



ENBRIDGE'S LINE 5:

A vital piece of Michigan's energy infrastructure

Enbridge's Line 5 moves up to 540,000 barrels per day (bpd) of light crude oil, light synthetic crude oil, and natural gas liquids (NGLs), primarily propane, to Michigan and points beyond. A vital piece of energy infrastructure, Line 5 moves products that heat homes and businesses, fuel vehicles, and power industry throughout the state.

How does Line 5 affect quality of life in Michigan?

The light oil transported by Line 5 feeds the Michigan economy with enough gas to fill 120,000 passenger cars and light-duty vehicles a day, enough diesel to fill 900 semi-trailers a day, **and** enough jet fuel to move 18,500 airline passengers a day.

How important is Line 5 to Michigan refiners?

About 30 percent of the light crude on Line 5 stays in the state, where it powers industry and is refined into gas, diesel, jet fuel, and other products. Without Line 5, Marathon's Detroit refinery would directly lose 28 percent of its refining feedstock—and, because of necessary rerouting of various products on Enbridge's pipeline network, indirectly lose 19 percent more.

What about propane deliveries?

Line 5 delivers 65 percent of the propane that heats Upper Peninsula and northern Michigan homes. Without Line 5, Michigan would have to make up an immediate 2,000-bpd shortfall in propane deliveries—that's enough propane to cook a quarter of last year's burger consumption in the United States.

Does Line 5 move Michigan crude?

Since it entered service, Line 5 has transported about 80 million barrels of Michigan-produced light sweet crude to refineries in the region.

What about heavy crude?

Line 5 does not carry, and has never carried, heavy crude.

Line 5: The facts

Enbridge's Line 5 is essential to Michigan's energy picture, delivering light crude oil, light synthetic crude oil, and natural gas liquids (NGLs), including propane. These products heat homes and businesses, fuel industry, and are used to produce a myriad of consumer goods, from computers to clothing to cellphones.

Line 5 delivers 65 percent of the propane that heats Upper Peninsula and northern Michigan homes. About 30 percent of the light crude moved by Line 5 stays in Michigan, where it powers the renowned Detroit auto industry and is refined into gas, diesel, jet fuel, and other products.

Enbridge supplies the vast majority of crude oil to Marathon's refinery in Detroit, with Line 5 acting as a primary conduit. Line 5 promotes a stable, secure supply of North American light crude, keeping prices at the pumps down.

Moving Michigan crude

Line 5 also moves up to 14,000 bpd of Michigan-produced light sweet crude oil, which enters the Enbridge pipeline network near Lewiston and is transported to regional refineries, including the Marathon refinery in Detroit.

Through its lifetime, Line 5 has carried about 80 million barrels of Michigan-based crude to market.

An energy short fall

If Line 5 were taken out of service, the direct impacts to Michigan's economy would include a loss of 2,000 bpd in Enbridge propane deliveries. That would mean:

- A loss of enough fuel to cook 12 billion eight-ounce, medium-rare burgers a year (a quarter of the American burger consumption in 2014);
- About 24,000 of the 320,000 Michigan homes heated by propane would be affected.

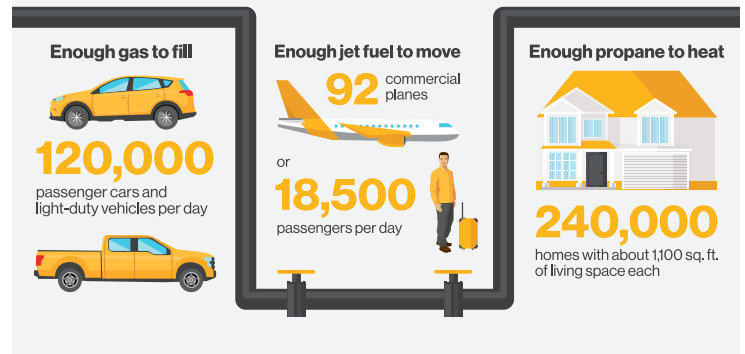
Marathon's Detroit refinery would also lose direct access to about 33,000 bpd of crude oil, or 28 percent of its refining needs. For the Michigan economy, that would mean:

- The loss of about 17,000 bpd of gas, or more than 18 million round trips from Detroit to Ludington State Park in a 2015 Ford Fusion;
- The loss of more than 9,000 bpd of diesel, or 1.8 million heavy truck return deliveries to Chicago; **and**
- The loss of 3,000 bpd of jet fuel, or 280 family vacations per day to Disney World.

Costlier, less efficient alternatives

If Line 5 were taken out of service, the state of Michigan would need to satisfy its energy needs from other markets through less efficient modes of transportation. That would mean an extra 177 fuel transport trucks and 11 propane trucks per day on Michigan's roads, or an extra 65 to 73 cars per day on Michigan's rails, required to pick up the slack. Use of these transportation methods to satisfy the state's energy needs would increase CO2 emissions by an estimated 325 tons per day in Michigan, based on sourcing refined product shortfalls from the U.S. Gulf Coast.

Line 5 provides Michigan's economy with:



Without Line 5

Overall, taking Line 5 out of service (and the necessary rerouting of products on Enbridge's pipeline network) would result in the loss of about 56,000 bpd of available crude supply, and 15,000 bpd of available propane, from the Michigan economy. That's the equivalent of:

- Enough gas to fill 120,000 passenger cars and light-duty vehicles per day;
- Enough jet fuel to move 92 commercial planes (or 18,500 passengers) per day; **and**
- Enough propane to heat 240,000 homes with about 1,100 square feet of living space each.

What is Line 5?

Enbridge's Line 5 is a 645-mile, 30-inch-diameter pipeline that travels through Michigan's Upper and Lower Peninsulas, originating in Superior, Wisconsin, and terminating in Sarnia, Ontario, Canada.

Built in 1953 by the Bechtel Corporation to meet extraordinary design and construction standards, the Line 5 Straits of Mackinac crossing remains in excellent condition, and has never experienced a leak in more than 60 years of operation. We're working hard to keep it that way.