

WATER-POWERS

In a statement issued by the Dominion Water-Power Branch, in 1915, the developed power was stated to be 1,712,193 twenty-four hour H.-P., distributed as follows:

Province.	H.-P. Developed.	Province.	H.-P. Developed.
Nova Scotia.	21,412	Saskatchewan....	45
New Brunswick.	13,390	Alberta....	33,306
Prince Edward Island.	500	British Columbia.	265,345
Quebec.	520,000	Yukon.	12,000
Ontario.	789,466		
Manitoba.	56,730	Total.	1,712,193

The same statement estimated that, within areas that may reasonably be expected to be populated in the near future, there were water-power possibilities aggregating 17,764,000 twenty-four hour H.-P.; that is, more than ten times as much as was developed in 1915. If 80 p.c. of this possible power were developed and used constantly twenty-four hours daily, it would be equivalent to 341,068,000 H.-P. daily. At certain hours of the night very little power is used, and there will occasionally be loss from stoppages during ordinary working hours; but there is reason to expect great developments in hydro-electric chemical and metallurgical industries that will use power all night. If, on the average, the power were used only twelve hours per day for 300 days in the year, it would be equivalent to over 51,000,000,000 H.-P. It will be interesting to consider what amount of coal would be required to produce this amount of power with steam plants. The amount of bituminous coal required to produce one H.P. for one hour depends upon the character of the plant and the efficiency of operation. Competent authorities have expressed the opinion that six pounds would be a fair average, although at large well-equipped and economically operated plants the average would not exceed four pounds, and in some cases the quantity is a great deal less than four pounds, while in other cases it is eight pounds and even higher. Accepting six pounds of coal as the average requirement it would take over 153,000,000 tons of coal, or nearly six times the quantity of coal now consumed in Canada for all purposes, including coal produced in the country and imported coal.

In any review of the water-powers of Canada, the Niagara power demands first attention. The amount of water that can be diverted for power on the Canadian and American sides of the Niagara river above the falls has been settled by an international agreement which takes into consideration the fact that more water passes over the Canadian falls than over the American falls, and also makes allowance for the diversion of 10,000 cubic feet of water from the international lakes by the Chicago drainage canal. This agreement is intended to preserve the scenic beauty of the Niagara waterfall and protect navigation interests allowing reasonable use of the water for power purposes. It provides that 36,000 cubic feet of water per second above the fall may be diverted for power purposes on the Canadian side and 20,000 cubic