercial operation on 15th April, 1946.

As the rectifier plant for the new traction substations at Krugersdorp and Maraisburg is still in use at Maitland, Cape Province, no work could be carried out on these substations during 1946.





**Output.**

The units sent out from the Witbank Power Station during 1946 totalled 772,752,268, which, compared with the previous year's output, shows an increase of 8.91 per cent.

**Sales.**

Sales of electricity from the Witbank Undertaking amounted to 896,892,060 units for the year, including 123,782,891 units purchased by the Commission from The Victoria Falls and Transvaal Power Co. Ltd. and the Pretoria Municipality, for railway traction supplies for the Reef and Pretoria electrification systems. Total sales were 66,157,454 units or 7.964 per cent. higher than in 1945.

Bulk sales to the Falls Company increased by 62,078,919 units or 11.201 per cent. and represented 68.72 per cent. of the total. The Company operates the Witbank Power Station on behalf of the Commission as an inter-connected unit of the Witwatersrand Grid system which supplies power to the gold mining industry.

Sales to the various classes of consumers, the corresponding net revenue, and the average price per unit sold are summarised hereunder:—

CONSUMERS.		SALES.		Net Revenue	Average Price Per Unit Sold.	
Class.	No.	Units.	Increase.		1945.	1946.
			%	£	d.	d.
Traction .....	1	123,782,891	5.31	205,820	.3968	.3991
Bulk .....	2	618,059,603	10.42	245,379	.1021	.0953
Industrial ...	98	152,664,825	0.90	139,025	.1984	.2186
Domestic & Lighting	1,034	2,384,741	9.37	9,568	.9214	.9629
	1,135	896,892,060	7.96	599,792	.1635	.1605

**Capital Expenditure.**

The capital expenditure on this Undertaking as at 31st December, 1946, was £2,793,785.

**Working Results.**

The working costs for the year amounted to £619,802, and the net revenue, after allowing for two-thirds of the rebate to consumers in the Local and Municipal Supplies Section of the Undertaking, totalled £618,256, leaving a deficit of £1,546 on the year's working. The remaining one-third of the rebate, amounting to £8,894, was deducted from the accumulated surplus, which was reduced to a credit balance of £8,777 at the year-end.

The maximum hourly demand sent out was 108,547 kW and the load factor was 81.3 per cent. The thermal efficiency on units sent out was 17.35 per cent.

**Coal  
Consumption.**

Coal consumption for the year 1946 amounted to 688,831 tons (an average of 1.783 lbs. per unit sent out) at a total cost of £95,021. The average price per ton consumed in 1946 was 2s. 9d., against 2s. 4d. in 1945. The figures include haulage by the Commission's transport from adjoining collieries.

## CAPE TOWN UNDERTAKING.

**Pooled  
Stations.**

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

**Table  
Bay  
Extensions.**

Due to late delivery of materials, continued delay was experienced in the extension of the Table Bay Power Station building, required for the installation of the fourth 40,000 kW Turbo-Alternator Set, and further delay is expected in delivery of the plant and machinery. Consequently, difficulty is anticipated in meeting, with the existing plant, the load required during the winter of 1947.

Still further extensions at Table Bay Power Station will be necessary to meet the increase in load growth which will result from the Railway Administration's projects for electrification of the line to Somerset West and the Stellenbosch loop line and also the revamping of the suburban and Cape Flats line to operate at 3,000 instead of 1,500 volts D.C. It was accordingly decided, in November, 1946, to purchase a fifth 40,000 kW Turbo-Alternator. It is expected that work in connection with this latest installation will be completed during the years 1949/50, and the Table Bay Power Station will then reach its designed capacity of five 40,000 kW Turbo-Alternator Sets.

**Proposed  
Extensions  
of Supply.**

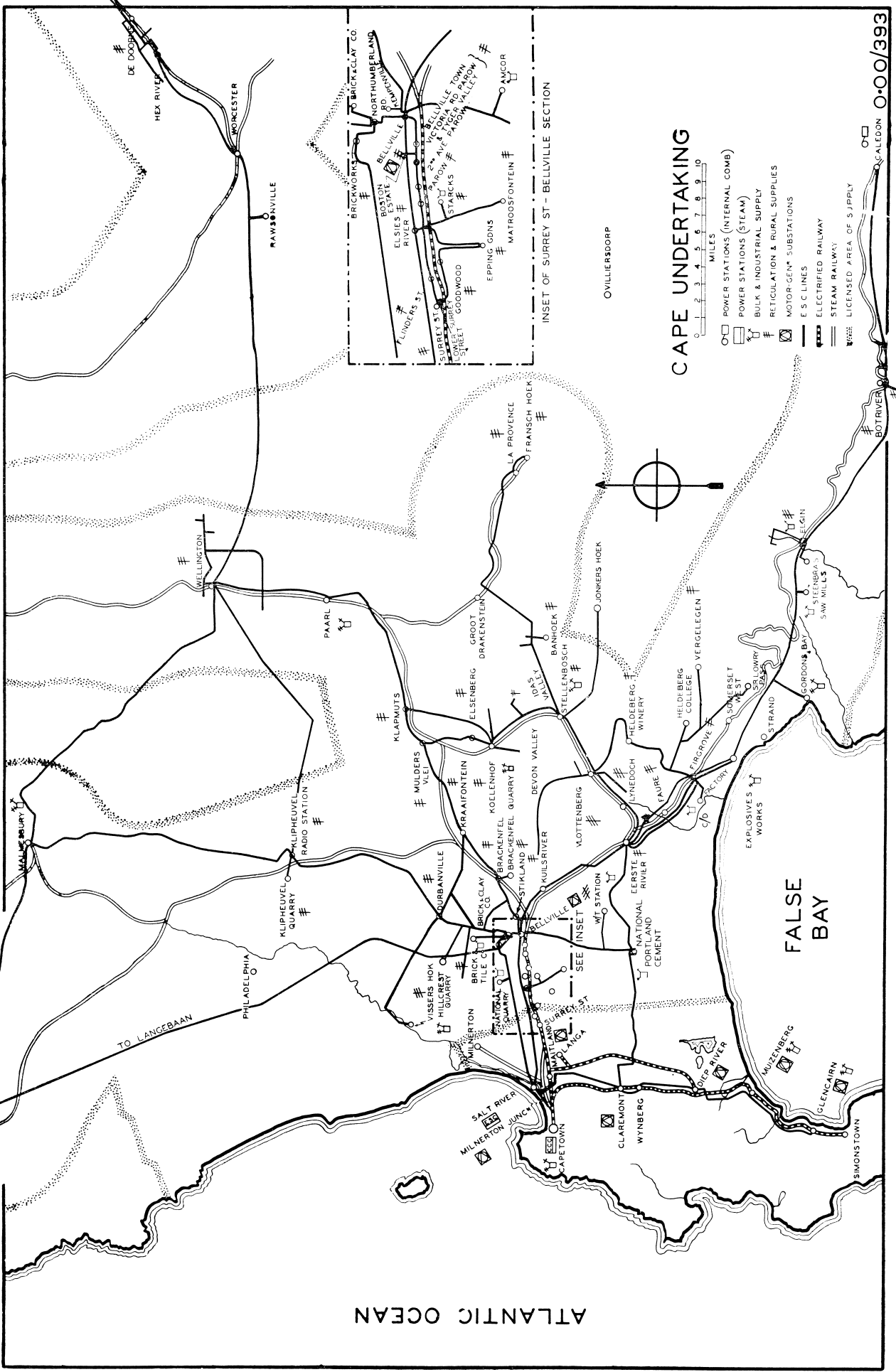
Negotiations are proceeding with the Municipalities of Robertson and Montagu for the provision of bulk supplies to these towns, and it is confidently expected that agreements will be concluded in the near future. Initial requirements for Robertson are estimated at 600 kVA maximum demand, with a consumption of 2,500,000 units per annum; but, in view of the potentialities of the district, these figures should show a considerable progressive increase. Initial demand for Montagu is estimated at 400 kVA with annual consumption at 1,500,000 units.

**Langebaan-  
weg.**

Erection of the 33 kV transmission line, to supply the aerodrome at Langebaanweg, has proceeded slowly but satisfactorily. Problems of labour and material have eased somewhat, and the work is nearing completion.

**Relief  
Transmission  
line  
Klip-  
heuvel-  
Wellington.**

To meet increasing demands by the municipalities of Paarl and Worcester and the de Doorns Valley Farmers' Scheme, together with the load resulting from the linking-up of Wellington.



**CAPE UNDERTAKING**

- POWER STATIONS (INTERNAL COMB)
- POWER STATIONS (STEAM)
- BULK & INDUSTRIAL SUPPLY
- RETICULATION & RURAL SUPPLIES
- MOTOR-GEN. SUBSTATIONS
- E.S.C. LINES
- ELECTRICIFIED RAILWAY
- STEAM RAILWAY
- LICENSED AREA OF SUPPLY

0 1 2 3 4 5 6 7 8 9 10  
MILES

0.00/393

ATLANTIC OCEAN

FALSE BAY

INSET OF SURREY ST - BELLVILLE SECTION

ton Municipality, a supplementary 88 kV line, initially operating at 33 kV, has been constructed over the 18.1 miles from Klipheувel to Wellington, on Truscon steel masts. The line came into service in May, 1946.

New consumers.

New connections during the year included 70 industrial and 1,014 domestic consumers. Farm connections totalled 549 at the year's end, compared with 489 at the end of 1945. Further Farm Schemes are contemplated; but again it must be emphasised that progress in this connection is dependent upon the availability of material and labour.

The number of consumers under reticulation schemes was 9,816 in 1946 against 5,296 in 1939. At the end of March, 1947, the figure had increased to 10,241.

An additional 241 houses built by the Citizens' Housing League and Utility Construction Company at Epping Garden Village are being connected as materials become available, and 148 new houses under control of the National Housing Commission in the Parow/Bellville area have been connected.

Development of urban distribution.

To cater for increased industrial and domestic demand in the Goodwood, Elsies River, Parow and Bellville areas of supply, material is on order for the erection of eight additional local reticulation 12 kV substations, the estimated cost of the work being £92,409.

S.A.R. & H. Supplies.

The unfortunate failures which have occurred in traction supplies for the Cape Town suburban service have been due to the impossibility of obtaining urgently needed equipment. Existing substations have been in operation for 20 years and were never intended to carry the load which is entailed by the enormous increase in traffic. Whereas more than 200,000 passengers are now carried daily, ten years ago the figure rarely exceeded 100,000.

Everything possible is being done to expedite delivery of the new equipment. Meanwhile temporary expedients are being carried out in close co-operation with the Railway Administration to alleviate the position pending the delivery of new substation plant for the conversion of the system from 1,500 to 3,000 volts D.C. operation.

Work on two new and independent points of supply for the Duncan Basin Graving Dock and the Harbour Network from the Salt River Power Station has been completed.

**Capital Expenditure.**

Capital expenditure on the Cape Town Undertaking was increased during the year by £112,990, bringing the total as at 31st December, 1946, up to £3,302,337. This excludes capital expenditure on the Table Bay Power Station, which is owned by the Cape Town Corporation.

**Output.**

The total number of units sent out from the pooled power stations in 1946 was 615,664,819. Of this, Salt River Power Station sent out 149,438,371 units, an increase of 13.82 per cent. over the figure for the previous year.

**Sales.**

Sales of electricity to all classes of consumers supplied by the Commission from this Undertaking amounted to 184,618,905 units in 1946, an increase of 11.31 per cent. compared with 1945.

A summary of sales to the various classes of consumers, the corresponding revenue, and the average price per unit sold is given below:—

CONSUMERS.		SALES.		Revenue	Average Price Per Unit Sold.	
Class.	No.	Units.	Increase.		1945.	1946.
			%	£	d.	d.
Traction .....	1	70,333,119	14.60	192,173	.6573	.6558
Bulk .....	8	30,009,954	9.64	83,890	.6761	.6709
Industrial ...	657	61,287,459	5.90	190,421	.7280	.7457
Domestic & Lighting	9,241	22,988,373	19.49	122,338	1.3336	1.2772
	9,907	184,618,905	11.31	588,822	.7635	.7655

**Working Results.**

Working costs for the year, including the Commission's share of the pooled cost of the Salt River, Table Bay and Dock Road Power Stations, amounted to £568,185, the corresponding revenue being £590,925. The surplus of £22,740 increased the accumulated surplus to £45,552. It must, however, be emphasised that the current surplus is due, in no small degree, to the difficulty of spending money on renewals and maintenance because of shortage of materials, and heavy expenditure awaits this Undertaking when supplies become more freely available.

