

Development, established in January 1974, continued to assess and coordinate research activities. Assistance was offered to provinces to help complete an inventory of Canadian resources in uranium, coal, oil and natural gas. The Office of Energy Conservation, also set up in January 1974 in the Department of Energy, Mines and Resources, continued to develop and recommend a program of energy conservation and to coordinate efforts of agencies responsible for conservation.

13.2 Oil and gas

13.2.1 Reserves

Oil. At the end of 1975 Canada's proven reserves of recoverable conventional crude oil and natural gas liquids (propane, butanes and pentanes plus) amounted to 8.2 billion barrels (bbl) (1.3 billion m³), most of them in Alberta. The estimates do not include reserves attributed to the Athabasca tar sands or recently discovered reserves in frontier areas. Proven oil reserves showed a net decline for the sixth consecutive year and represent a reserves-to-production ratio of 14 years. Canada's remaining ultimate potentially recoverable reserves, as estimated in 1975 by the Geological Survey of Canada (GSC), were placed at 40 billion bbl (6.4 billion m³) of oil and 301 trillion cu ft (MMMMcf) (8 523 billion m³) of gas. These potential reserves include, in addition to amounts already proven, about 23 billion bbl (3.7 billion m³) and 201 MMMMcf (5 692 billion m³) "yet to be discovered on the basis of geological predictions". These figures represent the mean GSC estimates of the amount of ore and gas which will ultimately be found in Canada.

According to an appraisal of Alberta's oil sands completed in 1973 by the Alberta Energy Resources Conservation Board, the ultimate recoverable reserves of synthetic crude oil from all of Alberta's bituminous deposits amount to 250 billion bbl (39.7 billion m³). Of this, approximately 26.5 billion bbl (4.2 billion m³) is considered recoverable by open cast mining methods similar to those now in use at the Great Canadian Oil Sands Limited's plant near Fort McMurray. The bulk of the oil located in deeper formations will only be recovered by in situ thermal or other techniques still being developed.

Natural gas. Raw natural gas may vary widely in composition. In addition to the usually predominant methane, varying proportions of ethane, propane, butanes and pentanes plus may be present. Hydrogen sulphide may be so abundant as to be an important source of sulphur. After processing has removed the water content, hydrogen sulphide, pentanes plus and other petroleum gases, the marketable gas consists mainly of methane, some ethane and small amounts of propane and butanes. The heating value of the marketed gas averages about 1,000 Btu per cu ft (37 259 kilojoules per cubic metre) of gas.

The most important use of natural gas is as a fuel for space and water heating. Domestically it is used as fuel in larger home appliances and industrially in the automobile, steel, metal-working, glass and food-processing fields. In metallurgical processing, its clean, easily controlled flow makes it possible to attain precise temperatures for rolling, shaping, drawing and tempering steel.

The constituents of natural gas have become major sources of feedstock for the petrochemical industry. Natural gas supplies the basic raw material for ammonia, plastics, synthetic rubber, insecticides, detergents, dyes and synthetic fibres such as nylon, orlon and terylene.

Canada's ultimately recoverable reserves of natural gas have been estimated at 82.7 MMMMcf (2 342 billion m³) of gas in place, most of it in the western provinces of Alberta and British Columbia. Cumulative production to the end of 1975 was 25.8 MMMMcf (731 billion m³), leaving 56.9 MMMMcf (1 611 billion m³) available to meet future demand. On the basis of 1975 production of