

• $\int_{-\infty}^{\infty} \delta(x) dx = 1$ (normalization)
• $\int_{-\infty}^{\infty} x \delta(x) dx = 0$ (centered at 0)
• $\int_{-\infty}^{\infty} x^n \delta(x) dx = 0$ for $n > 0$
• $\int_{-\infty}^{\infty} f(x) \delta(x) dx = f(0)$ (sifting property)

- $\int_{-\infty}^{\infty} f(x) \delta(x-a) dx = f(a)$
- $\int_{-\infty}^{\infty} f(x) \delta(x-a) dx = f(a)$
- $\int_{-\infty}^{\infty} f(x) \delta(x-a) dx = f(a)$

Pipeline Politics: The Struggle to Bring Oil Sands Crude to Market

Richard M. Sanders

On May 1, 2024, oil began to flow from Alberta to facilities in southern British Columbia on the Trans Mountain Pipeline Expansion.¹ This marked the conclusion of a lengthy, politically fraught struggle to create extra capacity to move petroleum from northern Alberta's oil sands to international markets. Trans Mountain was one of three domestic routes which had been considered, along with Northern Gateway,² which would have also reached British Columbia, but at a location several hundred miles further north, and Energy East,³ which would have ended in Quebec or New Brunswick.

These two options failed in the face of sustained environmental and indigenous rights activism as well as inter-provincial frictions. Another proposed pipeline, Keystone XL,⁴ would have gone south into the United States, connecting to an existing pipeline which would bring the oil to facilities near Houston.

The environmental and indigenous rights issues played out in the United States at a high decibel level, which doomed any approval of this route, and in the process put strain on US-Canadian relations.

Trans Mountain finally went forward, but only after its private sector investor, discouraged by the controversy and delays which had beset the project, dropped out and the Canadian government took it over, investing 34 billion CAD⁵ to see it through to conclusion. The pipeline saga points out the difficulty of bringing major natural resource projects to fruition in Canada, despite both the importance of this sector to Canada's overall economy and the fact that the United States is looking to Canada for access to "critical minerals" crucial to the global energy transition.

Pressure Builds for More Capacity

of bitumen,⁷ a tarry, semi-solid form of petroleum, found in the boreal forests of the northern part of the province.

Bitumen requires significant processing so this “heavy” crude oil can be moved in pipelines either to refineries closer to consumers or port facilities for overseas shipment. The first major investment was Syncrude,⁸ majority-owned by American major Sun Oil Corporation. (Its operation was ultimately spun off and is now a part-Canadian firm known as Suncor.) Others followed, often with several oil companies working together in joint ventures to share the enormous costs of oil sands investments.

Production from oil sands is expensive compared to conventional production and interest in the zone has waxed and waned, depending on world oil prices and competition from other sources such as shale oil. Still, by now, American, Canadian, British, South Korean, Japanese and Chinese firms⁹ are all present in northern Alberta. As a result, Canada now produces 5.76 million barrels of oil per day, making it the world’s fourth largest producer, ahead of China and below Russia.¹⁰

As oil sands production has increased in recent decades, the question of how to get it to market has become ever more acute, as the capacity of existing pipelines has been reached. One major work-around has been the transportation of oil by rail, but this is considerably more expensive than using pipelines. The cost of transportation, on top of the higher cost of production compared with that of other types of oil, means that crude from Alberta’s oil sands commands a lower price than comparable oil from other sources.¹¹ This price differential has acted as a partial brake on further expansion.

Trans Mountain: Nation Building with a High Price Tag

As production from the oil sands increased, the issue of a new pipeline became more acute. In 2013, Texas-based firm Kinder Morgan proposed building one under an existing pipeline from Alberta to southern British Columbia to expand shipments from 300,000 to 890,000 barrels per day.¹² This project, known as the Trans Mountain Pipeline Expansion Project, faced significant obstacles from the beginning.

