

During 1978, 8 012 km of gas pipelines were added to gathering, transmission and distribution systems, compared with the construction of 8 077 km in 1977. Additions to gas distribution systems accounted for more than three-quarters of the total pipeline additions in 1977. By the end of 1978 total gas pipeline length was 148 915 km.

The Polar Gas Project was initiated in 1972 to determine the feasibility of a natural gas transportation system from the Arctic islands to southern markets. As a result of its studies, Polar Gas Limited filed an application with the NEB and the Indian and northern affairs department to construct a large-diameter pipeline from the Arctic islands to interconnect with the TransCanada PipeLines system in northern Ontario. The pipeline route would stretch a total distance of 3 763 km including 143.7 km of channel crossings between islands. The pipeline would transport 59 million cubic metres a day of natural gas and have a maximum capacity of 85 million. It would require 425 to 566 billion cubic metres of natural gas reserves to ensure full utilization of the line over its economic life. Exploration in the Arctic islands to the end of 1978 had already resulted in natural gas discoveries of approximately 260 billion cubic metres.

An alternative for the transportation of natural gas from the Arctic islands to southern markets is the use of ice-breaking liquefied natural gas (LNG) tankers. Petro-Canada, Alberta Gas Trunk Line, and the Melville Shipping group have developed the Arctic Pilot Project designed to deliver 7 000 000 m³/d of natural gas by two LNG tankers from Melville Island in the Eastern Arctic to a port and re-gasification plant near Quebec City or on the East Coast. Petro-Canada filed an application with the NEB and the Indian and northern affairs department in mid-January 1979, for regulatory approval of the project. TransCanada PipeLines was also studying the feasibility of transporting natural gas by LNG tankers from the Arctic islands to a terminal near Quebec City. This gas would be a future source of supply for Quebec and the Maritime provinces.

During 1978 two proposals were submitted to the NEB to extend natural gas service east of Montreal. Q&M Pipe Lines Ltd. proposed construction of a pipeline to interconnect with the existing TransCanada PipeLines system near Montreal and extend eastward through Quebec, New Brunswick and Nova Scotia. The main line would follow the north shore to Quebec City, then cross the St. Lawrence River, continue to the Maritime provinces and terminate at Halifax. In addition to the 1 220 km of main trunk line, 1 832 km of lateral lines would serve more remote communities. TransCanada PipeLines proposed to extend its pipeline north of Montreal as far east as Quebec City and to construct a second extension south of Montreal to serve communities in the Eastern Townships.

The projected Alaskan Highway Gas Pipeline is designed to deliver natural gas from Prudhoe Bay, Alaska to southern US markets and also to provide access to Canada's Mackenzie Delta gas reserves when required. The pipeline route follows the Alyeska Oil Pipeline from Prudhoe Bay to Fairbanks, then parallels the Alaska Highway through Yukon to Fort Nelson, BC. The route continues through Alberta to Caroline where it divides into two legs. The eastern leg passes through southwestern Alberta to Monchy, Sask. near the international boundary, and continues to markets in the US midwest. The western leg passes through southern British Columbia to Kingsgate near the international boundary and continues to California markets. The proposed pipeline would stretch 1 175 km in Alaska, 3 262 km in Canada, and 3 264 km in the lower 48 states. The schedule is for construction to begin in 1982 and for initial gas deliveries in the winter of 1984-85. The Canadian portion of the pipeline would be built by Foothills Pipe Lines (Yukon) Ltd. which is jointly owned by Alberta Gas Trunk Line and West-coast Transmission. Alaskan Northwest Natural Gas Transportation Co., a partnership of US gas pipeline companies, would build the Alaskan segment of the pipeline.

A number of steps were taken toward construction of the Alaskan Highway Gas Pipeline. In April 1978 the Northern Pipeline Act was passed by Parliament establishing the Northern Pipeline Agency to co-ordinate all federal responsibilities directly related to the pipeline system in Canada. The act gave effect to the Canada-US agreement of September 20, 1977, on principles applicable to the pipeline. The act constitutes the certificates of public convenience and necessity authorizing the project and requires Foothills Pipe Lines to comply with the terms and conditions established by the legislation and by the Northern Pipeline Agency.