

## Backgrounder

# The link between Keystone XL and Canadian oilsands production

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### At a Glance

The proposed Keystone XL pipeline would connect the Canadian oilsands to the U.S. Gulf Coast market. Given the size, scope and market potential of the Keystone project, it would likely result in increased oilsands production.

### Introduction

This briefing note outlines evidence that the Keystone XL pipeline would drive upstream oilsands production and counters arguments that the pipeline would not impact oilsands production. Keystone XL would be the largest pipeline connecting the Canadian oilsands to the U.S. and would create a pathway to a new market on the Gulf Coast. It would create a higher netback price and a more favorable differential for oilsands crude, signaling a stronger return on investment for producers. Given its size, scope and market potential, Keystone XL is far more likely than not to support and drive upstream production.

If Keystone XL would drive increased oilsands production in Alberta, as this briefing notes argues, it is essential that the

GHG emissions and other land, water and air impacts associated with increased upstream production are assessed as part of the environmental impact analysis being conducted by the U.S. State Department.

### Context

This analysis was spurred in part by a recent EnSys Energy analysis commissioned by the U.S. Department of Energy to evaluate the impact Keystone XL would have on U.S. and global refining, trade and oil markets.<sup>1</sup> The report concluded that, "...building versus not building Keystone XL would not of itself have any significant impact on: U.S. total crude runs, total crude and product import levels or costs, global refinery CO<sub>2</sub> or life-cycle GHG emissions."<sup>2</sup> In particular, the report states "[p]roduction levels of oil sands crudes would not be affected by whether or not KXL was built."<sup>3</sup>

This briefing note argues that production levels *would* be affected by Keystone XL. We should note that this briefing note does not counter the EnSys modeling on which the report's conclusion was based. In fact, the EnSys modeling supports the key argument in this briefing note. Rather, we counter some of the analysis in the report and its final conclusion that Keystone XL would not by itself affect production.

The U.S. State Department may rely on the EnSys analysis to determine how and whether to consider transboundary impacts as part of its environmental analysis for the Keystone XL pipeline under U.S. law.<sup>4</sup> This analysis necessarily includes upstream GHG emissions. The EnSys analysis may also inform broader U.S. policy with respect to oilsands imports and climate policy in both countries. As the U.S. considers increasing its reliance on Canadian oilsands, decision makers require accurate information about the extent to which the U.S. drives upstream oilsands production. This is particularly important in the absence of a comprehensive climate policy in Canada.

## Recommendation

The U.S. State Department and other U.S. decision makers should be cautious about relying on the EnSys conclusion that oilsands production would not be affected by Keystone XL. There is no basis for concluding that Keystone XL would not drive upstream Canadian oilsands production. For this reason, the U.S. government has a legal responsibility under the National Environmental Policy Act to consider the likely upstream impacts associated with the increased production that would result from Keystone XL.

## Summary of key arguments<sup>5</sup>

**1. The proposed Keystone XL pipeline is designed to link the Alberta oilsands to a new market on the Gulf Coast (PADD III) with greater access to a global market. It would raise the cost of oil for all Canadian crude, providing a market signal for continued and increased production.**

With a final rated capacity of 900,000 barrels per day (b/d), Keystone XL would be the largest pipeline moving oilsands from Alberta to the United States. The pipeline

would provide a bullet line from Alberta to the Gulf Coast for approximately 50 years.<sup>6</sup>

The approval of Keystone XL would open a new market on the Gulf Coast, U.S. Petroleum Administration for Defense District (PADD) III. The opening of the PADD III market would increase the netback price or differential of oilsands crude relative to benchmark grades, which in turn would drive expanded production. Access to PADD III would likely benefit oilsands companies with integrated energy strategies (with an interest in both production and refinery capacity) and companies with higher production costs that require the highest possible netback. In any case, access to PADD III as a new market will create a price signal for the oilsands industry. This price signal will drive expanded production, resulting in increased GHG emissions and impacts on air, land and water.

