

Why the Now-abandoned Keystone XL Pipeline Was Troubled From the Start and Today Would Not Serve Its Purpose

Shifts in Canadian Oil Sands Production and U.S. Pipeline Development Make Keystone XL Not Only an Unreasonable Energy Investment But Also Redundant

Executive Summary

The Keystone XL pipeline project has no future. Recent political comments about the possibility of reviving the cancelled project are completely at odds with market forces and investment principles.

Undertaking a massive infrastructure project to move more heavy crude product from Canada's oil sands to refineries in the U.S. Gulf of Mexico makes no sense in the context of:

- Slowing growth in Canada oil sands production;
- A more economical realignment and expansion of pre-existing pipeline capacity; and
- The increasing competition from electric-powered vehicles that threatens the future of the gasoline market, a primary end use for heavy oil.

The Keystone XL pipeline project has no future.

IEEFA examined the Keystone XL pipeline project in light of current energy market conditions and determined the following:

- Cancellation of Keystone XL was deemed credit-positive for its sponsor, TC Energy. Investor and creditor perceptions of pipeline infrastructure projects like Keystone XL have generally shifted from positive to negative, as market and environmental factors have increased the risk that future dividends and free cash flow from investment in such projects will not materialize.

- Although the rationale for Keystone XL was based on a belief of robust growth in oil sands production, the outlook for production growth has dropped significantly since 2014. The trend in oil sands production suggests that the 2030 outlook will continue to decline. Between 2019 and 2021, five major oil sands projects were cancelled, deferred or delayed without provision of a significant update on restarting the project. The industry is particularly skeptical of growth from greenfield oil sands projects.
- U.S. pipeline companies have leveraged existing excess capacity, modified by expansions and a major pipeline's reversal of flow direction, to feed a similar amount of Canada oil into U.S. Gulf Coast markets, but in a more economical and flexible approach better suited to adapt to transitions in the energy market.
- Increasing competition from electrification in the vehicle market is likely over time to diminish demand for gasoline, a major end use for heavy oil. Meanwhile U.S. imports of crude oil have dropped by 43 percent since 2005.

Although some may hold out hope for a revival of the Keystone XL pipeline, private investors are highly unlikely to step up to the plate. Canada's increasing concern around climate policy and the need to lower greenhouse gas emissions have substantially reduced the outlook for growth from Canada's oil sands. Diversification of energy sources in Canada and the U.S. have undermined the financial rationale and public support for large-scale oil and gas projects, and pursuing large-scale greenfield projects in the oil sands is likely to be challenging for the foreseeable future. In this market environment, the notion of reviving the Keystone XL project is not rational.

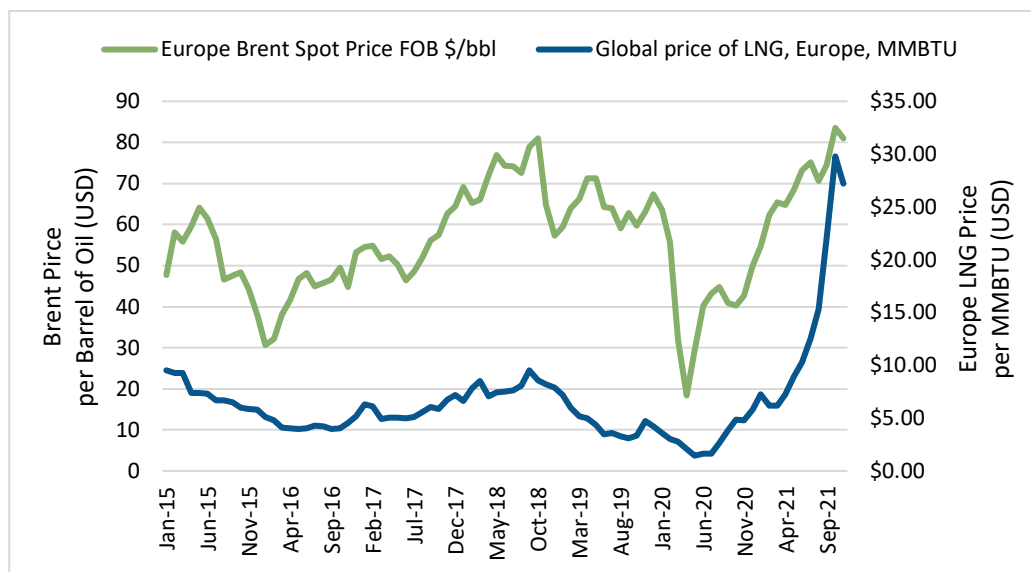
Introduction

The old Keystone XL international oil pipeline project proposal has re-entered the conversation around energy security for the West—almost 14 years after first being considered.¹ The arguments for reviving the abandoned project, however, are not substantive.

Opportunism often follows chaos, and the war in the Ukraine has roiled energy markets around the world. Global oil and gas prices are hitting levels last seen in 2014, hurting consumers affected by inflation. (Figure 1).