Although Canada’s federal government, then led by Prime Minister Stephen Harper (who represented an Alberta district), supported the project, it faced environmental protests, particularly as ships carrying oil from the pipeline terminal near Burnaby, British Columbia would have to transit the shallow Burrard Inlet.¹³ Some indigenous activists also objected, mounting “protest camps” which were contained or dismantled by police.¹⁴

7 “Bitumen.” Energy Education/University of Calgary. <https://energyeducation.ca/encyclopedia/Bitumen>

8 “Syncrude.” Suncor. <https://www.suncor.com/en-ca/what-we-do/oil-sands/syncrude#project-ownership>

9 “Oil Sands Operations.” Oil Sands Magazine. June 28, 2024. <https://www.oilsandsmagazine.com/projects/bitumen-production>

10 “What countries are top producers and consumers of oil?” U.S. Energy Information Administration. 2023. <https://www.eia.gov/tools/faqs/faq.php?id=709&t=6>

11 “Differentials Explained: Why Alberta Crude Sells at a Deep Discount.” Oil Sands Magazine. December 13, 2018. <https://www.oilsandsmagazine.com/market-insights/crude-oil-pricing-differentials-why-alberta-crude-sells-at-deep-discount-to-wti>

12 “Trans Mountain Files Facilities Expansion Application with the National Energy Board.” Kinder Morgan. December 13, 2013. <https://ir.kindermorgan.com/news/news-details/2013/Trans-Mountain-Files-Facilities-Expansion-Application-with-the-National-Energy-Board/default.aspx>

13 “Trans Mountain: tar sands oil to and from our coast.” Raincoast Conservation Foundation.

14 Kwan, Braela. “Indigenous activists fight British Columbia’s pipeline to the last mile.” Cascade PBS.

Delays were caused by a court decision invalidating the federal government approval of the pipeline and requiring further consultations with indigenous tribes, which were ultimately undertaken.¹⁵ The British Columbia and Alberta governments feuded loudly over the project.¹⁶ By April 2018, in the face of delays and attendant increased costs, Kinder Morgan announced that it was suspending all non-essential work on the pipeline, citing risks associated with the project.¹⁷

At that point the Canadian government, now led by Liberal Justin Trudeau, stepped in, even as alternative routes were fizzling out. In 2018 it purchased the project from Kinder Morgan for 4.5 billion CAD,¹⁸ borrowing money to finance both this deal and further construction. The \$34 billion CAD that building the pipeline would ultimately cost it was an enormous sum. By way of comparison Canada's entire annual defense budget is 26.5 billion CAD.¹⁹

This decision to build Trans Mountain was a huge effort at state-sponsored economic development, a nation-building exercise finding historical precedent only in the construction of the Canadian Pacific Railway and the St. Lawrence Seaway. There are those who assert that this enormous investment cannot be justified in economic terms²⁰ and will leave the Canadian taxpayer footing the bill while subsidizing the oil industry. However, defenders argue it is "worth every penny."²¹

The Canadian government hopes eventually to sell the pipeline to private investors (including in part to indigenous groups living along the route), but to make it attractive to them at a price which recovers the money already put in, it likely will have to raise the fees to users, setting itself up for a fight with the companies which have invested vast amounts in the oil sands.²²

March 18, 2021. <https://crosscut.com/environment/2021/03/indigenous-activists-against-british-columbia-pipelines-last-mile>

15 Gilbride, Bridget, Bundock, Emilie, and Rand, Niall. "Second Round of Consultation Successful for Trans Mountain to Proceed." Fasken. February 24, 2020. <https://www.fasken.com/en/knowledge/2020/02/second-round-of-consultation-successful-for-trans-mountain-pipeline-to-proceed>

16 Jung, Angela. "Timeline: Everything you want to know about the pipeline feud between Alberta and B.C." CTV News. April 19, 2018. <https://edmonton.ctvnews.ca/timeline-everything-you-want-to-know-about-the-pipeline-feud-between-alberta-and-b-c-1.3893041>

