

will be undertaken by Electric-power Boards, of which seven are already constituted, covering the whole area which can be reached from Mangahao and the whole of the available power, which has been allocated as follows:—

	Population.	Horse-power allocated.
Wellington District	93,030	12,000
Hutt Valley Electric-power District	22,594	2,000
Horowhenua Electric-power District	12,000	1,200
Manawatu-Oroua Electric-power District	36,642	3,300
Rangitikei Electric-power District	12,222	1,800
Wairarapa Electric-power District	22,159	2,000
Tararua Electric-power District	10,090	1,000
Dannevirke Electric-power District	13,082	1,300
		<hr/> 24,600

Negotiations are now in hand for the supply to Wellington City. The Power Boards covering the balance of the district to be supplied have all been constituted, and are making provision for the erection of the necessary reticulation in each case, but have not yet entered into contracts for the supply of the necessary power.

The above allocations of power available from Mangahao are only one-half of the ultimate demand anticipated from each district, and the full output of the plant is thus assured apart from any agreements to take power. In fact, Mangahao will be overloaded and will require supplementing from other sources as early as when the Lake Coleridge plant has reached the same position. It is anticipated that, pending the installation of the large plant at Waikaremoana for this purpose, this relief will be available from the steam stations being installed by the Wellington City Council at Evans Bay (10,000 kw.) and by the Wanganui Borough Council (1,750 kw.).

ARAPUNI ELECTRIC-POWER SUPPLY.

The proposed installation at Arapuni consists of an ultimate equipment of twelve units each of 12,000 h.p., of which eight are required to complete Mr. Parry's scheme (96,000 h.p.). The first installation proposed will consist of four of these units (48,000 h.p.), and the plant will not pay its way until the load reaches about 36,000 h.p. In the meanwhile the load will be built up by means of the Horahora plant (14,000 h.p.) and Auckland City steam-power plant (26,000 h.p.) and smaller installations at Te Kuiti, Huntly, Ngaruawahia, Pukekohe, Tamaki, and Rotorua, amounting in all to about another 1,000 h.p. But the Arapuni works are in an entirely different position from Lake Coleridge and Mangahao, in that without the Auckland City load (estimated to reach 26,000 h.p. by 1928) it was impossible to develop the scheme on a commercially sound basis. It was therefore necessary to arrange a definite contract with the Auckland authorities before putting the works at Arapuni in hand. This was accordingly done. This contract anticipates that the Auckland Electric-power Board, which has taken over the obligations, will have a demand of at least 15,000 kw. (20,000 h.p.) in 1928, when the works are expected to be completed. The Board is extending its existing steam plant from 6,500 kw. up to 19,500 kw. capacity, and it is now anticipated that this plant will be loaded up to 16,500 kw. by 1925. Allowing one unit of 3,000 kw. as spare, this is considered the full load of the plant, and it is anticipated that the load will grow considerably in excess of this by 1928, if power is available.

WAIKAREMOANA ELECTRIC-POWER SUPPLY.

The ultimate development proposed at this site will consist of three power-houses, taking the regulated flow from the lake of 540 cusecs, and giving the following outputs on a 50-per-cent. load-factor:—

	Horse-power.
Upper power-house (450 ft. head)	40,000
Middle power-house (675 ft. head)	60,000
Lower power-house (344 ft. head)	30,000

Mr. Parry's scheme requires only 40,000 h.p. at this site, for which the middle power-house will be installed, being the most economical.

In the meanwhile a small temporary plant has been erected for construction purposes and to give a supply to the Wairoa Electric-power Board. For this purpose the two three-unit exciters with their synchronous motors and water-wheels each of 500 h.p. capacity, intended ultimately for the main power-house, have been installed, the motors being operated as generators, giving a capacity of 1,000 h.p.

An arrangement has been entered into with the Wairoa Power Board to operate the plant and supply power to the Department as required for construction work on the main plant. Supply will be available within a few weeks.

Apart from this small plant, the greater portion of the capital outlay has been expended on the permanent improvement of the road and bridges to give access to the main power-house site and pipe-line intake, the road in the meanwhile serving also to improve the access for the settlers of the district.

Surveys for the main scheme and foundation investigations have also been carried out, as well as a survey for a sawmill tram-line. Continuous river and lake gaugings have been made during the year.