



Pétrole canadien : pas de solution facile

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Dans son [Analyse sur l'avenir énergétique du Canada en 2017](#) (l'« analyse de 2017 »), l'Office national de l'énergie fait des projections relativement à l'offre et à la demande d'énergie pour environ un quart de siècle, soit de 2016 à 2040. Même si les principales conclusions de l'analyse de 2017 sont en soi notables, elles mettent également en lumière les effets à long terme de certains enjeux pour l'industrie pétrolière canadienne, principalement d'éventuelles insuffisances de capacité d'acheminement des pipelines.

Ce billet est disponible en anglais seulement.

In its Report on [Canada's Energy Future 2017](#) ("2017 Report"), the National Energy Board makes energy supply and demand projections for the roughly quarter century period running from 2016 to 2040. While the key findings in the 2017 Report are noteworthy on their own, they also highlight the long-term effects of some issues affecting Canada's oil industry – notably potential shortfalls in pipeline takeaway capacity.

The 2017 Report indicates that Canadian oil production is expected to grow from 4.0 million barrels per day (MMb/d) in 2016 to around 6.3 MMb/d in 2040 (p.33). And yet the 2017 Report also clearly demonstrates that, while this expected growth has been anticipated for years, there could well be a significant shortfall in pipeline takeaway capacity to move all this oil to market (p.41).

The 2017 Report is built around a Reference Case based on the current economic outlook, a moderate view of energy prices and current energy and carbon pricing policies. (See p.12; for oil and carbon price assumptions over the projection period, see p.19-21 and p.16-18 respectively).

The key findings of the 2017 Report regarding Canadian oil production over the projection period include:

- Substantially all of the growth in Canadian oil production is expected to come from the oil sands – where production is expected to grow by 77% between 2016 and 2040, reaching 4.5 MMb/d by the end of the projection period (p.34).
- Most of the growth in production from the oil sands will come from in situ operations rather than mining:
 - Production from oil sands mining operations is expected to reach almost 1.7 MMb/d by 2020 as projects under construction are completed; after that, production from mines is expected to remain level for the balance of the projection period (p.35);
 - Production from oil sands in situ operations is expected to more than double from 1.4 MMb/d in 2016 to almost 2.9 MMb/d in 2040 (p.35).

- Conventional oil production from western Canada, including both light and heavy oils and related oil products, was roughly 1.2 MMb/d in 2016, or about 30% of total Canadian oil production. This conventional production is expected to grow gradually over the projection period to roughly 1.35 MMb/d, but will experience an overall proportional decline as a share of Canadian oil production due to the anticipated more rapid growth of oil sands production (p.39).
- Oil production from eastern Canada, particularly the Newfoundland and Labrador offshore, is expected to increase from 0.2 MMb/d in 2016 to almost 0.3 MMb/d by 2023 before declining to around 0.1 MMb/d by the end of the projection period, as the principal offshore oil fields are gradually depleted (p.40).

Historically, the bulk of Canadian oil production has moved by pipeline, principally from western Canada to markets in the rest of Canada and the United States. According to the NEB's report on [Canada's Pipeline Transportation System 2016](#), the principal existing and proposed pipeline takeaway capacity from western Canada is substantially as follows:

	Existing (MMb/d)	Proposed(MMb/d)	Total(MMb/d)
<i>Enbridge Mainline</i>	2.85	0.37	3.22
<i>Keystone</i>	0.59	0.83	1.42
<i>Trans- Mountain</i>	0.30	0.59	0.89
<i>Express System</i>	0.28	-	0.28
<i>Total</i>	4.02	1.79	5.81

Clearly, existing pipeline capacity falls short of expected oil production from western Canada over the projection period, particularly as pipelines optimally operate at 85% to 90% of their designed capacity to allow for maintenance, repairs, capital improvements and outages. Indeed, existing pipeline capacity, after allowing for these down times, is barely adequate to move even the current levels of oil produced in western Canada (p.91).

In its 2017 Report the NEB notes that the availability of takeaway capacity for western Canadian oil has become a key uncertainty, commenting (on p.41) that its analysis:

assumes that over the long term, all energy production will find markets and infrastructure will be built as needed. However projects to increase oil transportation capacity in North America have proven controversial. Whether sufficient pipeline structure is in place will impact pricing of Canadian crude oil and the economics of production.

Describing projects that would increase oil transportation capacity as controversial is, if anything, an understatement. Consider that in the last decade or so there have been five major proposals to build or increase pipeline capacity to move western Canada's oil production to market. Two of those, Northern Gateway and Energy East, have effectively terminated and the prospects of the remaining three are uncertain.

