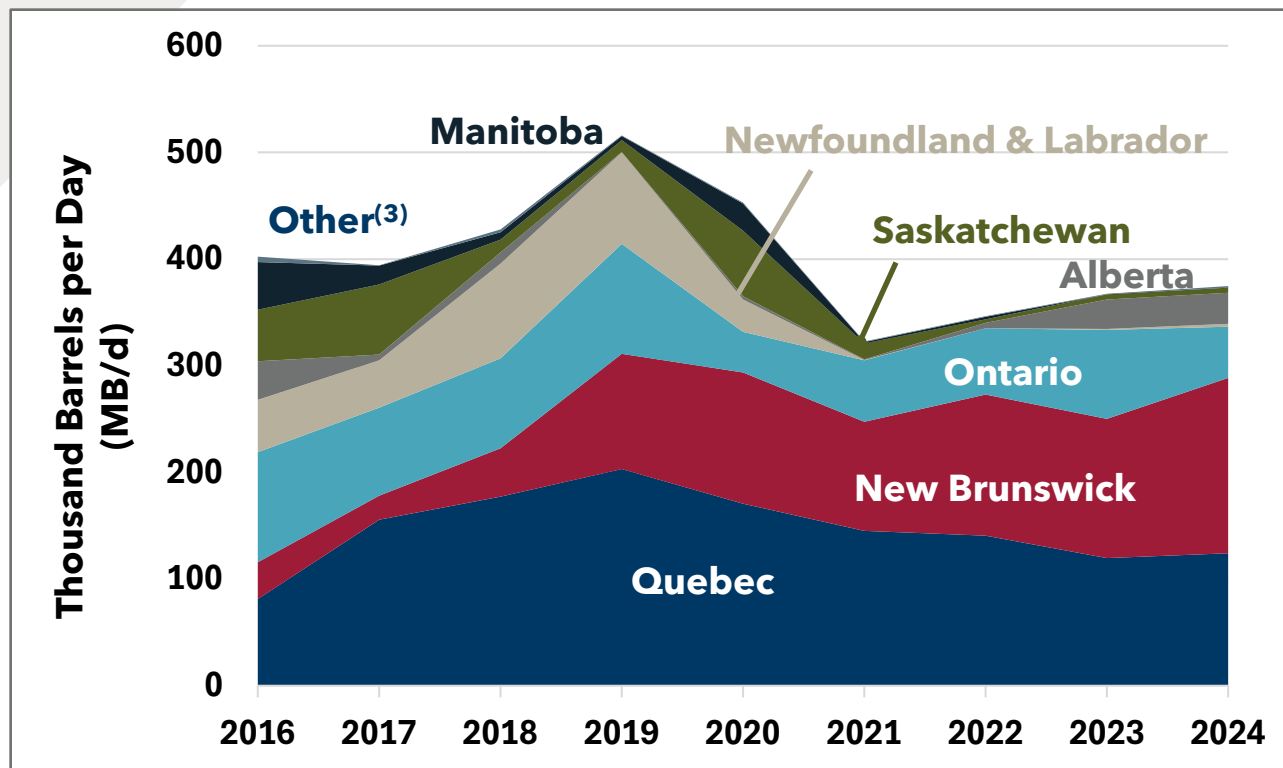


Canadian Imports of US Crude Oil, Natural Gas, and Refined Products

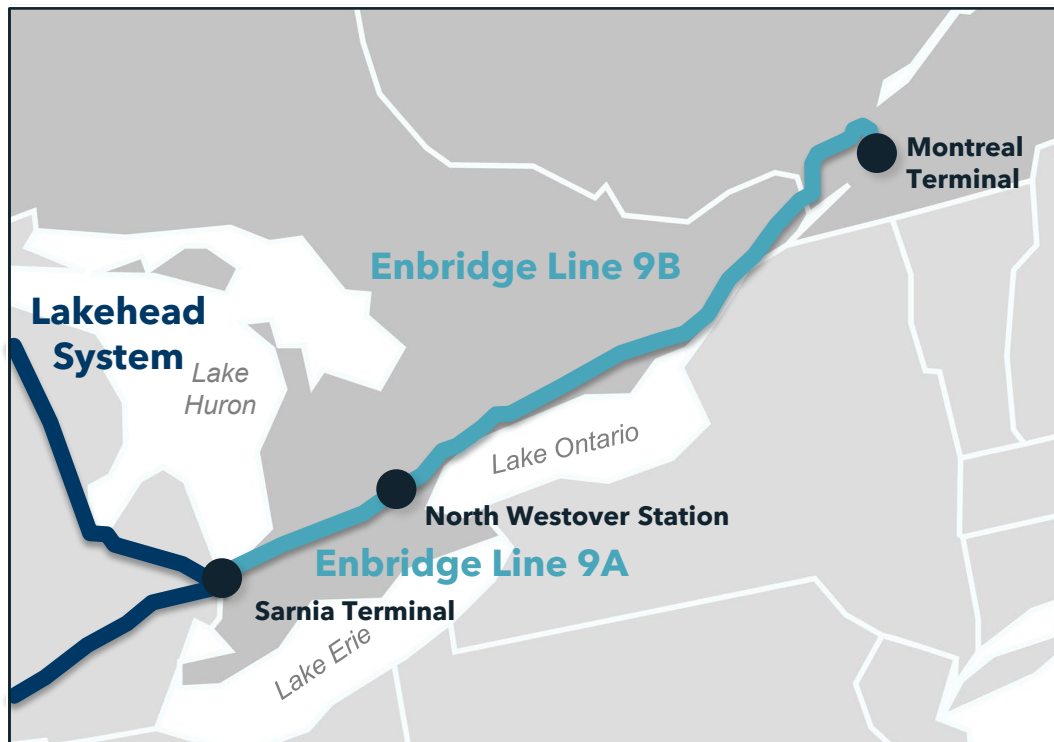
January 30, 2025

Canada Annual Crude Oil⁽¹⁾ Imports from the US by Province | 2016 to 2024⁽²⁾



- ▶ 2024 YTD⁽²⁾, total Canadian crude imports averaged ~508 MB/d. The US represented 375 MB/d (~74%) of these imports.
- ▶ New Brunswick, Quebec, and Ontario account for most of the US crude oil imports
 - ▶ New Brunswick, 165 MB/d (44%)
 - ▶ Quebec, 124 MB/d (33%)
 - ▶ Ontario, 48 MB/d (13%)
- ▶ The reversal of Line 9 in the 2010s has made Ontario and part of Quebec completely dependent on crude oil transited through the US and has made Eastern Canada completely reliant on US imports

Enbridge Line 9 Pipeline: A Lesson About Canadian Energy Security



The Enbridge's Line 9 pipeline connects refineries in Sarnia to Montreal. The flow of oil through the pipeline has been reversed multiple times.

- 🚩 **1976:** Line 9 opens, built for energy security purposes and to carry Western Canadian and US crude oil to refineries in Quebec.
- 🚩 **1999:** By the 1990s, there was a lack of crude oil from Western Canada (before the growth from the oil sands) and oil delivered by the pipeline could not compete with overseas supply, being economically more attractive. Therefore, the flow of Line 9 was reversed by Enbridge to transport crude oil from Montreal to refineries in Sarnia. This made Ontario more dependent on overseas oil but also provided optionality for the region versus Canada and the US only.
- 🚩 **2012-2015:** When crude oil from Canada and the US became abundant following the growth of the oil sands and shale plays, the flow was reversed again. The reversal happened in two phases, starting with Line 9A and then 9B. This allowed crude oil from Western Canada and the US to once again feed refineries in Quebec and displace overseas oil.

