

7.—Maximum Size of Turbo-Generator Units in Thermal Central Stations, 1945 and 1950-61¹

Year	Eastern Canada		Central Canada		Western Canada	
	Megawatt Capacity	Units	Megawatt Capacity	Units	Megawatt Capacity	Units
		No.		No.		No.
1945.....	12.5	1	—	—	15	4
1950.....	15	1	6	1	30	1
1951.....	20	1	100	1	30	1
1952.....	20	1	100	3	30	1
1953.....	24	1	100	4	30	2
1954.....	24	1	100	44	30	2
1955.....	25	1	100	4	30	3
1956.....	25	1	100	4	66	1
1957.....	50	1	100	4	66	1
1958.....	50	1	100	4	66	2
1959.....	50	2	200	2	66	2
1960.....	50	2	200	4	150	1
1961.....	50	3	300	1	150	3

¹ Prepared by the Fuels Division, Department of Mines and Technical Surveys, Ottawa.

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. From 1954 to 1958, nine gas-turbine-driven generating sets with capacities of from 8,400 to 30,000 kw. were installed in Western Canada and several more were in course of installation at the end of that period. These sets have the advantage of low first cost and extreme flexibility, and are well suited for peaking operations in an integrated system.

In 1958, thermal facilities provided 15.5 p.c. of the electricity generated in Canada and hydro facilities 84.5 p.c. Of the thermal generation, as much as 90.6 p.c. was provided by steam-driven equipment and 9.4 p.c. by diesel-engine and gas-turbine equipment.

Section 3.—Electric Power Statistics

Electric power statistics presented in this Section are based on reports of all electrical utilities and all industrial establishments that generate energy regardless of whether or not any is sold, and therefore show the total production and distribution of electric energy in Canada. Utilities are defined as companies, commissions, municipalities or individuals whose primary function is to sell most of the electric energy which they have either generated or purchased. Industrial establishments are defined as companies or individuals that generate electricity mainly for use in their own plants.

The current series of electric power statistics dates back only to 1956. Earlier reports, entitled "Central Electric Stations", were concerned solely with the electrical utility industry and hence excluded statistics relating to power produced by industrial establishments for their own use, although power sold by such establishments was included.

The figures of total water and thermal power generated for the years 1942-55 shown in Table 8 are compiled on the old basis, figures for 1956 are shown on both bases for comparative purposes, and those for later years are on the new basis.