¹ Financial Post. [Jason Kenny and Joe Manchin talk energy security, but Keystone XL is never far away.](#) April 2022.

Figure 1: European Oil & LNG Prices



Source: EIA Monthly Brent Data, FRED Monthly European LNG Data.

Certain countries are panicked and attempting to secure adequate energy supplies. Many energy project developers are claiming their projects will curb high fossil fuel prices and improve fossil fuel energy supplies. At the same time, the International Panel on Climate Change has warned that:

“Reducing GHG (greenhouse gas) emissions across the full energy sector requires major transitions, including a substantial reduction in overall fossil fuel use, the deployment of low-emission energy sources, switching to alternative energy carriers, and energy efficiency and conservation. The continued installation of unabated fossil fuel ... infrastructure will ‘lock-in’ GHG emissions.”²

Each project that can legitimately be linked to an energy market should be judged based on the actual scale of need and a robust analysis of the potential for cleaner energy alternatives— including renewable energy and energy efficiency—to meet that need.

The Keystone XL pipeline never was a good option in the past, and today it simply has no relevance to real-world market needs.

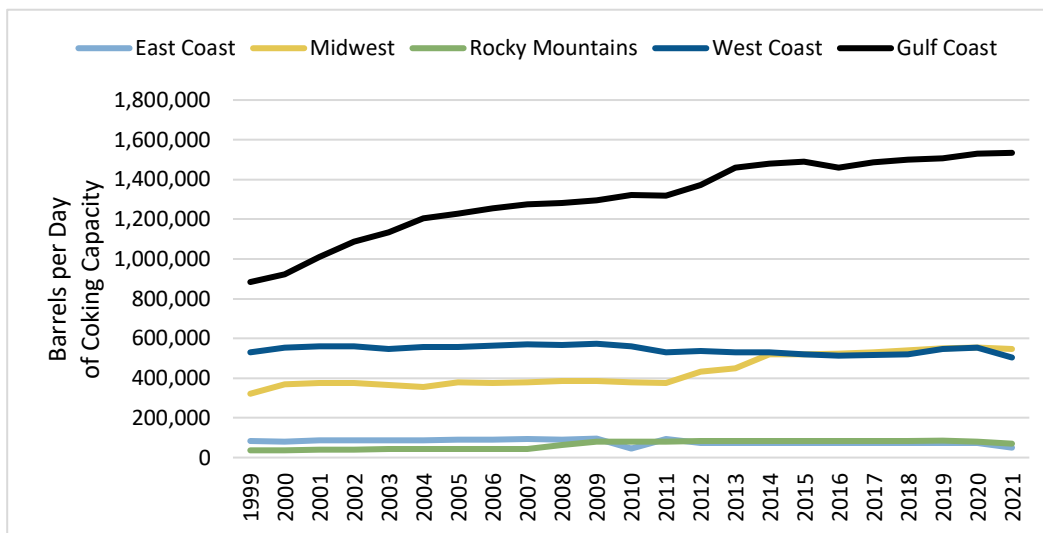
The Keystone XL pipeline never was a good option in the past.

² International Panel on Climate Change. *Climate Change 2022: Mitigation of Climate Change—Working Group III contribution to Sixth Assessment Report*. April 2022, p. SPM-36.

Background: The Proposal and the Permit History

Keystone XL was originally proposed as a pipeline system expansion to move as much as 830,000 barrels per day (b/d) of heavy crude oil from Hardisty, Alberta, to the U.S. Gulf Coast.³ The Gulf Coast and U.S. Midwest are the two main coveted markets for Canadian oil sands production because refineries in those specific regions are capable of refining heavy Canadian crude oil sands product. Refineries in the U.S. Gulf Coast and U.S. Midwest have a higher share of the cokers needed to extract higher value petroleum products from difficult-to-refine heavy oil grades like those produced by Canada’s oil sands (Figure 2).

Figure 2: Coker Refining Capacity by Region in the U.S.



Source: EIA Coker Capacity barrels per day – Yearly.

Proponents of the Keystone XL based their support for the project on the rationale that Canadian oil sands production was increasing rapidly. At the same time, however, the shale revolution in the United States was creating record oil production, and pipelines were being developed to move more oil from the U.S. Midwest to the Gulf Coast. Since 2008, the depressed outlook for oil sands growth and the number of domestic pipelines built between the Midwest and Gulf Coast has transformed energy dynamics between Canada and the United States.

Federal law requires any international oil pipeline to or from the United States to be approved at the top level of government, through a “presidential permit” generally administered by the U.S. Department of State. The Obama administration denied a presidential permit for the Keystone XL pipeline in 2015, pursuant to an environmental impact statement produced by the State Department.⁴

³ Alberta Government. [Keystone XL Pipeline](#). 2021.

⁴ U.S. Department of State. [Record of Decision and National Interest Determination](#). November 3, 2015 (“2015 Record of Decision”).

