

ELECTRIC GENERATION AND DISTRIBUTION IN CANADA.

Though only a comparatively short time has elapsed since electric lighting and electric power were introduced, the development in Canada has been phenomenal. This growth is strongly emphasized in a report just issued by the Commission of Conservation, entitled "Electric Development and Distribution in Canada," which covers all plants that sell electric energy.

The principal object of the report is to give complete and accurate information respecting power developed at any point, amount that is used and amount that is unused, prices charged for electric energy and similar pertinent data. Thus, with this information before him, an individual or company desiring to erect a plant, manufacturing or other, can decide which locality presents the maximum of advantage respecting one of the most important items of cost, namely, Power. Then, balancing the advantage respecting power against such important considerations as freight rates, accessibility to markets, etc., he can intelligently select the site which offers the maximum of advantage particularly as regards the point of the highest importance, namely, ability to market his product at lowest cost.

It includes data respecting the kind of primary power, that is, hydraulic, steam, gas, oil engines, etc., used to produce electrical energy in Canada. To be able to judge of the relative importance of each kind of primary power, the total quantity or horse-power is also dealt with. As was to be expected, water-power occupies an outstanding place. The total amount of power reported is 2,107,743 h.p.; of this, by far the greater portion, namely, 1,806,618 h.p., is water power, the remainder being divided 288,202 h.p. steam, 8,157 h.p. gas, and 4,766 h.p. oil or gasoline plants.

Respecting ownership, there are one and one-half times as many privately-owned plants as there are publicly-owned plants and the total capacity of the privately-owned plants is almost four times as great as that of the publicly-owned. Typical examples of the two kinds of ownership are furnished by two of our largest systems: the Ni-

agara system of the Ontario Hydro-Electric Power Commission, and the Shawinigan Water and Power Company in the Province of Quebec, each supplying over 200,000 h.p.

Among the largest plants described are those on the Canadian side at Niagara Falls, with a total installation of 488,800 h.p., one plant alone having a capacity of 211,300 h.p. The largest units, in point of capacity, at present in use are at Grand-Mere, each having a capacity of 20,000 h.p., but this figure will be surpassed by the 50,000 h.p. units in the Chippawa plant of the Ontario Hydro-Electric Power Commission now under construction to utilize additional Niagara power. The largest units in point of dimensions are the 10,000 h.p. units in the Cedars Rapids plant, St. Lawrence River, Que.

All our large plants are of relatively recent construction and are of a highly desirable type. Usually the works are of most substantial construction, while the equipment comprises both hydraulic and electrical machinery of the most efficient type.

Long distance transmission of electric energy has played an important part in our power development. The transmission lines operate under many different voltages up to 110,000 volts, the lines of 10,000 volts and upward, aggregating 5,490 miles, of which, 577 miles operate at 100,000 to 110,000 volts.

Information respecting capital and operative costs of the generating plants and transmission systems is also included and is summarized in the introduction. Short descriptions are also given of systems of distribution supplied from the different plants comprised in the report; the figures in connection with this show the extent and importance as well as the ownership of each system.

Another item which should prove of interest both to operators and the public in general is the information respecting rates charged by the vending companies for various services. The rates charged throughout the country show great variation inasmuch as they are based, to a great extent, on local conditions as well as on the cost of producing the power.

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