

## Briefing note

# Challenges to exporting Canadian oilsands crude overseas

## An overview of significant short-term barriers and market uncertainties facing Canadian oilsands exports

by Nathan Lemphers

### At a Glance

There are several barriers that make exporting Canadian oilsands to overseas markets (and most notably Asian markets) a challenging prospect in the near future. Alternative pipelines that would transport oilsands to Canada's West Coast are in the early stages of the regulatory process and approvals are expected to take several years at minimum. Additionally, the lack of proven commercial support for what is currently the leading pipeline option, Enbridge Northern Gateway, strong public concern, broad First Nations opposition, significant environmental impacts from oilsands production, the climate implications of oilsands development and lack of viable transportation alternatives make exporting Canadian oilsands crude overseas highly unlikely in the next five to 10 years. Considerable headway on these barriers would need to be made if overseas oilsands exports were to become a possibility in the long-term.

This briefing note discusses the most likely options to transport oilsands beyond the American Midwest, where the export market is currently saturated with oilsands exports and new Bakken shale oil production. These options include additional pipelines to the West (Enbridge Northern Gateway and Kinder Morgan Trans Mountain) and to the East (Enbridge Trailbreaker), as well as rail transport.

### Introduction

Canada has historically relied on the United States as a market for 99 per cent of its oilsands exports, which are currently directed to the U.S. Midwest. As delays continue on the proposed U.S.-bound Keystone XL oilsands pipeline and depressed heavy crude prices remain in the U.S. Midwest, the

Canadian government is sending clear signals that they intend to diversify the country's oil exports to the Asia-Pacific region, notably China.

Currently, the primary oilsands pipelines feed into the American Midwest. There are no major pipelines that take Canadian oilsands to the East or West Coast. Likewise, there are no other major pipelines that would transport oilsands directly from Canada to the U.S. Gulf Coast other than the proposed Keystone XL.

*At this time, there are considerable barriers to the approval and construction of major oilsands pipelines designed to export oilsands to overseas markets.*

## Pacific Coast Export Options

### Enbridge Northern Gateway Pipeline

This proposed \$6.6-billion, 727-mile pipeline from Alberta to British Columbia's coast is currently in the early stages of the Canadian regulatory approval process. If approved, this pipeline would not be operational before 2018 at the earliest. However, three considerable barriers exist for this pipeline:

- **Lack of proven commercial support.** In contrast to most other oilsands export pipelines, the pipeline proponent, Enbridge, does not have any long-term shipper agreements. While non-binding agreements have been signed with several shippers, these simply reflect a 'gentleman's handshake' and do not represent firm commercial support.<sup>1</sup>
- **Significant public concern.** More than 4,300 individuals have signed up to present oral evidence during the regulatory hearings into the Northern Gateway project. This unprecedented and growing amount of interest has delayed the project by at least one year and has made Gateway one of the most controversial pipeline projects in Canadian history.
- **Broad aboriginal opposition.** More than 100 First Nations in Western Canada have declared their opposition to this oilsands pipeline and oil supertanker traffic along the B.C coast based on ancestral law. These First Nations have considerable legal power to challenge any federal approval of the pipeline. Consequently, there is a very high likelihood that this project, if approved, will be held up for years by legal challenges in the federal courts. This prospect of ongoing legal delays due to First Nations opposition is reducing investor confidence in the project.<sup>2</sup>

*Even without these barriers, completion of the Northern Gateway pipeline would not happen before 2018.<sup>3</sup> But given the considerable barriers, it could very likely take upwards of a decade if the pipeline is to be completed at all.*

### Kinder Morgan Trans Mountain Expansion

This pipeline has been in operation since 1952 and runs from Edmonton, Alberta, to Greater Vancouver and the Puget Sound in British Columbia. Kinder Morgan Canada is currently seeking

commercial support to twin the current 300,000-barrel-per-day pipeline to handle up to 700,000 barrels per day.

