

# CHAPTER XIII.—POWER GENERATION AND UTILIZATION IN CANADA\*

## CONSPECTUS

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## Section 1.—Water Power

Canada's basic geological formations and their superimposed topographical features have resulted in a fresh-water area officially estimated at 228,307 square miles. This is larger than the fresh-water area of any other country and more than double that of the whole land area of Great Britain and Ireland. As all of this fresh-water area is above sea-level, and much of it at considerable altitudes, its outflow in its descent to the sea creates sources of potential energy at every rapid and fall along its course. By what may be regarded as a special dispensation of nature, more than half of this potential power occurs in that section of Canada comprising the Provinces of Ontario and Quebec, which is without commercial fuel deposits and in which is concentrated approximately 85 p.c. of the industrial development of the Dominion.

In war as in peace, water power is the mainspring of Canada's industrial success. The products of Canada's war industry, the output of which was designed to reach a peak value of \$3,700,000,000 during 1943 and which is so great that only 30 p.c. is allocated to the Canadian Armed Forces at home and abroad, have been used in every battle since Dunkirk—in the Philippines, in Greece, Crete, Russia, China, North Africa and the Middle East. The production of the essential constituents of these munitions—aluminum, copper, steel, zinc, nickel, lead and chemicals—and the conversion of these and many other materials into implements of warfare, are powered almost entirely by hydro-electricity generated by Canada's abundant and strategically located water powers. The peace-time utilization of these water powers had enabled Canada to advance from an agricultural economy to that of the third greatest manufacturing country in the British Empire and provided, upon the outbreak of hostilities, a reserve of power and an industrial background for the rapid development of a great munitions industry.

### Subsection 1.—Water-Power Resources of Canada and Their Utilization

An extensive discussion of Canada's water-power resources, a comparison of these resources with those of other countries and of problems in the development, distribution and merchandising of power is included in the 1940 Canada Year Book, pp. 353-364.

\* 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 V. Meek, Controller, Dominion Water and Power Bureau, Surveys and Engineering Branch, Department of Mines and Resources, and Sections 2, 3 and 4 (except as otherwise stated) by G. S. Wrong, B.Sc., Chief, Transportation and Public Utilities Branch, Dominion Bureau of Statistics.