Additionally, the Keystone XL pipeline is supported by shipper agreements with some of the largest oilsands companies. Most of these companies have significant expansion projects under way. Several KXL shippers have publicly acknowledged that the access to the Gulf Coast provided by Keystone XL would help create the market signals needed to commit future investments and increase production.

**2. The EnSys report supports the notion that Keystone XL would affect oilsands production by as much as 900,000 barrels per day by 2030.**

The EnSys report acknowledges that production would be constrained without Keystone XL.<sup>7</sup> One of its modeled scenarios (called No Expansion) demonstrates that without new or expanded pipelines, western Canadian crude production (largely oilsands) would be curtailed by 750,000 – 950,000 barrels per day by 2030.<sup>8</sup>

Despite this finding, EnSys concludes that Keystone XL would not affect production, largely because its analysis assumes that other pipeline projects to Asia and the Gulf Coast will move ahead.<sup>9</sup>

The EnSys conclusion is flawed. The potential for future transport projects that would similarly increase oilsands production does not negate the fact that Keystone XL would increase oilsands production.

This briefing note suggests that production will be influenced by factors other than the existence or non-existence of alternative projects. Upstream production could very well be affected before 2030 because:

- Keystone XL, by providing a massive delivery system of oilsands from Alberta to the Gulf Coast, would encourage production regardless of existing pipeline capacity;
- Oilsands production levels will be driven by market conditions, and in particular the existence or non-existence of the PADD III market, and should not be assumed in the absence of those markets;
- Alternative routes to China are more uncertain than suggested in the EnSys report and are at least 10+ years away, therefore Keystone XL would have a more significant influence on upstream production;
- Alternative routes between PADD II and III, while possible, would not be “broadly similar” to Keystone XL and would not create the same production signals as Keystone XL.<sup>10</sup>

**3. As the United States is the primary consumer of oilsands and the prospect of substantial growth in Canadian exports to Asian markets is a mid-term option (5-10 years) at best, Keystone XL is far more likely to drive upstream production than speculative Asian markets.**

At this time, the U.S. is the only export market for oilsands. Less than .56% of oilsands production is exported to overseas markets. While there are proposals to expand the oilsands market to the Canadian West Coast and ultimately to Asian markets, the proposed projects face permitting challenges and public opposition. As a result, the price signal needed to expand production for these markets will take longer to materialize.

Even if West Coast options emerge as viable, they will be delayed by several years and will remain secondary to the U.S. market. The uncertainty of these markets is not comparable to the real potential of Keystone XL to affect production in the near term, given its stage in the regulatory process. Therefore, our analysis gives these options less weight as alternatives to Keystone XL than the EnSys analysis.

**4. While alternative projects between PADD II and III could occur in the absence of Keystone XL, no other option of the scale and scope of KXL has been proposed. Consequently, other options are less likely to affect oilsands production.**

The EnSys report states that if KXL is not built, there would be a demand for alternative projects “broadly similar to those that would be provided by KXL”<sup>11</sup> to move Canadian crude from PADD II to PADD III.

While other pipelines to the Gulf Coast (PADD III) could move ahead, they would be materially different from Keystone XL. They would not provide the same market signal to industry as Keystone XL, and therefore would not result in the same increase in production.

Rather, KXL, by virtue of its size, pipeline path, and unique shipper agreements, which would directly link oilsands production in Canada with the Gulf Coast, offers a far greater signal to maintain upstream

production than either of the alternatives outlined in the EnSys report.

In summary, it is likely that Keystone XL would, in fact, drive increased oilsands production in Alberta. Therefore it is essential that the increased GHG emissions

and other land, water and air impacts associated with upstream production are assessed as part of the environmental impact analysis being conducted by the U.S. State Department.