The reversal has increased Canada's dependence on US crude oil and Canadian oil transported via the US, before the reversal, Eastern Canada could access overseas oil (however, that was a more expensive source, therefore the pipeline was not used)

Enbridge Mainline Pipeline: Critical Energy Infrastructure for Canada

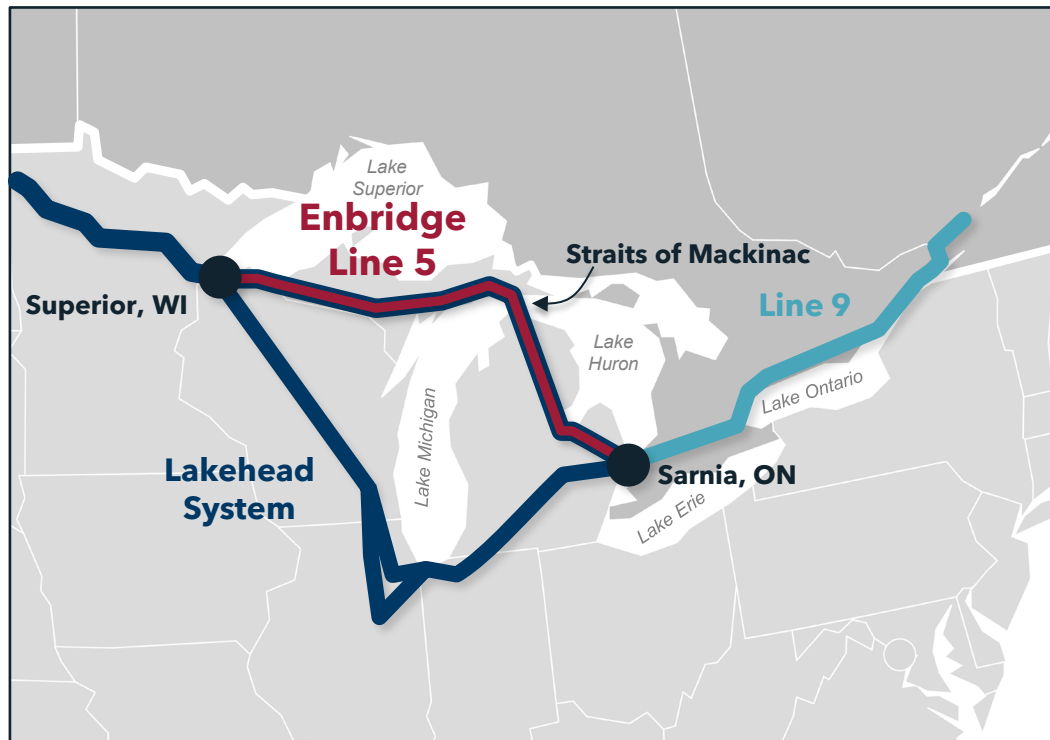


Originating in Edmonton, Alberta, the Enbridge Mainline moves crude oil, refined products, and natural gas liquids through a connected pipeline system. At Superior, Wisconsin, the system splits into Line 5, going north of Lake Michigan, and Lines 6, 14, and 61, going around the southern tip of the lake. The two routes then coalesce and terminate in Sarnia, Ontario, where it is interconnected with Line 9, which is terminated in Montreal, Quebec.

The Enbridge Mainline is Canada's largest transporter of crude oil, accounting for roughly 70% of all Western Canadian Sedimentary Basin exports to Eastern Canada and the US Midwest markets.

- ▶ The original pipeline was built in 1950, connecting Edmonton, Alberta to Superior, Wisconsin. The line was then extended in 1953 to connect to Sarnia, Ontario. There have since been many offshoots and other lines that go south or east, connecting to refineries across Eastern Canada and the US Midwest.
- ▶ Prior to constructing the Enbridge Mainline, several politicians, including C.D. Howe, pushed for an all-Canadian route north of the Great Lakes to increase Canadian energy security by linking Western Canada's supply with refineries in Ontario and Montreal. However, the routes through the US were chosen because of lower project costs and faster timelines.
- ▶ After the initial line connecting Edmonton to Superior was completed, C.D. Howe said of its energy security role, the pipeline was "an essential factor in our preparedness program for the defense of Canada."

