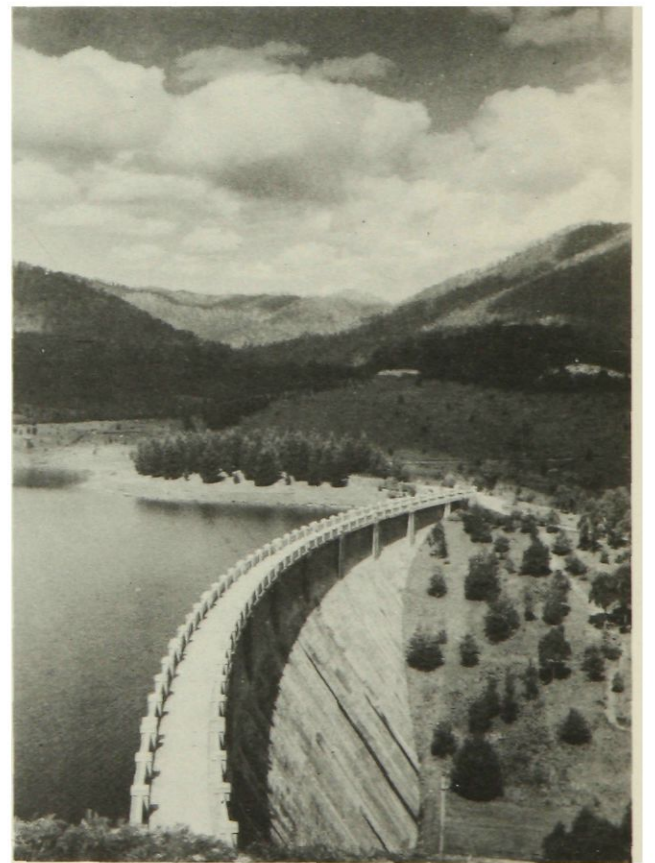


Newport Power Station



A catchment area for Melbourne's water supply



Cattle grazing at the Metropolitan Sewage Farm

ELECTRICITY

whole system will have to be undertaken in the near future.

The Board has considered various proposals for amplification and has approved of detailed investigations, which are now being carried out, for a scheme which provides for a new outfall sewer to discharge into Bass Strait near Cape Schanck and which will divert from the Werribee system the sewage from the eastern suburbs. The construction of this sewer will enable sewerage facilities to be extended to those southern portions of the metropolitan area for which no provision has yet been made.

When these amplification proposals are completed, there will be no physical difficulty in extending sewerage facilities to an expanded urban area including the southern suburbs of Chelsea, Frankston, and portions of Dandenong.

STORM-WATER DRAINAGE AND STREAMS

The Melbourne sewerage system is designed to exclude storm water, the removal of which is effected by independent conduits following the various creeks and waterways. In 1923, the responsibility for dealing with main storm water drainage was placed on the Melbourne and Metropolitan Board of Works, and by decision of the Board it constructs the necessary storm water drains up to the point where the area drained is less than 150 acres. Above these points the responsibility rests with local municipal councils.

At 30th June, 1952, there were under the control of the Board a total length of 128 miles of storm water drains, which are being extended as required and as manpower and finance are available. Generally there is no part of the metropolitan area, except some of the low-lying areas east of Chelsea, which cannot be effectively and economically drained by gravitation to the various radiating creeks and watercourses.

ELECTRICITY

Melbourne's electricity supply is under the control of the State Electricity Commission, an authority established by Act of Parliament in 1918 with the object of co-ordinating all electrical undertakings throughout Victoria. The Commission now generates about 98% of the electricity used in Victoria, and for the year 1951-52 distributed approximately 2,200 million kilowatt-hours to nearly 600,000 consumers. In the metropolitan area of Melbourne itself 1,800 million kilowatt-hours were used by over 300,000 consumers.

Sources of Supply

The electricity supply system of Victoria consists of an inter-connected system of power stations, based primarily on steam generating plants, but supplemented by hydro-electric plants and diesel-electric power stations. These include the Yallourn steam-electric power stations, three metropolitan steam power stations at Newport, Richmond and Spencer Street (Melbourne City Council), two regional steam power stations at Ballarat and Geelong, six hydro-electric power

stations in the north-eastern part of the State, and two regional diesel-electric stations at Shepparton and Warrnambool.

