

1.—Available and Developed Water Power, by Province, as at Jan. 1, 1962

| 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 | 204,538 |
| New Brunswick..... | 123,000 | 334,000 | 254,258 |
| Quebec..... | 12,527,000 | 23,706,000 | 12,576,845 |
| Ontario..... | 5,496,000 | 7,701,000 | 7,959,512 |
| Manitoba..... | 3,492,000 | 5,798,000 | 988,900 |
| Saskatchewan..... | 550,000 | 1,120,000 | 142,135 |
| Alberta..... | 911,000 | 2,453,000 | 414,455 |
| British Columbia..... | 18,200,000 ² | 19,400,000 ² | 3,701,326 |
| Yukon Territory..... | 4,678,000 ² | 4,700,000 ² | 38,190 |
| Northwest Territories..... | 1,369,000 ² | 1,795,000 ² | 22,250 |
| Canada..... | 48,985,000² | 70,451,000² | 26,688,094 |

¹ Includes water wheels and hydraulic turbines installed.
stream-flow regulation based on known storage potentials.

² This figure reflects the effect of possible

The figures listed in the second and third columns of Table 1 represent continuous 24-hour power based on available data on stream flow and hydraulic head at individual sites. The hydraulic head used is the feasible concentration of head, which has been measured or at least estimated at existing falls, rapids and known power sites. No consideration has been given to possible economic concentrations of head on rivers and streams of gradual gradient, except at those locations where the available head has been definitely established by field investigations.

It should be emphasized that the figures of available power represent only the minimum water power possibilities of Canada. Many unrecorded power sites exist on rivers and streams throughout the country, particularly in the less explored northerly districts. As power surveys are extended, information on new sites will become available, resulting in substantial additions to present estimates of available power. With the exception of British Columbia and Yukon Territory, estimates of available power are based upon existing river flows and do not take into account the benefits of stream-flow regulation resulting from the development of storage potential. In addition, the figures of available power do not include the power potential of major river diversions that have been investigated but not developed.

The figures in the third column of Table 1 are the totals of plant capacities based upon the manufacturer's name-plate rating of each unit. The maximum economic turbine installation at any power site can be determined only by consideration of the conditions pertinent to its development. It is the usual practice, however, to install a total turbine capacity in excess of the power equivalent of the ordinary six-months flow at the site. The extent to which the installed capacity exceeds the power equivalent of the ordinary six-months flow depends upon the system of power-plant operation, varying widely throughout the country, and amounting to several hundred per cent in some instances. Therefore, figures of installed turbine capacity are not directly comparable with figures of available power at either ordinary minimum or ordinary six-months flow.

The steady growth of hydraulic turbine capacity is shown in Table 2. The average annual growth of 56,000 hp. in the period 1900-05 increased sharply to about 150,000 hp. per annum in the 1906-22 period, owing largely to improvements in electric power transmission and to the construction of large hydro-electric stations. As a result of the heavier demand for electricity during the prosperous 1920's, the rate of installation increased appreciably in 1923 and continued at a nearly uniform rate of 377,000 hp. per annum until