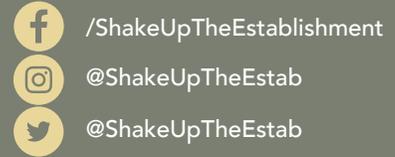


Pipelines in Canada

Author: Taro Halfnight

Editors: Cameron Fioret, Manvi Bhalla, Christina DiCarlo

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Pipelines are often the centrepiece of climate action debates because they are an important piece of fossil fuel infrastructure and a risk to surrounding environments and communities (1,7). Recently, the Trans Mountain Expansion (TMX) pipeline project has been in the spotlight due to legal battles spearheaded predominantly by Indigenous communities and environmental organizations in Canada. The debates surrounding these projects are often quite polarizing, so the goal of this piece is to dissect common arguments from both sides of the pipeline debate.

Supporters of pipeline projects often cite the fact that without the availability of pipelines to transport the crude oil manufactured in Canada, companies will likely rely on transport by rail to keep up with crude oil production (3). This raises safety concerns due to the poor accident record of crude oil rail transport in the past (e.g. the Lac-Mégantic disaster of 2013) (3, 8).

This, combined with potential economic advantages of increased crude oil production and export provided by new pipelines, is an attractive case for increasing the use of pipelines throughout Canada (3). It is important to note that in response to the safety concerns of crude oil railtransport, the rail cars used in disasters, such as the one in Lac-Méganticare, are being phased out in favour of safer, more advanced rail cars (1).

Opponents of pipelines argue that the construction of dedicated oil transport infrastructure to countries outside of Canada's borders is counterproductive to energy and climate goals set out by the Canadian government (1). Moreover, they argue that spills from pipelines, regardless of being less frequent than rail transport, have a much higher potential to be catastrophic to the surrounding environments and fresh water supply if not immediately discovered (1).

This concern stems from high-profile pipeline oil spills such as the one in 2012 in Red Deer River, Alberta, where almost 500,000 liters of crude oil leaked into the Red Deer River (11). Plains Midstream, the owner of said pipeline, was charged with 2 counts of violating environmental laws and fined \$1.3 million (11).

Despite being detrimental to the environment and local communities, articles such as "A Comparison of the Risk of Transporting Crude Oil: Rail vs. Pipeline," published by the International Association for Energy Economics (IAEE) energy forum, report that the volume of oil leaked per spill was on average much less with pipelines than with rail transport, and that companies are able to transport a significantly higher volume of oil by pipeline (5).

REFERENCES

Furthermore, the lack of oversight that has led to past pipeline spills is largely attributable to Canadian regulatory organizations such as the National Energy Board (NEB) (1). At present, the NEB is responsible for the regulation of around 73,000 km of pipelines in Canada (9). The NEB have also been at the center of legal battles over the TMX pipeline, which was recently approved for expansion (9). The government of Canada is currently working on updating/replacing the NEB with the Canadian Energy Regulator (CER) (10).

As we move into a new age of energy production, it is important to ensure that Canada's investments are not only true to our values, but that they continue to be effective with the coming shifts towards renewable energy production. Many of the major Canadian parties are promising both short- and long-term goals for our fossil fuel economy (7,8,9). Some parties are committing to using only domestically-produced oil and gas, and others to ending fossil fuel subsidies (7,8,9).

Overall, most parties are committing, broadly, to reduce and eventually eliminate the production of greenhouse gases in the oil and gas industry (7,8,9). How this country moves forward with the construction of energy infrastructure (e.g. pipelines) must match up with these goals in an environmentally sound way, considering all of the communities potentially impacted by the project.

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