

But these districts differ from the rest of the Dominion in that the demand is more concentrated near the towns. There is very little dairying except just round the centres of population; these centres are more widely separated; the connecting roads are very rough, mountainous, and difficult for transmission-line construction and maintenance, and, above all, there are local water-powers near each centre which, with one exception, can be developed very cheaply up to the capacity required for ordinary domestic and industrial purposes for many years to come. No doubt the completely interconnected scheme provided for the rest of the Island will ultimately be extended to these centres as well, but the above circumstances render it impossible to justify main interconnecting-lines between these small centres at present, and full surveys of each district are necessary. The local sources that have been proposed are as follows:—

	Ultimate Capacity. Horse-power.
Marlborough District—	
Clarence River	14,000
Waihopai River	2,000
Nelson District—	
Gowan River (Lake Rotoroa)	30,000
Lake Rotoiti	10,000
Boulder Lake	11,000
Wairoa River	1,400
Buller District: Four-mile Creek	5,000
Greymouth District: Kumara Water-race	2,000
Westland District—	
Toaroha River	10,000
Kanieri Lake	3,000

Of these, preliminary examinations have been made during the year of the Clarence River, Waihopai River, and a detailed survey of the Gowan River. It is proposed during the coming year to carry these surveys on to the stage at which a definite decision can be made of the most economical sources of supply for these districts.

WAIKATO ELECTRIC-POWER SUPPLY.

The Horahora plant was acquired by the Department from the Waihi Gold-mining Company on the 1st November, 1919, and operated by the company for the five months ending 31st March, 1920, so that the year ended is the first complete year of operation by the Department.

Financial Results of Operation.

The capital outlay at the end of the year was £249,745, exclusive of stocks of material for new work, as compared with £215,064 on the 31st March last. This is analysed in Table A. Cost and load records are given in Table B.

Future Prospects.

A contract has been entered into with the Grand Junction Company under which the Department undertakes to supply the company with power during the night hours and when it is available during the day—that is, until the demand of other consumers, including the Waihi Company, grows approximately to 6,000 kw. When the load of the Department's ordinary consumers grows beyond the capacity of Horahora, the Grand Junction Company will supply power to the Department, generated at its steam plant at Waihi, up to an amount not exceeding 2,000 kw., above the requirements of the mine. Supply to this consumer commenced in January, and so far is only for a partial supply of about one-third of its total demand.

Another contract, with provision for use of standby plant, has been made with the Cambridge Co-operative Dairy Company, in connection with their plant at Hautapu. A contract has been made with the Thames Valley Power Board for supply to them at Waikino, and arrangements are being made to supply the Thames Valley Board at Horahora and Waihou, the Te Awamutu, Cambridge, and Central Power Boards, Hamilton Borough Council, and the Railway Department's factory at Frankton.

After providing for the requirements of the Waihi Gold-mining Company, and reserving 500 h.p. for special industries and 200 for the Arapuni works, and allowing for one spare unit of 1,400 h.p., there is left for allocation to the different Power Boards 2,400 h.p. out of a total of 8,400 h.p.

As far as possible the spare unit will be utilized to supply power to factories, &c., which already have steam plants installed and can be cut off in case of necessity without any great inconvenience. Such factories are the Hautapu Dairy Factory mentioned above, and the New Zealand Co-operative Dairy Company's factories at Frankton, Waitoa, Waharoa, and Te Awamutu.

Extensions.

Transmission-line construction was commenced in November on the Horahora–Hamilton 11,000-volt line, which has been completed to Cambridge and Hamilton.

Orders have been placed for material for the following extensions, all of which should be completed within the next year:—

Horahora Power-station.—Additional transformers and switch gear required to supply at 11,000 volts.

Transmission-lines.—11,000-volt lines to Cambridge, Hamilton, and Te Awamutu, a total of 32 miles (approximately); 50,000-volt lines from Horahora to Hamilton and Te Awamutu, and from Waiorongomai, on the Horahora–Waikino line, to Waihou, a total of 46 miles (approximately).

Substations.—50,000-volt to 11,000-volt equipment for substations at Waihou, Hamilton, Waikino, and Te Awamutu.