## Detailed analysis

**1. The proposed Keystone XL pipeline is designed to link the Alberta oilsands to a new market on the Gulf Coast (PADD III) with greater access to a global market. It would raise the cost of oil for all Canadian crude, providing a market signal for continued and increased production.**

KXL is unique from other oilsands pipelines in that it would open up a major new market that would otherwise be limited (or shut in) to the Midwest market (other than occasional tankers reaching the Gulf Coast from Vancouver). The Keystone XL pipeline would bring western Canadian Crude directly to the Gulf Coast. It would facilitate movement of the growing Canadian crude oil supply from PADD II into the new PADD III market and provide new access to a global market. Because crude oil is currently discounted in the Midwest, oilsands producers' profits are not what they would be in a Gulf Coast market. Consequently, Keystone XL would very likely provide a strong price signal to increase oilsands production in Alberta.

### *PADD III is a significant new market*

Keystone XL would deliver crude to a new market, the U.S. Gulf Coast (PADD III), which is currently constrained by existing pipeline capacity. Keystone XL could increase deliveries to this region by 700% (current capacity is 96,000 bbl through the Pegasus Pipeline),<sup>12</sup> with a final KXL capacity between Cushing and the Gulf Coast of 700,000 bpd.<sup>13</sup> TransCanada has already secured shipper agreements totaling 380,000 b/d for Keystone XL. TransCanada's economic analysis suggests deliveries of 500,000 b/d by as early as 2014.<sup>14</sup>

As noted by the Canadian Association of Petroleum Producers (CAPP), "PADD III is the largest untapped market for western

Canadian crude oil producers."<sup>15</sup> According to an economic analysis completed as part of TransCanada's submission to the National Energy Board (NEB), "By committing volumes to the Keystone XL Pipeline, Canadian shippers are indicating a strategy to supply a market which has had little access to their crude."<sup>16</sup>

TransCanada argued for new markets to expand oilsands production in its application to the National Energy Board, concluding, "this [oilsands] supply growth *will require access to new crude oil markets*, underpinning the need for the Keystone XL Pipeline."<sup>17</sup> Similarly, the economic analysis conducted by Purvin and Gertz as part of the Keystone XL application stated, "Canadian crude exports to the U.S. are expected to rise with growing production, *assuming* pipeline capacity continues to grow."<sup>18</sup> CAPP stated in its 2010 Outlook: "...the main constraint to the growth of supply of western Canadian heavy crude to this region [PADD III] is not available refining capacity but is in fact the availability of pipeline capacity to the region."<sup>19</sup>

The constraint created by limited access to PADD III is evident today. Over the past few months, there has been a growing supply of oil in Cushing, Oklahoma, creating what is described as a "glut" of oil in the Midwest.<sup>20</sup> This has led to a record discount in WTI crude upwards of \$10<sup>21</sup> to \$18<sup>22</sup> that would only be resolved by adding substantial pipeline capacity. This discount has resulted in lower gas prices at the pump for consumers.<sup>23</sup> The glut has been reported as partly due to the addition of two major trunk-lines out of Alberta (Enbridge's Alberta Clipper line and TransCanada's Keystone project) combined with the emergence of North Dakota's Bakken shale oil.<sup>24</sup> The disparity between the discounted crude (WTI) and

other markets such as Brent will likely continue to rise until other options to send the crude to the Gulf Coast are found.<sup>25</sup>