Enbridge Line 5 Pipeline: Illustrating Canada's Energy Security Risk

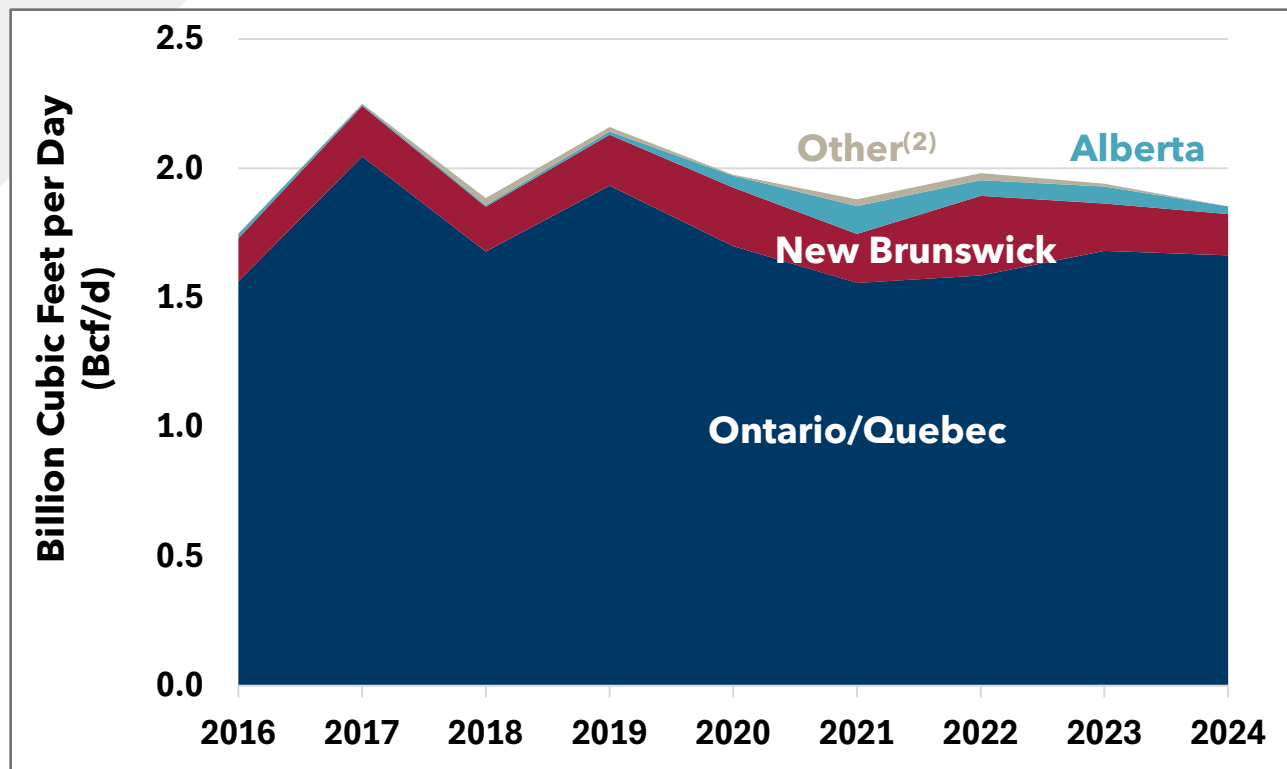


The Enbridge Line 5 pipeline is a strategic piece of Canadian infrastructure, delivering crude oil to key refineries in eastern provinces and states. The future operations of the pipeline were challenged by the State of Michigan in 2021.

The Enbridge Line 5 pipeline is a critical link for Ontario and Quebec to receive crude oil. In 2021, Michigan's governor ordered a shutdown of the pipeline, which would have caused energy shortages in Eastern Canada. This situation illustrates the risk of Canada's key infrastructure transiting the US.

