

Oil and natural gas

12.5.2

Canadian production of crude oil and natural gas liquids in 1976 declined for the third consecutive year to 86 936 million cubic metres. Crude oil output, including synthetic crude oil from the Athabasca tar sands amounted to 77.8 million cubic metres or 213 000 cubic metres a day, about 6% less than in 1975 (Table 12.27). Gas plant production of natural gas liquids totalled 18 million cubic metres or 49 000 cubic metres a day. Natural gas production dropped slightly in 1976 to 86 858 million cubic metres or 244 million cubic metres a day (Table 12.28).

At the end of 1976 Canada's proven liquid hydrocarbon reserves, which include conventional crude oil and natural gas liquids (propane, butane and pentanes plus), amounted to 1.24 billion cubic metres. This is comprised of 1.0 billion cubic metres of crude oil and 0.246 billion cubic metres of natural gas liquids. These estimates do not include oil in the Athabasca sands. At the 1976 annual production level of 92.6 million cubic metres, the life index (ratio of reserves to production) for conventional crude oil and natural gas liquids increased to 13.8 years. This increase was due to reduced production rates, not an increase in proven reserves. The reserve position of most provinces declined. Alberta was the most notable as total reserves, including natural gas liquids, dropped by 66 million cubic metres. According to the Canadian Petroleum Association (CPA), proven remaining marketable reserves of natural gas increased by about 36 830 million cubic metres to a total of 1.6 trillion cubic metres in 1976. Using the 1976 level of production, the life index for natural gas increased to 21.85 years. In compiling its reserve estimates, the CPA assumed that Mackenzie Delta gas would be brought to market via the same pipeline system as Alaskan gas and so could be categorized as proven. This is not the case for gas from Arctic islands; a minimum reserve base is required before it can be considered within economic reach. Therefore gas reserves that have been found there and in offshore areas are classified as probable rather than proven. Alberta with 1.3 trillion cubic metres of marketable gas reserves accounted for 78% of Canadian reserves at the end of 1976.

Canadian refinery capacity increased substantially in 1976, mainly with the expansion of the Irving Oil Ltd., Saint John, NB, refinery to 39 747 cubic metres a day. By 1978 Canadian refinery capacity will have increased to almost 397 500 cubic metres a day from the 331 000 cubic metres at the start of 1976.

Alberta. During 1976 crude oil production in Alberta declined by 18 000 cubic metres a day to 174 000 cubic metres a day and accounted for 84% of total Canadian crude oil production. Of this amount, synthetic crude oil production from the Athabasca tar sands averaged 7 519 cubic metres a day in 1976.

Both exploratory and development drilling footages increased slightly in Alberta in 1976, partly due to provincial incentive programs but primarily because of substantial increases in field prices for both oil and gas. Drilling statistics show that, in 1976, the total number of wells drilled in all categories amounted to 5,042, for a total length of 4.87 million metres, 1.22 million metres more than in 1975. Despite increased efforts, no large oil discoveries were made.

The shallow gas-bearing formations of both northern and southern regions continued to be the principal target for explorers in Alberta and several discoveries were recorded. The foothills were again a prime exploratory target. Several follow-up wells were drilled on the discoveries made in 1975. Early indications are that recoverable reserves of natural gas from the area exceed 28 328 million cubic metres. Successful gas completions increased by 1,271 wells to 3,193 in 1976.

According to an appraisal of Alberta's oil sands completed in 1973 by the province's resources conservation board, there is an ultimate in-place reserve of crude bitumen of 159 billion cubic metres of which 39.7 billion cubic metres are recoverable by known methods of technology. The bulk of recoverable reserves are located in the Athabasca deposit with the remainder distributed between the Cold Lake, Peace River, Wabasca and Buffalo Head Hills deposits. Of the 39.7 billion cubic metres of recoverable synthetic crude oil, only 4.2 billion cubic metres are amenable to open-cast mining methods and all of this is located in the Athabasca deposit. The remaining 35.5 billion cubic metres are expected to be eventually recovered by recovery techniques still in the experimental