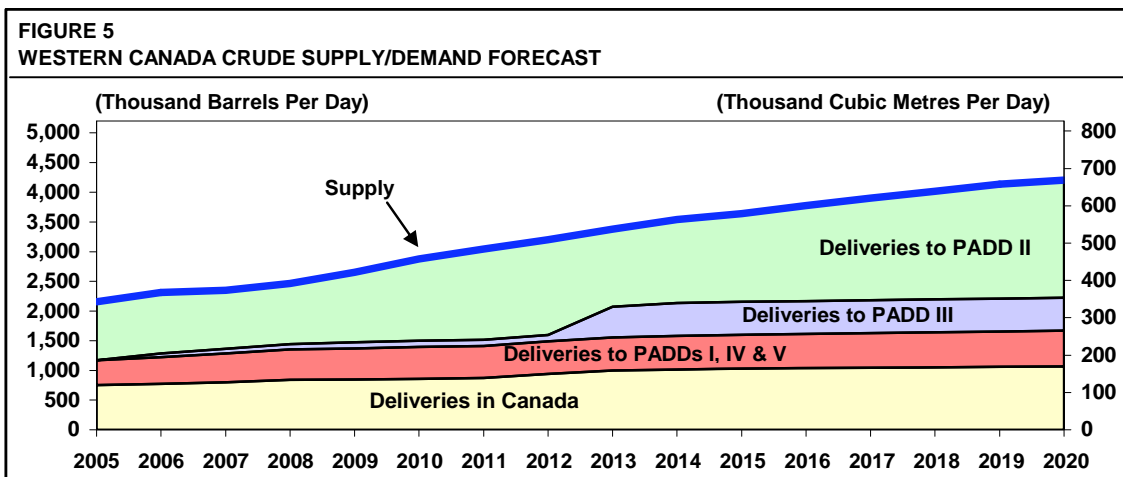
### Growth in Canadian crude to supply new market

As Canadian crude supply grows, Keystone XL will be viewed as essential for moving that supply to multiple and new U.S. markets. Oilsands production is projected to increase from approximately 1.3 million barrels per day in 2009 to approximately 3.5 million barrels per day by 2025.<sup>26</sup> While approximately half of Canada's crude oil exports are currently from oilsands, that proportion is expected to increase.

The National Energy Board ultimately approved KXL largely because of growing western Canadian crude oil supply and the need to access the PADD III market.

According to the NEB decision, "The Board is also satisfied that there is an adequate market to absorb the volumes that will be delivered off the Keystone XL Pipeline. No party disputed that the USGC (U.S. Gulf Coast) is a large, long term and strategic market for Canadian crude oil. The Board is of the view that the refining area to be supplied by the Keystone XL Pipeline holds strong potential for Canadian crude oil producers. *The opening of new markets for Canadian crude oil would alleviate the economic risk associated with saturation in traditional markets.*"<sup>27</sup>

The graph below, provided by Purvin and Gertz in their economic analysis in support of Keystone XL, demonstrates how growing oilsands production requires increased deliveries to PADD II and PADD III.





In other words, these increases in supply and corresponding increases in deliveries to the U.S. PADD regions are the result of Keystone XL being added to the pipeline system.

Gulf Coast refineries being upgraded to accept bitumen have added new cokers, enabling them to run heavier and more source grades of crude oil. Marathon oil completed a major expansion in Garyville, Louisiana, that doubled its capacity. Other announced upgrades include Motiva Enterprises (Port Arthur, TX) and Valero (St. Charles, LA).<sup>28</sup>

### *Glut at Cushing will affect production over time*

Canadian crude deliveries are contributing to an oversupply of Canadian crude oil (exacerbated by new deliveries from Bakken oil<sup>29</sup>) that will have ramifications for upstream projects.

IHS CERA has indicated that the current glut at Cushing may affect oilsands production. According to IHS CERA Director of Global Oil Jackie Forrest, as productive capacity is added without access to a new market on the Gulf Coast, there will be a saturation of Canadian crude in the Midwest. Forrest added, "If we saturate that Midwest market, it may not be that extreme but we're going to see a severe discount for Canadian crudes. That's going to hurt the economics of new upstream projects ... that would change our outlook. We wouldn't be doubling in 10 years anymore."<sup>30</sup>

### *Raising the price of Canadian crude*

Opening the PADD III Gulf Coast market would increase the cost of oil for all Canadian crude. This increase in price would provide a strong market signal for increased production and investments in the oilsands.

Access to the Gulf Coast (where Brent prices have been \$18 per barrel more than at Cushing and is projected to remain between \$7-\$10 higher through most of 2011 and 2012<sup>31</sup>) would also affect industry expectations about profit margins.