The maximum half-hourly demand sent out from Salt River Power Station was 59,400 kW, and the load factor, calculated on 8,736 hours, was 28.80 per cent. The thermal efficiency of the power station on units sent out was 16.91 per cent., which shows a slight improvement on the figure for the previous year. By

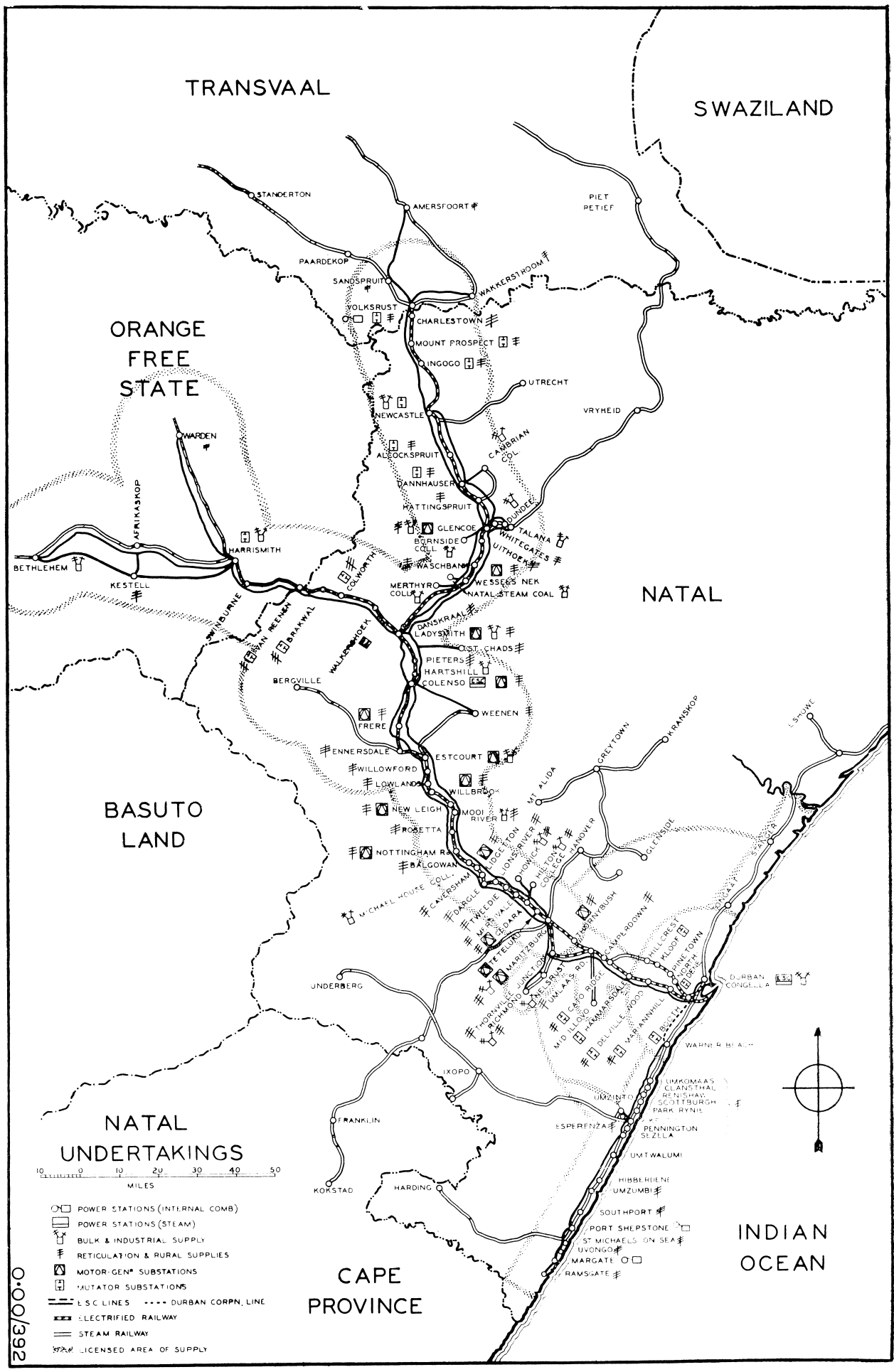
comparison, the thermal efficiency of the Table Bay Power Station, which carried the base load, was 24.10 per cent. in 1946. The overall efficiency of the pooled stations was 21.94 per cent.

**Coal  
Consumption.**

The coal consumption for the year 1946 at Salt River Power Station amounted to 124,896 tons (or an average of 1.672 lbs. per unit sent out) at a total cost of £160,865. The average price per ton of coal delivered increased by 5d. from 25s. 4d. in 1945 to 25s. 9d. in 1946.

Precarious coal supplies have been a source of anxiety to the Undertaking. At times it was not possible to purchase full requirements of pea coal, and resort was had to the use of round coal, locally crushed, which entailed increased expense and decreased combustion efficiency.





TRANSVAAL

SWAZILAND

ORANGE  
FREE  
STATE

NATAL

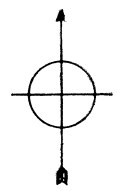
BASUTO  
LAND

NATAL  
UNDERTAKINGS

0 10 20 30 40 50  
MILES

- ☐ POWER STATIONS (INTERNAL COMB)
- ☐ POWER STATIONS (STEAM)
- ☐ BULK & INDUSTRIAL SUPPLY
- ☐ RETICULATION & RURAL SUPPLIES
- ☐ MOTOR-GEN<sup>a</sup> SUBSTATIONS
- ☐ MUTATOR SUBSTATIONS
- L.S.C. LINES    - - - DURBAN CORPN. LINE
- ELECTRIFIED RAILWAY
- STEAM RAILWAY
- ☐ LICENSED AREA OF SUPPLY

0.00/392



CAPE  
PROVINCE

INDIAN  
OCEAN

## DURBAN UNDERTAKING.

Dust  
Nuisance.

Despite difficulties and inevitable delays, progress is being made with the Commission's plans for alleviating the inconvenience and discomfort caused to residents of the surrounding area by emission of coal dust and ash deposits from the Congella Power Station.

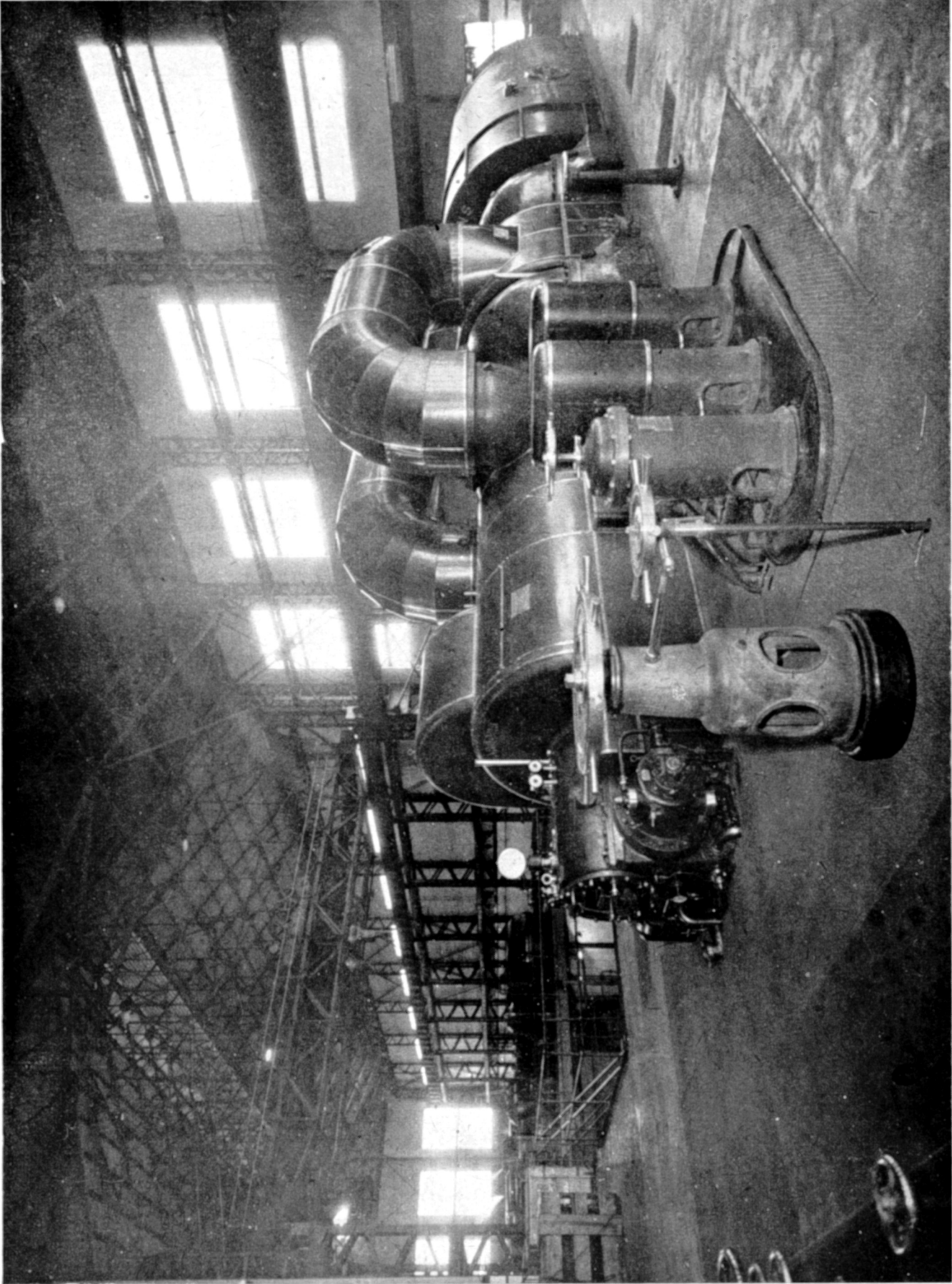
The efforts being made and the results achieved are limited only by delays in delivery of the necessary corrective equipment, and by the fact that all plant in operation is loaded to its utmost capacity. It has proved impossible to obtain new generating plant fast enough to cope with the rapidly increasing demand.

However, some of the modern and efficient dust precipitator equipment on order for No. 1 boiler house, for all boilers not yet so fitted, is expected from Great Britain before the end of 1947, and construction of the housing for this plant has begun. Work is proceeding as expeditiously as possible, bearing in mind that loading conditions permit the boilers to be taken out of service only one at a time, and then for limited periods only.

The new or No. 2 boiler house also carries very high loads, and this at times has caused unavoidable interruptions in carrying out modifications to the electrostatic dust-precipitators on boilers Nos. 11, 12 and 13. There have also been delays in delivery of the necessary material. Nevertheless, the alterations so far made have effected a considerable improvement in the operation of the precipitators, although this has been offset to some extent by the increased load carried.

Completion of two further boilers, Nos. 14 and 16, which it was hoped to have available for the winter peak load of 1947, has been held up by the non-arrival of the necessary plant. Dust extraction, as in the case of No. 1 boiler house, will be by modern electrostatic precipitators.

Work has begun on the two new 300 ft. concrete and brick chimneys which will take the outlet gases from No. 1 boiler house. On completion of these and the installation of new precipitators, having a guaranteed efficiency of 98%, only a wisp of smoke will appear, and a very small quantity of fly-ash will be spread over a wide area. When in addition the modification



The new 40,000 KW turbo-generator in the No. 2 station of the Durban Undertaking.

of precipitators in No. 2 boiler house has been effected, the dust nuisance at Congella should cease.

**Plant  
Installed.**

A new 40,000 kW turbo-generator, the first machine in No. 2 station, was put on load on 27th February, 1946. A second set is in process of erection and should be in operation early in 1948 and further to meet the constantly growing demand for electricity, a third of these sets was ordered early in 1947; but under present conditions delivery of this cannot be expected before 1950.

**Port  
Shepstone  
Power  
Station.**

The 1,493 h.p. diesel engine with 1,000 kW alternator, which last year's Report anticipated might be in operation during 1947, has not yet been manufactured and the latest advice is that it is unlikely to arrive before 1948.

**Supplies  
for South  
Coast.**

To provide not only for the increase in load along the South Coast but also for the requirements of a new cement factory at Port Shepstone and to ensure continuity of supply, it has been decided to construct a duplicate 88 kV line inland along the South Coast to Port Shepstone. The first section will be approximately half the length of the ultimate line and construction will commence on completion of the survey of the route and negotiation of the servitudes.

**Capital  
Expenditure.**

The capital expenditure on the Durban Undertaking during the year amounted to £231,185, bringing the total as at 31st December, 1946, up to £3,246,667.

**Output.**

Units sent out from Congella Power Station in 1946 totalled 364,119,270; an increase of 7.724 per cent. over the previous year. The diesel stations at Margate (dismantled and sold in December, 1946) and Port Shepstone sent out 1,545 and 783,215 units, respectively, during the year.

**Sales.**

The total sales of electricity from the Undertaking for the year amounted to 369,659,142 units (excluding 1,858,900 units supplied to the Natal Central Undertaking under the interchange arrangement, but including 7,380,468 units purchased from the Durban Corporation for sale to consumers along the South Coast), an increase of 5.998 per cent. over the sales for the previous year.

Bulk sales to the Durban Corporation for supply to consumers in the municipal and peri-Durban areas increased by

6.368 per cent. to 345,091,090 units. South Coast sales for the year advanced by 15.831 per cent. to 6,563,732 units.

Sales to the various classes of consumers, the corresponding revenue and the average price per unit sold are summarised hereunder:—

CONSUMERS.		SALES.			Average Price Per Unit Sold.	
Class.	No.	Units.	Increase or Decrease.	Revenue	1945.	1946.
			%	£	d.	d.
Bulk .....	2	346,385,170	+6.396	489,174	.3149	.3389
Industrial ...	84	19,151,060	—2.723	33,047	.3808	.4141
Domestic & Lighting	1,567	4,122,912	+18.126	29,803	1.7267	1.7349
	1,653	369,659,142	+5.998	552,024	.3328	.3584

**Working Results.**

The Report submitted last year recorded a deficit of £27,310, and mentioned that an adjustment in charges would be necessary. The adjustment was made in August, 1946, and during the year under review, while revenue increased from £486,839 to £556,760, working costs rose from £512,007 to £562,425. Thus the deficit of £5,665 for the year, added to £27,310 brought forward from 1945, resulted in a total deficit of £32,975 at 31st December, 1946. As pointed out in the Auditors' Report, it is difficult to say whether any further revision in charges will be necessary, until the revised schedule has been longer in operation.

