Of the twenty-three districts constituted the majority have included the whole of the area concerned as rateable inner area, the presumption being that it is intended to supply over the whole area as soon as it proves remunerative to do so: these are, particularly, Southland, Thames Valley, Banks Peninsula, Central, Wairoa, Springs-Ellesmere, Auckland, Manawatu-Oroua, Dannevirke, Horowhenua, Tararua, Hutt Valley, and Buller Power Districts. Five others—viz., Te Awamutu, Cambridge, Teviot, Opunake, Reefton—have limited their area to a small district, the whole of which it is intended to reticulate. The remaining five districts—viz., Ashburton, Wairarapa, Wanganui-Rangitikei, Taranaki, and Westland—have taken advantage of the provisions of the Act for including the more sparsely settled districts as outer areas, only the more closely settled portion being included in the rateable district at present. But provision is made in the Act for the inclusion of additional areas in the rateable district on petition, and this has already been taken advantage of in two cases.

On the whole, the legislation, as far as can be judged at present, is proving quite successful in relieving the Government of the detail work of reticulation, in throwing the responsibility of this reticulation on to the shoulders of the local ratepayers, and leaving to the prospective consumers, as ratepayers, the decision as to which areas can be reticulated remuneratively and which should be postponed until the prospects are more promising.

Local Electric-supply Systems.

Including the Government stations, there are now sixty-one electric-power stations in operation in the Dominion, as detailed in Tables K and L herewith.

Four new stations commenced operation during the year under review, viz.: Motueka (50 kw., gas-power); Kaikoura (37 kw., gas-power); Tamaki (40 kw., gas-power); Murchison (80 kw., water-power). The following will commence operation during the current year: Fairlie (40 kw., water-power); Havelock North (144 kw., water-power); Whakatane (250 kw., water-power); Opunake (120 kw., water-power); Teviot (250 kw., water-power).

Extensions were made to existing stations during the year as follows: Invercargill (1,000 kw., steam-power); Tauranga (650 kw., water-power); Kaponga (90 kw., water-power); Raetihi (32 kw., water-power); Hawera (180 kw., water-power); Oamaru (150 kw., gas-power); Patea (40 kw., water-power); Martinborough (50 kw., gas-power); Stratford (90 kw., oil-power). In addition extensions and new stations are in hand to the extent of 32,000 kw., as already detailed.

The sum of the maximum outputs of all stations has increased during the year from 42,157 kw. to 48,866 kw., an increase of 6,709 kw., or 16 per cent., and the number of consumers in the Dominion has increased from 73,151 to 88,838, an increase of 15,687 consumers, or 21 per cent.

The total installed capacity of the sixty-one power-stations has increased from 49,630 kw. to 51,749 kw. of main plant, and is distributed according to source as follows:—

	Stations.	Kilowatts.	Proportion per Cent.
Water-power	27	25,125	49
Steam-power	10	22,470	43
Gas-power	22	3,343	6·5
Oil-power	2	811	1·5
	61	51,749	100·0

In addition there are 7,247 kw. of subsidiary or standby plant, distributed as follows: Water-power, 110 kw.; steam-power, 4,753 kw.; gas-power, 310 kw.; and oil-engines, 2,074 kw.

The total of the maximum loads was 48,866 kw., as compared with the installed capacity of 51,749 kw., apart from the 7,247 kw. of standby plant, showing a margin in main generating plant of 2,883 kw., or 5·6 per cent. of the installed capacity. The water-power plants as a whole were actually overloaded by 500 kw., and the extensions in hand are thus urgently required to meet the increasing demand.

The load-factor for the year, based on a maximum load of 48,866 kw., and an output of 171,943,546 units, is 40 per cent.; and the load-factors for each type of plant are—Water-power, 48 per cent.; steam-power, 32 per cent.; gas-power, 25·5 per cent.; oil-power, 32·5 per cent. These figures in each are high, due to the extensive use of electric power for tramways, industrial, and domestic purposes.

The units sold per consumer (exclusive of tramways) was 1,210 units, as compared with 1,246 units per consumer in the previous year.

The maximum demand per head of population in the areas actually supplied was 0·067 kw., or 0·089 h.p., inclusive of tramways, and the units sold per head of population were 146, exclusive of tramway load. Both of these figures show an increase over the previous year.

The total length of distribution-line is 2,814 route-miles (apart from 400 miles of transmission-line), as compared with 2,260 miles in the previous year. The power-demand supplied per mile of line was 14 kw., the sales 38,500 units, and the revenue £327 per mile, excluding tramways in each case. The number of consumers per route-mile of line is 31·4, as compared with 32·3 last year. These figures are of considerable importance in considering the question of the construction of new lines, and the probability of their proving as remunerative as the average returns from the existing lines of the Dominion. It is usually considered that country lines costing £250 to £300 per mile will pay with two farms connected per mile, each with a milking plant, and taking a maximum demand of about 4 kw., yielding a revenue of £50 per year or more per mile of line.

The average return (excluding tramways) was £24 per kilowatt of output—also a very important figure in estimating the return from a new plant. It will be noted that this includes the lower return of £17·6 per kilowatt from the large water-power plants. The steam, gas, and oil stations, which represent average retail conditions, show a revenue of £33·7 per kilowatt of output, which is the figure