

refineries are now connected to Trans Mountain, five in British Columbia and four in the state of Washington. In 1974 Trans Mountain built additional crude oil loading facilities in Vancouver to load tankers delivering oil to eastern Canada via the Panama Canal.

The Montreal refining centre is served by a pipeline from tidewater at Portland, Maine, the nearest port on the Atlantic seaboard from which tanker-borne crude oil from Venezuela, the Middle East and Africa may be trans-shipped by pipeline to Montreal. This joint system of the Montreal Pipe Line Company and its wholly-owned subsidiary in the US, Portland Pipe Line Corporation, shortens tanker voyages as it bypasses the seaboard of the Maritime provinces, the Gulf of St. Lawrence and the St. Lawrence River segments. However, there are deepwater port sites in the Atlantic region and on the St. Lawrence which have been considered for development as tanker terminals to provide pipeline routes within Canadian territory to Montreal. The Portland-Montreal system consists of 236 miles (380 km) of right-of-way and 708 miles (1 139 km) of main pipeline. In 1974, 467,746 b/d (74 366 m<sup>3</sup>/d) of crude oil went through the system.

The oil embargo of the winter of 1973, coupled with frequent price increases of offshore oil, led the federal government to decide on a policy of an all-Canadian coast-to-coast pipeline network for security of supply, self-reliance in oil and oil products and to further economic development throughout the country. As phase one of this network, in May 1975, the government approved the company's application to extend the Interprovincial pipeline system from Sarnia to Montreal to provide consumers in eastern Ontario and western Quebec with access to more secure domestic supplies of western Canadian crude oil. The system went into operation in June 1976. The 30-inch (76 cm) line has an initial capacity of 250,000 b/d (40 000 m<sup>3</sup>/d).

**Natural gas.** The authorization of large-volume gas removal from British Columbia and Alberta, beginning in the mid-1950s, led to the construction of the first major gas transmission lines in Canada. Today, the complete system serves major Canadian centres from Vancouver to Montreal and transports gas to the international border for US markets from California to New England. The next expansion will be directed to opening up Arctic gas resources. The initial economic, engineering and environmental studies for a Mackenzie Valley gas pipeline were completed in 1973 and an application was filed before Canadian and US regulatory authorities in 1974 for authorization and approvals to own and operate the pipeline. Research is also being carried out into the feasibility of transporting natural gas from the Arctic islands.

Most Canadian natural gas now produced must be processed before it can be marketed. Gathering lines take raw gas from the producing wells to a collection point on a transmission system or to the inlet of a gas processing plant. Main transmission systems receive marketable gas from field gathering lines or plants and transport it through trunk lines to Canadian distribution companies or to interconnected US transmission pipelines at the international border. Distribution systems serve the ultimate customers in the centres of population. With the introduction of PVC (polyvinylchloride) small-diameter pipe, distribution companies — especially in the western provinces — have been rapidly extending their service to rural customers by means of this easily laid durable pipe. At the end of 1974, a total of 73,012 miles (117 501 km) of pipeline were in operation, of which 8,613 miles (13 861 km) were gathering, 25,107 miles (40 406 km) were transmission and 39,292 (63 234 km) were distribution.

Unlike an oil pipeline company, which is a common carrier transporting oil for a fixed charge, a gas transmission pipeline company either owns the gas it transports or is a subsidiary of the company purchasing the gas at source. The principal exception is the Alberta Gas Trunk Line Company Limited which delivers virtually all of the gas removed from Alberta to the main transmission companies at the provincial boundary.