The Trump administration reversed the Obama administration decision in 2017, issuing a presidential permit.⁵ Although former President Trump's 2017 order was blocked by a federal judge pending an updated environmental review, the State Department produced an updated environmental impact statement, and Trump issued a new presidential permit in 2019.⁶

The Biden administration in January 2021 reversed the Trump administration decision that had overruled the Obama administration decision.⁷ Biden's executive order revoking the presidential permit declared the project "would not serve the national interest."⁸ His order noted that the 2019 presidential permit had included an express condition that the permit could be terminated at any time, at the administration's discretion.⁹

TC Energy announced it would abandon the project rather than fight the revocation. In its first quarterly report for 2021, TC Energy disclosed that it had "agreed with the Government of Alberta to formally suspend the Keystone XL pipeline project."¹⁰

Financial Consequence for TC Energy of Keystone Denial: Credit Positive

IEEFA and Oil Change International had documented the risks of oil sands development in a report issued in 2014, prior to the first denial of the presidential permit for Keystone XL. The report flagged signs of financial weakness due to rising costs, smaller profit margins and tougher capital markets, among other issues.¹¹ By 2021, the evidence of trouble in the industry was rampant. For financial and climate-related reasons, oil and gas projects were being abandoned,¹² delayed,¹³

⁵ U.S. Department of State. [Presidential permit: Authorizing TransCanada Keystone Pipeline, L.P.](#) ("Keystone") to construct, connect, operate and maintain pipeline facilities at the international boundary between the United States and Canada. March 23, 2017 (hereafter, "Presidential permit issued by Trump administration").

Also see: President Donald Trump. [Presidential Memorandum Regarding Construction of the Keystone XL Pipeline](#). January 24, 2017.

⁶ President Donald Trump. [Presidential Permit of March 29, 2019: Authorizing TransCanada Keystone Pipeline, L.P., to Construct, Connect, Operate, and Maintain Pipeline Facilities at the International Boundary Between the United States and Canada](#). 84 Fed. Reg. 13101 (April 4, 2019).

⁷ President Joseph R. Biden, Jr., [Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis](#) (signed January 20, 2021), Exec. Order 13990, 86 Fed. Reg. 7,037, 7,041 (January 25, 2021), § 6.

⁸ *Ibid.*, § 6(d).

⁹ *Ibid.* Also see [Presidential permit issued by Trump administration](#), Article 1.

¹⁰ TC Energy. [Quarterly Report to Shareholders: TC Energy reports solid first quarter operating performance. Continues to advance \\$20 billion secured capital program following formal suspension of Keystone XL](#). May 7, 2021, p. 2 Also see: Reuters. [Developer officially cancels Keystone XL pipeline project blocked by Biden](#). June 9, 2021.

¹¹ IEEFA and Oil Change International. [Material Risks: How public accountability is slowing tar sands development](#). October 29, 2014.

¹² Reuters. [Teck drops C20.6 billion oil sands frontier project to take writedown](#). February 23, 2020.

¹³ S&P Global. [Argentina's fracking activity in Vaca Muerta slowed to zero in April](#). May 5, 2020.

written off,¹⁴ and sold at distressed prices.¹⁵ Also, the project was likely to be subject to ongoing opposition even while under development, given landowners' opposition to the taking of their property, construction impacts on streams and wetlands, adverse impacts of oil sands extraction growth, and the threat of leaks or spills during pipeline operation.

The Biden administration's revocation of the Keystone XL permit benefited the credit status of TransCanada Pipelines Limited, the principal subsidiary and debt issuer of TC Energy Corporation.¹⁶ In a credit opinion issued on July 8, 2021, by Moody's Investors Service, Moody's summarized the company's credit profile:

**Oil and gas projects were
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"TransCanada Pipelines Limited's (TransCanada or TCPL) credit profile is driven by its predictable and growing cash flow, large size and portfolio diversification benefits. Cash flow is typically underpinned by either cost of service regulation or long-term contracts. Offsetting these strengths are weak financial metrics and a large capital program with elevated execution risk, albeit significantly diminished following the cancellation of the Keystone XL pipeline."¹⁷

Moody's observed that cancellation of Keystone XL made the company's capital program and financial obligations more manageable. It stated:

"There are multiple sources of funding for the capital program, dividend growth and debt maturities. However, with the cancellation of Keystone XL and the reduction in funding needs, we expect the company to rely primarily on internally generated cash flow and a modest increase in debt."¹⁸

Moody's concluded, "The revocation of the presidential permit and subsequent cancellation of Keystone XL earlier this year was credit positive."¹⁹

The cancellation of Keystone XL is part of a trend. Many plans for oil and gas infrastructure projects were conceived during an expansionary period of the

¹⁴ Wall Street Journal. [Big oil's big writedowns](#). January 8, 2020.

¹⁵ World Oil. [Shell sells Appalachia assets to National Fuel for \\$541 million](#). May 4, 2020.

¹⁶ Moody's Investors Service. [Credit Opinion: TransCanada Pipelines Limited: Update to credit analysis](#). July 8, 2021, p. 2.

¹⁷ *Ibid.*, p. 1.

