

CHAPTER XVII.—POWER GENERATION AND UTILIZATION

CONSPECTUS

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Section 1.—Water Power

Canada as a whole has been very favourably endowed with water-power resources. A country of great lakes and rivers, its large areas of favourable topography, combined with adequate, well-distributed precipitation in most sections, present great opportunities for the development of water power. Precipitation, the raw material of water power, varies from more than 100 inches annually on the Pacific Coast to about 12 inches in certain sections of the Prairies and Northwest Territories; in Ontario and Quebec, the annual average is 24 to 40 inches; in Nova Scotia it is about 45 inches. The run-off from this precipitation, much of it from considerable altitudes, creates in its descent to the sea sources of potential energy at every rapid and fall along the streams and rivers. Canada's innumerable lakes, which have a total area in excess of 200,000 square miles, also provide storage basins for the regulation and control of its stream flow, thus enhancing its potential power. The distribution of available power resources, more than one-half of which occur in Ontario and Quebec, has fostered great industrial development and has compensated in large degree for the lack of commercial fuel deposits in these provinces.

Since the turn of the present century, water power has been a dominant factor in the evolution of the Canadian economy. In 1900, Canada was predominantly an agricultural country and water power, with the advent of long-distance transmission of electricity, was just beginning to exert its influence in the development of large-scale industry. In the succeeding decades, this influence grew rapidly and so encouraged the economic utilization of the natural resources of land, mine and forest throughout the Dominion that Canada has attained a position of first-rate importance among the manufacturing countries of the world. Water-power installations, which totalled only 173,000 h.p. in 1900, grew to 977,000 h.p. in 1910, 2,516,000 h.p. in 1920, 6,125,000 h.p. in 1930, 8,584,000 h.p. in 1940, and at the beginning of 1947 had reached a total of 10,312,123 h.p. This places Canada in a position second only to the United States, the foremost country in

* In this Chapter of the Year Book all information respecting power generation and utilization in Canada is co-ordinated; some sections, however, cannot be regarded as complete owing to the insufficiency of available data. Section 1 has been revised under the direction of J. M. Wardle, Director, Surveys and Engineering Branch, Department of Mines and Resources, by V. Meek, Controller, Dominion Water and Power Bureau, and Sections 2, 3 and 4 (except as otherwise stated) by G. S. Wrong, Chief, Transportation and Public Utilities Division, Dominion Bureau of Statistics.