Considerable challenges exist for this export pipeline, largely due to the fact that the terminus of the pipeline is the Port Metro Vancouver harbour in Burnaby, B.C., where there is significant public opposition to additional oil tanker traffic.<sup>4,5</sup> For Kinder Morgan to pursue this option, it would also require dredging of the Vancouver harbour — an option that raises a number of additional environmental concerns.<sup>6</sup>

***The Trans Mountain expansion would not be completed before 2017 at the earliest, but given the tanker and terminus challenges facing this project, it is unlikely to be completed within the next decade, if it goes ahead at all.***<sup>7</sup>

## East Coast Export Options – Enbridge Trailbreaker Project

Originally proposed as another way for oilsands to reach an international port, Enbridge's Trailbreaker project would reverse two existing pipelines (from Southern Ontario via Montreal to Portland, Maine). Proposed in 2008 initially, the project was shelved due to insufficient commercial interest. Recently, pipeline company Enbridge has publicly stated they are not currently pursuing the project.<sup>8</sup> However, if the project moves ahead there are regulatory hurdles that must be overcome in both Canada and the United States. Also, the pipeline capacity is only 169,000 barrels per day, a fraction of current oilsands production. Like Northern Gateway and Keystone XL, Trailbreaker has already been delayed by over a year due to public concern over oilsands pipelines in Ontario, Quebec, Maine, Vermont, and New Hampshire.

***Lack of interest by Enbridge and limited pipeline capacity make the Trailbreaker project an unlikely option for large-scale East Coast oilsands exports.***

## Shipping Oilsands by Rail

While shipping oilsands by rail is emerging as an alternative to pipelines, it has yet to be a proven, economically viable method to transport major volumes of oil. Although still in the pilot phase, shipping oilsands by rail has much higher operating costs than large-capacity pipelines that service existing markets.<sup>9</sup> Rail may be more economic when shipping smaller batches from areas without access to existing pipelines.<sup>10</sup> Rail also carries different environmental considerations than conventional pipeline transport, such as increased noise and air pollution.

***Shipping oilsands by rail therefore faces considerable economic barriers to large-scale implementation.***

## Climate Implications of Oilsands Development

### Other jurisdictions discouraging use of high-carbon fuels

To reduce the impacts of climate change, an increasing number of jurisdictions are adopting low-carbon fuel standards that give preference to fuel sources that have the lowest associated greenhouse gas (GHG) emissions. Oilsands are among the most GHG emission-intensive forms of oil in the world.<sup>11</sup> California has already passed a low-carbon fuel standard that attempts to reduce the intensity of GHG emissions from transportation fuels, specifically naming the oilsands as a high-carbon fuel source.<sup>12</sup> A number of Northeastern U.S. states and the European Union are also considering similar legislation.

These policies send a clear signal to oilsands producers that for oilsands to remain competitive in an increasingly carbon-constrained market, there would need to be significant reductions in carbon emissions. Without such innovation aimed at reducing the GHG emissions associated with oilsands production, downstream markets may re-orient away from oilsands imports.

Currently the oilsands industry and the Canadian government have not proposed or implemented changes that would achieve the necessary reductions in carbon emissions intensity that are required by such low-carbon fuel policies.<sup>13,14,15</sup>

***Until the oilsands industry significantly reduces GHG emissions from oilsands production, it will face increasing market barriers.***

## Uncertainty in Chinese Demand for Oilsands

### China uncertain to ship Canadian oilsands crude back to China

The booming Chinese economy will certainly need considerable amounts of new crude oil to maintain its growth over the long-term. China has invested \$11.7 billion CDN into the oilsands over the past five years, representing 15.9 per cent of all equity investments into the oilsands over that time period.<sup>16</sup> However, this growing demand for oil and investment opportunities in the oilsands does not necessarily translate to an actual interest in oilsands product.

According to the International Energy Agency, decisions by Chinese national oil companies to import oil are actually determined by prevailing market prices — not from internal company quotas or mandates from the Chinese government. In other words, Chinese oil companies will sell oil to whichever market generates the greatest revenue. Currently, almost all equity investment that Chinese oil companies have in North America is sold locally, because it is more profitable rather than shipping that oil back to China.<sup>17</sup>

A more likely Canadian energy product that China would bring back is liquefied natural gas (LNG). LNG exports to the B.C. coast are also more developed than oilsands exports.<sup>18</sup> A major LNG pipeline to the B.C. coast and an export terminal have already received federal permits and exports of LNG to the Asia-Pacific region are expected to begin by 2015. LNG transport also has considerably less opposition from First Nations.

