

Allowing for the diversity between the demand of various consumers, this will require a maximum power-station output of, say, 6,000 h.p., corresponding to the four-unit stage, with three units in service.

When all are connected this will yield a revenue of at least last year's rate of £4 13s. 4d. per horse-power—*i.e.* £28,000 per annum.

The expenditure for the year has been as follows: Working-expenses, £9,383 9s.; interest charges, £11,397 18s. 2d.: total, £20,781 7s. 2d.

The working-expenses will be somewhat increased by reason of the provisions made for maintaining a standby supply in Christchurch, and it is estimated that this and other charges will bring up the working-expenses to £10,500, whilst the estimated interest charges will amount to £13,500, making a total charge of £24,000 against a revenue of £28,000, or a surplus of £4,000 towards sinking fund, depreciation, and reserve. It is evident that as the business grows the financial position will become still more favourable and its success assured. Thus, as far as the Department's aspect of the work—*viz.*, the supply of power in bulk—is concerned, a successful financial result is assured.

A very important aspect is that of the consumer—the ability of Lake Coleridge power to meet and satisfy the public requirement. In this direction the success of the undertaking has been even more marked. The distribution is carried out, as far as possible, through the local authorities, who are raising their own loans for installing the necessary reticulation, and the following outlay by such local authorities has been authorized:—

	£
Christchurch City Council	155,000
Waimairi County Council	19,250
Heathcote County Council	6,200
Spreydon Borough Council	6,000
Riccarton Borough Council	3,500
Tai Tapu Dairy Company	2,000
	<hr/> £191,950

Within the City of Christchurch the immediate effect of the introduction of hydro-electric power has been to reduce the retail price for domestic lighting from 6d. to an average of 3d. per unit, the retail price for power from 3d. to 1½d., and the price for power in bulk from 2½d. to ½d. These reductions resulted in popularizing the supply to such an extent that the number of consumers increased from 1,623 at the beginning of the year to 2,860 at the end—an increase of over 80 per cent. This increase is being maintained at the rate of 125 consumers per month, in spite of the shortage of men and materials caused by the war.

The form of bulk charge to the city based only on the maximum load taken has resulted in the city authorities doing their utmost to maintain a high average load even at very low rates, down to ½d. at "off load" hours. As a result the city load factor has increased during the year from 25 per cent. to 50·8 per cent. This achievement is a direct result of the favourable form of the contract made between the city and the Department.

The popularity within the city is indicated by the following approximate analysis of the retail consumers according to the amount of their average monthly account:—

	Number.	Per Cent.
Under 3s.	700	24·5
From 3s. to 4s.	400	14·0
From 4s. to 5s.	380	13·3
From 5s. to 10s.	400	14·0
From 10s. to £1	275	9·6
Over £1	705	24·6
	<hr/> 2,860	

Of these, about 700 are commercial consumers, leaving 2,160 domestic consumers; and it will be noted that in the case of 1,100 of these—*i.e.*, more than one-half—the monthly account does not exceed 4s.

In the suburban areas the Department has started the retail reticulation in various centres, but arrangements have been made to sell these reticulations to the local authorities so soon as they can raise the necessary loan. In this way the initial difficulties have been overcome and the local authority will take over a going, and in most cases a paying, concern.

Remarkable results have attended the extensions to country districts, notably in the case of Tai Tapu and Lincoln, obtained with the assistance of the Tai Tapu Co-operative Dairy Company. Even within the city and suburbs, with ten to twenty consumers per mile of main, the capital outlay in distribution is heavy compared with the capital outlay in the whole system. But in the country, with one or two consumers per mile of line, the difficulty of successful distribution is increased tenfold, and the organization of a separate distribution business would also be much more expensive. By taking advantage of an existing local organization, such as a co-operative dairy company or local authority, and sharing the proceeds, the distribution in country areas is rendered possible, as has been demonstrated in the Tai Tapu district, and as a result the farmers and settlers of the whole Peninsula to Akaroa are clamouring for similar advantages.

The supply has been utilized, so far, mainly for lighting (domestic and public) and industrial power. For these purposes, at the rates available, it is substantially cheaper than any other form of energy, although, apart from this, its claim to adoption would be fully justified on the grounds of convenience, safety, and reliability.