

## E.2 IN CANADA

### E.2.1 PROJECTED EMISSIONS - THERMAL POWER

Canada's electrical generating capacity is expected to increase substantially by 1990, exceeding 1977 capacity by over 60 percent.<sup>(1)</sup> This expansion will be noticeable in all three major types of generation: hydroelectric, nuclear, and conventional thermal. Hydroelectric power will maintain its leading role in the utility sector, nuclear power will grow by a factor of three, and thermal generation will increase to a somewhat lesser degree.

Conventional steam electric capacity, which was 19 200 MW in 1978, may increase to 29 000 MW by the end of 1989.<sup>(1)</sup> All announced steam-unit additions by 1990 will be coal-fired. This added coal-burning capacity will cause annual coal consumption to increase by 127 percent, from 21 100 kilotonnes in 1977 to approximately 47 900 kilotonnes in 1989. The majority of the steam-unit additions are in the provinces of Alberta and British Columbia.

Table E.2.1 shows each province's percentage distribution of installed capacity by generation type for both 1977 and 1989. The type categories are standard: coal steam, oil steam, gas steam, nuclear, hydro, gas turbine, and internal combustion.

The 1989 distributions do not include the effects of any capacity penalties due to pollution control devices and therefore represent the distributions that would occur in the case involving no active pollution control. The changes in the distributions due to the imposition of pollution control penalties are not great.

In Table E.2.2, the generation mix by province is presented for the two years 1977 and 1989. Note that Nova Scotia, Saskatchewan, Alberta, and British Columbia substantially increase their share of generation from coal units. In

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(1) Statistics Canada, Electric Power Statistics, Vol. 1, Annual Electric Power Survey of Capability and Load - 1979-1983 Forecast, 57-204 Annual (Ottawa, Ont.: Manufacturing and Primary Industries Division, Energy and Minerals Section, September 1979); Department of Energy, Mines and Resources, Electric Power in Canada - 1979 (Canada: Electrical Section - Energy Policy Sector, 1980); "Canada - Still Planning for a Strong 1980," Electrical World 1980 Statistical Report, 5 March 1980.