17 "Kinder Morgan Canada Limited Suspends Non-Essential Spending on Trans Mountain Expansion Project." Trans Mountain. April 8, 2018. <https://www.transmountain.com/news/2018/kinder-morgan-canada-limited-suspends-non-essential-spending-on-trans-mountain-expansion-project>

18 "Canada to buy Kinder Morgan pipeline assets." BBC. May 29, 2018. <https://www.bbc.com/news/world-us-canada-44243921>

19 "Defence Budget." Government of Canada. September 25, 2023. <https://www.canada.ca/en/department-national-defence/corporate/reports-publications/transition-materials/transition-assoc-dm/defence-budget.html>

20 Curmond, David. "Trans Mountain expansion may not be economically viable, says think tank report." CBC News. October 29, 2020. <https://www.cbc.ca/news/politics/trans-mountain-pipeline-oil-sands-1.5781073>

21 Tombe, Trevor. "The Trans Mountain pipeline was worth every penny of its \$34 billion price tag." The Hub. April 30, 2024. <https://thehub.ca/2024/04/30/trevor-tombe-the-trans-mountain-pipeline-was-worth-every-penny/>

22 Bakx, Kyle. "For its next trick, Ottawa must unload the \$34B Trans Mountain pipeline. It won't be easy." CBC. April 18, 2024. <https://www.cbc.ca/news/canada/calgary/tmx-trans-mountain-sale-free-land-1.7176629>

Northern Gateway and Energy East: Two Failed Canadian Alternatives

Parallel to problem-plagued Trans Mountain, investors made other efforts to develop alternative routes. Canadian pipeline operator Enbridge had proposed in 2010 the Northern Gateway Pipeline which would have gone due west from the oil sands to Kitimat in northern British Columbia, close to the southern end of the Alaska panhandle. It too faced strong opposition from some native groups and was subject to multiple lawsuits.²³

Opponents cited a number of oil spills which Enbridge had faced in its large existing network of pipelines throughout North America.²⁴ Despite initial approval which the Harper government had given (subject to multiple conditions), following adverse court decisions in 2016, the federal government determined that Northern Gateway was not environmentally justifiable.²⁵

Another Canadian route, Energy East, had a similar fate. Proposed in 2013 by TransCanada Corporation (now TC Energy), it would have brought oil to eastern Canada by repurposing an existing natural gas pipeline extending from Alberta to the Ontario-Quebec border and by building new pipeline into Quebec and on to New Brunswick.²⁶ An export terminal in Quebec was considered, but ultimately abandoned because of its impact on a Beluga whale habitat,²⁷ and one was anticipated for Saint John, New Brunswick.²⁸

Energy East faced the same objections from indigenous groups as did other pipelines. Also, revelations of secret meetings between energy regulators and lobbyists for Energy East raised suspicions of the project²⁹ and such enthusiasm as existed for it (always limited in Quebec) was soon dimmed when a train carrying crude derailed and the ensuing explosion and fire destroyed much of the town of Lac-Mégantic.³⁰ Energy

23 Steward, Gillian. "Why B.C. First Nations oppose the Northern Gateway pipeline." Toronto Star. August 28, 2015. [ns D0\(w7 m72 0sn 2y Ea1 0f L\)Ea1 \(o\)5t08\(MDC ID 20 0 6\(ns r\)9 3\(\(.2599s\)TJET350.ocm1a1 135.7Ja](#)

East was formally abandoned in 2017.³¹

Keystone XL: Harper Versus Obama

The Keystone XL pipeline was proposed in 2012 also by TC Energy which had constructed the original Keystone Pipeline System which moved oil east from Alberta through Saskatchewan and Manitoba and then south through North and South Dakota, Nebraska, Kansas and Oklahoma, and into Texas, terminating on the Gulf of Mexico near Houston. The XL addition would have slanted southeast from Alberta into Montana, western South Dakota and Nebraska, where it would have joined the existing pipeline.³²