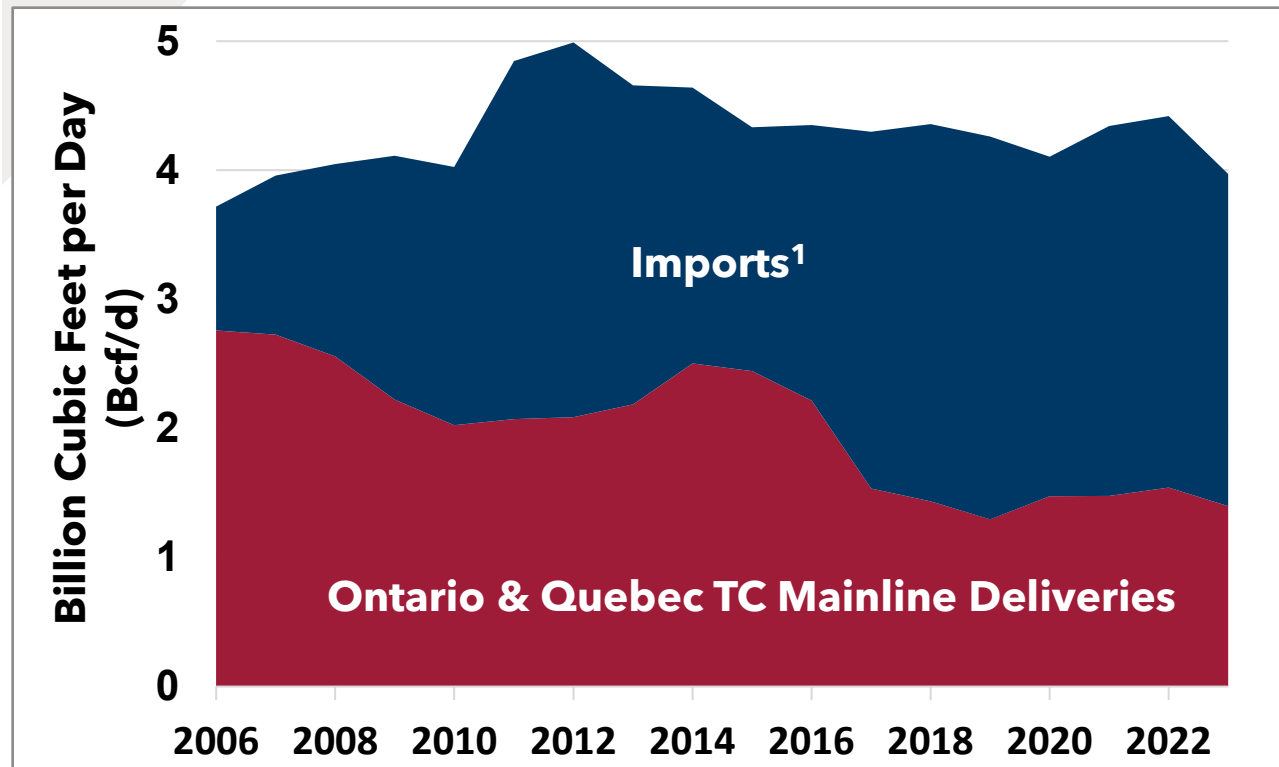
- Line 5 is part of the Enbridge Mainline system and one of the offshoots of the Lakehead System. The pipeline transports up to 540,000 B/d of crude oil and natural gas liquids. It moves more than half of the crude oil used in Ontario and 66% of what gets consumed in Quebec. It's also critical for Ohio and Michigan to provide heating oil and propane.
- In 2021, Michigan Governor Gretchen Whitmer ordered a shutdown of Line 5 due to concerns about a pipeline leak and potential oil spill under the Straits of Mackinac that could affect the Great Lakes.
- In December 2023, Michigan regulators approved a key permit that would protect the Great Lakes by encasing the pipeline in a concrete tunnel under the Straits of Mackinac. This would allow the pipeline to continue operating and delivering crude oil to Eastern Canada.

Canada Annual Natural Gas Imports from the US by Province | 2016 to 2024⁽¹⁾



- ▶ Ontario and Quebec are the most dependent on US natural gas imports, with 1.7 Bcf/d or about half of Ontario and Quebec consumption in 2024*. The natural gas is imported to Ontario and then flows into Quebec.
- ▶ The TC Energy Canadian Mainline connects Western Canada with Ontario, over Canadian territory. However, due to higher costs to transport natural gas on the Canadian Mainline, Ontario has been growing its reliance on US natural gas imports - see the next slide.

