

Biomass. A forest industry renewable energy program (FIRE) was designed to increase the use of biomass (wood, municipal and agricultural wastes, and peat) as a source of energy. By mid-1983, grants totalling \$58 million for 124 projects resulted in benefits including the creation of 5,900 person-years of new employment, fuel savings equal to more than 7 million barrels of oil per year, and private sector spending over \$375 million on Canadian equipment and services.

In early 1982, Canertech Inc. announced its involvement in a biomass-based synthetic gas demonstration project at St-Juste-de-Bretenières, Que. The corporation invested \$5 million in this project. Canertech Inc. opened its Winnipeg headquarters in May 1981 and was established under the NEP as a Crown corporation dedicated to supporting commercial production of renewable energy and conservation technology.

Solar energy. Progress has been made toward diversification of energy supply and reduction in heating costs through programs such as a solar domestic water heating demonstration program, which funded the installation of nearly 2,000 solar hot water systems in 40 different projects across Canada.

Wind energy. The National Research Council of Canada (NRC) and Hydro-Québec have collaborated on Project Aeolus, involving the design and construction of one of the world's most powerful wind-driven generators. The new wind turbine was expected to begin operation in 1983, opening up a large market domestically and abroad. The federal government was providing up to \$17.6 million for this project.

11.3 Energy supply and demand

Canada's primary energy needs are met by oil, natural gas, coal, uranium and hydroelectricity. In primary energy consumption the share of oil as a source during 1979 was 54.5%, natural gas 23.0% and coal 11.0% with some 11.5% of energy needs being met by hydro and nuclear power. The corresponding figures for 1982 were 46.9% for oil, 24.2% for natural gas, 14.1% for coal, 13.8% for hydro and nuclear power.

A marked change in the primary energy export-import balance ranged from a deficit of some \$100 million in 1966, on a trade balance basis, to a surplus of almost \$2 billion in 1979 and \$5 billion in 1982.

11.4 Oil and natural gas

11.4.1 Production and consumption

Crude oil and equivalent. Production had increased by about 105% in the seven-year period to 1973, declined during the period 1974-78, and increased

slightly in 1979 before falling off again, with production in 1982 the lowest since 1969.

In 1982 total crude oil and equivalent production in Canada decreased by 1.4%, from 80.3 million cubic metres in 1981 to 79.2 million in 1982. There was a 2.6% increase in conventional light and medium crude oil from 57.3 million cubic metres in 1981 to 58.7 million in 1982. Condensate production dropped by 7.6% to 5.7 million cubic metres. Heavy crude oil production decreased from 9.9 million cubic metres in 1981 to 6.8 million in 1982. Synthetic crude oil production for 1982 was 15.3% above 1981, amounting to 8.0 million cubic metres for the year.

Reduced production emanated from a significant decrease in consumer demand for oil and gas products in 1982, precipitated by the downturn in the economy and oil conservation and substitution measures. Demand for refined petroleum products fell by 11.1% in 1982 to 86.0 million cubic metres from 96.8 million in 1981.

Domestic oil prices continued a gradual move upward. During 1982 the price of old conventional oil (discovered before January 1, 1981) at the wellhead received two price increases of \$14.16 per cubic metre each on January 1 and July 1, as scheduled under the 1981 federal-provincial pricing agreement. The wellhead price of old conventional oil rose to \$147.88 per cubic metre on January 1, and \$162.04 on July 1. In 1982 producers of new oil (oil found after December 31, 1980) received \$278 per cubic metre of crude. This decreased to \$272.90 per cubic metre by the end of the year, due to the drop in the world price of crude.

The cost of importing oil into Montréal at the end of 1982 was \$201.63 per cubic metre, a decrease from \$222.70 per cubic metre at the end of 1981.

Natural gas. In the 12-year period to 1977, production of marketable natural gas and domestic demand increased markedly. The natural gas industry encountered marketing problems in 1981 and 1982 when supply far exceeded demand. In mid-1983 the federal government announced an incentive pricing program aimed at expanding domestic and export markets.

Natural gas prices as measured at the Toronto city-gate averaged \$2.42/GJ (gigajoule) in 1981, rose to \$2.68/GJ in February 1982 and \$3.05/GJ in September 1982.

In mid-1983, an 11% drop in the export price of natural gas brought the price from US\$4.94 per million BTU (per 1 054 megajoules) to US\$4.40 per million BTU. This decrease was intended to make Canadian gas more competitive with domestic gas in the US market.

11.4.2 Exploration and development

During 1982 Western Canada, including Northwest Territories, was the centre of activity and accounted