Enbridge's Northern Gateway project would have connected western Canada's oil production to the Pacific Coast, while Trans-Canada's Energy East project would have reached the Atlantic Coast. Each

would have been constructed over all-Canadian routes, would have required only Canadian consents and approvals and would have brought Canadian oil to tidewater and as a result to global markets. After close to a decade of regulatory proceedings, Northern Gateway was still being legally challenged on numerous fronts. After a successful challenge by various First Nations, the federal government decided against continuing or revising the process. Energy East was withdrawn by Trans-Canada in the face of slow progress in its regulatory proceedings and changes in regulatory filing and assessment requirements.

The remaining three pipeline proposals would collectively provide more limited access to tidewater than the two all-Canadian projects that have terminated. Moreover two of the three remaining projects continue Canada's substantial reliance on American approvals, markets and continued goodwill:

- Enbridge's Line 3 Replacement project would add 0.37 MMb/d to the Enbridge Mainline, by far the largest Canadian oil pipeline system. All material Canadian approvals are in place but permitting in the United States has been fraught with difficulties. Enbridge's Line 3 Replacement has run into various issues at the state level, including most recently in Minnesota where intervenors and the state's Department of Commerce have cast substantial doubt on both the necessity and convenience of authorizing its construction. While many had initially assumed Line 3 would be the easiest of the proposed oil pipelines to construct, its prospects are now by no means certain.
- TransCanada's Keystone XL project would, if implemented, increase the capacity of the Keystone Pipeline system from 0.59 MMb/d to 1.42 MMb/d, materially increasing the oil sands production that could be moved down to a battery of refineries on the US Gulf Coast that are specifically designed to refine heavy oils. Canadian approvals are all in place, but obtaining US approvals has been a long and drawn out process. US federal approval of Keystone XL as an import oil pipeline was delayed for the better part of 8 years during the Obama administration before finally being rejected. Keystone XL now has support from the US federal government and is much closer today to having in hand all necessary US federal and state regulatory approvals. But the prospect of litigation opposing the project is very likely. Moreover, TransCanada has not yet reached a final investment decision to proceed with the project.
- The proposed Trans Mountain Expansion project (TMX) would loop the existing Trans Mountain pipeline from Alberta through to the Westridge Marine Oil Terminal in the Greater Vancouver area, thereby increasing the capacity of the line threefold, from 0.30 MMb/d to 0.89 MMb/d. TMX has been approved in principle by the Canadian federal government, but a variety of conditions remain unfulfilled and significant First Nations and environmental litigation is still pending. Accordingly, whether and when TMX will proceed remains uncertain.

Given the significant uncertainties surrounding the construction of new pipelines, the NEB in its [report on Canada's Energy Future 2016](#) ("2016 Report"), analyzed a Constrained Case which assumed that the only new pipeline capacity developed was the Line 3 Replacement project and related upgrades to Enbridge's Mainline system. Any production in excess of this capacity would have to move by rail. In its Constrained Case, the NEB estimated that up to 1.2 MMb/d would have to be shipped by rail by 2040 (p.97). Movement of this amount of oil by rail would dwarf current rail movements: the NEB estimates that movements of oil by rail peaked at between 0.25 MMb/d and 0.3 MMb/d at various times in 2014 and 2015. In the 2016 Report, the NEB noted:

While the use of rail to export crude oil in the Constrained Case is not far above the estimated capacity of existing crude loading terminals in western Canada, it is roughly quadruple the peak crude-by-rail movements in Canada to date. . . Expansion of rail capacity to meet these volumes is uncertain (p.106).

Movement of oil by rail also raises economic issues. Transportation of oil by rail as a general rule has historically been costlier than pipelines and accordingly reduces margins to producers. In the 2016 Report, the NEB assumed that net-backs to producers would be up to \$10 /bbl less when shipped by rail (p.94). Moreover these changes in economics could be expected to reduce capital expenditures and reduce Canadian oil production by as much as 0.5 MMb/d by the end of the projection period (p.96). Technology and other improvements to rail systems could of course lower the costs associated with moving oil by rail. But for now, those are possibilities, not certainties.

With five major pipeline proposals over the last decade or so, there has been ample opportunity for the federal government to shape a coherent national policy that could have matched expected Canadian oil production with appropriate transportation options to serve diverse global markets. Instead, we are experiencing transportation constraints which are projected to only worsen as production increases. For so long as access to tidewater and global markets is constrained, Canadian oil will remain linked principally to North American markets and will be materially dependent on American rules governing market access. Moreover, any deficit in pipeline capacity will place greater reliance on moving oil by rail which is anticipated to result in smaller margins for Canadian oil producers, less royalty revenues for affected provincial governments and challenges to our rail infrastructure.

It is the federal government which has the exclusive power and authority to regulate and approve interprovincial and international pipelines. A more clearly articulated or more effectively implemented federal strategy to optimize the movement of Canada's oil resources to market could have avoided these anticipated transportation constraints and improved the economic prospects for Canadian oil generally.

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