



are only possible where systems are large enough to accommodate them. Additional types of thermal generation are provided by gas turbine and internal combustion equipment; their flexibility makes them particularly suitable for meeting power loads in smaller centres, especially in isolated areas. Gas turbines are frequently used for peak loads because of their rapid start-up capability and low capital cost.

After World War II, industrial expansion and rapidly growing residential and agricultural development placed extremely heavy demands on power generating facilities which were impossible to satisfy from hydro sources alone. An extensive program of thermal plant construction began in the early 1950s; by 1956 thermal capacity represented 15% of the total. Since then, the annual installed capacity has averaged 56% hydroelectric with the rest in thermal generation. At the end of 1976 thermal capacity accounted for 42% of Canada's installed capacity.

Thermal plants accounted for only 21.8% of total generation in 1976 (Table 13.15) because much of the capacity installed is operated for peak-load duty only, with hydroelectric capacity providing base-load generation. This pattern will change as additional nuclear-fuelled plants which can operate economically at high capacity for base-load purposes are introduced.

Details of the type of fuel used, by province, appear in Table 13.12. The table shows a significant increase in coal consumption to generate electricity in 1976. More than 19.0 million tonnes were used, valued at \$322.0 million in the latest year, up from 16.6 million t valued at \$214.6 million in 1975. Oil showed only a small volume increase but higher oil prices pushed the dollar value to more than \$155.0 million from \$89.9 million a year earlier. The volume of natural gas used was virtually unchanged, but higher prices again increased the cost of fuel for this type of generation to nearly \$112.0 million from \$87.2 million in 1975.