

LINE 3 AND THE CLIMATE CRISIS

A RED CARPET FOR CLIMATE CHANGE

Supporters of Enbridge's new Line 3 "Replacement" Project Pipeline argue that this project will not impact climate change because, if new Line 3 is not built, the oil will flow anyway by train and/or truck and these forms of transport are more energy intensive and dangerous forms of transportation such that using them will make climate change worse and create greater risk of oil spills and explosions on the roads and railroad tracks through Minnesota's communities. They also argue that the new pipeline is just a replacement pipeline that will restore the original capacity of Enbridge's Mainline System, implying that Enbridge has a right to import the same amount of crude oil.

These arguments are not supported by factual evidence. Over the past three years, tar sands oil production increased but pipeline export capacity from Canada was not expanded. The industry's response to this situation does not show that rail and truck shipments compensated for limited pipeline capacity, nor did railroads cause multiple spills or become congested with a huge number of unit trains of crude oil.

The facts show that:

- Although rail imports increased modestly in 2018 and 2019, they were limited by the Government of Alberta's two-year crude oil production curtailment order that kept hundreds of millions of barrels of oil safely in the ground. The railroad industry's response to the Bakken oil crude-by-rail boom earlier this decade served to substantially increase the overall capacity of rail lines with the result that this modest increase in Canadian crude-by-rail did not create rail line congestion.
- Rather than use railroads or trucks, Enbridge increased the capacity of its Mainline System through efficiency improvements and upgrades to its existing pipelines totaling approximately 500,000 bpd – more capacity than would be provided by new Line 3.
- In response to the COVID-19 pandemic's impact on oil markets and because of Enbridge's pipeline expansions, Alberta recently lifted its curtailment order. At the same time, rail imports from Canada dropped to low levels, and a significant portion of the remaining rail shipments go to the US West Coast. These limited railroad shipments show that current pipeline capacity is adequate such that new Line 3 is not needed.

- Crude-by-rail imports have been predominately of undiluted (solid) bitumen, or bitumen to which a relatively small volume of diluent is added (10-15% diluent, called “railbit”). These products are more like road tar than crude oil and are semi-solid during transport. They pose a low risk of a major release or explosion and fire in the event of a derailment. There is no reasons why the industry cannot convert all tar sands rail shipments to safer forms.
- There has never been any use of trucks to import tar sands crude oil, and the lack of new pipeline construction did not result in an increased use of trucks. Importing crude oil by truck has never been a remotely viable alternative to pipelines or railroad lines, such that it is a red herring.
- Once the under-construction Trans Mountain Expansion pipeline from Alberta to tidewater in British Columbia comes online in late 2022, it will compete with both rail and Enbridge to ship crude oil making it likely that crude-by-rail rail imports will virtually disappear and Enbridge will see reductions in imports on its pipelines, regardless of whether or not new Line 3 is constructed. Building two new pipelines at the same time creates a significant risk that the oil industry will build excess pipeline capacity making new Line 3 redundant.
- Continued electrification of transport and crude oil demand destruction resulting from new business patterns triggered by the pandemic will over the long-term generally suppress global crude oil prices (although prices always fluctuate) and render most future development of tar sands extraction projects uneconomic, such that within a few years Canadian crude oil exports will likely begin to drop.