¹⁸ Moody's Investors Service, *op. cit.*, p. 5. Credit Opinion: TransCanada Pipelines Limited: Update to credit analysis. July 8, 2021, p. 5.

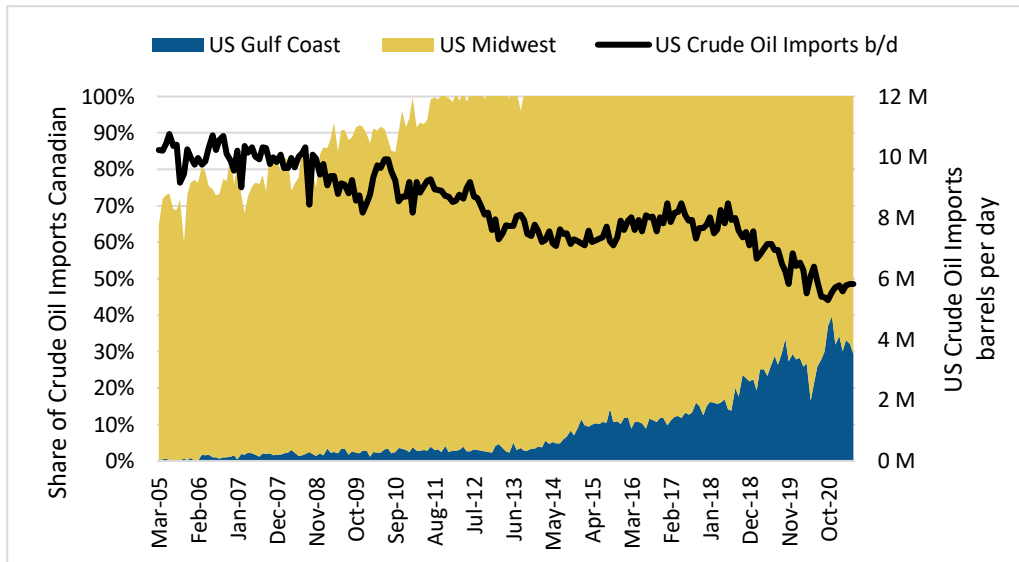
¹⁹ *Ibid.*

industry. Now, however, market forces responding to the energy transition have caused a reversal of fortune for many projects.²⁰

Keystone XL Not Necessary as Oil Sands Growth Outlook Continually Falls

The rationale for Keystone XL was based on growth in oil sands production. During the Keystone XL saga, Canada’s oil exports dominated the Midwest oil market, and the industry in Canada was focused on expanding its market share in the Gulf Coast (Figure 3). Canadian oil has managed to expand market share in a dwindling crude oil import market in the U.S., where total crude oil imports have contracted by 43% since 2005.

Figure 3: Canada Crude Oil Exports to the U.S.

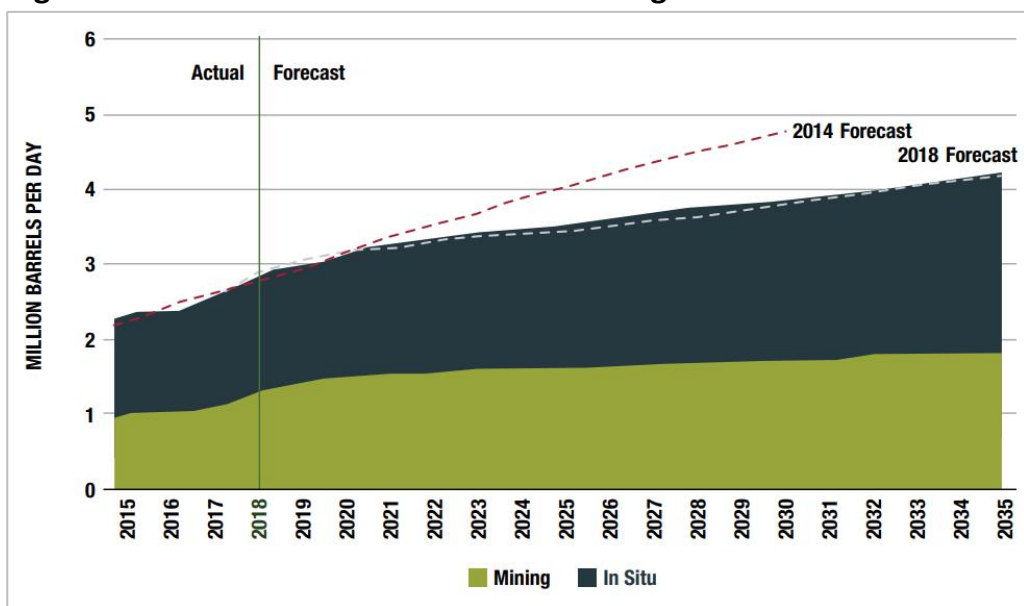


Source: EIA Daily Imports by Country – Crude Oil.