*Chinese investment in oilsands should not be equated with demand for oilsands crude in China.*

### **No Long-Term Shipper Agreements for Northern Gateway Pipeline**

If Chinese demand for oilsands imports were strong, then the Northern Gateway pipeline would have binding, long-term commercial support for the pipeline, like there has been for recent oilsands pipelines to the United States. However, only non-binding precedent agreements have been signed by five oilsands producers.<sup>19</sup>

*The absence of firm commercial support for the Northern Gateway pipeline suggests that Chinese demand for oilsands is limited at present.*

## **Key Conclusions**

**At this time, there are considerable barriers to the approval and construction of major oilsands pipelines designed to export oilsands to overseas markets.**

- The Northern Gateway pipeline would not be completed before 2018 at the earliest,<sup>20</sup> but given the considerable barriers facing this project, it could very likely take upwards of a decade if the pipeline is to be completed at all.
- The Trans Mountain expansion would not be completed before 2017 at the earliest, but given the tanker and terminus challenges facing this project, it is unlikely to be completed within the next decade, if it goes ahead at all.<sup>21</sup>
- Shipping oilsands by rail faces considerable economic barriers to large-scale implementation.
- Until the oilsands industry significantly reduces carbon emissions from oilsands production, it will face increasing market barriers.
- Chinese investment in oilsands should not be equated with demand for oilsands crude in China.
- The absence of firm commercial support for the Northern Gateway pipeline suggest that Chinese demand for oilsands is limited at present.

