(5)

Government electric supply is Government trading, and the accounts of such an undertaking should be treated exactly as would be the case were the enterprise a private one.

(6)

All deficits should be carried forward at debit of profit and loss, to be wiped out by future trading surpluses, if any. After the undertaking is properly started, such a price should be charged for current as will make the undertaking self-supporting.

(7)

The undertaking should also pay all the usual charges that have to be met by private enterprises, including rates and taxes.

(8)

(c.) The average price per unit sold, found by dividing the revenue by the energy sold, is 0·427d. per unit for the year 1917.

(9)

The cost of the unit to the undertaking, calculated by dividing the total annual cost by the energy sold, is 0·673d. It may be said that the output could have been increased without any increase in capital expenditure and operating-costs. This seems to be the case, as the plant is capable of generating 6,000 kilowatts, and the maximum load on the power-station during the year was only 4,366 kilowatts.

(10)

The output, assuming the load factor to have remained constant at 52·9, might have been increased in the ratio of 6,000 to 4,366, and the energy sold would then have become 16,030,638 kilowatt-hours.

(11)

This amount of current, sold at the average price (0·427d. per unit), would have yielded a revenue of only £29,189, so that there would still have remained a deficit of £3,521, and this without any charges for rates and taxes, and possibly management. It therefore appears that the prices charged for current are too low to make ends meet. If the average price charged was ½d. per unit, and if the maximum load on the power-station was equal to the capacity of the plant, the revenue from the sale of current would be £33,397, and this sum would be sufficient to meet the working-expenses, interest, and depreciation charges, totalling £32,710, as shown in the accounts for 1917.

(12)

Had the hydro-electric station been a private enterprise, paying 4 per cent. dividend on its capital, it would have been required to pay income-tax on £13,743; and it does not seem fair that it should be exempt because its capital is loan capital and not share capital, especially as it is in competition with other interests which are subject to taxation. It thus appears that, even under the most favourable circumstances, an average price of ½d. per unit would not be sufficient to make the undertaking self-supporting if all legitimate charges were met.

The Hydro-electric Scheme for Auckland District.

(13)

Mr. Parry, the Chief Electrical Engineer, proposes for Auckland district a hydro-electric station at Arapuni Gorge, on the Waikato River, and he proposes an initial installation of 30,000 h.p. for an expenditure of £1,200,000.

(14)

He states (Public Works Statement, 1917, page 50): "One objection to this scheme is that, whilst the development is an exceptionally economical one for the full development, the initial cost of the large hydraulic works required makes it unduly expensive for partial development of under 40,000 horse-power; but if it can be found that within reasonable time there is a prospective market for this amount, the development of the scheme would be justified on an economical basis."

(15)

Without expressing any opinion as to whether there will be a market for 40,000 h.p. within a reasonable time, it may be pointed out that, as compared with Lake Coleridge plant, the Arapuni scheme suffers from two disadvantages:—

(1.) That the hydraulic works will be unduly expensive for partial development:
(2.) That the chief centre of population to be supplied (Auckland) is about twice as far away from Arapuni as Lake Coleridge is from Christchurch.

(16)

The cost per horse-power of plant installed at Lake Coleridge has largely exceeded the estimate of £23, and is now actually over £45.

(17)

The estimate of the Arapuni scheme is £40 per horse-power of plant with a development of 30,000 h.p., and this is probably also an underestimate, while for partial development it is certain that this figure will be greatly exceeded.