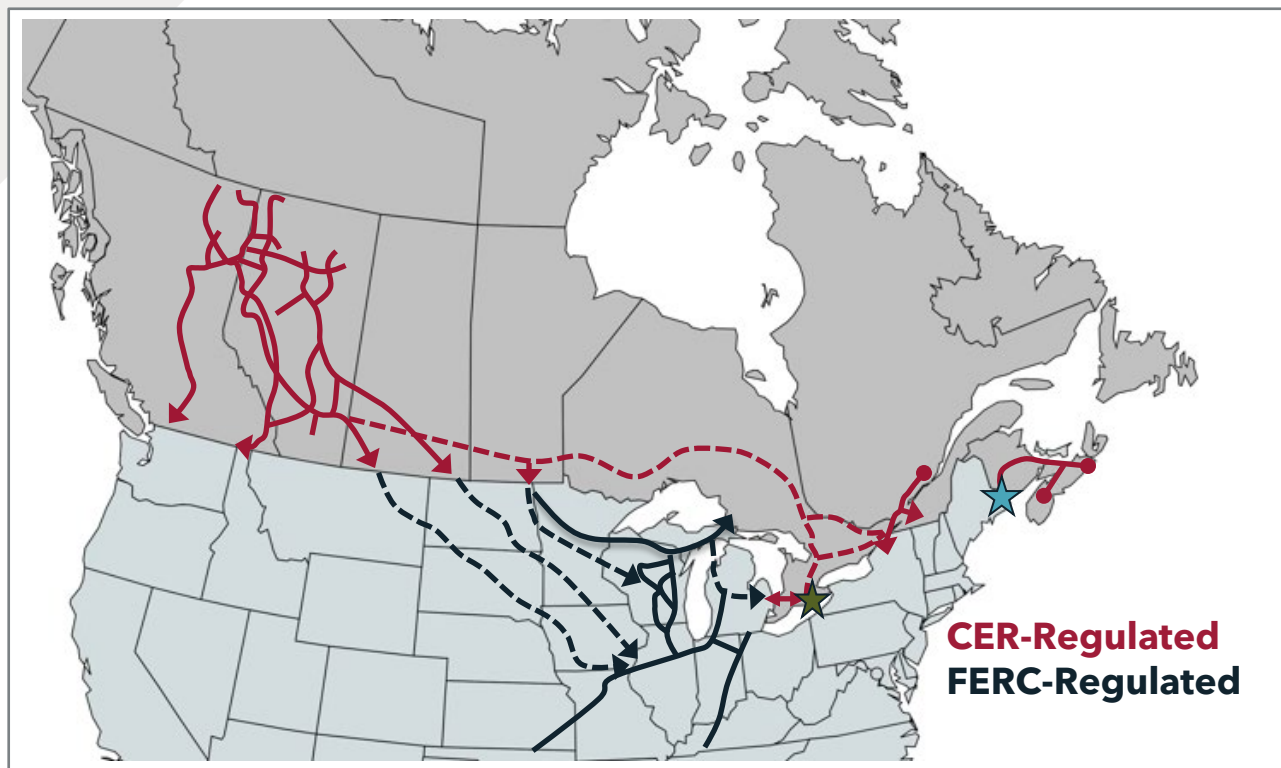
TC Canadian Mainline Ontario and Quebec Pipeline Deliveries | Annual | 2006 to 2023



➤ Pipeline deliveries to Ontario and Quebec via the TC Mainline have steadily decreased following the expansion of US natural gas production and associated infrastructure build-out to accommodate increased transportation of US gas into Canada. In 2023, combined Mainline deliveries into Ontario and Quebec from the WCSB were ~1.4 Bcf/d, down from ~2.8 Bcf/d in 2006.

➤ **High transportation costs on the TC Mainline have hindered Canada's ability to re-capture market share.** However, due to long-term fixed contracts in 2017, followed by a reduction in base tolls from 2021 to 2026 and resulting rate rider reductions as part of a toll settlement, subsequently lower tolls have stopped further erosion of Canada's market share.

