

Section 2.—Power Generating Capability and Load Requirements*

Power generating *capability*, as covered in this Section, is the measurement of the available generating resources of all hydro and thermal facilities at the time of the one-hour firm peak load for each reporting company, and is not equal to the *capacity* of such generating facilities. For example, a hydro plant may have a capacity of 100,000 kw. but if, at the time of peak-load, the water available for generation is only 80 p.c. of the plant capacity requirements, then its capability is 80,000 kw.

Total generating capability has grown at a rapid rate since 1950. The annual rate of increase was 8.2 p.c. in the eleven-year period 1951-62 and 6.4 p.c. in the period 1958-62. In comparison, the forecast rate of growth for the years 1963-66 is only 4.8 p.c.; thermal generating capability is expected to grow at the average rate of 9.8 p.c. a year in the forecast period compared with 15.7 p.c. in the period 1951-62, but hydro-electric capability is expected to increase at only 3.5 p.c. a year compared with 6.8 p.c. in the 1951-62 period.

Among the provinces, Quebec has the largest generating capability, followed by Ontario, British Columbia and Alberta. Quebec also has the largest hydro-electric generating capability, followed by Ontario and British Columbia, but Ontario has the largest thermal capability, followed by Alberta and British Columbia. The first nuclear capability is scheduled for 1965.

The largest absolute growth in generating capability for the forecast years is indicated for Ontario, amounting to 1,985,000 kw., followed by Quebec 1,427,000 kw., Alberta 498,000 kw., and British Columbia 379,000 kw. Quebec will meet most of its increased generating capability by adding over 1,127,000 kw. in hydro capability and 300,000 kw. in thermal capability. Ontario will add 1,478,000 kw. thermal, including 200,000 kw. nuclear, and 508,000 kw. hydro, and Alberta will add 300,000 kw. hydro and 228,000 kw. thermal. Thus, it is apparent that thermal capability is becoming of greater importance, partly because of decreasing availability of hydro resources in provinces such as Ontario and partly because technological advances have made possible much more efficient use of thermal fuels in the operation of thermal base load plants.

Firm power peak load is the measure of the maximum average net kilowatt demand of one-hour duration from all loads, including commercial, residential, farm and industrial consumers as well as the line losses. Such load demand increased at the rate of 7.0 p.c. a year from 1951 to 1962 but only 5.0 p.c. a year from 1958 to 1962; peak load demand is forecast to increase at the average rate of 6.5 p.c. a year in the period 1962-66. As a result of the rapid increase in generating capability and the somewhat slower but steady increase in the peak loads, together with the slight reduction in deliveries of firm power to the United States, the indicated reserve on net generating capability increased each year from 1951 to 1962, with the exception of 1961. The forecast is for increases in 1963 and 1964 and declines in 1965 and 1966. The reserve ratio as a percentage of firm power peak load, which reached a high of 28.2 p.c. in 1960, is expected to decrease to 18.8 p.c. in 1966, approximately the same as in 1958.

* Prepared by the Public Utilities Section, Public Finance and Transportation Division, Dominion Bureau of Statistics.

4.—Net Generating Capability, by Province, 1962

(Thousand kilowatts)

Type of Generating Facility	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.
Hydro-electric.....	350	—	141	233	8,830	5,285
Thermal-electric—						
Steam.....	45	32	378	240	41	1,926
Internal combustion.....	14	5	2	7	12	12
Gas turbine.....	—	—	—	—	36	—
Totals.....	409	37	521	480	8,919	7,223