heavy demands on power generating facilities, to stay abreast of which the addition of new capacity was required at a rate higher than at any time in Canada's history. These demands also led to the start of an extensive program of thermal plant construction in the early 1950s, since they could not be satisfied from hydro sources alone. In the period 1950-66, the average annual rate of installation of both hydro and thermal facilities was about 1,400,000 kw., with hydro contributing two kilowatts of new capacity for each kilowatt contributed by thermal. However, it is interesting to note that the average increase in thermal generating capacity over the period 1961-66 has approximated the average increase in hydro capacity.

Table 1 shows the status of installed generating capacity in hydro and thermal stations and the combined total for all stations in Canada as at Jan. 1, 1967.

1.—Installed Hydro- and Thermal-Electric Generating Capacity, by Province, as at Jan. 1, 1967

Province or Territory	Hydro	Thermal	Total
	kw.	kw.	kw.
Newfoundland	466,000	113,000	579,000
Prince Edward Island	—	57,000	57,000
Nova Scotia	143,000	525,000	668,000
New Brunswick	262,000	433,000	695,000
Quebec	10,746,000	441,000	11,187,000
Ontario	6,194,000	3,923,000	10,117,000
Manitoba	1,074,000	338,000	1,412,000
Saskatchewan	397,000	662,000	1,059,000
Alberta	617,000	1,096,000	1,713,000
British Columbia	2,695,000	1,083,000	3,778,000
Yukon Territory	28,000	4,000	32,000
Northwest Territories	35,000	27,000	62,000
Canada	**22,657,000**	**8,702,000**	**31,359,000**

Current Trends.—Although water power traditionally has been and still is the main source of electric energy in Canada, thermal sources some day will undoubtedly become the main supplier. The choice between development of a hydro-electric power site and construction of a thermal generating station must take into account a number of complex considerations, the most important of which are economic in nature. In the case of a hydro-electric project, the heavy capital costs involved in construction are offset by maintenance and operating costs considerably lower than those for a thermal plant. The long life of a hydro plant and the dependability and flexibility of operation in meeting varying loads are added advantages. Also important is the fact that water is a renewable resource. The thermal station, on the other hand, can be located close to the demand area, with a consequent saving in transmission costs. With the current trend to large steam stations, however, a certain amount of the flexibility of location of thermal stations is lost because such units require considerable quantities of water for cooling purposes, making it essential that they be sited close to an adequate water supply.

The marked trend to thermal development which became apparent in the 1950s can be explained in part by the fact that, by that time in many parts of Canada, most of the hydro-electric sites within economic transmission distance of load centres had been developed and planners had to turn to other sources of electric energy. More recently, however, advances in extra-high-voltage transmission techniques are providing a renewed impetus to the development of hydro power sites previously considered too remote.

Because of the relatively long starting-up time required by large thermal units, thermal stations tend to lack flexibility of operation and can be used most efficiently to meet continuous load conditions. Hydro stations, on the other hand, can put generating units on line with minimum delay and hence are admirably suited to supply power to meet the peak