Since 2014, however, the outlook for production growth in Canada’s oil sands has dropped significantly (Figure 4). The Canadian Association of Petroleum Producers (CAPP) had projected in 2014 that oil sands production would surpass 4.5 million b/d in 2030. By 2018, CAPP’s 2030 outlook had dropped to 3.9 million b/d of production.

²⁰ Moody’s Investors Service. Regulated Electric & Gas Utilities – North America: Shifting environmental agendas raise long-term credit risk for natural gas investments. September 2020.

Figure 4: Oil Sands Production Outlook Falling



Source: CAPP 2018 oil sands Outlook.

Since the latest update by CAPP, the trend in oil sands production suggests that the 2030 outlook has continued to decline, and currently may be in the range of just over 3 million b/d (Figure 5). Even based on the 2018 estimates of production growth, 70 percent of planned production growth is at risk, with large producers realizing that greenfield projects are almost impossible to develop in the near and medium term.²¹

The landscape of oil sands production, within just two years following the 2018 CAPP outlook, indicated the risk of a further downgrade in production growth expectation for 2030 (Figure 5). Between 2019 and 2021, five major oil sands projects were cancelled, deferred, or delayed without the provision of a significant update on re-starting the project (Figure 5). The only updated oil sands project has been Narrows Lake by Cenovus Energy, which plans to build the project as a tie-in to its existing Christina Lake in-situ oil sands project.²² Cenovus Energy CEO Alex Pourbaix warned, however, that launching large-scale greenfield projects in the oil sands will be challenging for the foreseeable future.²³ Narrows Lake might have never been pursued if it had been a stand-alone greenfield project.

Similarly, Suncor Energy recently received pushback from potential government approval of its Base Mine Expansion project. Issues around its ability to offset GHG emissions were a contributing factor to the warning issued to Suncor.²⁴ The project

²¹ Cenovus Energy. Q3 2021 Results Earning Conference Call. November 2021.

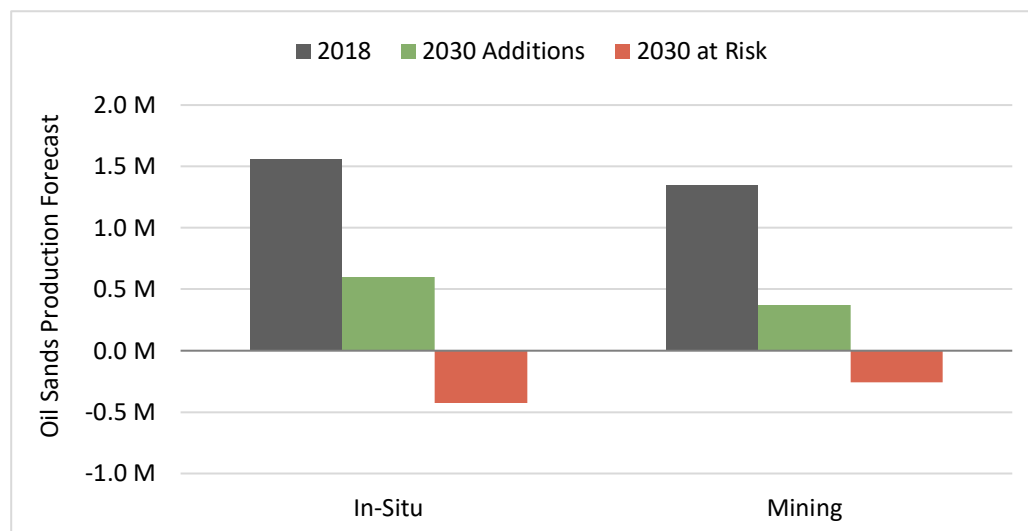
²² Cenovus Energy. Cenovus Energy Investor Day 2021. December 2021. Slide 57.

²³ Cenovus Energy, *op. cit.*

²⁴ BOE Report. Canada climate goals set high hurdle for Suncor oil sands mine extension. April 2022.

was expected to increase the mine life of Base Mine by 25 years, by adding oil production of around 225,000 b/d.

Figure 5: 70% of Growth in Oil Sands at Risk, Post-2019



Source: Company AIF 2020 and 2021 for Cenovus, Athabasca Oil, Suncor, Imperial Oil, MEG Energy, Teck Resources.

Pursuit of oil sands development in the context of reducing absolute GHG emissions from operations has been a challenge. Top oil sands producers like Cenovus, Suncor, and Canadian Natural have relied on acquisitions of already-producing assets to add to production growth, instead of building out greenfield projects. This has been relatively cheap for oil sands producers, and the approach has avoided the regulatory risks associated with greenfield development for production growth.