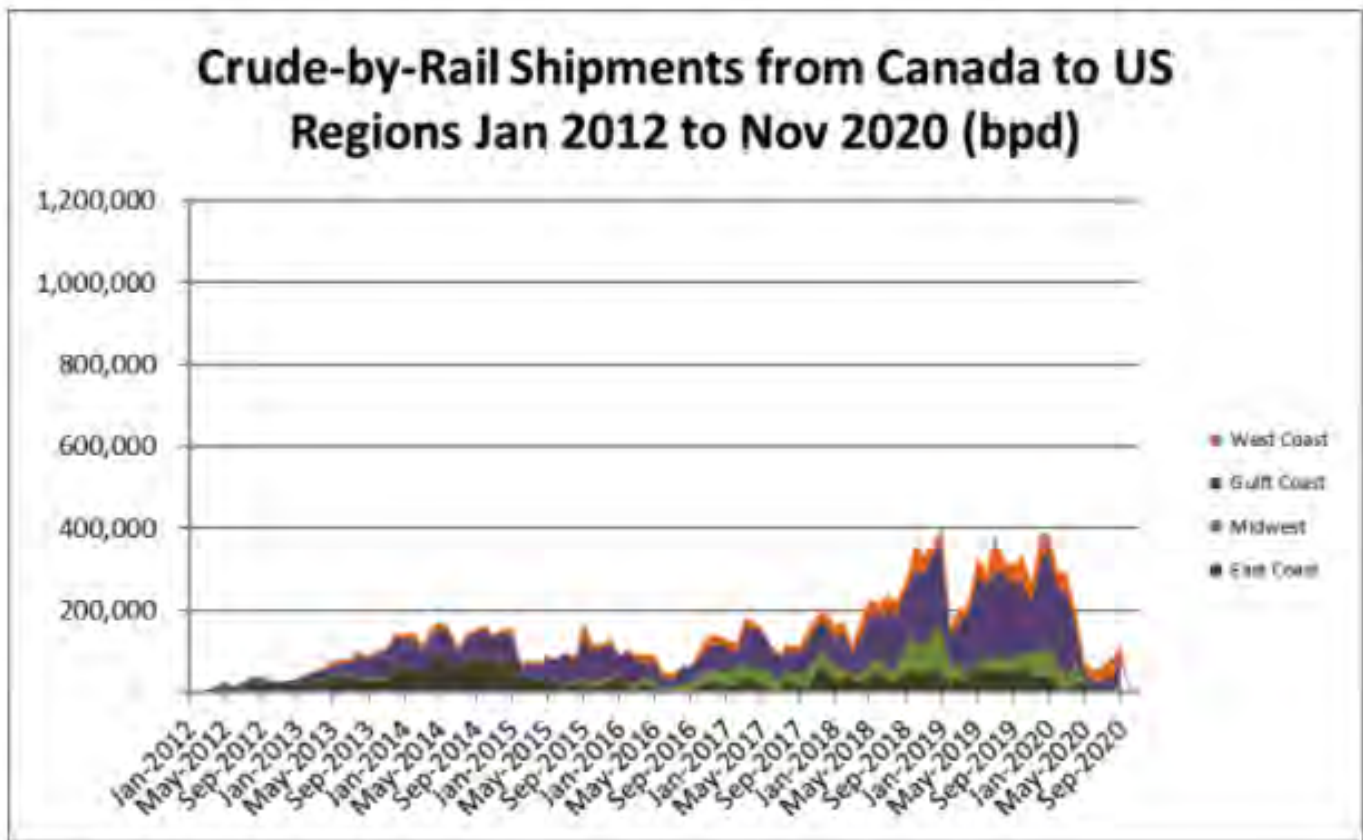
Q. Would not constructing Line 3 keep carbon in the ground, or would the oil simply be transported by rail or truck?

A. Evidence shows that the lack of pipeline capacity over the past few years resulted in the Government of Alberta ordering production curtailment starting in January 2019, meaning that the government ordered the oil industry, including the tar sands industry, to slow the rate that crude oil was extracted from the ground. With regard to the reason for this policy, the Government of Alberta expressly stated: “This short-term approach will help address the continued lack of takeaway capacity caused by pipeline delays that are negatively impacting Alberta’s oil and gas sector.”² This curtailment stopped extraction of hundreds of thousands of barrels of crude oil per day. The curtailment volume was initially set at 325,000 bpd³, nearly the net capacity increase that would be provided by new Line 3 in Minnesota. Over the past year Alberta reduced this curtailment and just eliminated it entirely in December 2020⁴. A significant part of the reason for this curtailment was reduced demand for Alberta crude oil due to the COVID-19 pandemic, but Enbridge’s efforts to increase the throughput on its existing pipelines also allowed more crude oil to be exported. Thus, not building new Line 3, Keystone XL, and Trans Mountain Expansion pipelines kept hundreds of millions of barrels of crude oil in the ground¹.

Q. Doesn’t the Alberta crude oil production curtailment prove a need for additional pipeline capacity?

A. Not over the long-term. Due to oil industry investment decisions made in the early part of the prior decade, the tar sands continued to increase crude oil production through about 2019. Since then, continued low oil prices have not justified construction of significant new tar sands extraction projects. As more and more electric vehicles are sold, global demand for oil will drop and put increasing downward pressure on oil prices. Further, the COVID-19 pandemic has permanently reduced commuting and business travel due to adoption of work-from-home options and video conferencing, also suppressing demand for oil. Although oil prices always fluctuate, these market trends will keep oil prices on average below the price needed to justify new tar sands projects.

The cost to extract tar sands oil is on average the highest in the world. Rystad, an independent Danish energy consulting group, calculates that international oil prices must average and remain above \$69/barrel over time to justify construction of the average tar sands project. Without new oil development in Canada, oil exports will fall



due to the natural depletion of existing oil production facilities, such that Alberta crude oil production will not grow and likely will soon peak, if the pandemic hasn't already caused a peak. If oil price on average remains around \$55/barrel, which is the long-term inflation adjusted average oil price, then little if any new tar sands development will be economically viable. While there has been a short-term need for additional oil export capacity, this peak in exports will be short-lived and does not justify building a new pipeline with a 30+ year operational life.

Q. Will not building pipelines result in greater use of trucks and trains and greater risk of spills and explosions?

A. Due to the delay in constructing new Line 3, Keystone XL, and the Trans Mountain Expansion pipelines, we know how the industry responded to its temporary need for more pipeline capacity. It's response did not result in rail congestion, a significant number of crude-by-rail oil spills, or use of trucks.

