

**6.—Capacity of Thermal Generating Equipment, by Type of Plant,  
as at Dec. 31, 1958—concluded**

Province or Territory	Type of Plant and Basic Fuel Used	Stations	Gener- ating Units	Gener- ating Capacity
		No.	No.	kw.
Alta. ....	Steam turbine (coal, oil and natural gas).....	11	23	257,600
	Steam turbine (natural gas and oil).....	3	15	191,375
	Internal combustion engine (oil and natural gas).....	15	49	18,513
	Gas turbine (natural gas).....	1	1	10,000
B.C. ....	Steam turbine (oil and wood waste).....	18	48	112,610
	Steam turbine—internal combustion engine (oil and wood waste).....	1	2	1,800
	Internal combustion engine (oil and natural gas).....	41	161	82,892
	Gas turbine (oil).....	1	4	87,040
Yukon and N.W.T.	Steam turbine—internal combustion engine (oil).....	1	4	1,500
	Internal combustion engine (oil).....	6	19	2,841
Canada. ....	<b>Steam turbine.....</b>	<b>107</b>	<b>272</b>	<b>2,237,660</b>
	<b>Steam turbine—internal combustion engine.....</b>	<b>5</b>	<b>19</b>	<b>29,168</b>
	<b>Steam turbine—gas turbine.....</b>	<b>3</b>	<b>15</b>	<b>191,375</b>
	<b>Internal combustion engine.....</b>	<b>111</b>	<b>374</b>	<b>171,802</b>
	<b>Internal combustion engine—gas turbine.....</b>	<b>1</b>	<b>5</b>	<b>29,000</b>
	<b>Gas turbine.....</b>	<b>2</b>	<b>5</b>	<b>97,040</b>
	<b>Grand Totals.....</b>	<b>229</b>	<b>690</b>	<b>2,756,045</b>

Heretofore, a fair proportion of the thermal generating capacity was operated at extremely low rates of load factor, particularly in small stations serving isolated communities, and as standby to hydro facilities. However, progressive increase in load and need for firmer output is making it economical to install larger and more efficient thermal units essentially in the larger stations serving widespread system demands. Here the capacity is mainly provided by steam-motivated turbo-alternators, the largest of which are capable of generating a kilowatt-hour from a pound of coal. Still larger units, shortly to be installed, will be capable of generating a kilowatt-hour with as little as two-thirds of a pound of coal. Since 1955, in Western Canada ten gas-turbine-driven generating sets with capacities of from 7,500 to 30,000 kw. have been installed, with several more in the course of installation. These sets have the advantage of low first cost and extreme flexibility, and are well suited for peaking operations in an integrated system. In addition, a number of gas-diesel-driven generator sets with capacities to 3,000 kw. have replaced smaller oil diesel units in several western stations, more particularly in British Columbia.

In 1957, thermal facilities provided 8 p.c. of the electricity generated in Canada and hydro facilities 92 p.c. Of the thermal generation, as much as 94 p.c. was provided by steam-driven equipment and 6 p.c. by diesel-engine and gas-turbine equipment.

### Section 3.—Water and Thermal Power Developments in the Provinces and Territories, 1957 and 1958

A total of 1,546,560 h.p. of new hydro-electric capacity was placed in service in 1957 and 2,500,000 h.p. was added in 1958. The latter total is the highest increase ever recorded in one year. Construction of hydro-electric plants continued to accelerate with about 4,300,000 h.p. of new capacity expected to come into operation during the next few years. Construction was active also in the field of power distribution and in the building of thermal-electric plants. Progress in hydro-electric and thermal-electric construction is outlined below by provinces.