At the time of its application, TransCanada acknowledged that one of the primary benefits offered by Keystone XL would be an increase in the price of heavy crude, which would result in an increase of annual revenue to the Canadian producing industry of between U.S. \$2 billion and U.S. \$3.9 billion in 2013.<sup>32</sup> Of course, netbacks to Alberta producers are affected by many factors, including U.S. demand, global oil prices, costs to comply with local regulations, and availability of other barrels. But a stronger price signal should act as a key incentive to increase production.

### *TransCanada and shippers: KXL will assist in increased production*

Keystone XL is supported by shipper agreements with some of the largest oilsands companies; many have significant expansion projects under way. Several KXL shippers have publicly acknowledged that Keystone XL would facilitate access to the Gulf Coast and contribute to increased production. TransCanada has also acknowledged the need for new access, stating, "*The increase in WCSB crude oil exports from Alberta requires access to new markets, including the Gulf Coast. TCPL will continue to pursue additional opportunities to move crude oil from Alberta to U.S. markets.*"<sup>33</sup>

The Keystone XL shippers<sup>34</sup> are among the largest crude oil producers in Canada, with billions of dollars in production investment. Seven transportation service agreements (TSAs) were executed to support the Canadian portion of the Keystone XL

Pipeline, with aggregate shipper commitments of 380,000 b/d).<sup>35</sup>

Keystone shippers Total, Cenovus, ConocoPhillips, CNRL, and Shell have a combined operating capacity of 689,500 b/d. Collectively, they have another 163,000 b/d in projects under construction, 440,600 b/d in approved projects, 725,500 b/d in the application phase, and another 1 million b/d in announced projects.<sup>36</sup>

- Keystone XL shipper Total, in its regulatory submission to the National Energy Board of Canada, intervened in support of the Keystone application. Total has “plans for several other projects that will *increase* its production” and stated “we consider it important that adequate export capacity is developed to accommodate future oilsands development production in general.”<sup>37</sup>
- Keystone XL shipper CNRL reported to the U.S. Securities and Exchange Commission (SEC) that it entered into a 20-year agreement to ship 120,000 b/d to the U.S. Gulf Coast. CNRL has received approval for 135,000 b/d for its Horizon oilsands mine. CNRL already has 255,000 b/d of operating capacity in place, another 75,500 b/d in the application phase, and 547,000 b/d in announced expansions.<sup>38</sup>
- In its SEC filing, Cenovus discussed the advantage of additional pipeline access to the Gulf of Mexico in the context of strengthening Canadian crude oil prices.<sup>39</sup>
- Two of the shippers, Cenovus and ConocoPhillips, have a partnership in three major oilsands operations. The partnership’s Christina Lake and Foster Creek in situ operations are undergoing significant expansions. In addition to current operations, the partnership has

an 80,000 b/d expansion under construction (Cenovus Christina Lake); a 90,000 b/d approved expansion (Cenovus Foster Creek); and a 160,000 b/d expansion in the application phase (Cenovus Christina Lake). The partnership is also invested in a Texas Refinery that recently increased its capacity to process heavy oil blends, particularly Canadian heavy oil.<sup>40</sup>

- ConocoPhillips, which originally had a 50% equity interest in Keystone, reported that it expected the pipeline to carry its crude oil to market “including as a source of supply to our U.S. refineries,” one of which is in Texas.

### *Maintaining a single pipeline from Canada to the Gulf Coast*

Speculation that TransCanada could sever the Keystone XL pipeline and build only the segment from Cushing to the Gulf Coast has furthered arguments that Keystone XL would not influence upstream production.<sup>41</sup>

However, TransCanada has maintained that the pipeline is intended to be a single economic connected unit (inseparable by contract) linking oilsands production directly to the Gulf Coast.<sup>42</sup> Keystone XL is underpinned by shipper agreements and TransCanada has acknowledged that these agreements do not allow for moving ahead with individual segments.

