

Energy Conservation in Canada, released in 1977, promotes energy efficiency while reducing the growth rate of consumption. *Financing Energy Self-Reliance* examines capital investment requirements and concludes that the Canadian economy can absorb a total investment of about \$180 billion for new energy development from 1976 to 1990, to achieve the policy objective of self-reliance in energy. A 1979 report, *Energy Futures for Canadians*, deals with the long-term outlook for Canadian energy supply and demand to 2025 in a global context. It concludes that shortages and interruptions of supply of world oil could result in sudden and radical price increases, and possibly bring about socio-political disturbances on a pan-international scale, unless efforts are made to establish new patterns of energy supply and use.

13.3 Energy supply and demand

Canada's energy needs are met by oil, natural gas, coal, uranium and electricity. In primary energy consumption, the share of oil as a source is 44.0%, natural gas 18.6% and coal 8.9%. Some 25.1% of energy needs are met by hydro and 3.4% by nuclear power. Although nuclear power accounts for a small proportion, it is expected to become increasingly important. Hydroelectricity and thermal generation from coal are expected to decline as nuclear power development increases and by the end of the century probably no more than 50% of primary energy consumption will be met by natural gas and oil.

The relative importance of energy sources, in terms of Canada's trade, is shown in Table 13.3. A marked change in the export-import balance ranged from a deficit of \$117 million in 1966, on a trade balance basis, to a surplus of \$1,467 million in 1977 and \$1,878 million in 1978.

Canada's primary energy demand increased at an average annual rate of 5.3% over the period 1960-73, while energy use per capita grew annually by 3.3%. Higher prices, increasing attention to conservation and some economic decline lowered the yearly increase to 2.7% in the period 1974-78, with the annual per capita increase being 2.1%.

Growth in oil use and supply trends since 1965 are illustrated in Table 13.4. Production of crude oil and gas liquids which had increased by about 90% in the 10-year period to 1975 began to decline by 1977 and remained static in 1978. The most notable trend was the decline in the export-import surplus.

Natural gas supply and demand is shown in Table 13.5. In the 12-year period to 1977, production of marketable pipeline gas and domestic demand increased markedly but from 1977 to 1978 exports declined while domestic demand continued to grow.

More than 1,500 companies are involved in the Canadian petroleum industry, excluding a further 5,000 independent gas station operations; however, the top 30 oil producers accounted for 85.8% of Canadian oil production and the top 30 gas producers for 57.3% of gas production in 1977. The degree of concentration has diminished as smaller companies move from exploration to production.

The federal government has taken a number of steps to boost supplies of oil and natural gas. It made large direct investments in oil and gas projects including \$300 million in Syncrude of Canada Ltd., which began producing oil from the Athabasca tar sands in 1978. The project was granted the world price for oil. Through Petro-Canada, the federal government attempted to speed up development at Lloydminster and Cold Lake heavy oil deposits. Development of new technology to tap Western Canada's heavy oil and oil sands resources is a federal priority and includes a \$96.0 million joint research fund with Alberta, and a \$16.1 million heavy oils program undertaken with Saskatchewan.

Construction of a pipeline to move Alberta oil from Sarnia to Montreal, lessening Quebec's dependence on foreign oil, was completed in 1976. By the end of 1978 the line was transporting about 40 000 m³/d of crude oil to the Montreal refining area.

By 1978 it appeared the main future source of Alberta oil would be the costly oil sands and heavy oils. The price of this oil will be higher than the field price of \$92.76 per cubic metre as of January 1, 1978. By world standards Canadian prices remained low.

By agreement with provincial governments, a schedule of increases was established to bring the field price of oil to \$86.48/m³ by July 1979. The schedule was subject to