The maximum half-hourly demand sent out was 89,380 kW with a station peak of 99,700 kW and the load factor was 46.5 per cent. The thermal efficiency of the power station on units sent out rose from 16.95 to 18.32 per cent., as a result of the commissioning of No. 2 Station.

**Coal Consumption.**

The coal consumption for the year 1946 at Congella Power Station amounted to 274,890 tons (or an average of 1.510 lbs. per unit sent out) at a total cost of £214,058. The average price per ton of coal delivered increased by 3d. from 15s. 4d. in 1945 to 15s. 7d. in 1946.

## SABIE UNDERTAKING.

The three 450 kW sets installed at the Sabie hydro-electric station continued to operate satisfactorily throughout the year.

**Capital  
Expenditure.**

The capital expenditure on this Undertaking as at 31st December, 1946, remained unchanged at £96,171.

**Output  
and  
Sales.**

The generated output, 7,849,300 units, constituted a record for this Undertaking. The whole of the output is supplied to two gold mines in the district, and sales for 1946 amounted to 7,408,010 units, an increase of 12.296 per cent. on the previous year.

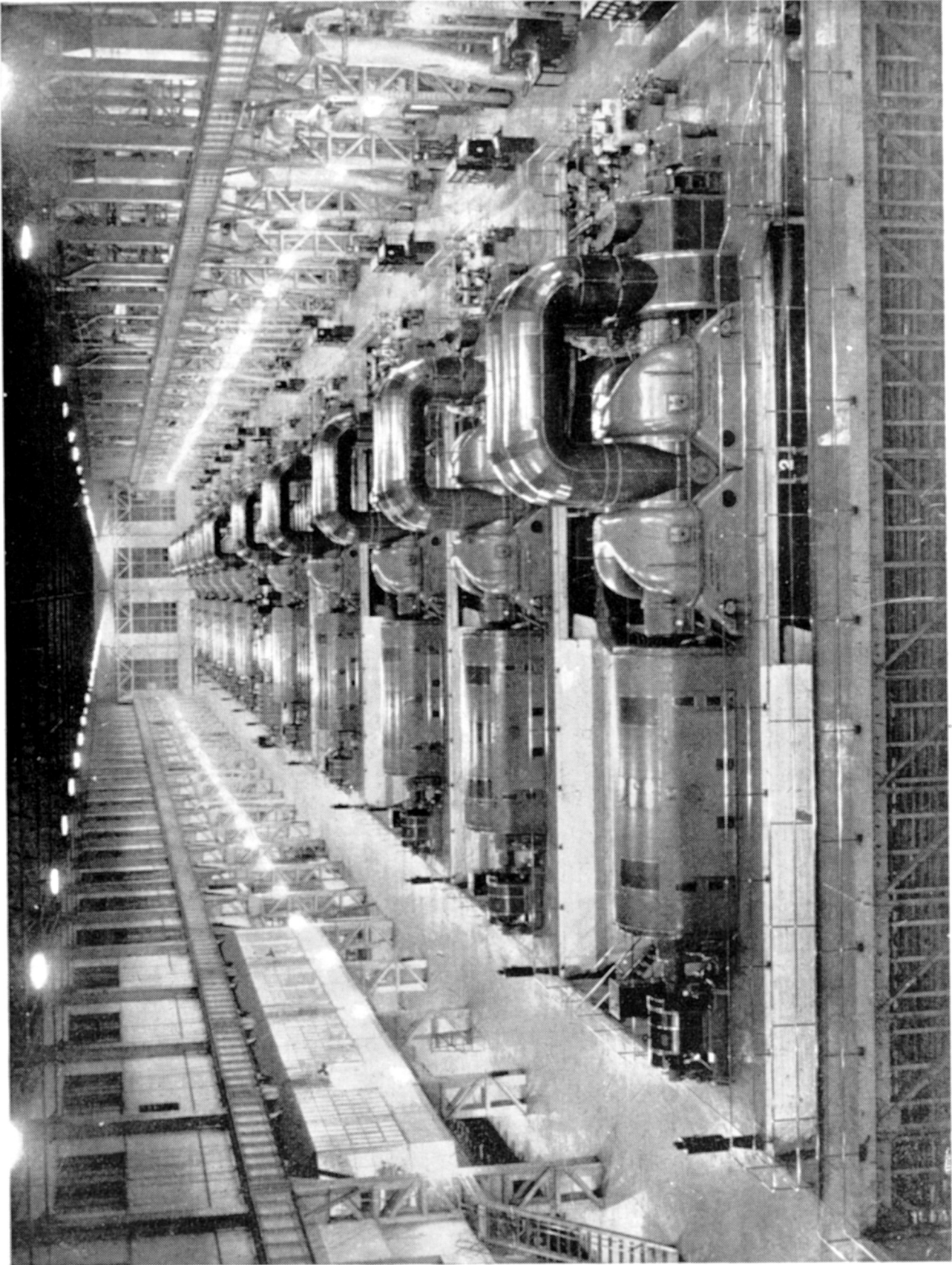
**Working  
Results.**

Working costs for the year amounted to £14,511, and revenue to £14,487, showing a small deficit of £24, which reduces the brought forward surplus to £79.

The average price per unit sold was 0.4694d. in 1946, against 0.5209d. in 1945—a reduction of 9.89 per cent.

The maximum half-hourly demand sent out was 1,280 kW (a record for the station) and the load factor was 69.2 per cent.





The twelve generating sets at the Commission's Klip Power Station.

## KLIP GENERATING STATION UNDERTAKING.

Klip, the Commission's largest power station, is operated by The Victoria Falls and Transvaal Power Co. Ltd. as a unit of the Reef Grid System. The whole output of the station's twelve main generating sets, each of 33,000 kW, is sold to the Company for supply to the gold mining industry and other consumers on the Witwatersrand.

**Output  
and  
Sales.**

Due to transfer of off-peak loading to Vaal Station, the output of 2,614,328,036 units, again records a small decline, being 1.086 per cent. below the previous year's figure.

**Capital  
Expenditure.**

The capital expenditure on this Undertaking as at 31st December, 1946, amounted to £6,569,939.

**Working  
Results.**

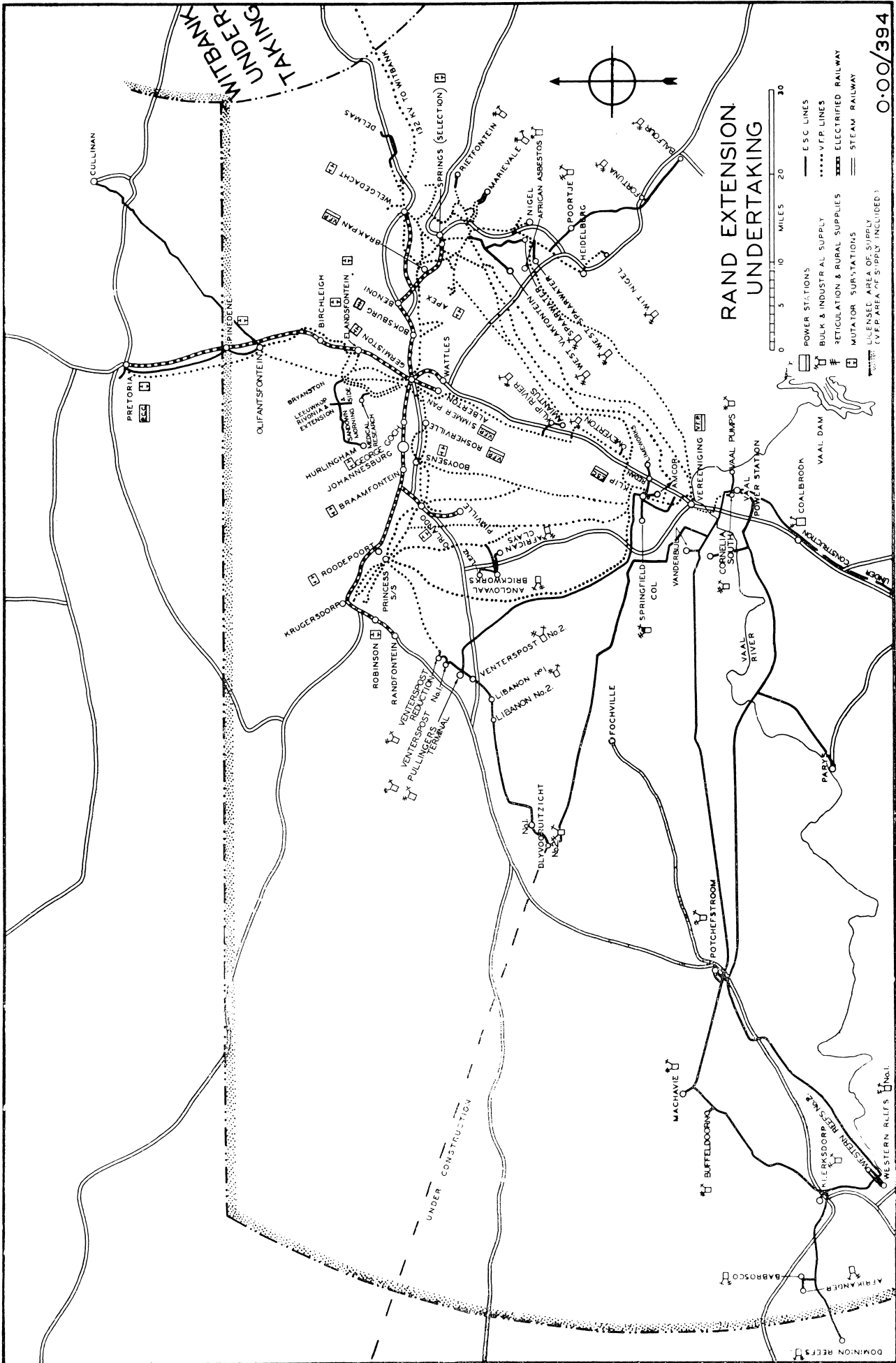
The operating costs and capital charges (interest, redemption and reserve) are paid by the Falls Company and in 1946 amounted to £1,186,875. The average price per unit sold increased by 3.37 per cent. from 0.1049d. in 1945 to 0.1084d. in 1946, due mainly to the reduced output.

The maximum hourly demand sent out in 1946 was 361,350 kW and the average load factor calculated on 8,760 hours was 82.6 per cent. The thermal efficiency of the power station on units sent out was 20.73 per cent.

**Coal  
Consumption.**

Klip Power Station consumed coal at an average rate of 269 tons per hour (or an average of 1.801 lbs. per unit sent out) at an average price of 4s. 4d. per ton, as against 4s. 2d. in 1945. The total consumption for the year was 2,354,804 tons at a cost of £514,245. No railage is incurred as coal from an adjacent colliery is screened, crushed, and delivered by conveyors to the station bunkers.





# RAND EXTENSION UNDERTAKING



- ESC LINES
- ..... VFP LINES
- ⊠ BULK & INDUSTRIAL SUPPLY
- ⊠ RETICULATION & RURAL SUPPLIES
- ⊠ ELECTRIFIED RAILWAY
- ⊠ MUTATOR SUBSTATIONS
- ⊠ STEAM RAILWAY
- ⊠ POWER STATIONS
- ⊠ LICENSED AREA OF SUPPLY (VFP AREA OF SUPPLY INCLUDED)