Keystone XL faced the same indigenous rights and environmental concerns as the other alternatives. In particular the Sioux nation and its supporters strongly objected to it. Objections were raised to the planned route through the Sandhills ecosystem of Nebraska, potentially threatening the Ogallala aquifer. A lawsuit challenged the Nebraska governor's authority to approve the pipeline.³³

Canada, then led by just elected Justin Trudeau, who lacked his predecessor's deep personal commitment to Keystone XL, expressed disappointment over the decision but chose not to vocally oppose it,³⁷ and instead concentrated on the domestic Canadian alternatives. After taking office in 2017, President Trump reversed the decision and approved Keystone XL;³⁸ however, the project remained mired in legal challenges as Trans Mountain inched forward, and when in office in 2021 President Biden immediately reversed President Trump's approval.³⁹

e Hard Slog of Resource Development

The staggering amount of time, money, and political will which it took to complete Trans Mountain, and the fate of the Northern Gateway and Energy East alternatives show that despite the importance of natural resources to Canada's economy, a constant throughout its history, it is not necessarily an easy environment for large projects. Indeed, environmental and indigenous rights concerns, and the legal and public relations weapons available to their advocates demonstrate that at best such projects require sustained focus and expenditure of political (and in this case also financial) capital on the part of Canada's leaders if they are to have any hope of succeeding.

And the failure of Keystone XL showed that the environmental and indigenous rights lobbies can be equally powerful in the United States. It demonstrated dramatically that despite the most aggressive and persistent lobbying in the part of Canadian authorities, up to the level of the prime minister, they will not always carry the day.

While the Obama administration never embraced the argument that Keystone XL in and of itself represented the drastic environmental threat that its opponents portrayed, it nonetheless apparently bowed to a lobby that was politically important to it, using as its chief argument that it would have adversely affected American leadership on climate change diplomacy. (In reality, it does not appear to have been a factor one way or the other in international climate negotiations.) This is provided a lesson that when US domestic political forces tilt against Canada, it has a very steep uphill climb to persuade an American administration to give it something it wants regardless of how close the overall relationship may be.

Trans Mountain ultimately got built, and despite the considerable amount of self-congratulation in which environmentalists engaged after defeating Northern Gateway, Energy East and Keystone XL, Alberta's heavy oil is finding its way to global markets. Although making this happen had been a top priority of the Conservative Prime Minister Stephen Harper, Liberal Justin Trudeau saw it to conclusion despite his desire to be seen as friendly to the environment and indigenous peoples, as the project was viewed as too big to fail. But it seems unlikely that the Canadian government will open its pockets so generously to push through such a project of this scale any time in the foreseeable future.

Still the question of how to prioritize natural resource development against environmental and indigenous rights is not going to go away in Canada (or in the United States for that matter). Climate change concerns raise questions about the long term future of petroleum, but they also imply increased demand for

37 Harris, Kathleen. "Justin Trudeau 'disappointed' with U.S. rejection of Keystone XL." CBC News. November 6, 2015. <https://www.cbc.ca/news/politics/canada-keystone-pipeline-trudeau-obama-1.3307458>

38 Labott, Elise and Diamond, Jeremy. "Trump administration approves Keystone XL pipeline." CNN. March 24, 2017. <https://www.cnn.com/2017/03/23/politics/keystone-xl-pipeline-trump-approve/index.html>

39 Brady, Jenna. "Biden Order blocks Keystone XL pipeline." NPR. January 20, 2021. <https://www.npr.org/sections/inauguration-day-live-updates/2021/01/20/958823085/biden-order-blocks-keystone-xl-pipeline>

minerals such as lithium and cobalt to secure the transition to electric powered vehicles.

Canada, the world's second largest country by area, will thus doubtless feel political and economic pressure to speed up development of mines which often have their own environmental and indigenous rights issues. This may not produce the giant struggle that the oil sands pipeline did, but instead dozens of smaller fights that taken together may be equally painful for policymakers to resolve.







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