

SURVEYS AND INVESTIGATIONS.

Apart from surveys on schemes on which construction is already in hand, work in this direction has been concentrated on investigations to decide on the best source for development to provide additional power for Canterbury and the districts farther south, and on surveys of the potential sources between Lakes Manapouri, Te Anau, and the West Coast Sounds.

The investigations in South Canterbury have been carried sufficiently far to enable a pronouncement to be made as to the future policy to be adopted in providing additional power for the Canterbury and North Otago districts. In making a decision on this matter due consideration has been given to the following four main points:—

- (1) The cost at which power can be generated at the generating-station and supplied to the main transmission system :
- (2) The location of the feed-point in respect to the centre of gravity of the load and prospective load to be supplied :
- (3) The location of the feed-point on the main transmission-line as affecting the security from interruption of all substations supplied off the main transmission system :
- (4) The possibility of the generating source selected being developed at reasonable cost for the capacity immediately required, and of economical extension to meet future growth.

All the various potential sources in Canterbury and North Otago were considered, including the Clarence River, the Waimakariri, the Rakaia, the Rangitata, Lakes Tekapo, Ohau, and Pukaki, and various possibilities on the Waitaki River. Taking all things into consideration, the source best suited to the conditions required above appears to be the Waitaki River, a few miles above Kurow. Surveys and borings are being made at two different sites on the river, and alternative plans are being considered. In view of the prospective increases in load in the districts to be supplied it would appear that a start will have to be made with construction work within the present financial year.

The surveys between Lakes Manapouri, Te Anau, and the Western Sounds have been continued throughout the past summer with a view of placing on record in more definite form than exists at present the potential value of these water-powers, with sufficient information to allow of accurate estimates of cost of development being made.

LOCAL ELECTRIC-SUPPLY AUTHORITIES.

The Public Works Department has two particular functions in respect to the electric supply of the Dominion. In the first place, as the owner of main generating-stations, it has to supply power in bulk to the Power Boards and other local authorities to enable them to carry out the retail distribution to the actual consumers ; in the second place, as the general authority controlling electric supply, it has also to exercise a general supervision and control over all supply authorities, whether purchasing power from the Department in bulk or not. In both cases the fullest co-operation between the Department and the various other authorities interested is necessary, and I am gratified to feel is in general being observed. The business in which Government and local authorities are both concerned is growing at a very rapid rate, as indicated by the following figures : The capital expenditure by the Government itself has grown from £362,000 at March, 1916, the first complete year of supply from Government stations, to £1,072,000 in 1921, and to £6,428,000 by the end of last March. In the same period the capital investment of local authorities connected to the Government supply had increased from £200,000 in 1916 to £600,000 in 1921, and to £7,950,000 in the year just closed. Apart from the above, other electric-supply authorities not connected with the Government supply have a capital of £3,647,000 invested in electric-supply undertakings.