0.00/394

WITBANK  
UNDERTAKING

UNDER CONSTRUCTION

MAGNIFICENT RAILWAY

DOMINION REFS

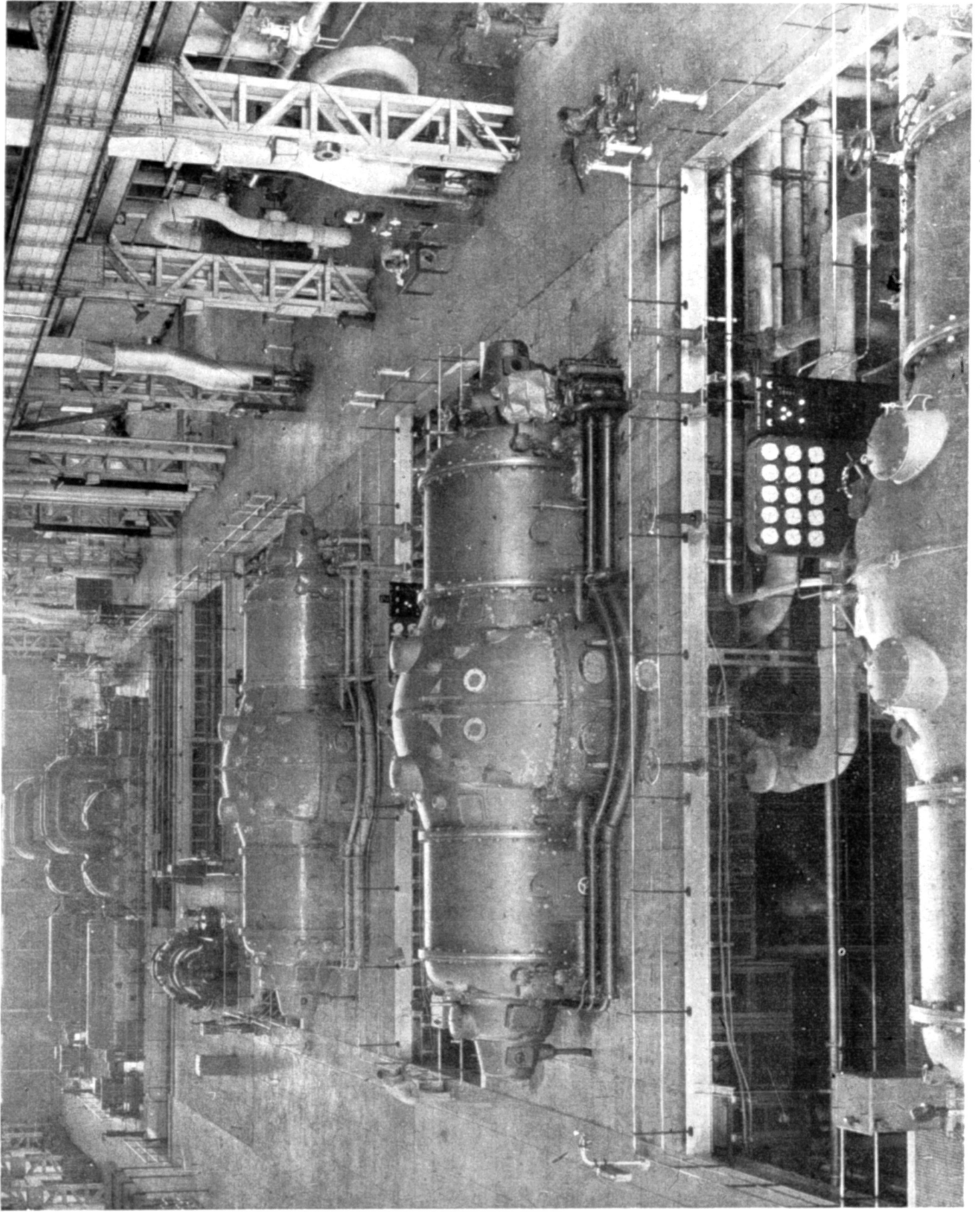
## RAND EXTENSION UNDERTAKING.

The Rand Extension Undertaking comprises a transmission and distribution system and is operated as part of the Witwatersrand Grid system by The Victoria Falls and Transvaal Power Co. Ltd. under a licence granted to the Commission and ceded to the Falls Company.

All capital expenditure on this Undertaking is financed by the Commission and the charges for interest, redemption, reserve and administration are recovered from the Company. These charges in respect of the year ended 31st December, 1946, amounted to £82,716. The Company also bears its own costs of operating and maintaining the system.

Capital expenditure on the Undertaking as at 31st December, 1946, amounted to £1,335,747.

The transmission lines and cables serving this Undertaking at 31st December, 1946, totalled approximately 532 route miles and the installed transformer capacity at that date was 348,040 kVA, an increase of 20,230 kVA for the year.



The turbine house of the Commission's Vaal Undertaking.

## VAAL GENERATING STATION UNDERTAKING.

Vaal is the newest of the Commission's power stations, and it will supply the initial requirements of the new developing gold mines in the Odendaalsrust area of the Orange Free State, the nearest mine being about 120 miles away.

The new goldfields will be connected by an extension southwards from Coalbrook of the 88 kV line. Work on this is proceeding at a satisfactory rate, and most of the servitudes have been negotiated.

The station commenced operations on 22nd January, 1945. Thus the statistics given below cover the Undertaking's first full year of operation and figures given on page 15 demonstrate the value of the contribution which it has already made towards meeting the constantly increasing demand for electricity on the Witwatersrand.

The installation of main plant reported last year as under construction has now been completed with the exception of No. 1 A.S.E.A. set. No. 2 set was commissioned on 1st July, and No. 3 on 5th November, 1946. The 7,000 kW house set started up on 16th April, 1946.

A further house set and four additional boilers are on order and still further extensions are contemplated.

The Victoria Falls and Transvaal Power Co. Ltd. also operates this station on behalf of the Commission.

This station sent out 582,485,354 units of electricity in 1946, an increase of 204,583,319 or 54.137 per cent.

The capital expenditure on this Undertaking as at 31st December, 1946, amounted to £3,835,874.

As in the case of the Klip Power Station, the operating costs and capital charges of this station are paid by the Falls Company, and in 1946 amounted to £391,652. The average price per unit sold during 1946 was 0.1592d. or a reduction of 9.19% as compared with the previous year.

The average maximum hourly demand sent out in 1946 was 103,979 kW. The average load factor calculated on 8,760 hours was 63.9 per cent. The thermal efficiency of the power station on units sent out was 22.48 per cent.

Vaal, which like Klip is a "pit-head" power station, consumed 474,919 tons of coal (or an average of 1.631 lbs. per unit sent out) during the year at a total cost of £142,287, the average price being 5s. 10d. per ton in 1945 and 6s. per ton in 1946.

Plant  
Installed  
and under  
Construction.

Output  
and  
Sales.

Capital  
Expenditure.

Working  
Results.

Coal  
Consumption.

## 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.		
<i>New Schemes.</i>	<i>Extensions.</i>	<i>Tenders.</i>
Naboomspruit	Balfour	
Venterspost	Belfast	
White River	Meyerton	
	Pietersburg	
	Piet Retief	
	Rensburg	
	Rustenburg	
	Standerton	
	Ventersdorp	
	Warmbaths	
NATAL.		
	Stanger	Stanger
ORANGE FREE STATE.		
Viljoenskroon	Kroonstad	Ficksburg
	Reitz	Hoopstad
	Theunissen	Lindley
	Villiers	Theunissen
	Vrede	Vrede
CAPE.		
Kenhardt	Alexandria	Aliwal North
Pearston	Britstown	Calvinia
	Jansenville	Cradock
	King William's Town	George
	Murraysburg	Richmond
	Richmond	Riversdale
	Riversdale	Somerset East
	Robertsor.	
	Somerset East	
	Uppington	

## SOUTH-WEST AFRICA.

Karasburg  
Mariental

Keetmanshoop

Up to 31st December, 1946, 570 reports on municipal electricity supply schemes, of which 184 were in respect of new schemes, had been submitted by the Commission. In addition, the Commission had issued at that date 268 supplementary reports on tenders.

**ANNEXURES.**

The Commission submits for the year 1946 with this Report:—

**ANNEXURE "A"—AUDITORS' REPORT AND ACCOUNTS.**

The Report of the Auditors.

Balance Sheet.

Schedule of Expenditure on Capital Account.

Statement showing the Investments of the Redemption Fund.

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.

**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, 1946.

Statement No. 2—Summary of principal plant and equipment in course of installation or on order as at 31st December, 1946.

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

Statement No. 4—Distribution of units sold during 1946 as between the various classes of consumers.

Statement No. 5—Power Station Statistics, 1946.

Statement No. 6—Particulars of coal used at the Commission's Steam-raising Power Stations during 1946.

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 1946.

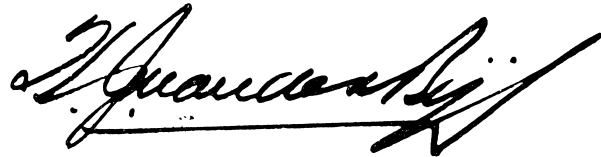
**ANNEXURE " C "—UNION STATISTICS.**

Union Statistics relating to the production and distribution of electricity. This information, which was extracted from the 1944-45 Industrial Census, is published in this Report by the courtesy of the Union Census and Statistics Office.

I have the honour to be,

Sir,

Your obedient servant,

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).**

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Natal Central Undertaking .....	68—69
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**AUDITOR'S REPORT  
AND  
ACCOUNTS**

**ANNEXURE "A"****THE REPORT OF THE AUDITORS.**

Johannesburg.  
22nd May, 1947.

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, 1946.

**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, 1946, 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, 1946, 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 retained as a provision for deficiencies which may occur as the result of lower interest rates.

The date from which redemption of Loan No. 12 shall commence has now been fixed by the Minister at 1st January, 1947. In the case of Loan No. 13, which was issued in September,

1946, application has not yet been made to the Minister to fix the date from which redemption shall commence in terms of Clause 16 (2) of the Schedule to the Electricity Act. Provision has been made, however, for the redemption of moneys expended out of Loans Nos. 12 and 13 on plant which had come into commercial operation prior to 31st December, 1946.

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

Expenditure under this heading shows a considerable 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 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 and 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.

#### WITBANK UNDERTAKING.

During the year 1946, an adjustment in terms of Section 10 of the Electricity Act, was made by way of a rebate, amounting to ten per cent. of the charges for electricity supplied to Consumers in the Local and Municipal Supplies area who received power from the Witbank Power Station. This adjustment was made with the object of bringing the charge to Consumers more closely into line with actual costs, and is shown

as a deduction from Sales of Electricity in the relative account. A further rebate of five per cent. of the charges was granted to those Consumers in reduction of the accumulated surplus brought forward from previous years. This further rebate is shown in the lower section of the Revenue Account and the surplus has now been reduced to £8,776 19s. 1d.

The remaining Consumers are, by agreement, charged on a cost basis as determined from month to month and accordingly in their case the adjustment is automatic.

#### 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 UNDERTAKING.

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

#### REVENUE ACCOUNTS.

The results of the operations during the year of the various Undertakings and the accumulated balances to date are clearly shown in the respective Revenue Accounts.

The operation of the Durban Undertaking reflected a loss of £5,665 8s. 7d. resulting in an accumulated deficit of £32,975 8s. 11d. An increase in tariffs was brought into effect as from the 1st August 1946. The adjustment in tariffs was designed to offset the additional charges consequent upon the extensions to the Undertaking and also to adjust the accumulated deficit. At this stage, and until the revised tariffs have been longer in operation, it is difficult to say whether any further tariff adjustments are required

In the case of the Cape Town Undertaking the year's operations reflected a surplus of £22,740 17s. 10d. increasing the accumulated surplus to £45,552 0s. 5d. We understand that during the next year or two this Undertaking will be called upon to incur heavy additional expenditure, the burden of which will be borne as increases in capital charges and other costs. In these circumstances a revision of the tariffs at this stage would appear to be premature.

The position of the Witbank Undertaking is dealt with earlier in this report.

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.

#### GENERAL.

As the result of our audit of the books and accounts of the Commission for the year 1946, 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,

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

# Electricity Supply

Incorporated under the

## BALANCE SHEET AT

Dr.			
<b>Loan Capital</b>		£27,002,262	0 0
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	
	8,000,000	0 0	
Less — Repaid during 1933 and 1934	8,000,000	0 0	
<b>Local Registered Stocks:</b>			
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 (payable in full not later than 31st January, 1947, in terms of Prospectus)	2,752,262	0 0	
Partly Paid: Instalments due and payments in advance	£712,275	0 0	
Less — Amounts outstanding since paid	10,313	0 0	
	701,962	0 0	
Fully Paid	2,050,300	0 0	
	£27,250,000		
<b>Interest Accrued on Loan Capital</b>		146,291	2 11
<b>Sundry Loans and Amounts Outstanding for Rights Acquired</b>		100,339	3 3
Umkomaas Town Board	8,380	0 0	
Volksrust Municipality	14,226	5 0	
Rand Water Board	67,794	4 5	
Caledon Municipality	5,342	14 8	
Rawsonville Village Management Board	4,595	19 2	
<b>Sundry Creditors and Credit Balances</b>		552,301	17 4
Current liabilities and provisions.			
<b>Pension Fund</b>		303,166	10 7
<b>Redemption Fund (as per Account No. 1)</b>		7,094,644	11 2
<b>Sinking Fund (Umkomaas Town Board Loans)</b>		4,283	1 1
<b>Sundry Loans Repaid</b>		78,815	1 4
<b>Reserve Fund (as per Account No. 2)</b>		2,202,165	7 6
<b>Balance on Revenue Accounts (as per Accounts Nos. 3 to 7)</b>		33,140	13 0
Natal Central Undertaking	11,707	18 3	
Witbank Undertaking	8,776	19 1	
Cape Town Undertaking	45,552	0 5	
Durban Undertaking	Dr. 32,975	8 11	
Sabie Undertaking	79	4 2	
<b>Note.</b> — In addition to the liabilities shown above, the Commission is committed to the extent of approximately £4,118,000 for expenditure on Capital Account and £498,500 chargeable against Reserve Fund.			
		£37,517,409	8 2

Johannesburg,  
23rd April, 1947.

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

# Commission

Electricity Act, 1922

31st DECEMBER, 1946

Cr.

