

pality. Then the question of joining the "Hydro" is voted upon under a civic by-law, which, if passed, is followed by another to provide the money necessary for construction of the municipal distribution system.

The rates at which power is supplied by the Commission to the various municipalities vary with the amounts of power used, the distances from the sources of supply, and other factors. The basic principle underlying the operations of the undertaking is the provision of service "at cost". Like any other efficient business concern, the Commission and the municipal electric utilities make provision from the charges for electrical service for repairs and replacements and for obsolescence and contingencies. In addition, the sinking fund provisions ensure that as the successive issues of capital are retired, the charges for interest will be reduced. Power bills for the wholesale service given by the Commission are rendered each month to the municipal utilities at an interim estimated rate, and "credit or debit adjustment" is made at the end of the year when the Commission's books are closed and the actual cost of providing the service is determined.

The rates charged by the municipal utilities for retail service are under the control of the Commission and are designed to ensure that each class of consumer bears its appropriate share of the expenses of the undertaking. The form of rate schedule for each class of service is designed to ensure, as far as is practicable, that each consumer is charged with the cost of the service he receives.

Power Supplies.—The constantly expanding power demands of the undertaking have been met by the Commission constructing its own generating plants, by the making of long-term contracts for the purchase of power from other organizations and by acquisition of existing privately-owned generating plants. The initial requirements of the undertaking were supplied under a contract with the Ontario Power Co. of Niagara Falls, which reserved to the Commission, in 1908, a maximum of 100,000 h.p. In 1916, power was purchased from the Canadian Niagara Power Co. as well, and in the following year the Commission, through purchase, acquired the Ontario Power Co. It was at this time that the Queenston-Chippawa development was begun. In 1920, the Toronto Power Co. was purchased. In 1926-7 contracts for the supply of power up to a maximum of some 360,000 h.p. were negotiated with the Gatineau Power Co.

To supply the needs of municipalities in various parts of the province, the Commission has from time to time constructed and acquired a number of smaller generating plants, and has negotiated contracts for the purchase of power. In 1929 the bulk of its energy supplies, aggregating 4,992,937,029 kilowatt-hours, were derived from some 25 hydro-electric developments owned and operated by the Commission. Provision for the needs of the near future had been made at the end of 1929 up to an aggregate of about 1,700,000 h.p.

The largest of the plants constructed by the Commission is the Queenston-Chippawa development on the Niagara river. Diverting water from above the rapids in the upper river and returning it to the river below the rapids in the lower gorge, this plant has the distinction of being the only one to make use of the maximum head capable of economic utilization, *viz.*, about 300 feet, of the 327 feet difference in elevation between lake Erie and lake Ontario. The general