security and environmental matters from those dealing with commercial and promotional aspects of nuclear energy. The former responsibilities would be administered by the Atomic Energy Control Board (AECB) to be renamed the Nuclear Control Board (NCB), which would report to Parliament through the minister of state for science and technology. The minister of energy, mines and resources would retain responsibility for, and administer, all commercial and promotional matters.

Domestic uranium requirements, estimated at 560 tonnes U in 1977, are expected to rise to some 2400 and 4200 t a year by 1985 and 1990, respectively.

In mid-1977 nuclear generating capacity operating in Canada exceeded 4000 megawatts, 94% of it in Ontario. Additional capacity totalling 7900 MW was either under construction or committed, and scheduled for operation by 1986, some 84% to be in Ontario.

Early in 1978, the Ontario government signed an agreement with uranium producers at Elliot Lake to supply the projected uranium requirements of Ontario Hydro into the next century at a cost of $7 billion.

13.9 Electric power

13.9.1 Electric power development

Total installed generating capacity increased by 11.0% in 1976 to 68088 megawatts with additions totalling 6736 MW (2194 MW hydro, 3386 MW fossil-fired steam, 342 MW combustion turbines, 14 MW diesel and 800 MW nuclear capacity). Generating units that became operational in 1976 but were not yet available for normal commercial service are included.

Load growth in terms of energy in 1976 increased 7.1% over 1975. On a national basis, electrical energy consumption totalled 284.1 TWh (1 terawatt hour = 10^9 kilowatt hours), distributed across the country in the ratio of approximately 33% in each of Quebec and Ontario, 13% in British Columbia, 4% to 6% in each of Alberta and Manitoba, and 2% to 3% in each of Newfoundland/Labrador (excluding Churchill Falls), New Brunswick, Nova Scotia and Saskatchewan, with Prince Edward Island, the Yukon and Northwest Territories each accounting for less than two-tenths of 1.0% of the total. Growth rates varied considerably across the country — 10.1% in the Yukon Territory to +15.5% in Newfoundland. On a nationwide basis, total residential consumption grew 12.7%, commercial 7.8% and industrial 1.7%.

The national growth rate of approximately 7.0% (−0.3% in 1975) represents a return to usual levels following a partial recovery of demand in the industrial sector which, in 1975, decreased 11.4%. Total generation for the year (293.4 TWh) increased 7.6%. Hydro represented 72.6% of the total in 1976 (74.2% in 1975); nuclear energy 5.6% (4.3% in 1975); and conventional thermal 21.8% (21.5% in 1975). Coal comprised 61.7% of thermal or 13.4% of the total and oil 20.3% of thermal or 4.4% of the total.

While this growth could be viewed as a return to the long-term growth trend, such a conclusion must be treated with caution. Price increases and conservation policies have undoubtedly led to some decrease in consumption, but substitution of electricity for other energy forms, either because of relative price changes or for security of supply, may cause some increases in demand. Time lags in demonstrating full customer response to these factors is inevitable in both cases. In the short run however economic activity seems to be the most likely explanation of variations in demand occurring in 1975 and 1976.

Net export of electrical energy in 1976 was 9.3 TWh or 3.2% of net generation, up 26.1% from 7.4 TWh (2.7% in 1975). The change reflected some recovery in economic activity. [Gross national expenditure (GNE) in 1971 dollars showed an increase of 4.6% in 1976 after a rise of only 0.6% in 1975.]

13.9.2 Generating capacity

Power generating capability measures 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 installed capacity of such generating facilities.