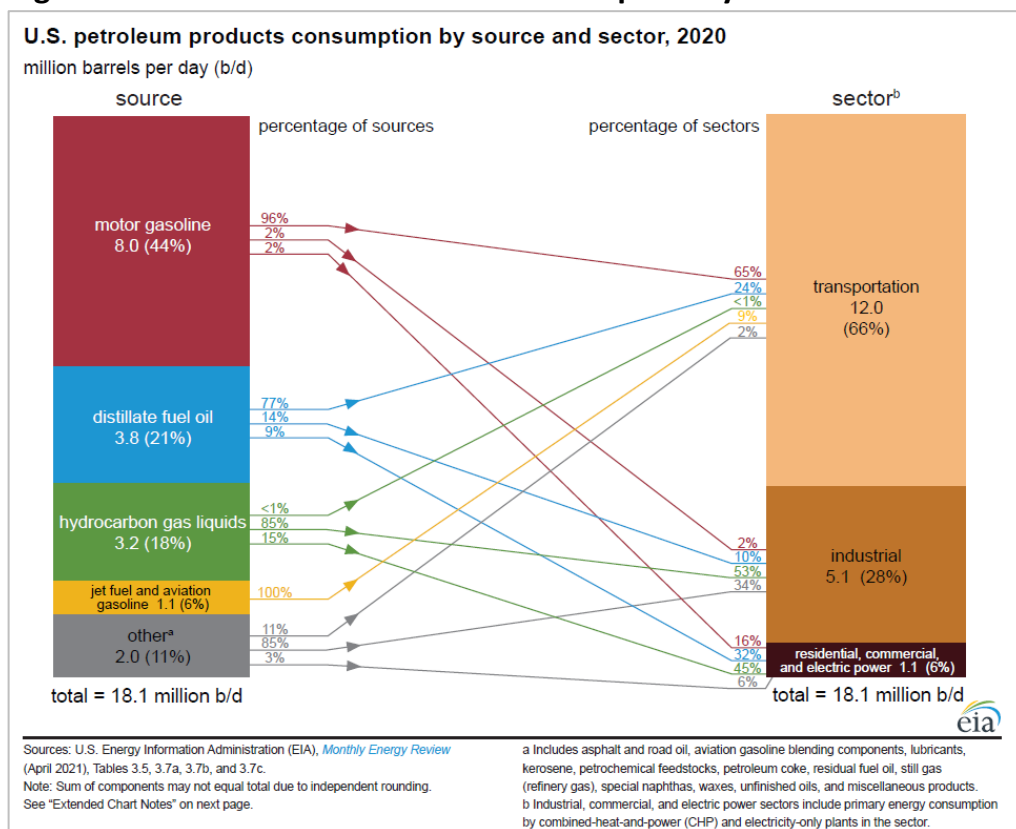
The Canadian government has targeted an 81 million ton annual reduction in carbon emissions from the oil and gas sector by 2030. The five oil sands projects that were cancelled, delayed, or deferred would have added more than 17 million tons per year of carbon emissions, based on the commonly-used carbon intensity estimate of 0.07 tons of carbon emissions per barrel of oil.²⁵ Given that Canada's fuel levy on carbon will reach \$170 per ton in 2030,²⁶ it would be hard to justify trying to develop such projects unless the producers could successfully and economically offset the projects' carbon emissions.

At the market end of the spectrum, energy policy is expected to have an increasing impact on demand for oil. The rising competition from electric-powered vehicles (EVs) threatens the future of the gasoline market, which comprises roughly 44 percent of the total U.S. market for oil (see Figure 6) and is a primary end use for heavy oil such as that produced by Canada's oil sands.

²⁵ Canadian Energy Centre. [Evaluating the Canadian oil and gas sector's GHG emissions intensity record](#). August 2020.

²⁶ Wood Mackenzie. [Canada's carbon price to rise to \\$170/tonne: implications for upstream](#). December 2020.

Figure 6: U.S. Petroleum Products Consumption by Source and Sector



Major automotive companies are investing heavily in electric vehicles. Five major automakers recently submitted statements on the future of the market impact of EVs in federal court.²⁷ The manufacturers seek to intervene in support of California in a case challenging the state’s power to adopt cleaner vehicle standards than the rest of the country.²⁸ They include the Ford Motor Company, the Volkswagen Group of America, Inc., BMW of North America LLC, American Honda Motor Company, Inc., and Volvo Car USA LLC. In a motion submitted to the U.S. Court of Appeals for the District of Columbia, the automakers declared that:

- Ford plans to produce more than 2 million electric vehicles annually by 2026, and expects EVs to comprise half of global volume by 2030.
- Volkswagen plans to make 55% of its U.S. sales fully electric by 2030.
- BMW projects its vehicle emissions per mile will fall by about 40 percent by 2030.

²⁷ IEEFA. [Appeals court case underscores growing rift between automakers and oil industry](#). June 20, 2022.

²⁸ The case is *State of Ohio, et al. v. United States Environmental Protection Agency, et al.*, No. 22-1081, D.C. Cir., filed May 12, 2022.

