

TABLE 5—WATER WHEEL AND WATER TURBINE CAPACITY IN CENTRAL STATIONS

	No. of Units	Total H.P.	H.P. per 1,000 Population
Alberta	14	32,589	63
British Columbia	52	209,025	340
Manitoba	15	64,100	112
New Brunswick	15	6,878	19
Nova Scotia	14	3,354	7
Ontario	298	751,003	274
Prince Edward Island ..	5	170	2
Quebec	204	575,551	257
Saskatchewan .....	..	.....	.....
Yukon	2	10,000	1,176
Canada	619	1,652,661	198

water, indicating markedly the commercial adaptability of water power for central station work, even where in competition with convenient and reasonably cheap coal supplies.

Manitoba develops 95.2 per cent. of its central station energy from water, Quebec 94.9 per cent., and British Columbia 89.9 per cent.

Alberta develops 43.2 per cent. from water, although an abundant supply of coal is available.

New Brunswick develops 38.8 per cent. from water power, Nova Scotia 19.2 per cent.

Coal vs. Water Power

The percentage of water power used in central electric stations in Nova Scotia is low, although the province is ex-

TABLE 6—STEAM, GAS AND OIL POWER IN CENTRAL STATIONS

	STEAM		GAS AND OIL	
	No. of Units	Total H.P.	No. of Units	Total H.P.
Alberta	57	41,862	11	975
British Columbia	22	21,808	12	1,815
Manitoba	15	2,575	11	662
New Brunswick	20	9,790	5	1,065
Nova Scotia	39	13,950	2	140
Ontario	43	31,740	11	1,917
Prince Edward Island	2	425	3	631
Quebec	22	30,245	6	286
Saskatchewan	29	27,540	52	4,219
Yukon	2	260	.....	.....
Canada	251	180,200	113	11,710

ceptionally endowed with available water-power resources. An abundant coal supply indicates the reason for this condition. The city of Halifax is served from a steam-driven plant, the largest central electric station in the province. The present tendency in the province is, however, towards the increased use of hydro power.

In Prince Edward Island only 13.9 per cent. of the central station power is derived from water. Topography and

TABLE 7—COMPARISON OF STEAM TURBINE AND STEAM ENGINE CAPACITY IN CENTRAL STATIONS

	ENGINES		TURBINES	
	No.	H.P.	No.	H.P.
Alberta	47	12,162	10	29,700
British Columbia	16	3,308	6	18,500
Manitoba	15	2,575	..	.....
New Brunswick	17	5,890	3	3,900
Nova Scotia	36	7,830	3	6,120
Ontario	37	8,845	6	22,900
Prince Edward Island ..	2	425	..	.....
Quebec	16	4,745	6	25,500
Saskatchewan	20	7,472	9	20,068
Yukon	1	60	1	200
Canada	207	53,312	44	126,888

area of the island province explains the lack of water-power resources.

In Saskatchewan no water power is developed. Here the topography of the province is solely responsible, the entire settled portion being located in prairie country which is not naturally endowed with attractive water-power sites.

Every Important City Served

The fundamental reason underlying the great use of water power in central stations in Canada lies in the fact that, with but one or two exceptions, every city of importance in Canada is served with central station power from hydro-power stations. In other words, practically all the commercial and industrial centres of the Dominion are within

TABLE 8—CAPITAL INVESTED IN CENTRAL STATION INDUSTRY

	Total per Primary H.P. Installed	In Commercial Stations	In Municipal Stations
Alberta	\$147	\$ 5,634,479	\$ 5,468,141
British Columbia	187	41,255,719	2,292,773
Manitoba	179	3,460,220	8,617,953
New Brunswick	194	2,941,569	502,279
Nova Scotia	194	2,776,101	600,304
Ontario	182	96,538,585	46,238,794
Prince Edward Island ..	173	211,900	.....
Quebec	215	126,080,992	4,132,478
Saskatchewan	176	257,564	5,332,951
Yukon	357	3,661,366	.....
Canada	\$193	\$282,819,495	\$73,185,673

easy transmission distance of ample supplies of economically developed hydro-electric power.

The accompanying tables provide a more detailed analysis of the statistical data above mentioned.

In considering these statistics it should be borne in mind that they have reference solely to central electric stations; that is, to stations which are engaged in the distribution and sale of electrical energy. Where central stations are interwoven with other activities, such as the operation of electric railways, mines, pulp mills, or other industrial enterprises, the central station equipment, capitalization and other statistical data has been wholly divorced from the allied industry. This line of severance has been drawn through the

TABLE 9—CAPITAL INVESTED IN CENTRAL STATIONS DEVELOPING POWER HYDRAULICALLY

	Turbine H.P.	Amount	Per Turbine H.P.
Alberta	32,580	\$ 2,293,537	\$ 70
British Columbia	209,025	41,045,100	196
Manitoba	64,100	11,493,274	179
New Brunswick	6,878	1,315,723	191
Nova Scotia	3,354	686,705	205
Ontario	751,003	129,342,065	172
Prince Edward Island ..	170	48,400	285
Quebec	575,551	120,516,166	209
Saskatchewan .....	.....	.....	.....
Yukon	10,000	3,363,688	336
Canada	1,652,661	\$310,104,658	\$188

entire statistical analysis. Central stations purchasing power in bulk for purposes of re-sale are included in the financial and staff statistics.

The total number of central electric stations recorded is 666, of which 323 are commercial and 343 are municipal. The excess of municipal stations is attributable to the non-generating stations. Of the stations with generating equipment, 296 are commercial and 174 are municipal. Of the stations without generating equipment, 27 are commercial and 169 are municipal. The Hydro-Electric Power Commission of Ontario is largely responsible for the municipal stations purchasing power in bulk.