Operating exclusively on brown coal of high moisture content from the Yallourn open cut in the Latrobe Valley, the steam-electric power station at Yallourn is the most important station in the inter-connected system. Electricity generated there in 1951-52 was approximately 46% of the total amount generated. This power station is designed to carry the sustained base load, while the purpose of the metropolitan and regional stations is mainly to generate the additional power needed during peak loading periods. Apart from local supplies in the Gippsland area, the power generated at Yallourn is transmitted by two double circuit 132,000 volt transmission lines to the metropolitan area, feeding into the common pool to which the other power stations contribute and from which consumer's supplies are drawn.

Of the three steam-electric power stations in the metropolitan area, the most important is at Newport, which in 1951-52 produced 892 million kilowatt-hours, 32% of the electricity for general purposes, and 193 million kilowatt-hours of 25 cycles energy for railway traction. The metropolitan power stations all use higher grade fuel such as low moisture brown coal, briquettes, black coal or fuel oil, and at the present time the three stations are burning about 650,000 tons of brown coal and 350,000 tons of briquettes a year.

Nearly 8% of the total output of the inter-connected system in 1951-52 was generated at the hydro-electric power stations comprising the Sugarloaf-Rubicon group and the one power station at present in operation at Kiewa.

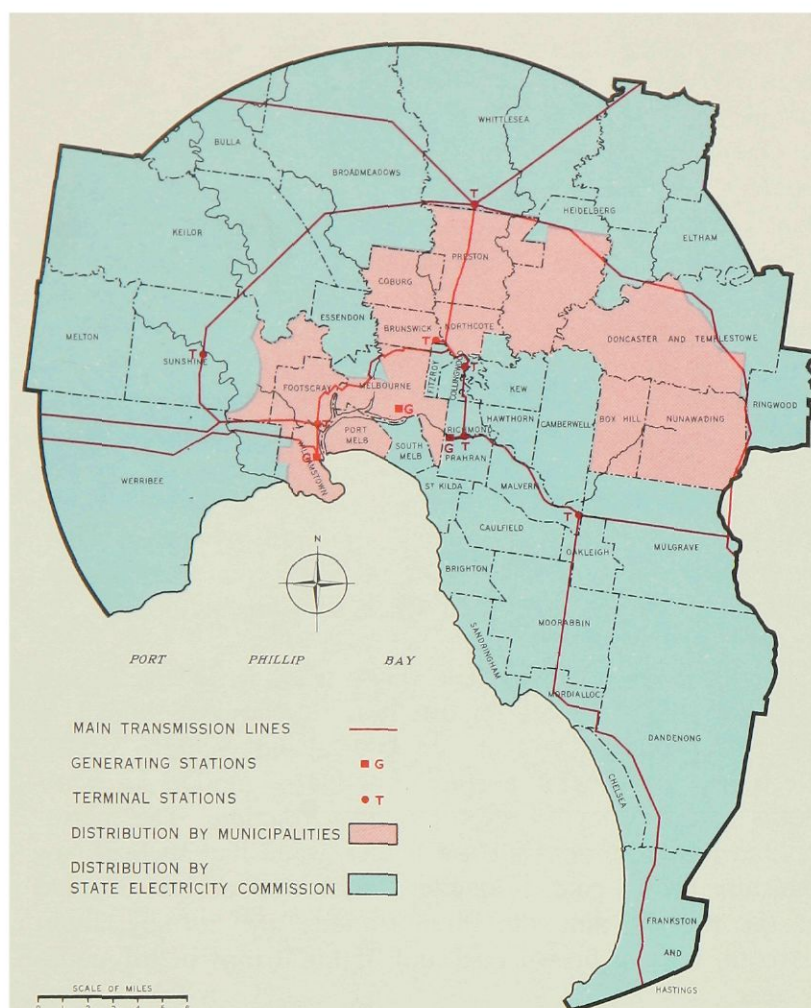
Two diesel-electric power stations at Shepparton and Warrnambool are in partial service and are scheduled for completion this year. A third diesel station at Hamilton is not yet connected with the main system.

The available capacity of the electricity supply system at June 30th, 1952, is set out in Table 58.

