

ations. This "public ownership" movement developed especial strength in Ontario and finally led to the establishment of the Ontario Hydro-Electric Commission, the operating statistics of which are given below. In more recent years, Manitoba, Nova Scotia and New Brunswick have established Hydro-Electric Commissions on the model of the Ontario system. In Quebec, on the other hand, the development of hydro-electric power has been left in the hands of private corporations.

The Hydro-Electric Power Commission of Ontario.

Ontario.—The Hydro-electric scheme in Ontario had its beginning in 1903, when seven municipalities (Toronto, London, Brantford, Stratford, Woodstock, Ingersoll and Guelph) united in an investigation of the transmission possibilities of Niagara power. The Ontario Power Commission, which was created to report on the question, favoured the construction of a generating plant at Niagara Falls, and the Hydro-Electric Power Commission of Ontario was formed in 1906 to carry out its recommendations.

The capital required by the Commission for its transmission plant was provided by issues of bonds, guaranteed by the Government of Ontario, whose security was something more corporate than that of the associated municipalities. The contracts between the Commission and the municipalities called for repayment to the Government in thirty years.

When a municipality wishes to become part of the Hydro system, an engineer of the Commission reports on the cost of connection with the existing transmission lines. Then the question of joining the Hydro is voted upon under a civic by-law, which, if passed, is followed by another giving the necessary money. The local distribution system is financed by an issue of municipal debenture bonds to be retired in twenty years. Monthly bills are sent by the Commission to the municipalities, based upon an approximation to the yearly expense incurred in supplying power to the municipality, and at the year's end a thirteenth statement is sent, which brings the approximation to a true account. Like any efficient business concern, the Commission makes provision from the charges for power for sinking funds, repairs and replacements.

The Commission had been given authority to generate its own power, but chose rather to contract for power from the Ontario Power Company at \$9.40 for the first 25,000 h.p. and \$9.00 for any in addition up to 100,000 h.p. In 1916 power was purchased from the Canadian Niagara Power Company as well, and in the following year the Ontario Power Company was acquired through purchase of practically all the stock. It was at this time that the Queenston-Chippawa development was begun. Of the total drop of 327 feet between lake Erie and lake Ontario, an effective head of 305 feet is obtained by the Queenston-Chippawa development. This effective head is about twice that utilized by the plant located at the falls. This means that the efficiency of utilization of the water diverted from Niagara falls has been doubled, and for each cubic foot per second instead of 15 h.p., approximately 30 h.p. is now developed.

The Queenston-Chippawa development was begun in 1917 as a war measure, when the consumption of power in munition factories was greatest, at a time when the duration of the war could not be foreseen. High wage costs and high prices of material placed construction costs far above the original estimate of \$10,500,000, besides which the ultimate capacity of the plant was enlarged. The cost of completing the first five units totalling 275,000 h.p., is now estimated at approximately \$60,000,000.