## Endnotes

- <sup>1</sup> Nathan Vanderklippe, “Enbridge touts support, others call it ‘hollow.’” *Globe and Mail*, 1 September 2011, <http://m.theglobeandmail.com/report-on-business/industry-news/energy-and-resources/companies-commit-to-northern-gateway-enbridge/article2140101/?service=mobile>
- <sup>2</sup> Jeffrey Jones, “Enbridge to look again at Gateway pipeline route,” *Reuters*, 17 February 2012, <http://www.reuters.com/article/2012/02/17/enbridge-idUSL4E8DH91F20120217>
- <sup>3</sup> Rebecca Penty, “Kinder Morgan to decide on Trans Mountain expansion by end of March,” *Calgary Herald*, 22 February, 2012, <http://www.vancouversun.com/business/Kinder+Morgan+decide+Trans+Mountain+expansion+March/6186387/story.html>
- <sup>4</sup> Tseil-Waututh Nation, “Kinder Morgan expansion plans: a risk too great to accept,” Tseil-Waituth Nation Media Release, 31 October 2011, [http://www.twnation.ca/~media/Files/Press%20Releases/TWN\\_PressRelease\\_KinderMorgan\\_31Oct2011.ashx](http://www.twnation.ca/~media/Files/Press%20Releases/TWN_PressRelease_KinderMorgan_31Oct2011.ashx)
- <sup>5</sup> Ben West, “Kinder Morgan pipeline expansion must be stopped,” Wilderness Committee, 3 February 2011, [http://wildernesscommittee.org/press\\_release/kinder\\_morgan\\_pipeline\\_expansion\\_must\\_be\\_stopped](http://wildernesscommittee.org/press_release/kinder_morgan_pipeline_expansion_must_be_stopped)
- <sup>6</sup> Kinder Morgan Canada, *Trans Mountain Pipeline*, Presentation by Ian Anderson, Kinder Morgan Canada Group President, 2011 Analysts Conference, [http://www.kindermorgan.com/investor/presentations/2011\\_Analysts\\_Conf\\_05\\_KM\\_Canada.pdf](http://www.kindermorgan.com/investor/presentations/2011_Analysts_Conf_05_KM_Canada.pdf)
- <sup>7</sup> Rebecca Penty, “Kinder Morgan to decide on Trans Mountain expansion by end of March,” *Calgary Herald*, 22 February, 2012, <http://www.vancouversun.com/business/Kinder+Morgan+decide+Trans+Mountain+expansion+March/6186387/story.html>
- <sup>8</sup> John Balentine, “Pipeline debate comes to Maine,” *American Journal*, 19 February 2012, [http://www.keepmecurrent.com/american\\_journal/news/pipeline-debate-comes-to-maine/article\\_0565e08e-5b2e-11e1-9a35-001871e3ce6c.html](http://www.keepmecurrent.com/american_journal/news/pipeline-debate-comes-to-maine/article_0565e08e-5b2e-11e1-9a35-001871e3ce6c.html)
- <sup>9</sup> EnSys Energy & Systems, Inc., *Keystone XL Assessment, Section 3.2.3.2.*, 23 December 2010, p. 20, <http://www.keystonepipeline-xl.state.gov/clientsite/keystonexl.nsf/AssmtDrftAcpt.pdf>
- <sup>10</sup> Nathan Vanderklippe, “CN, CP push for a ‘pipeline on rails’,” *The Globe and Mail*, 7 February 2011, <http://www.theglobeandmail.com/globe-investor/cn-cp-push-for-a-pipeline-on-rails/article1898062/page1/>
- <sup>11</sup> A 2011 meta-analysis by Stanford University’s Adam Brandt concluded oilsands production was on average 23 per cent more GHG-emission-intensive than conventional crude entering the European Union. Adam R. Brant, *Upstream greenhouse gas (GHG) emissions from Canadian oil sands as a feedstock for European refineries* (Stanford University, 2011). Prepared for European Commission.
- <sup>12</sup> California has already passed a low-carbon fuel standard that requires oil companies to reduce the carbon-intensity of transportation fuels by 10 per cent by 2020. The performance-based standard requires companies to properly account for emissions from both cleaner fuels as well as dirtier sources, such as tar sands, effectively encouraging greater production of the former and discouraging production of the latter.
- <sup>13</sup> The Canadian Association of Petroleum Producers (CAPP) reported that GHG emissions for the oilsands increased by 14 per cent in 2010 over 2009 levels and that the carbon emission intensity also increased by two per cent over the same time period. CAPP, *Responsible Canadian Energy – 2010 Progress Report: Oilsands – Greenhouse Gases*, <http://www.rce2010.ca/oil-sands/air/greenhouse-gases/>
- <sup>14</sup> Oilsands industry GHG emissions are projected to triple from 2005 levels by 2020, according to Environment Canada. Currently there are no federal GHG regulations on the oilsands industry. Environment Canada, *Canada’s Emission Trends*, July 2011, <http://www.ec.gc.ca/Publications/E197D5E7-1AE3-4A06-B4FC-CB74EAAAA60F%5CCanadasEmissionsTrends.pdf>
- <sup>15</sup> Matthew Bramley, Simon Dyer, Marc Huot and Matt Horne, *Responsible Action? An assessment of Alberta’s greenhouse gas policies*, (Calgary, AB: Pembina Institute, 2011). <http://www.pembina.org/pub/2295>
- <sup>16</sup> Pembina Institute calculation based on publicly available investments from Chinese national oil companies and investment corporations in the Canadian oilsands over the past five years.
- <sup>17</sup> J. Jiang and J. Sinton, *Overseas Investments By Chinese National Oil Companies: Assessing the Drivers and Impacts*, Information Paper, (Paris, France: International Energy Agency. 2011. p.18).
- <sup>18</sup> China’s most recent five-year plan calls for a significant reduction in the GHG-intensity of the country’s economy. Given the recent major discoveries of shale gas around the world, the current depressed natural gas prices and the desire by China to reduce their carbon emissions, LNG is more likely to be shipped to Asia from Canada in the near-term than oilsands.
- <sup>19</sup> Cenovus Energy, MEG Energy, Nexen, Suncor Energy Marketing, and Total E&P Canada
- <sup>20</sup> Rebecca Penty, “Kinder Morgan to decide on Trans Mountain expansion by end of March,” *Calgary Herald*, 22 February, 2012, <http://www.vancouversun.com/business/Kinder+Morgan+decide+Trans+Mountain+expansion+March/6186387/story.html>
- <sup>21</sup> Rebecca Penty, “Kinder Morgan to decide on Trans Mountain expansion by end of March,” *Calgary Herald*, 22 February, 2012, <http://www.vancouversun.com/business/Kinder+Morgan+decide+Trans+Mountain+expansion+March/6186387/story.html>