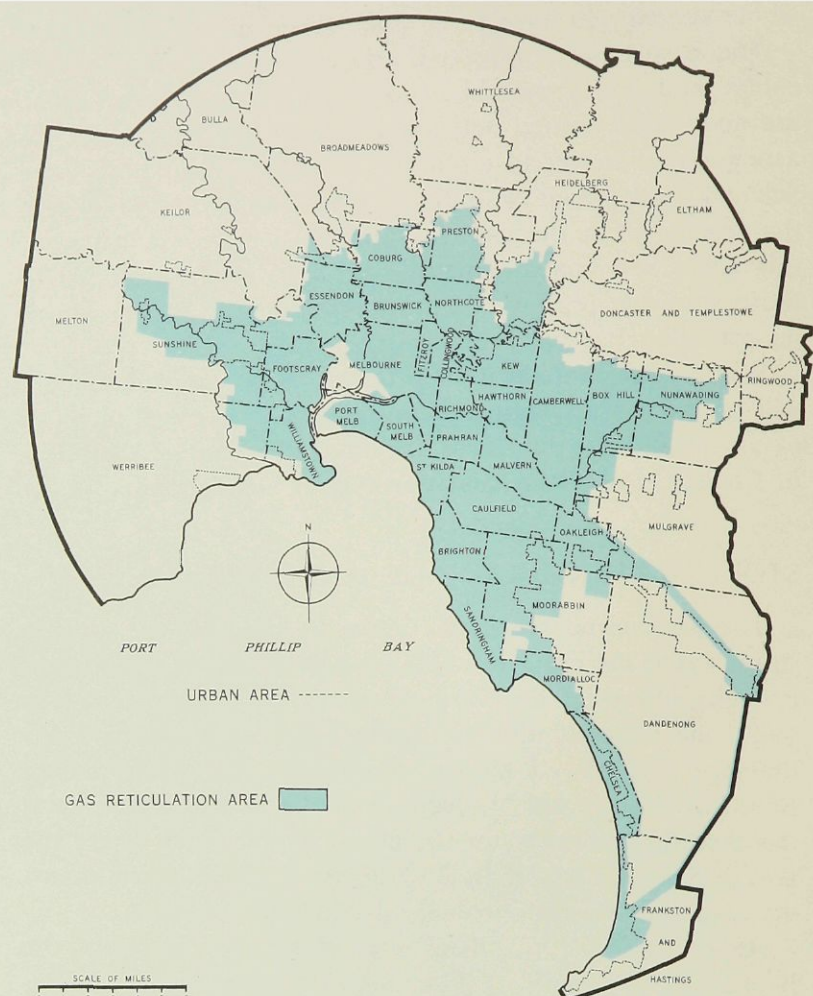
Metropolitan Distribution System: Within the metropolitan area of Melbourne approximately 63% of consumers are supplied direct by the State Electricity Commission and the remaining 37% by the 11 municipal supply authorities which purchase electricity in bulk from the State Electricity Commission.

Table 58
CAPACITY OF VICTORIAN ELECTRICITY
SUPPLY SYSTEM, 1952

Latrobe Valley Thermal Power Stations	183,000 kilowatts
Metropolitan Thermal Power Stations	265,000 „
Regional Thermal Power Stations	21,000 „
Hydro-electric Power Stations	51,000 „
Total	520,000 kilowatts



40 ELECTRICITY



41 GAS

The metropolitan system is based on a number of main distributing points known as the terminal stations, which are linked with one another and with the various generating stations of the inter-connected system. Generally, power is supplied from the terminal stations at 22,000 volts to main substations, where it is stepped down to 6,600 volts. Large consumers, such as the municipal supply authorities and the Tramways Board, take supply at 6,600 volts, but for the ordinary street mains supplying industrial and domestic consumers the power is further stepped down to 400-230 volts at a relatively large number of small substations.

Map 40 shows the principal power generating stations, transmission line and terminal stations in the metropolitan area as well as those areas supplied by municipal authorities and the State Electricity Commission direct.

Proposals for Expansion: The Commission's programme of capital works for new electric power projects is designed to secure a progressive increase of more than 200,000 kilowatts, or 40%, in the generating capacity of the inter-connected State system by the winter of 1954. Projects now under construction include major extension to Yallourn power station, three new regional steam-power stations at

provincial centres, a large hydro-electric power station at the new Eildon Weir, and further stages of the major hydro-electric project at Kiewa.

After 1954, further extensions of Yallourn Power Station are expected to increase its capacity to almost three times its present output. Also considerable further development of the relatively small hydro-electric resources of Victoria is planned. Insofar as the metropolitan area of Melbourne is concerned, developments may involve further expansion of existing power stations, and possibly the development of a new power station at a site yet to be determined.

The Commission's long-term plans for State-wide extension of electricity supply also involve the ultimate construction of a 220,000 volt transmission system 600 miles across the State, linking Yallourn, Melbourne, Kiewa and Mildura, and the extension of the other power transmission lines.

Construction of the 220,000 volt Kiewa-Melbourne power line is already partially completed, while work has begun on the Yallourn-Melbourne section of the new 220,000 volt power line to link the enlarged Yallourn power station with the main transmission system. It will run parallel to the two existing 132,000 volt power lines linking Yallourn with terminal stations in Melbourne.