<b>Expenditure on Capital Account (at Cost)</b>		£26,426,395	14 11
(As per Schedule attached.)			
Land and Rights	£307,216	10 11	
Buildings and Civil Works	6,609,608	17 3	
Machinery and Plant	19,509,570	6 9	
<b>Movable Plant and Equipment (less depreciation)</b>		88,896	3 9
Workshop Equipment, Instruments, Tools and Loose Plant	32,697	8 3	
Transportation Equipment	16,605	6 9	
Furniture and Office Equipment	39,593	8 9	
<b>Stores and Materials</b>		515,365	8 7
<b>Sundry Debtors and Debit Balances</b>		354,457	15 9
Current Debtors less Reserves	320,727	17 7	
Expenditure on investigations in terms of section 3 (b) of the Act and payments in advance	33,729	18 2	
<b>Cash on Current Account</b>		507,374	10 3
<b>Investment of Pension Fund</b>		303,258	4 1
Amount invested in Stocks and Securities of Electricity Supply Commission, Municipalities and Rand Water Board and First Mortgages on Freehold Properties, less Reserve	301,588	16 8	
Interest Accrued	1,669	7 5	
<b>Investment of Redemption Fund</b>		7,097,143	3 11
(As per Schedule attached)			
<b>Investment of Sinking Fund</b>		4,324	12 2
Amount invested in Stocks of Electricity Supply Commission, the Government of the Union of South Africa and Municipalities	4,301	4 9	
Interest Accrued	23	7 5	
<b>Investment of Reserve Fund</b>		2,220,193	14 9
Amount invested in Stocks and Securities of Electricity Supply Commission, the Government of the Union of South Africa and Municipalities	2,202,673	3 9	
Interest Accrued	17,520	11 0	
		£37,517,409	8 2

Referred to in our Report of 22nd, May, 1947.

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

# Electricity Supply

## SCHEDULE OF EXPENDITURE ON CAPITAL

Expenditure in connection with Electricity Undertakings.	Total to 31st December, 1945.	Year ended 31st December, 1946.	Total to 31st December, 1946.
<b>NATAL CENTRAL UNDERTAKING:</b>			
Land and Rights .....	£24,781 6 9	£4,006 7 8	£28,787 14 5
Buildings and Civil Works .....	862,272 10 5	164,930 15 0	1,027,203 5 5
Machinery and Plant .....	3,706,135 15 8	92,268 13 7	3,798,404 9 3
	<b>£4,593,189 12 10</b>	<b>£261,205 16 3</b>	<b>£4,854,395 9 1</b>
<b>WITBANK UNDERTAKING:</b>			
Land and Rights .....	£10,439 15 8	Cr. £18 2 6	£10,421 13 2
Buildings and Civil Works .....	648,357 11 3	1,435 0 2	649,792 11 5
Machinery and Plant .....	2,080,664 18 3	52,905 17 2	2,133,570 15 5
	<b>£2,739,462 5 2</b>	<b>£54,322 14 10</b>	<b>£2,793,785 0 0</b>
<b>CAPE TOWN UNDERTAKING:</b>			
Land and Rights .....	£30,619 13 1	£1,011 13 11	£31,631 7 0
Buildings and Civil Works .....	992,352 18 2	905 3 6	993,258 1 8
Machinery and Plant .....	2,166,374 12 2	111,073 3 9	2,277,447 15 11
	<b>£3,189,347 3 5</b>	<b>£112,990 1 2</b>	<b>£3,302,337 4 7</b>
<b>DURBAN UNDERTAKING:</b>			
Land and Rights .....	£31,143 6 6	—	£31,143 6 6
Buildings and Civil Works .....	859,473 10 5	£11,356 16 6	870,830 6 11
Machinery and Plant .....	2,124,864 15 5	219,828 6 5	2,344,693 1 10
	<b>£3,015,481 12 4</b>	<b>£231,185 2 11</b>	<b>£3,246,666 15 3</b>
<b>SABIE UNDERTAKING:</b>			
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
	<b>£96,170 6 1</b>	—	<b>£96,170 6 1</b>

Johannesburg,  
23rd April, 1947.

# Commission

## ACCOUNT TO 31st DECEMBER, 1946

Expenditure in connection with Electricity Undertakings.	Total to 31st December, 1945.	Year ended 31st December, 1946.	Total to 31st December, 1946.
<b>KLIP GENERATING STATION UNDERTAKING:</b>			
Land and Rights .....	£127,975 0 0	—	£127,975 0 0
Buildings and Civil Works .....	1,588,117 5 4	Cr. £843 10 8	1,587,273 14 8
Machinery and Plant .....	4,820,558 0 2	34,132 4 11	4,854,690 5 1
	<b>£6,536,650 5 6</b>	<b>£33,288 14 3</b>	<b>£6,569,938 19 9</b>
<b>RAND EXTENSION UNDERTAKING:</b>			
Land and Rights .....	£10,810 6 2	£583 18 5	£11,394 4 7
Buildings and Civil Works .....	24,607 15 11	1,550 2 6	26,157 18 5
Machinery and Plant .....	1,093,214 19 4	204,980 3 2	1,298,195 2 6
	<b>£1,128,633 1 5</b>	<b>£207,114 4 1</b>	<b>£1,335,747 5 6</b>
<b>VAAL GENERATING STATION UNDERTAKING:</b>			
Land and Rights .....	£5,613 2 5	£154 19 10	£5,768 2 3
Buildings and Civil Works .....	988,159 11 10	74,547 13 0	1,062,707 4 10
Machinery and Plant .....	2,272,560 14 11	494,838 7 0	2,767,399 1 11
	<b>£3,266,333 9 2</b>	<b>£569,540 19 10</b>	<b>£3,835,874 9 0</b>
<b>ESCOM HOUSE:</b>			
Land .....	£59,585 3 0	—	£59,585 3 0
Building and Equipment .....	331,895 2 8	—	331,895 2 8
	<b>£391,480 5 8</b>	—	<b>£391,480 5 8</b>
<b>SUMMARY:</b>			
Land and Rights .....	£301,477 13 7	£5,738 17 4	£307,216 10 11
Buildings and Civil Works .....	6,355,726 17 3	253,882 0 0	6,609,608 17 3
Machinery and Plant .....	18,299,543 10 9	1,210,026 16 0	19,509,570 6 9
	<b>£24,956,748 1 7</b>	<b>£1,469,647 13 4</b>	<b>£26,426,395 14 11</b>

J. VAN NIEKERK, Chief Accountant.



# Electricity Supply Commission

## Schedule Showing Details of Investments of the Redemption Fund at 31st December, 1946

	Nominal Amount.	Totals.	Loan No. 3.	Loan No. 4.	Loan No. 5.	Loan No. 6.	Loan No. 7.	Loan No. 8.	Loan No. 9.	Loan No. 10.	Loan No. 11.	Loan No. 12.	Loan No. 13.
			£500,000 4½% Local Registered Stock, 1953/63.	£2,500,000 4½% Local Registered Stock, 1953.	£6,750,000 3¼% Local Registered Stock, 1954/64.	£2,500,000 3½% Local Registered Stock, 1959/64.	£2,000,000 3¼% Local Registered Stock, 1956/66.	£2,000,000 3½% Local Registered Stock, 1957/67.	£2,000,000 3¼% Local Registered Stock, 1959/64.	£1,500,000 3¼% Local Registered Stock, 1960/65.	£2,000,000 3¼% Local Registered Stock, 1961/66.	£2,500,000 3¼% Local Registered Stock, 1965/70.	£3,000,000 3% Local Registered Stock, 1967/73.
<b>LOCAL REGISTERED STOCKS:</b>													
<b>Electricity Supply Commission:</b>													
4½ per cent., 1953/63	£106,200 0 0	£106,200 0 0	£40,750 0 0	—	£65,450 0 0	—	—	—	—	—	—	—	—
4½ per cent., 1953	284,405 0 0	284,405 0 0	1,500 0 0	£262,905 0 0	15,500 0 0	£4,500 0 0	—	—	—	—	—	—	—
3½ per cent., 1954/64	854,056 0 0	853,890 3 10	10,000 0 0	—	769,456 0 0	53,721 15 9	£17,000 0 0	£3,518 13 3	—	—	—	—	—
3½ per cent., 1959/64	140,497 0 0	140,497 0 0	—	—	35,000 0 0	90,197 0 0	5,600 0 0	—	£4,300 0 0	—	—	—	—
3½ per cent., 1956/66	337,800 0 0	326,703 3 7	16,490 0 0	92,767 3 9	143,560 0 0	19,400 0 0	54,485 19 10	—	—	—	—	—	—
3½ per cent., 1957/67	324,177 0 0	315,749 4 9	24,287 10 0	85,565 5 0	77,628 10 0	60,043 0 0	21,922 0 0	45,230 9 9	—	—	—	—	—
3½ per cent., 1959/64	520,810 0 0	509,907 2 6	19,482 19 9	90,028 0 2	180,286 8 3	62,540 7 8	55,274 6 4	—	£1,072 10 0	—	—	—	—
3½ per cent., 1960/65	439,700 0 0	430,966 13 9	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	6,136 13 9	—	—	—
3½ per cent., 1961/66	499,750 0 0	489,850 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	£4,750 0 0	—	—
3½ per cent., 1965/70	538,000 0 0	538,000 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	£22,300 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
<b>The Government of the Union of South Africa:</b>													
3½ per cent., 1948/58	2,725 0 0	2,725 0 0	—	—	2,725 0 0	—	—	—	—	—	—	—	—
3½ 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	—	—	—	—	—	—	—	—	—
3½ 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	—	—	—	2,000 0 0	—	—
3 per cent., 1959/69	100,000 0 0	100,000 0 0	6,000 0 0	30,000 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	—
<b>Municipal:</b>													
<b>Johannesburg:</b>													
3½ per cent., 1956/66	1,600 0 0	1,600 0 0	—	—	—	—	1,600 0 0	—	—	—	—	—	—
3½ per cent., 1959	6,200 0 0	6,200 0 0	—	—	—	—	—	1,900 0 0	4,300 0 0	—	—	—	—
3½ per cent., 1960/65	20,000 0 0	20,000 0 0	—	8,000 0 0	12,000 0 0	—	—	—	—	—	—	—	—
3½ 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	—	—	—	—	—	—	—	—	—	—	—
3½ 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	—
<b>Cape Town:</b>													
3½ per cent., 1960/65	2,000 0 0	2,000 0 0	—	—	—	—	—	—	—	—	—	—	—
3½ per cent., 1962/67	225,000 0 0	222,567 15 8	—	—	—	—	—	—	—	2,000 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	38,998 7 11	46,838 7 11	58,108 7 11	40,122 11 11	27,000 0 0	11,500 0 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	—
<b>Durban:</b>													
3½ per cent., 1962/72	115,500 0 0	115,211 5 0	—	115,211 5 0	—	—	—	—	—	—	—	—	—
3½ per cent., 1965/75	45,000 0 0	45,000 0 0	2,500 0 0	14,500 0 0	28,000 0 0	—	—	—	—	—	—	—	—
3½ 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	—
	£7,107,385 0 0	£7,049,561 3 0	£261,183 9 7	£1,686,687 3 7	£2,431,188 13 2	£807,820 1 11	£536,279 10 8	£485,697 11 3	£415,839 7 7	£172,824 5 4	£158,602 4 11	£90,951 5 0	£2,487 10 0
Interest Accrued	—	47,582 0 11	1,726 4 6	9,183 6 10	16,700 17 6	5,381 9 9	4,285 19 8	3,577 8 11	3,537 11 1	1,356 10 11	1,177 12 9	644 19 8	9 19 4
	£7,107,385 0 0	£7,097,143 3 11	£262,909 14 1	£1,695,870 10 5	£2,447,889 10 8	£813,201 11 8	£540,565 10 4	£489,275 0 2	£419,376 18 8	£174,180 16 3	£159,779 17 8	£91,596 4 8	£2,497 9 4



## Electricity Supply

Dr.

Reserve Fund Account for the

To	<b>Expenditure during the Year on Replacements and Betterment</b>		£217,596 14 4
	Natal Central Undertaking	£120,214 0 2	
	Witbank Undertaking	26,247 16 1	
	Cape Town Undertaking	21,022 10 9	
	Durban Undertaking	31,557 3 0	
	Klip Generating Station Undertaking	15,350 19 5	
	Rand Extension Undertaking	961 16 5	
	Vaal Generating Station Undertaking	2,242 8 6	
..	<b>Balance as per Balance Sheet</b>		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	
			<u>£2,419,762 1 10</u>

Johannesburg,  
23rd April, 1947.

## Commission

Year Ended 31st December, 1946

Cr.

By	<b>Balance at 31st December, 1945, brought forward</b>		£2,198,665 13 10
	Natal Central Undertaking	£582,970 14 8	
	Witbank Undertaking	338,578 6 5	
	Cape Town Undertaking	387,543 13 7	
	Durban Undertaking	265,451 4 10	
	Sabie Undertaking	16,022 0 9	
	Klip Generating Station Undertaking	535,390 13 7	
	Rand Extension Undertaking	63,024 19 6	
	Vaal Generating Station Undertaking	9,684 0 6	
..	<b>Amounts set aside during the Year as per Revenue Accounts</b>		137,935 19 3
	Natal Central Undertaking	27,000 0 0	
	Witbank Undertaking	4,723 2 4	
	Cape Town Undertaking	6,962 15 0	
	Durban Undertaking	10,000 0 0	
	Klip Generating Station Undertaking	65,087 12 4	
	Rand Extension Undertaking	12,215 14 1	
	Vaal Generating Station Undertaking	12,006 15 6	
..	<b>Interest earned on Investments</b>		83,100 8 9
			<u>£2,419,762 1 10</u>

J. VAN NIEKERK, Chief Accountant.

# Electricity Supply

## NATAL CENTRAL

### Dr. Revenue Account for the Year

Generation of Electricity.	
To Operation—	
Fuel .....	£157,986 9 8
Water, Oil, Waste and Stores .....	2,649 17 10
Salaries and Wages .....	34,257 2 0
Other Expenses .....	119 5 3
„ Maintenance—	
Stores .....	11,569 11 0
Salaries and Wages .....	23,079 4 6
Other Expenses .....	3,383 2 7
„ Electricity Purchased .....	£233,044 12 10
„ Electricity Interchanged .....	10 15 8
	1,355 9 3
Distribution of Electricity.	
„ Operation and Maintenance—	
Stores .....	6,893 8 5
Salaries and Wages .....	38,679 19 0
Other Expenses .....	4,538 4 10
	50,111 12 3
General Expenses.	
„ Local Administration and Technical Management .....	19,335 2 3
„ General Expenses (including Maintenance of Quarters, Stores Expenses, Rates, Insurance, Pension Fund Contributions, Payment to Durban Undertaking under Agreement, etc.) .....	22,476 7 10
„ Investigations and Development Expenses .....	42 2 11
„ Head Office Administration and General Expenses, including Publicity .....	17,897 11 7
„ Engineering Expenses .....	7,433 12 7
	67,184 17 2
„ Deferred Payment Scheme, including Propaganda and Show-room Expenses .....	204 8 9
	351,911 15 11
„ Interest .....	172,951 15 10
„ Redemption Fund .....	115,886 8 10
„ Instalments paid on Volksrust Municipality Loan .....	1,742 13 3
„ Amount set aside to Reserve Fund .....	27,000 0 0
	£669,492 13 10
To Balance brought down .....	£10,803 0 8
„ Balance as per Balance Sheet .....	11,707 18 3
	£22,510 18 11

J. VAN NIEKERK, Chief Accountant.

Johannesburg,  
23rd April, 1947.

