

Canada is exceeded only by Norway. Canada is in approximately fifth place in potential power resources but, on the whole, those resources are more readily available to prospective markets than are the water power resources of other countries that outrank Canada, an exception being the United States. In particular might be mentioned the enormous potential resources of the great river systems of Africa and Asia.

Table 1 gives a summary of the water power resources of Canada and their development as at the beginning of 1961.

1.—Available and Developed Water Power, by Province, as at Jan. 1, 1961

Province or Territory	Available 24-Hour Power at 80 p.c. Efficiency		Turbine Installation ¹
	At Ordinary Minimum Flow	At Ordinary Six-Months Flow	
	hp.	hp.	hp.
Newfoundland.....	1,608,000	3,264,000	384,025
Prince Edward Island.....	500	3,000	1,660
Nova Scotia.....	30,500	177,000	184,538
New Brunswick.....	123,000	334,000	254,258
Quebec.....	10,896,000	20,445,000	12,440,145
Ontario.....	5,496,000	7,701,000	7,814,562
Manitoba.....	3,492,000	5,798,000	988,900
Saskatchewan.....	550,000	1,120,000	122,135
Alberta.....	911,000	2,453,000	414,455
British Columbia.....	18,200,000 ²	19,400,000 ²	3,700,326
Yukon Territory.....	4,678,000 ²	4,700,000 ²	38,190
Northwest Territories.....	374,000	808,000	22,250
Canada.....	46,359,000²	66,203,000²	26,375,444

¹ Includes water wheels and hydraulic turbines installed.

² This figure reflects the effect of possible stream-flow regulation based on known storage potentials.

The figures given in the first and second columns of Table 1 represent 24-hour power and are based upon rapids, falls and power sites of which the actual drop, or the head of possible concentration, has been measured or at least carefully estimated. Tabulations of potential power in Canada are not complete, as many unrecorded rapids and falls of undetermined power capacity exist on rivers and streams throughout the country, particularly in the less explored northern districts. Apart from areas where definite studies have been carried out and the results recorded, no consideration has been given to the power concentrations that are feasible on rivers and streams of gradual gradient where economic heads may possibly be created by the construction of dams. Furthermore, the estimates of power available in different provinces do not include the power potential of major river diversions which have been investigated but not developed. Thus, in Table 1, the figures of available power under the two conditions of stream flow represent only the minimum water power possibilities of Canada.

The figures in the third column of Table 1 give the total capacity of the water wheels actually installed and should not be placed in direct comparison with those in the first and second columns to deduce the percentage of the available water power resources developed. While the maximum economic turbine installation at any site can be determined only by careful consideration of all conditions and circumstances pertinent to its individual development, it is usual practice to install turbines that have a total capacity in excess of the power equivalent of the six-months flow at the site.

The consistent growth of hydraulic turbine capacity is shown in Table 2. The average annual increase of 56,000 hp. from 1900 to 1905 was stepped up sharply in subsequent years because of improvements in the transmission of electricity and the building of large generating stations. During the period 1906-22, development proceeded at the fairly uniform rate of 150,000 hp. per annum but the rate of installation increased sharply in