

The figures listed 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 possible of concentration has been measured or at least carefully estimated. Many unrecorded rapids and falls of undetermined power capacity exist on rivers and streams from coast to coast. These will become available for tabulation only as more detailed survey work is completed; this is particularly true in the less-explored northern districts. Also, no consideration has been given to the power concentrations that are feasible on rivers and streams of gradual gradient, where economic heads may be created by the construction of power dams, unless definite studies have been carried out and the results made matters of record.

The third and fourth columns give the total capacity of the water wheels actually installed throughout the Dominion; these figures 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. The water-wheel installation throughout the Dominion averages 30 p.c. greater than the corresponding maximum available power figures for developed sites calculated as in the second column. The above figures, therefore, indicate that the *at present recorded water-power resources* of the Dominion will permit of a turbine installation of more than 51,350,000 h.p. In other words, the turbine installation at Dec. 31, 1944, represents only 20 p.c. of the present recorded water-power resources and the figures in the first and second columns may be said to represent the *minimum water-power possibilities* of the Dominion.

Subsection 2.—Statistics of Water-Power Development

Growth of Water-Power Development.—The inception of long-distance transmission of electricity about the beginning of the present century rendered practicable the development of water-power sites remote from the point at which the power was to be utilized. This resulted in the hydro-electric central station installation increasing from 33½ p.c. of the total hydraulic installation at Jan. 1, 1900, to 90 p.c. at Jan. 1, 1945. The growth of hydraulic installation during the period 1931-44 is shown in Table 2, attention being called to the increased installation since the outbreak of war. In addition to the increase in power resulting from the adding of generating equipment to plants not completely installed and the building of new generating stations, much additional power was provided by greater diversion of water at Niagara Falls, by the continuance of daylight saving throughout the winter months, by the transference of secondary power to primary uses and by many other methods.

The only development of magnitude completed during 1944 was that of Brilliant on the Kootenay River in British Columbia by the West Kootenay Power and Light Company (Consolidated Mining & Smelting Company of Canada). Two units of 34,000 h.p. each were brought into operation with provision being made for the installation of two similar units at a later time.