# Commission

## UNDERTAKING

### Ended 31st December, 1946

Cr.

By Sales of Electricity—		
Traction Supplies .....	£440,840 3 10	
Bulk Supplies .....	120,789 1 4	
Industrial Supplies .....	58,418 0 2	
Domestic and Lighting Supplies .....	31,321 19 5	
Electricity Interchanged .....	516 8 1	
	£651,885 12 10	
„ Other Revenue .....	6,804 0 4	
„ Balance carried down .....	10,803 0 8	
	£669,492 13 10	
By Balance at 31st December, 1945, brought forward .....	£22,510 18 11	
	£22,510 18 11	

Referred to in our Report of 22nd, May, 1947.

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

# Electricity Supply

WITBANK

Dr. Revenue Account for the Year

GENERATION OF ELECTRICITY.		
To Operation—		
Fuel .....	£95,020	17 3
Water, Oil, Waste and Stores .....	8,428	6 2
Salaries and Wages .....	44,480	16 8
Other Expenses .....	1,136	4 9
„ Maintenance—		
Stores .....	11,652	17 7
Salaries and Wages .....	26,118	1 3
Other Expenses .....	7,554	3 10
	£194,391	7 6
„ Electricity Purchased .....	172,331	4 2
DISTRIBUTION OF ELECTRICITY.		
„ Operation and Maintenance—		
Stores .....	5,618	11 9
Salaries and Wages .....	6,371	7 5
Other Expenses .....	380	1 9
	12,370	0 11
GENERAL EXPENSES.		
„ Local Administration and Technical Management .....	11,670	17 7
„ General Expenses (including Maintenance of Quarters, Stores Expenses, Rates, Insurance, Pension Fund Contributions, etc.) .....	15,038	16 5
„ Administration, Engineering and General Expenses of Operating Party (The Victoria Falls & Transvaal Power Company, Limited) .....	7,000	0 0
„ Head Office Administration and General Expenses, including Publicity .....	10,780	13 0
„ Engineering Expenses .....	4,477	13 3
	48,968	0 3
„ Deferred Payment Scheme, including Propaganda and Show-room Expenses .....	67	1 9
	428,127	14 7
„ Interest .....	116,948	10 9
„ Redemption Fund .....	70,002	14 1
„ Amount set aside to Reserve Fund .....	4,723	2 4
	£619,802	1 9
To Balance brought down .....	£1,546	1 3
„ Further adjustment in terms of Section 10 of the Electricity Act, 1922 .....	8,894	8 8
„ Balance as per Balance Sheet .....	8,776	19 1
	£19,217	9 0

J. VAN NIEKERK, Chief Accountant.

Johannesburg,  
23rd April, 1947.

# Commission

UNDERTAKING

Ended 31st December, 1946

Cr.

By Sales of Electricity—		
Traction Supplies .....	£205,819	10 1
Bulk Supplies .....	245,841	2 6
Industrial Supplies .....	163,557	7 8
Domestic and Lighting Supplies .....	11,256	11 3
	626,474	11 6
Less—Adjustment in terms of Section 10 of the Electricity Act, 1922 .....	17,788	17 4
	£608,685	14 2
„ Other Revenue .....	9,570	6 4
„ Balance carried down .....	1,546	1 3
	£619,802	1 9
By Balance at 31st December, 1945, brought forward .....	£19,217	9 0
	£19,217	9 0

Referred to in our Report of 22nd, May, 1947.

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

# Electricity Supply

## CAPE TOWN

### Dr. Revenue Account for the Year

GENERATION OF ELECTRICITY.			
To Proportion of Pooled Costs (As per attached Statement)	£316,455	0	7
„ Other Operation and Maintenance Costs	138	7	7
	£316,593	8	2
„ Electricity Purchased		10	18 4
DISTRIBUTION OF ELECTRICITY.			
„ Operation and Maintenance—			
Stores	7,337	18	1
Salaries and Wages	41,749	19	7
Other Expenses	8,521	19	1
		57,609	16 9
GENERAL EXPENSES.			
„ Local Administration and Technical Management	18,861	8	9
„ General Expenses (including Maintenance of Quarters, Stores Expenses, Rates, Insurance, Pension Fund Contributions, etc.)	18,116	2	9
„ Head Office Administration and General Expenses, including Publicity	11,434	11	4
„ Engineering Expenses	4,749	5	3
	53,161	8	1
Less—Charged to Pooled Costs	4,815	5	8
		48,346	2 5
„ Deferred Payment Scheme, including Propaganda and Show-room Expenses		339	1 3
		422,899	6 11
„ Interest	125,221	17	10
„ Redemption Fund	92,309	16	7
„ Instalments on Caledon Municipality and Rawsonville Village Management Board Loans	871	16	11
„ Amount set aside to Reserve Fund	6,962	15	0
	225,366	6	4
Less—Charged to Pooled Costs	80,082	0	6
		145,284	5 10
„ Balance carried down		22,740	17 10
		£590,924	10 7
To Balance as per Balance Sheet		£45,552	0 5
		£45,552	0 5

J. VAN NIEKERK, Chief Accountant.

Johannesburg,  
23rd April, 1947.

# Commission

## UNDERTAKING

### Ended 31st December, 1946

### Cr.

By Sales of Electricity—			
Traction Supplies	£192,172	16	4
Bulk Supplies	83,889	18	9
Industrial Supplies	190,420	16	7
Domestic and Lighting Supplies	122,337	19	7
		£588,821	11 3
„ Other Revenue	2,714	18	4
Less—Credited to Pooled Costs	611	19	0
		2,102	19 4
		£590,924	10 7
By Balance at 31st December, 1945, brought forward		£22,811	2 7
„ Balance brought down		22,740	17 10
		£45,552	0 5

Referred to in our Report of 22nd. May, 1947.

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

## Electricity Supply Commission

Dr. Statement of Pooled Costs for the Year Ended

POOLED GENERATION OF ELECTRICITY.		
To Operation and Maintenance—		
Fuel .....	£513,907 14 1	
Water, Oil, Waste and Stores .....	30,015 10 1	
Salaries, Wages and Other Expenses .....	124,914 8 0	
	<hr/>	£668,837 12 2
„ General Expenses (including Stores Expenses, Rates, Insurance, Pension Fund Contributions, etc.) .....		19,283 8 4
„ Interest .....		117,112 14 1
„ Redemption Fund .....		113,223 10 3
„ Reserve Fund .....		17,551 5 8
		<hr/>
		<u>£936,008 10 6</u>

Cape Town,  
23rd April, 1947.

## and City of Cape Town

31st December, 1946, and Allocation Thereof Cr.

By Allocation of Pooled Costs in terms of Agreement—		
Electricity Supply Commission .....	£316,455 0 7	
City of Cape Town .....	617,389 6 9	
	<hr/>	£933,844 7 4
„ Sundry Revenue .....		2,164 3
		<hr/>
		<u>£936,008 10 6</u>

H. A. EASTMAN,  
Manager of the Pooled Stations.

# Electricity Supply

DURBAN

Dr. Revenue Account for the Year

GENERATION OF ELECTRICITY.		
To Operation—		
Fuel .....	£215,969	14 7
Water, Oil, Waste and Stores .....	11,382	8 2
Salaries and Wages .....	43,547	13 4
Other Expenses .....	2,223	14 5
„ Maintenance—		
Stores .....	13,468	17 0
Salaries and Wages .....	39,597	1 5
Other Expenses .....	1,049	19 4
„ Operation and Maintenance, Alice Street Station Power .....		6,391 7 0
„ Electricity Purchased .....		13,054 19 5
„ Electricity Interchanged .....		516 8 1
	£327,239	8 3
DISTRIBUTION OF ELECTRICITY.		
„ Operation and Maintenance—		
Stores .....	6,106	4 5
Salaries and Wages .....	7,878	16 0
Other Expenses .....	1,413	1 7
		15,398 2 0
GENERAL EXPENSES.		
„ Local Administration and Technical Management .....	10,736	18 10
„ General Expenses (including Maintenance of Quarters, Stores Expenses, Rates, Insurance, Pension Fund Contributions, etc.) .....	18,242	18 4
„ Investigations and Development Expenses .....	10	4 11
„ Head Office Administration and General Expenses, including Publicity .....	10,937	8 2
„ Engineering Expenses .....	4,542	15 6
	44,470	5 9
	407,070	10 6
„ Interest .....	85,773	19 1
„ Redemption Fund .....	59,460	19 4
„ Sinking Fund .....	120	0 0
„ Amount set aside to Reserve Fund .....	10,000	0 0
	£562,425	8 11
To Balance at 31st December, 1945, brought forward .....	£27,310	0 4
„ Balance brought down .....	5,665	8 7
	£32,975	8 11

J. VAN NIEKERK, Chief Accountant.

Johannesburg,  
23rd April, 1947.

ACCOUNT NO. 6

# Commission

UNDERTAKING

Ended 31st December, 1946

Cr.

By Sales of Electricity—		
Bulk Supplies .....	£489,173	19 4
Industrial Supplies .....	33,046	10 5
Domestic and Lighting Supplies .....	29,803	9 3
Electricity Interchanged .....	1,355	9 3
	£553,379	8 3
„ Other Revenue .....	3,380	12 1
„ Balance carried down .....	5,665	8 7
	£562,425	8 11
By Balance as per Balance Sheet .....	£32,975	8 11
	£32,975	8 11

Referred to in our Report of 22nd. May, 1947.

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



# Electricity Supply

SABIE

Dr. Revenue Account for the Year

GENERATION OF ELECTRICITY.		
To Operation—		
Water, Oil, Waste and Stores	£88 3 10	
Salaries and Wages	2,266 3 7	
„ Maintenance—		
Stores	238 17 6	
Salaries and Wages	520 10 0	
Other Expenses	60 0 0	
		£3,173 14 11
DISTRIBUTION OF ELECTRICITY.		
„ Operation and Maintenance—		
Stores	84 7 2	
Salaries and Wages	633 0 0	
Other Expenses	149 2 10	
		866 10 0
GENERAL EXPENSES.		
„ Local Administration and Technical Management	260 2 7	
„ General Expenses (including Maintenance of Quarters, Insurance, Pension Fund Contributions, etc.)	250 5 11	
„ Head Office Administration and General Expenses, including Publicity	1,491 9 3	
„ Engineering Expenses	619 9 5	
		2,621 7 2
		6,661 12 1
„ Interest		4,281 12 10
„ Redemption Fund		3,568 10 10
		£14,511 15 9
To Balance brought down	£24 0 9	
„ Balance as per Balance Sheet	79 4 2	
		£103 4 11

J. VAN NIEKERK, Chief Accountant.

Johannesburg,  
23rd April, 1947.

# Commission

ACCOUNT No. 7

UNDERTAKING

Ended 31st December, 1946

Cr.

By Sales of Electricity—	
Industrial Supplies	£14,487 15 0
„ Balance carried down	24 0 9
	£14,511 15 9
By Balance at 31st December, 1945, brought forward	£103 4 11
	£103 4 11

Referred to in our Report of 22nd, May, 1947.

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

# Electricity Supply

## KLIP GENERATING

### Dr. Revenue Account for the Year

GENERATION OF ELECTRICITY.			
To Operation—			
Fuel	£514,244	15	11
Water, Oil, Waste and Stores	9,080	18	4
Salaries and Wages	64,478	14	6
Other Expenses	2,229	8	11
„ Maintenance—			
Stores	18,622	0	9
Salaries and Wages	38,746	18	6
Other Expenses	14,819	19	4
			£662,222 16 3
GENERAL EXPENSES.			
„ Local Administration and Technical Management	9,808	2	1
„ General Expenses (including Maintenance of Quarters, Stores Expenses, Rates, Insurance, Pension Fund Contributions, etc.)	17,097	16	8
„ 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	7,263	15	10
„ Engineering Expenses	3,016	19	4
			54,511 13 11
			716,734 10 2
„ Interest			231,596 11 3
„ Redemption Fund			167,105 19 5
„ Provision for Repayment of Amounts Outstanding (Rand Water Board)			6,350 12 7
„ Amount set aside to Reserve Fund			65,087 12 4
			£1,186,875 5 9

J. VAN NIEKERK, Chief Accountant.

Johannesburg,  
23rd April, 1947.

