

APPENDIX D.

ANNUAL REPORT ON ELECTRICAL WORK AND POWER-SUPPLY UNDERTAKINGS, BY THE ACTING CHIEF ELECTRICAL ENGINEER.

The ACTING CHIEF ELECTRICAL ENGINEER to the Hon. the MINISTER OF PUBLIC WORKS.
SIR,—

I have the honour to submit the following report on the existing electric-power installations of the Dominion in service on 31st March, 1919, for public electric supply and controlled by the Department under the regulations issued under section 2 of the Public Works Amendment Act, 1911. The table herewith is a complete list of such installations. Of the total of sixty-six distributing authorities taking energy from fifty-four plants the sources of energy are as follows :—

	Number.	Capacity. Kilowatts.	Proportion per Cent.
Water-power	26	24,307	55.4
Steam-power	8	15,022	34.2
Gas-engines	17	2,280	5.2
Oil-engines	3	2,290	5.2
Bulk supply	12	(No generating plant.)	
Totals	66	43,899	100.0

Out of the total installed capacity thus more than one-half already consists of water-power, about one-third of steam-power, and only 5 per cent. each of gas- and oil-engine power.

Owing to the large number of isolated power-stations the total capacity was not efficiently used, as each station has had to maintain its own standby provision. The sum of maxima outputs from the whole of the stations was only 27,996 kilowatts, thus leaving a margin of 15,933 kilowatts, or 36.4 per cent., as standby provision. With a completely interconnected system 10 to 20 per cent. would be ample provision for this purpose, thus indicating the large economy of plant which will be possible as the general interconnected system of the Dominion is built up.

With regard to the authorities operating the various installations, they are classified as follows :—

	Number.	Capacity. Kilowatts.	Proportion per Cent.
Government Departments	2	8,700	19.8
City Councils	4	17,250	39.3
Borough Councils	39	6,628	15.1
Town Boards	8	442	1.0
County Councils	2	(Bulk)	..
Electric-supply companies	9	2,079	4.8
Industrial companies (Wairua Falls power-house)	1	2,500	5.7
Mining companies (Horahora Rapids power-house)	1	6,300	14.3
Totals	66	43,899	100.0

Thus, apart from the Waihi Gold-mining Company's plant at Horahora Rapids (6,300 kilowatts), which has since been purchased by the Government, there is only 10.5 per cent. of the installed electric-power capacity in the hands of private companies, and 55.4 per cent. in the hands of the local authorities.

The 54,926 consumers of electricity are distributed as follows :—

	Number of Consumers.	Proportion per Cent.
4 cities	32,665	59.5
39 boroughs	16,812	30.6
2 Government Departments	1,047	1.9
11 electric-supply companies	2,304	4.2
8 Town Boards	848	1.5
2 County Councils	1,250	2.3
Totals	54,926	100.0

From this it is obvious that the benefits of electric supply are so far confined almost entirely to the cities and larger borough centres. In addition to those classed under cities and boroughs, one of the Government Departments (Tourist Department, Rotorua), seven of the electric-supply companies, and the greater portion of the two counties Waimairi and Heathcote, supply what are practically suburban areas, and there are thus probably less than 1 per cent. of the total number of consumers located in farming or country districts. Farm supply is the sphere in which the greatest advantages will ultimately be obtained from electric power, and the future installations should be developed generally along such lines as will meet this special demand.

Owing to war conditions the capacity of the power plants has not increased during the past three years in proportion to the demand, which, owing to the steadily rising prices of fuel has been very insistent. But since the Armistice practically all the supply authorities are providing for extensive increases in their installed capacity, and the demand for the development of the water-power is especially urgent.