Construction Cost at Power Site of Hydro-Power Stations.

Of special interest to engineers is the actual cost of construction of hydro-electric power stations per installed turbine horse-power. The census questions were designed to secure this figure. In a large number of instances it was found to be impossible to obtain the subdivision desired as the construction cost records had not been preserved, so that the census returns as a whole could not be analysed on this basis. Sufficient accurate returns were, however, secured to permit of a statement on average costs.

The figures of seventy representative hydro-electric stations throughout the Dominion, with an aggregate turbine installation of 745,797 horse-power, show a total construction cost of $50,740,468, or an average of $69.11 per installed horse-power. The cost includes the capital invested in construction of dams, flumes, penstocks, and all hydraulic works, and of power stations and equipment. It excludes real estate and transmission and distribution equipment. The figure in brief represents the capital cost of construction at the power site.

Total Water-Power Development in Canada.

Apart from the foregoing statistics which have to do with the central electric station industry in Canada, a census of the total developed water-power in the Dominion has just been completed by the Dominion Water Power Branch in co-operation with the Dominion Bureau of Statistics. This compilation is complete to date, i.e., January, 1919, and takes into consideration the growth in turbine installation during the year 1918. The totals disclosed are exceptionally interesting. The water-power resources of Canada, with their strategic locations adjacent to practically every industrial centre, constitute one of our greatest assets, and it is satisfactory to note that the economic advantages accruing from utilization of these powers for industrial purposes is being fully realized in practice.

Table 1 analyses the installed turbine or water-wheel capacity of the Dominion by provinces, and by use of power. The returns indicate a total developed water-power capacity of 2,305,310 horse-power.

Table 1.—Distribution of developed water-power in Canada by provinces and by use of power, January 1, 1919. Figures represent installed turbine horse-power.

	*Central Electric Stations. H. P.	†Pulp and Paper. H. P.	Other Industries. H. P.	Total. H. P.	H. P. per 1,000 population.
	1	2	3	4	5
Yukon	10,000	.....	3,392	13,392	1,574
British Columbia	221,625	46,450	44,348	312,423	506
Alberta	32,580	.....	300	32,880	63
Saskatchewan	.....	.....	.....	.....	.....
Manitoba	64,100	.....	12,072	76,172	133
Ontario	791,163	133,952	59,945	985,060	359
Quebec	597,601	155,512	89,648	842,761	376
New Brunswick	6,878	2,800	5,191	14,869	41
Nova Scotia	3,354	13,500	9,170	26,024	51
Prince Edward Island	170	.....	1,559	1,729	19
	1,727,471	352,214	225,625	2,305,310	276

* Column one includes only hydro-electric stations which develop electrical power for sale.

† Column two includes only the water-power owned by pulp and paper companies. In addition to this total, upwards of 100,000 hydro-electric horse-power is purchased by pulp and paper companies, mainly from the central electric stations included in column one. The hydraulic power utilized in the pulp and paper industry of Canada therefore totals 450,000 horse-power.