# Commission

ACCOUNT NO. 8

## STATION UNDERTAKING

### Ended 31st December, 1946

Cr.

By Sales of Electricity—			
Bulk Supplies			£1,180,895 18 3
Other Revenue			5,979 7 6
			£1,186,875 5 9

Referred to in our Report of 22nd. May, 1947.

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

## Electricity Supply

### RAND EXTENSION

Dr.	Revenue Account for the Year	
To General Expenses (Insurance) .....	£196 9 11	
„ Head Office Administration and General Expenses, including Publicity .....	971 13 10	
„ Engineering Expenses .....	403 11 8	
	£1,571 15 5	
„ Interest .....	39,487 15 7	
„ Redemption Fund .....	29,441 6 11	
„ Amount set aside to Reserve Fund .....	12,215 14 1	
	£82,716 12 0	

J. VAN NIEKERK, Chief Accountant.

Johannesburg,  
23rd April, 1947.

## Commission

### UNDERTAKING

Ended 31st December, 1946

ACCOUNT No. 9

	Cr.
By Amount recovered from The Victoria Falls and Transvaal Power Company, Limited .....	£82,716 12 0
	£82,716 12 0

Referred to in our Report of 22nd. May, 1947.

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

## Electricity Supply

### VAAL GENERATING

#### Dr. Revenue Account for the Year

GENERATION OF ELECTRICITY.			
To Operation—			
Fuel .....	£142,287 0 7		
Water, Oil, Waste and Stores .....	2,371 16 6		
Salaries and Wages .....	27,184 18 5		
Other Expenses .....	521 8 4		
„ Maintenance—			
Stores .....	3,579 4 8		
Salaries and Wages .....	9,381 8 4		
Other Expenses .....	2,075 9 3		
		£187,401 6 1	
	<b>GENERAL EXPENSES.</b>		
„ Local Administration and Technical Management .....	6,251 5 7		
„ General Expenses (including Maintenance of Quarters, Stores Expenses, Rates, Insurance, Pension Fund Contributions, etc.) .....	8,088 14 2		
„ Administration, Engineering and General Expenses of Operating Party (The Victoria Falls and Transvaal Power Company, Limited) .....	2,475 0 0		
„ Head Office Administration and General Expenses, including Publicity .....	4,013 1 3		
„ Engineering Expenses .....	1,666 15 11	22,494 16 11	
		209,896 3 0	
„ Interest .....		83,503 16 3	
„ Redemption Fund .....		84,930 19 3	
„ Provision for Repayment of Amounts Outstanding (Rand Water Board) .....		1,313 18 3	
„ Amount set aside to Reserve Fund .....		12,006 15 6	
		£391,651 12 3	

J. VAN NIEKERK, Chief Accountant.

Johannesburg,  
23rd April, 1947.

## Commission

### STATION UNDERTAKING

#### Ended 31st December, 1946

Cr.

By Sales of Electricity—			
Bulk Supplies .....		£386,468 1 5	
„ Other Revenue .....		5,183 10 10	

£391,651 12 3

Referred to in our Report of 22nd. May, 1947.

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

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STATEMENTS).**

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## 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, 1946 :

## POWER STATIONS.

Caledon (Cape Town Undertaking)	.....	.....	Oil
Colenso (Natal Central Undertaking)	.....	.....	Steam
Congella (Durban 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 p s i
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
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
<b>Totals</b>	<b>83</b>		<b>9,780,000</b>	

## 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	6,000 12,000 20,000 30,000	7,500 15,000 25,000 37,500	138,000	169,500	{ 6,600 A.C. 6,600 A.C. 6,600 A.C. 33,000 A.C.				
	{ 1	40,000	47,000			{ 33,000 A.C.				
	Klip ... ..	12	33,000			40,000	396,000	480,000	10,500 A.C.	28,000
	Port Shepstone { 2 1	700 1,000	875 1,175			2,400	2,925	380/220 A.C. 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 ... ..	4	33,000			40,000	132,000	160,000	10,500 A.C.	7,000
Volkswest ... ..	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			
<b>Totals ... ..</b>	<b>50</b>			<b>945,390</b>	<b>1,134,775</b>		<b>43,300</b>			

Total Station Capacity: 988,690 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.	450/230 and 380/220 volts. Route Miles.	Total Route Miles.
Cape Town ... ..	—	—	324	—	166	151	213	854
Durban (South Coast) ... ..	—	—	58	—	32	31	53	174
Natal Central ... ..	609	—	33	68	126	202	88	1,126
Rand Extension ... ..	332	118	—	9	4	44	25	532
Sabie ... ..	—	—	—	7	—	—	1	8
Witbank ... ..	—	22	—	159	—	32	32	245
<b>Totals ... ..</b>	<b>941</b>	<b>140</b>	<b>415</b>	<b>243</b>	<b>328</b>	<b>460</b>	<b>412</b>	<b>2,939</b>

## STATIC TRANSFORMERS AT POWER STATIONS AND SUB-STATIONS.

(Step-up and Step-down, including Spares.)

Undertaking.	Capacity. Kilovolt-amperes.
Cape Town .....	177,645
Durban .....	74,515
Klip .....	549,633
Natal Central .....	253,708
Rand Extension .....	348,040
Sabie .....	3,640
Vaal .....	234,914
Witbank (including Reef, 71,890) .....	289,699
<b>Total</b> .....	<b>1,931,794</b>

## 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
<b>Totals</b> .....	<b>54</b>	<b>99</b>	—

† 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, 1946.

### BOILER PLANT.

Power Station.	Number of Boilers.	Each.	Capacity in lb. of steam per hour. (Normal Rating).		Pressure. psi
			Total		
Colenso .....	2	180,000	<b>360,000</b>		290
Congella .....	2	200,000	<b>400,000</b>		625
			<b>760,000</b>		

### GENERATING PLANT.

Power Station.	Number of Sets.	Capacity. Each.	Total Kilowatts
Colenso .....	1	25,000 kW	<b>25,000</b>
Congella .....	1	40,000 kW	<b>40,000</b>
Vaal .....	1	33,000 kW	<b>33,000</b>
			<b>98,000</b>

### TRANSMISSION LINES AND CABLES.

Overhead Lines: 350 miles.

### TRANSFORMERS.

(Step-up and Step-down.)

	Kilovolt-amperes.
Total capacity in course of installation or on order .....	108,895

### 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-two years.

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

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 1946 as between the various classes of consumers.

## UNITS SOLD, 1946.

Undertaking	Traction	Bulk	Industrial and Mining	Domestic and Street Lighting	TOTAL
Cape Town ... ..	70,333,119	30,009,954	61,287,459	22,988,373	184,618,905
Durban ... ..		346,385,170	19,151,060	4,122,912	369,659,142
Klip ... ..		2,614,328,036			2,614,328,036
Natal Central ...	263,752,629	56,585,802	22,638,932	4,029,178	347,006,541
Sabie ... ..			7,408,010		7,408,010
Vaal ... ..		582,485,354			582,485,354
Witbank ... ..	123,782,891	618,059,603	152,664,825	2,384,741	896,892,060
<b>TOTALS ... ..</b>	<b>457,868,639</b>	<b>4,247,853,919</b>	<b>263,150,286</b>	<b>33,525,204</b>	<b>5,002,398,048</b>

**STATEMENT No. 5.**

## POWER STATION STATISTICS, 1946.

Power Station	Units Generated.	Maximum Half-hourly Demand. Kilowatts (Sent Out).	Load Factor on Units Sent Out. Per Cent.
Caledon*	—	—	—
Colenso .....	386,373,940	62,900	66.6
Congella .....	395,495,300	89,380	46.5
Klip .....	2,783,492,597	361,350 (Hour)	82.6
Margate .....	1,545	—	—
Port Shepstone .....	791,493	—	—
Sabie .....	7,849,300	1,280	69.2
Salt River .....	161,677,429	59,400	28.8
Vaal .....	618,012,627	103,979 (Hour)	63.9
Volksrust .....	9,808	—	—
Witbank .....	824,338,995	108,547 (Hour)	81.3
	<b>5,178,043,034</b>		

\*Caledon not operated during 1946—standby only.

## STATEMENT No. 6.

Particulars of coal used at the Commission's Steam-raising Power Stations during 1946.

Power Station.	COAL CONSUMED.			B.Th.U.		Thermal Efficiency on Units Sent Out.
	Tons (2,000 lb.)	Per Unit Generated lb.	Per Unit Sent Out. lb.	Average per lb. of Coal. (as fixed)	Average per unit. Sent Out.	
Colenso ... ..	289,668	1,499	1,578	12,270	19,360	17.62%
Congella ... ..	274,890	1,390	1,510	12,330	18,620	18.32%
Klip ... ..	2,354,804	1,692	1,801	9,140	16,460	20.73%
Salt River ... ..	124,896	1,545	1,672	12,070	20,180	16.91%
Vaal ... ..	474,919	1,537	1,631	9,310	15,180	22.48%
Witbank ... ..	688,831	1,672	1,783	11,030	19,670	17.35%
	<u>4,208,008</u>					

## Average Cost per Ton (2,000 lbs.)

	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946
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
Congella ... ..	15/4	15/-	15/5	15/2	15/-	15/3	15/2	15/3	15/2	14/9	14/6	15/4	15/7
Klip ... ..	—	—	3/2	3/-	3/3	3/4	3/6	3/6	3/7	3/9	3/11	4/2	4/4
Salt 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
Vaal ... ..	—	—	—	—	—	—	—	—	—	—	—	5/10	6/-
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

# 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 1946.

(See previous Annual Reports for Rights or Interests in or over Land acquired prior to 1946)

## NATAL CENTRAL UNDERTAKING

FARM OR LOT	DISTRICT	Title	Purchase Price or Rental	Acquired From	Purpose for which required
Remaining Subdivision C Samsons Klip No. 3312 .....	Klip River	Servitude of right of way in perpetuity do.	£2 10 0	C. J. Meyer	Power Conductors
Subdivision 1 of Nauheim No. 1278	Harrismith	do.	£7 10 0	F. J., E. M. and A. M., F. Fourie	do.
Portion of Meinheim of Lichtenfels of A of B of Uithoek No. 1335 .....	Klip River	do.	£8 0 0	D. R. J. van der Schyff	do.
Subdivision 1 Portion 1 Ordinance Land No. 1686 .....	Pietermaritzburg	do.	Nil	City Council of Pietermaritzburg	do.
Portion Kalfirstadt North No. 1024 of Kotzes Rust No. 1251 .....	Harrismith	do.	£27 10 0	Minister of Lands	do.
Subdivision 3 Kalfirstadt No 163	do.	do.	£8 15 0	A. K. Sansbury	do.
Rushen No. 714 of Plauen No. 850	do.	do.	£13 10 0	A. G. Shannon	do.
Portion "Glen Dore" No. 779	Klip River	do.	£5 0 0	C. J. Stander	do.
Remainder "Jordaans Stroom" No. 3310 .....	Weenen	Purchase	£300 0 0	W. Mitchell	Housing
Lot 125 Colenso Township	Glencoe	do.	£1,700 0 0	J. S. Stewart	Engineer's Residence
Subdivision A of Erl 4, block O of Subdivision A of Sterkstrum No. 3306 .....	Weenen	do.	£134 0 0	W. Simpson	Housing
Lot 129 Colenso Township .....					