- Honda plans to have all of its vehicles worldwide electrified by 2040.
- Volvo expects at least half of its cars sold to be fully electric by 2025, and all of its cars to be electric by 2030.²⁹

The companies reportedly account for almost 30 percent of vehicle sales in the United States.³⁰ In a similar vein, General Motors this year dropped its opposition to California's stricter vehicle emission standards,³¹ and its website declares that the company is "aggressively going after every aspect of what it takes to put everyone in an EV."³²

As energy sources diversify around the world, project spending even on smaller expansion projects is likely to fall out of favour, and current CAPP projections out to 2035 are likely to decline further. Oil sands producers will continue to find ways to optimize and possibly achieve some expansions of existing projects, but the growth phase of the oil sands industry is behind it.

Spending, even on smaller expansion projects, is likely to fall out of favour.

U.S. Pipelines Replace Keystone XL

As oil sands production growth stalled, U.S. pipelines found opportunity in the chaos from Keystone XL to develop other capacity to increase Canadian oil exports to the U.S. Midwest (Figure 7). In 2019 and 2020, U.S. pipeline companies started to build smaller pipeline projects and expand existing infrastructure to bring Canadian oil sands product down to the U.S. Gulf Coast. Record amounts of Canadian crude oil are reaching the Gulf Coast today even as rail exports have slowed (Figure 7). This is in part due to a key U.S. pipeline called the Capline, which reversed its flow direction to start moving oil from the Midwest to the Gulf Coast by Q4 2021.³³

²⁹ Motion of Ford Motor Company, Volkswagen Group of America, Inc., BMW of North America, LLC, American Honda Motor Co., Inc., and Volvo Car USA LLC to Intervene in Support of Respondents, in *State of Ohio, et al. v. United States Environmental Protection Agency, et al.*, No. 22-1081, D.C. Cir., filed June 7, 2022.

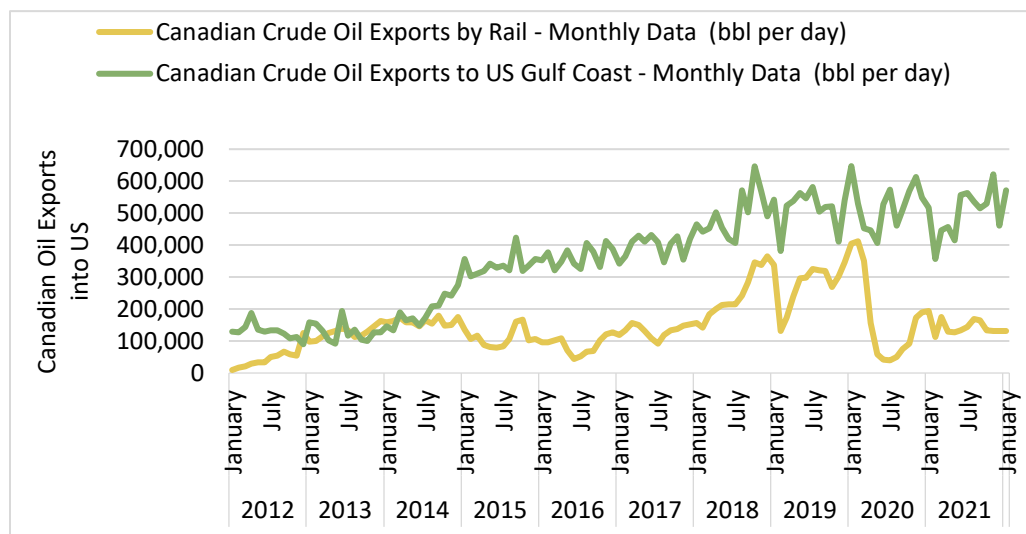
³⁰ U.S. Environmental Protection Agency. "Revised 2023 and Later Model Year light-Duty Vehicle Greenhouse Gas emissions Standards." 86 Fed. Reg. 74, 434 at 74,458 (Dec. 30, 2021).

³¹ Reuters. [GM recognizes California's authority to set vehicle emissions rules](#). January 9, 2022.

³² General Motors. [Our path to an all-electric future](#). Accessed January 10, 2022.

³³ Pipeline & Gas Journal. [Reversed Capline Pipeline Set to Begin Light Crude Service in 2021](#). March 2020.

Figure 7: Record Oil Exports to the U.S. Gulf Coast



Source : Canadian Energy Regulator exports by Train, EIA Exports of Canadian Crude Oil to PADD 3 (U.S. Gulf Coast).

The Capline project alone has the capacity to move 1.2 million b/d of crude oil, of which just over half would be heavy crude oil, from the Midwest to the Gulf Coast. The project freed up existing capacity to move more Canadian crude oil from the Midwest (Figure 2) to the Gulf Coast.³⁴ While the Capline comes just 175,000 b/d short of Keystone XL’s planned capacity, U.S. projects that include the Red River expansion pipeline and the Cushing-to-Nederland pipeline added 150,000 b/d of crude oil in additional capacity.^{35,36}

As a result, just two years after 2018, a combination of U.S. pipelines freeing up existing capacity to transport Canadian crude oil from the Midwest have replaced most of the capacity that had been targeted by Keystone XL. In addition to the Capline, the pipelines include Enbridge’s Mainline and Express pipeline expansion, and the Line 3 replacement transporting product from the oil sands to U.S. Midwest markets.^{37,38}

The Keystone XL project would have required significant growth in oil sands production to make it useful over the 30-plus years of the project’s life, effectively “locking in” the use of heavy Canadian crude oil. In contrast, these smaller pipelines are attachments that do not need committed supply from the oil sands. They remain

³⁴ Pipeline & Gas Journal, *op. cit.*

³⁵ Delek US. 2020 Annual Report, p. 12.