Canada and US Natural Gas Pipeline Infrastructure¹

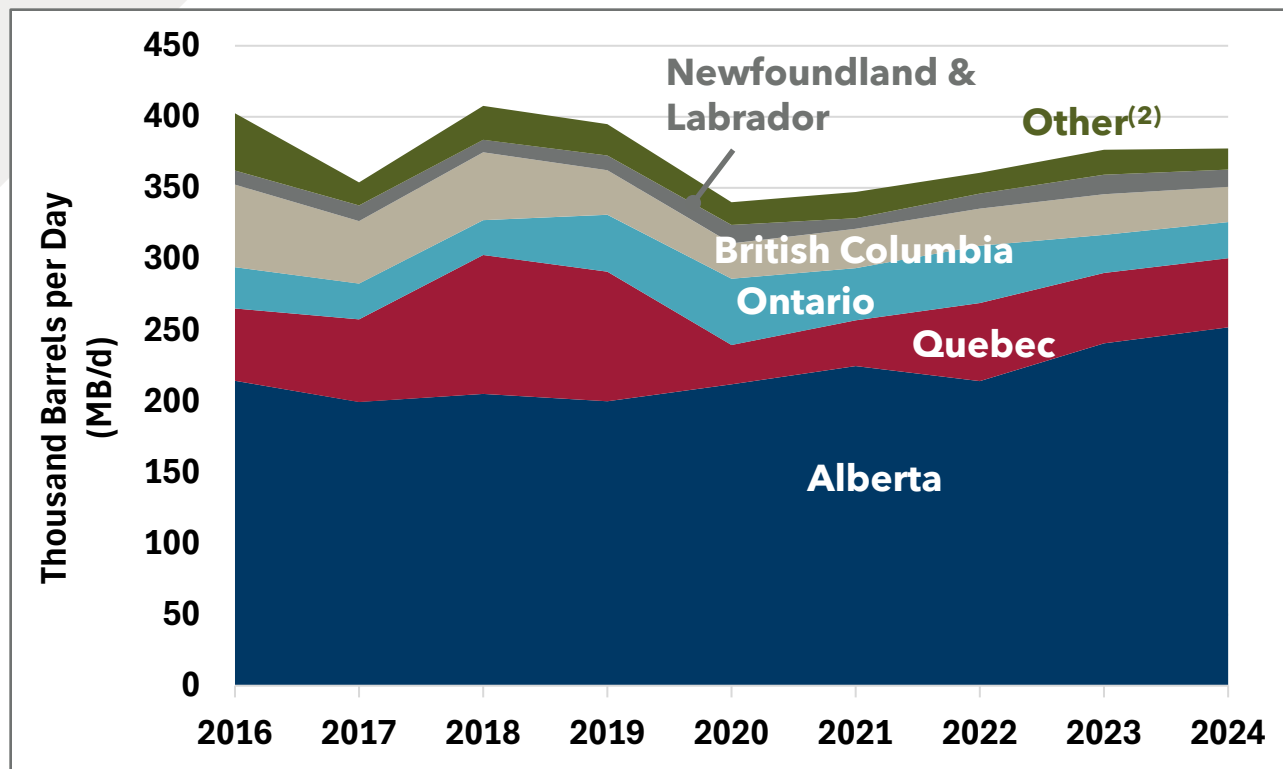


➤ The TC Canadian Mainline (red dashed line) transports natural gas produced in Western Canada to markets in Eastern Canada.. The system flows about half of its potential capacity because the transportation costs have been higher than for flowing gas via the United States.

➤ The Alliance, Northern Border, Great Lakes Gas Transmission, and Viking Gas Transmission pipelines (black dashed lines) supply markets in the US Midwest with Canadian gas, some of which is re-exported back into Ontario. These pipelines also supply US gas to Canada via various interconnects (not shown).

➤ US gas is also primarily imported into Ontario at Niagara and Chippawa (green star) and into New Brunswick (blue star) via US pipelines (not shown).

Canada Annual Refined Petroleum Product Imports from the US by Province | 2016 to 2024⁽¹⁾



- Alberta is the most reliant on imports of refined products, followed by Quebec, Ontario, and BC.
- Alberta imports are mostly condensate, which is used to blend with heavy bitumen to transport the blended bitumen by pipeline.
- In 2024, annual imports averaged:
 - Alberta, 252 MB/d (67%), mostly condensate for bitumen blending
 - Quebec, 48 MB/d (13%)
 - Ontario, 25 MB/d (7%)
 - British Columbia, 25 MB/d (7%)