CAPE TOWN UNDERTAKING

FARM OR LOT	DISTRICT	Title	Purchase Price or Rental	Acquired From	Purpose for which required
"Florence" part of "Tois Kloof"	Worcester	Servitude of right of way in perpetuity	£25 14 9	J. A. Stofberg, Jr. Rawsonville Village Management Board	Power Conductors
Portion of "Aan die Smalle Bladeren Rivier aan 't Groot Eiland"	do.	do.	Nil		do.
(i) Partly redeemed quitrent land and partly freehold remainder					
Gustrouw A	Stellenbosch	do.	£81 18 2	G. D. Irvin and E. W. Gee	do.
(ii) Remaining extent Lot 1 Broadlands Extension					
(iii) Portion 15 of Gustrouw A	Worcester	do.	£12 18 2	R. M. C. Smith	do.
Portion 3 of Groot Eiland A	Caledon	do.	Nil	J. D. Swanepoel	do.
"Melkhoutfontein" Portion of "Lake View"	do.	do.	£2 4 8	J. J. Delpoort	do.
Remaining extent La-C "Heuvelskraal" now called Dassiestontein	Paarl	do.	£5 6 6	F. P. J. Smit	do.
Lot G portion of Wellington Municipal Commonage	do.	do.	Nil	F. J. Joubert	do.
Portion of Paarlse Pont Outspan Lot A	do.	do.	£31 4 6	H. C. de Wet	do.
Elandsjacht in du Toits Kloof	do.	do.	£15 10 3	JHS/SON	do.
			£17 10 3	C. D. Small	
				M. Dixon	
	Malmesbury	do.	£63 15 6	P. R. and E. M. Rabie	do.
(i) Remaining extent of "Blauwe Bloms Kloof"	Paarl	do.	£28 1 4	J. J. P. Wiehahn	do.
(ii) "Blauwe Bloms Kloof" between Paardeberg and Mosselbank River					
"Lange Valley"					
"Boonties River" and Bokkekraal B2	Worcester	do.	£47 14 5	P. J. v d Merwe	do.
Portion of part of Bokkekraal	Caledon	do.	£5 9 9	P. H. de Kock	do.
Erven Nos. 2 and 3 Onrust River	do.	do.	£28 10 0	J. A. McFarlane	do.
Lot No. 2422 called "Kock van de Berg"	Goodwood	Purchase	£180 0 0	Joyce and McGregor Ltd.	Substation Site
(i) Lot No. 1510 Townsend Estate Portion A of LAO					
(ii) Lot No. 883 Richmond Estate Portion D of Lot LAO	Bellville	do.	£1,500 0 0	Mrs. A. Kuffner	do.
Lot E.S.C. of "The Hope"					

WITBANK UNDERTAKING

FARM OR LOT	DISTRICT	Title	Purchase Price or Rental	Acquired From	Purpose for which required
Onkwenza No. 156	Pretoria	Servitude of right of way in perpetuity	£0 10 0	Consolidated Rand Brick Pottery and Lime Co. Ltd.	Reef Electrification
Remaining Portion of "Blaauwkrans" (No. 785)	Witbank	do.	£3 17 7	P. J. de Wet	Power Conductors
1. Remaining Portion of Enkelde-keel No. 785	Middelburg	do.	£14 4 6	J. N. Meyer	do.
2. Remaining Portion of "Enkelde-keel" No. 795	Witbank	do.	Nil	Transvaal Con- solidated Land & Exploration Co. Ltd.	do.
Remaining Portion of Portion C "Van Lynsigt" No. 77	do.	Servitude for V Trench Witbank Power Station	Nil	Witbank Colliery Ltd.	Construction of V Trench
Portion No. 16	Middelburg	Servitude of right of way for ten years	£108 5 3	J. H. Botha	Power Conductors

RAND EXTENSION UNDERTAKING

FARM OR PLOT	DISTRICT	Title	Purchase Price or Rental	Acquired From	Purpose for which required
Remaining portion of portion C of "Rietfontein" No. 78	Klerksdorp	Servitude of right of way in perpetuity	£2 10 0	H. E. Jooste	Power Conductors
Portion "Vergencegg" of portion of "Rietfontein" No. 16	do.	do.	£24 8 9	C. C. Buys	do.
Remaining extent of portion of por- tion of Zandstein No. 1	Johannesburg	do.	£18 0 0	Wendywood Estate (Pty.) Ltd.	do.
Remaining extent of portion of Zand- stein No. 1	do.	do.	£20 0 0	M. Weber	do.
Portion marked IV of the Western Portion of Klipriviersoog No. 47	do.	do.	£1 15 0	E. Mare R. S. Kahanovitz I. Marcus H. Nielson R. Buchan	do.

## RAND EXTENSION UNDERTAKING—Continued.

FARM OR LOT	DISTRICT	Title	Purchase Price or Rental	Acquired From	Purpose for which required
Portion No. XIV of that portion of "Klipriviersoog" No. 47	do.	do.	£3 8 0	A. B. du Preez	do.
Remaining portion marked "A" of portion of Rietfontein No. 48	do.	do.	£5 9 0	H. L. R. Mitchell	do.
Portion A of portion "Blinkpoort" No. 353	Heidelberg	do.	£1 12 0	J. A. Strydom	do.
Southern portion of portion of Blinkpoort No. 208					
Remaining extent of "Vlakkfontein" No. 101	do.	do.	£3 11 0	J. Lanser	do.
Remaining extent of the Southern portion of "Blinkpoort" No. 353	do.	do.	£2 16 6	A. O. A. Osborn and H. A. Lilienfeld	do.
Portion 17 a portion of that Northern half	do.	do.	£2 14 0	D. J. Potgieter	do.
and					
The remaining extent of portion of "Blinkpoort" No. 353	do.	do.	Nil	Crown Mines Ltd.	do.
Portion of Poortjie No. 123	do.	do.	Nil	Klerksdorp Municipality	do.
Remaining extent Townlands of Klerksdorp No. 44	Klerksdorp	do.	Nil	Government of Union of South Africa	do.
Remaining extent of Western portion of a portion of Rietfontein No. 48	Johannesburg	do.	Nil	G. C. Jones	do.
Portions K and L of portions of Zandfontein No. 1	do.	do.	£156 0 0	L. Mirvis and H. Opert	do.
Portion 5 of portion xiii of a portion of Klipriviersoog No. 47	do.	do.	£3 5 0	Government of the Union of South Africa	do.
Portion 1 of portion "B" of portion of Blinkpoort No. 353	Heidelberg	do.	£2 19 0	P. J. P. Hugo	do.
Remaining portion of portion (b) of portion 1 of portion of Wildebeeffontein No. 233	do.	do.	£1 7 3	M. Younger	do.
Remaining extent of portion of Vlakkfontein No. 101	do.	do.	£1 6 6	C. G. Mortimer	do.
Remaining extent "Bissetts' Rest" of portion 3 of portion of Blinkpoort No. 208	do.	do.			



## RAND EXTENSION UNDERTAKING—Continued.

FARM OR LOT	DISTRICT	Title	Purchase Price or Rental	Acquired From	Purpose for which required
Portion 5 of Poortjie No. 123	do.	do.	Nil	Witwatersrand Nigel Ltd.	do.
Remaining portion of portion of "Blinkpoort" No. 208	do.	do.	£2 7 0	P. J. Swanepoel and Mrs. L. P. Swanepoel	do.
Remaining extent of portion of Poortjie No. 123	do.	do.	Nil	East Rand Consolidated Ltd.	do.
Portion 9 (a portion of the Eastern portion) of Wildebeesfontein No. 233	do.	do.	£9 18 6	Government of the Union of South Africa	do.
Remaining extent of portion of Vlaktefontein No. 101	do.	do.	£5 3 0	Coronation Freehold Estates, Town and Mines Ltd.	do.
Portion "B" of portion of Blinkpoort No. 353	do.	do.	£1 0 6	A. A. Strydom	do.
Portion 25 of Blinkpoort No. 208	do.	do.	£2 3 6	B. J. de Jong	do.
Portion of Wildebeesfontein No. 233	do.	do.	£1 11 3	J. K. and J. E. Lanser	do.
Portion of the remaining extent Rietfontein No. 8	Germiston	do.	Nil	Government of the Union of South Africa	do.
Remaining portion of Molensteenpan No. 129	Heilbron	do.	£2 13 0	Government of the Union of South Africa	do.
Remaining portion of Leitrem No. 926	do.	do.	£9 16 0	D. J. van Niekerk	do.
Remaining portion of Bloemfontein No. 11	Vrededorp	do.	£3 1 0	G. F. Supra	do.
Subdivision 2 of Goede-Hoop No. 235 and	do.	do.	£3 11 0	W. J. Lotter	do.
Welverdiend No. 283	Johannesburg	do.	£1 7 3	A. E. Yelland	do.
Remaining extent of portion of Rietfontein No. 48	Potchefstroom	Surface right permit	Nil	Department of Mines	do.
Farm Blyvooruitzicht No. 71					

**KLIP GENERATING STATION UNDERTAKING**

FARM OR LOT	DISTRICT	Title	Purchase Price or Rental	Acquired From	Purpose for which required
Portion "A" of Kafferskraal No. 90	Vereeniging	Servitude of options for Railway Line	£5: p.a. option Rental. £2: p. morgen option purchase.	F. J. Muller	Railway Line
Portion 1 of portion B called Groot-spruit of Goedgedacht No. 93	do.	do.	£93.0 p.a. option Rental. £25: p. morgen option purchase.	E. P. Muller and G. C. Engelbrecht	do.
Portion 2 of portion B Groot-spruit of Goedgedacht	do.	do.	£5: p.a. option Rental. £25 per morgen option purchase.	P. J. Muller	do.
Portion E Hutchinson of Uitgevallen No. 75	do.	do.	£5: p.a. Rental option purchase £20: p. morgen.	H. J. van der Bijl	do.
1. Portions A of Western portion of Blesbokspruit 94 2. Remaining portion of portion B of Western portion of Blesbokspruit No. 94	do.	do.	£20.8.0 p.a. Rental option purchase. £35: p. morgen.	J. P. Beytel	do.
Portion C of Eastern portion of Uitvluugt No. 84	do.	do.	£4.16.0 p.a. Rental option to purchase. £50: p. morgen.	G. J. Bester	do.
Portion 2 of Eastern half Blesboklaagte No. 94	do.	do.	£5: p.a. option Rental. Option to purchase £30: p. morgen.	M. Pereira	do.
Remaining extent of "Uitgevallen" No. 75	do.	do.	£6.9.0 p.a. option Rental. Option to purchase £85 p. morgen.	J. S. Clark	do.
Portion 1 of portion C of Uitgevallen No. 75	do.	do.	£6 p.a. option Rental. Option to purchase £85 p. morgen.	J. S. Clark	do.

## KLIP GENERATING STATION UNDERTAKING.—Continued.

FARM OR LOT	DISTRICT	Title	Purchase Price or Rental	Acquired From	Purpose for which required
Portion 10 (a portion of portion E) of Uitgevallen No. 75 .....	do.	do.	£5 p.a. option to Rental. Option to purchase £20 p. morgen.	W. J. Lamont	do.
Remaining extent of Palmietfontein of Boschkop No. 72 .....	do.	do.	£5 p.a. option to Rental. Option to purchase £20 p. morgen.	W. J. Lamont	do.
Remaining extent of portion of Badfontein No. 85 .....	do.	do.	£5.11.0 p.a. option to Rental. Option to purchase £20 p. morgen.	W. J. Lamont	do.
Portion B of Kafferskraal No. 90 .....	do.	do.	£11.2.0 p.a. option to Rental. Option to purchase £25 p. morgen.	J. P. Buys	do.
Remaining portion of portion B of Goedgedacht No. 93 .....	do.	do.	£8.8.0 p.a. option to Rental. Option to purchase £20 p. morgen.	G. H. de Lange	do.
Portion of portion of Badfontein No. 85 .....	do.	do.	£8.17.0 p.a. option to Rental. Option to purchase £30 p. morgen.	A. J. Beytel	do.

## ANNEXURE "C"

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


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Extracted from the 1944-45 Industrial Census and published by courtesy of the Department of Census and Statistics (Pretoria).

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## UNITS GENERATED.

Province.	Local Authorities.	Private Companies.
Cape .....	708,916,897	231,603,513
Natal .....	21,384,958	891,831,718
O.F.S. ....	50,047,003	431,789,307
Transvaal .....	756,702,756	5,236,242,813
Total .....	1,537,051,614	6,791,467,351
	<u>8,328,518,965</u>	

## CONSUMERS AND SALES.

## PROVINCE.

	Cape	Natal	O.F.S.	Transvaal	Totals
Total Number of Consumers	156,250	61,223	16,838	166,045	400,356
Total Units Consumed .....	796,849,014	768,825,130	102,493,779	5,474,273,095	7,142,441,018
Number of Domestic Consumers	131,158	48,004	14,846	141,036	335,044
Units Sold and Used For Domestic Consumption	365,151,476	159,231,644	16,925,912	385,157,241	926,466,273
Average Units Sold per Domestic Consumer	2,784	3,317	1,140	2,731	2,765

**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	1,552,000
20,000 kilowatts and over but below 50,000 kilowatts	6	208,500
10,000 kilowatts and over but below 20,000 kilowatts	4	58,100
5,000 kilowatts and over but below 10,000 kilowatts	7	52,887
1,000 kilowatts and over but below 5,000 kilowatts	43	88,835
Below 1,000 kilowatts	243	52,809
	<u>317</u>	<u>2,013,131</u>

SIZE AND TYPE OF GENERATING UNITS.

Size of Sets.						Total Number of Sets.	
	Steam Turbines.	Steam Recip- rocating Engines.	Diesel, Petrol, Paraffin, Light Oil Engines.	Gas Engines.	Water Wheels and Turbines.	Local Authori- ties.	Private Com- panies.
<b>(1) A.C. Plants :</b>							
Below 250 kilowatts	3	77	309	7	28	329	95
250 kilowatts and over but below 1,000 kilowatts	34	67	22	7	11	40	101
1,000 kilowatts and over, but below 5,000 kilowatts	83	—	1	—	—	29	55
5,000 kilowatts and over	99	—	—	—	—	26	73
<b>(2) D.C. Plants :</b>							
Below 250 kilowatts	—	29	174	8	—	153	58
250 kilowatts and over, but below 1,000 kilowatts	1	12	1	3	—	2	15
1,000 kilowatts and over	—	—	—	—	—	—	—

FUEL CONSUMED.

Type of Fuel.	Quantity (Tons of 2,000 lbs.)	Costs.
Coal	7,168,508	£2,906,632
Other Fuel	—	293,294

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

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COAL CONSUMPTION.

(Calorific Values Unknown).

Average Coal Consumption per Unit Generated	Number of Undertakings.
Under 2 lb. ....	22
2 lb. and over, but under 3 lb. ....	19
3 lb. and over, but under 4 lb. ....	17
4 lb. and over, but under 6 lb. ....	20
6 lb. and over, but under 8 lb. ....	8
8 lb. and over .....	18

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TRANSFORMERS.

Total installed capacity ..... 8,280,479 kVA

Total value of land, buildings, machinery, plant and tools ..... £68,496,877

Total average number of persons employed in the electricity  
industry (generation and distribution) ..... 16,850

Total salaries and wages paid for the year ..... £3,735,611