³⁶ Energy Transfer Partners. JP Morgan 2021 Energy Power and Renewables Conference. June 2021. Slide 13.

³⁷ S&P Global. Enbridge raises Line 3 Replacement project costs, touts confidence as protests escalate. February 2021.

³⁸ Enbridge. Q2 Financial Results & Business Update. July 2020. Slide 11.

flexible to obtain and transport crude oil from locations other than Canada, which is a distinct advantage in a changing energy economy.³⁹

At the same time, substantial reliance on pre-existing infrastructure offered an economic advantage that likely benefitted the cost-competitiveness of the delivered product in comparison with the proposed Keystone XL.

Pipeline infrastructure companies have adapted, and large pipeline projects or new builds are no longer the norm as pipeline companies look to stagger infrastructure through expansions and connections between pipelines. Of the major pipeline construction projects moving crude oil from Canada to the Midwest and Gulf Coast from 2019 to 2021, none of the projects are new builds.⁴⁰ Similarly, of the projects under construction from 2019 to 2021, the average project expansion will consist of 140,000 b/d of capacity (excluding the 1.2 million b/d Capline reversal) compared to Keystone XL's 830,000 b/d of capacity.^{41,42,43,44,45}

The Risks for Governments When Investing in Large Fossil Fuel Pipeline Projects

The Canadian federal and Alberta governments have a similar challenge to overcome. Both governments spent and guaranteed billions of dollars in equity and debt respectively to build out major pipeline projects. Both the Alberta-backed Keystone XL and Canada-backed Trans Mountain Expansion have been troubled projects. In IEEFA's recent analysis of the [Trans Mountain Expansion project](#), the pipeline has experienced cost overruns of \$8.8 billion, or a 70% increase in construction costs.⁴⁶ Keystone XL, perhaps fortunately, did not even get off the ground, but Alberta taxpayers realized a loss on \$394 million in equity and had to pay back \$1 billion in loans that were guaranteed and 100% taxpayer funded.

TC Energy has officially backed out of Keystone XL and Francois Poirier, CEO of TC Energy, has no plans to revive the project.⁴⁷ Without TC Energy or another pipeline operator to invest in Keystone XL, the Alberta government would have to revive the effort alone, similar to the Canadian federal government's purchase and development of the Trans Mountain Pipeline Expansion. It has not been a smooth ride for the Canadian federal government, given the problems with the Trans

³⁹ The U.S. Environmental Protection Agency reported to the Obama administration that a barrel of Western Canadian Sedimentary Basin (WCSB) crude oil emits 17% more GHGs on a lifecycle basis than average crude oil produced in the United States. See: EPA. [Letter to Secretary of State re National Interest Determination for proposed Keystone XL Pipeline Project](#). Feb. 2, 2015.

⁴⁰ Tallgrass Energy, *op. cit.*

⁴¹ *Ibid.*

⁴² Delek US, *op. cit.*

⁴³ Energy Transfer Partners, *op. cit.*

⁴⁴ S&P Global, *op. cit.*

⁴⁵ Enbridge, *op. cit.*

⁴⁶ IEEFA. [Trans Mountain \(TMX\) pipeline \(\\$17 billion+\) will require even more Canadian taxpayer dollars to prop up](#). March 9, 2022.

⁴⁷ Financial Post. [Jason Kenney and Joe Manchin talk energy security, but Keystone XL is never far away](#). April 2022.

Mountain Pipeline expansion. During an Alberta visit by U.S. Sen. Joe Manchin (D-W.Va.), even he was skeptical that investors and policy would align in a way to bring Keystone XL back to light.⁴⁸

Conclusion

The Keystone XL project is dead and will not be revived. Oil and gas producers, as well as pipeline companies, have adapted to the regulatory burdens of building new pipeline projects and mega-projects. Like oil sands producers, pipeline companies in Canada and the U.S. are more focused on expanding existing infrastructure and piecing together smaller pipeline projects to get crude oil from the oil sands to the Gulf Coast. The management teams of oil and gas and pipeline companies cannot remain complacent about regulatory changes and social and economic pressure to reduce GHG emissions. The desire by some for opportunism arising from the chaos caused by the invasion of the Ukraine does not change the practicalities of today's market, and will not be enough to revive Keystone XL.

**The Keystone XL project
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⁴⁸ *Ibid.*

About IEEFA

The Institute for Energy Economics and Financial Analysis (IEEFA) examines issues related to energy markets, trends and policies. The Institute's mission is to accelerate the transition to a diverse, sustainable, and profitable energy economy. www.ieefa.org

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