First, as previously discussed, the Government of Alberta ordered the industry to curtail oil production. While some oil companies opposed curtailment, most supported it. Alberta would not have implemented a curtailment absent industry support. If the industry could have used trains rather than curtail, it would have.

Second, Enbridge increased the capacity of its existing pipelines by approximately 500,000 bpd, relative to the capacity limits it claimed in the 2017 Minnesota Public Utilities Commission Line 3 hearing. It accomplished this capacity increase via more efficient use and upgrades to its existing pipelines, none of which required significant construction. This increased throughput on the Mainline System without building a new pipeline also reduced rail imports.

¹. <https://www.alberta.ca/oil-production-limit.aspx>.

². Id.

³. <https://www.gljpc.com/blog/curtailment-%E2%80%93-tactic-not-strategy>.

⁴. <https://www.energyindepth.org/oil-curtailement-end-signals-boost-for-alberta-energy-industry/>.

Third, imports of Canadian crude oil by rail increased from about 100,000 bpd to about on average 300,000 bpd in 2019, but due to COVID-19 and Enbridge's capacity additions, in May 2020 crude-by-rail imports dropped back to 100,000 bpd or less, and much of this oil is shipped to the West Coast.

In comparison, the 2013-2015 crude-by-rail boom that resulted in rail congestion and Bakken oil "bomb" trains fluctuated between 800,000 bpd to 1,100,000 bpd. The fact that rail imports from Canada tripled between 2016 and 2019 yet there were no reports of rail congestion indicates that the railroad situation over the past few years has been nothing like the 2013-2015 Bakken-by-rail boom. The total volumes of Canadian crude shipped by rail have been much smaller and, in response to past demand, the rail industry significantly increased the capacity of and maintenance of its rail lines. Relative to railroad capacity, the relatively modest increase in crude oil imports by rail from Canada did not result in rail system congestion or impact farmers' ability to ship grain.

Fourth, the oil industry has the ability to ship undiluted bitumen ("neatbit"), which contains no explosive diluent and is shipped as a solid tar product, or as "railbit", which contains a small amount of diluent and is semi-solid in transport, especially in cold weather. According to the US Energy Information Agency's "Company Level Import" data, of the 51,116 bpd of Canadian crude oil imported by rail through International Fall in November 2020, fully 36,500 bpd or 71% was either non-explosive undiluted bitumen (neatbit) or railbit. Only 14,716 bpd (an average of about 20 rail cars per day) of these imports were of conventional diluted bitumen with up to 30 percent of the volume being volatile diluent. The Canadian oil industry is fully capable of importing bitumen in a solid non-explosive form, so the remaining shipments of more dangerous diluted bitumen are an industry choice, not a necessary result of insufficient pipeline capacity.

Fifth, if TMX comes into service in December 2022 as planned by the Canadian government, future crude-by-rail shipments may very well drop to extremely low levels, even without new Line 3. Currently, the Canadian government is constructing the Trans Mountain Expansion Project, a new 590,000 bpd pipeline from Alberta to a seaport on the Pacific Ocean. It is about 20% complete and has a projected in-service date of December 2022, or one year after Enbridge's projected in-service date for new Line 3. The Trans Mountain Expansion pipeline will compete with both rail and Enbridge to ship Canadian crude oil, likely resulting in reduced use of both rail and Enbridge pipelines.

Sixth, transportation of large volumes of crude oil by truck is not economically viable, and there is no evidence that significant crude oil imports by truck from Canada have ever occurred. Moreover, there are no examples anywhere in the world that trucking large volumes of crude oil over long distances is economically viable. The US government tracks oil movements by ship, barge, pipeline, and rail, but does not track crude oil movements by truck, because imports by truck are essentially zero. Trucks are used only for short hauls to collect oil from oil wells not served by pipelines or rail, and even then, the trucks transport the oil from these isolated wells to the nearest pipeline or rail line. The Line 3 EIS asserted that trucking was a viable alternative to new Line 3, but its own analysis showed that shipping by truck was extraordinarily expensive and practically unworkable, and dismissed it outright. During the delay in Line 3's approval, there is no evidence that the oil industry imported any crude oil by truck. The trucking alternative is and always has been a red herring.

Q. Will building new pipelines increase oil production in Canada?

A. The purpose of building new pipelines is to reduce the cost of tar sands oil transportation and increase oil company profits. In turn, higher oil company profits mean the industry will attempt to grow tar sands oil production, thereby increasing greenhouse gas emissions. So, if one assumes that the tar sands oil industry is economically viable and will expand, then pipelines would facilitate this expansion and increase greenhouse gas emissions. Although some tar sands oil would likely be shipped by rail, the evidence shows that much less tar sands oil would be economically viable if the only transportation option is rail.

Fortunately, we don't need to pick our poison because the electrification of transportation will limit the need for additional oil supplies, making both rail and new pipeline capacity unnecessary. Our society should not roll out the red carpet for uneconomic carbon intensive tar sands crude oil.