

## VII.—WATER POWERS.

The water area of Canada is officially estimated at 142,923 square miles — an area substantially larger than the whole land area of the British Isles, and certainly larger than the fresh water area of any other country in the world. As many parts of this well-watered country are situated at a considerable height above sea-level, it is inevitable that its rivers should generate abundant water power on their course to the sea. Water power, therefore, is among the chief natural resources of Canada, and its development has in recent years contributed materially to swell the volume of Canadian production.

This Water Power section of the Year Book is divided into three sub-sections, the first of which deals with water powers, their development and use in industry; the second deals with the Canadian central electric station industry, which is based almost wholly upon hydro-electric power; the third treats of the public ownership of hydro-electric power in Ontario, the chief manufacturing area, and describes the policies of the Hydro-Electric Power Commissions in other provinces.

1.—The Water Powers of Canada.<sup>1</sup>

Before discussing the water powers of Canada in detail, some brief particulars may be given, for purposes of comparison, of the developments already made in some of the principal countries of the world.

During the later stages of the war, owing to the immense demand for power to manufacture munitions and to the scarcity and high price of coal, very large programmes of water power construction were entered on by the principal countries engaged; since the war the rate of progress has somewhat diminished, but a large amount of new construction is still in hand in many of the countries listed.

It will be seen in the following table that Canada stands second in turbine horsepower installed per 1,000 of the population; the high ratio in Norway is largely due to immense electro-chemical industries which use much power but employ relatively little labour.

1.—Developed Water Power of Leading Countries, 1925.

Countries.	Population in 1,000's.	Turbine horsepower installed.	
		Horsepower in 1,000's.	Per 1,000 population.
United States.....	113,494	12,060	106
Canada.....	9,361	4,290	458
Italy.....	39,000	3,000	77
France.....	40,000	2,800	70
Japan.....	59,737	2,360	40
Norway.....	2,700	2,000	740
Switzerland.....	4,000	1,750	437
Sweden.....	6,000	1,600	266
Germany.....	63,000	1,200	19
Spain.....	21,763	1,000	46

With this brief reference to the water powers of the world, we may proceed to a more particular consideration and analysis of those of the Dominion. It has already been shown that Canada is richly endowed with water power resources and is in the forefront as regards their utilization. In fact, practically every large industrial centre throughout the Dominion is now served with hydro-electric energy and has within easy transmission distance ample reserves for the future. Over 90 p.c. of the prime motive power of the central electric stations of Canada is hydro power.

<sup>1</sup> By the Director, Dominion Water Power and Reclamation Service, Department of the Interior.