During the National Energy Board proceedings, the National Energy Board issued an Information Request to TransCanada with the following question: “*Could the first phase of Keystone XL, the Gulf Coast Segment, proceed without the other? What circumstances could warrant that scenario?*”



Trans-Canada responded: “No, there are no circumstances under which the first phase of the Keystone XL Pipeline, the Gulf Coast Segment, could proceed without the other, the Steele City Segment. Keystone would not be able to fulfill its contractual obligations to provide transportation service under the Keystone XL Pipeline TSAs from Hardisty to the USGC unless all phases of the Keystone XL Pipeline are completed. Keystone would not proceed to construct solely the first phase of the Keystone XL, the Gulf Coast Segment, except as an initial construction phase of the complete Keystone XL Pipeline.”

We believe the economics of the project support the completion of the entire Keystone XL pipeline. Also, TransCanada would likely be reluctant to sever the Gulf Coast Extension because it benefits from the northern leg (from Hardisty to Cushing) to ensure sufficient volumes for both Wood River/Patoka and the Gulf Coast.

## 2. The EnSys report supports the notion that Keystone XL would affect production by as much as 900,000 barrels per day by 2030.

Significantly, the EnSys report acknowledges that production is constrained without Keystone XL, but not until 2030.<sup>43</sup> One of its modeled scenarios, called No Expansion, demonstrates that without new pipelines, western Canadian crude production (largely oilsands) would be curtailed by 750,000 – 950,000 barrels per day by 2030.<sup>44</sup>

Under this scenario, oilsands production would be curtailed in the event that Keystone XL does not proceed, there is no expansion of pipeline capacity between PADD II and PADD III, and no pipelines to the West Coast proceed. According to the EnSys report, “A No Expansion scenario

would have significant impacts on the disposition of WCSB crudes.”<sup>45</sup>

Despite this finding, EnSys concludes that Keystone XL would not affect production, largely because its analysis assumes that other pipeline projects to Asia and the Gulf Coast will move ahead.<sup>46</sup>

The EnSys conclusion is flawed. The potential for future transport projects that would similarly increase oilsands production does not negate the fact that Keystone XL would increase oilsands production.

As described in the above sections, we argue that other factors will have a more significant influence on production than the existence or non-existence of alternative projects. In addition, this briefing note argues that the existence of comparable alternative projects is overstated.

- Keystone XL, by virtue of its size and scope, would impact oilsands production regardless of existing pipeline capacity.
- Oilsands production levels will be driven by market conditions, and in particular the existence or non-existence of the PADD III market, and should not be assumed in the absence of those markets.
- Alternative routes to China are more uncertain than suggested in the EnSys report and are at least 10+ years away, therefore Keystone XL would have a more significant influence on upstream production.
- Alternative routes between PADD II and III, while possible, would not be “broadly similar” to Keystone XL and would not create the same production signals as Keystone XL.<sup>47</sup>

Interestingly, the EnSys report acknowledges that a No Expansion scenario would lead to a shut in of WCSB supply and

a corresponding glut in PADD II. Under this scenario and the WORLD modeling results, producer revenue would be 19% less than other scenarios. However, EnSys views this as a future projected outcome whereas we argue that this is the current situation.<sup>48</sup>

### 3. As the United States is the primary consumer of oilsands and the prospect of substantial growth in Canadian exports to Asian markets is a mid-term option (5-10 years) at best, Keystone XL is far more likely to drive upstream production than speculative Asian markets.

The assumption that oilsands supply will flow to Asia if it does not flow to the United States is one basis for the argument that Keystone XL would not affect production in Canada. At this time, only 0.56% of oilsands flow to Asian markets.<sup>49</sup> Substantial growth in exports to Asian markets is unlikely as a short-term option (1-5 years); possible as a mid-term option (5-10 years) but only if certain issues are overcome; and most likely as a long-term option (10+ years). Given the uncertainty associated with Asian markets at this point, the approval of the Keystone XL pipeline would be a more dominant driver for near-term expansion of oilsands production in Canada.<sup>50</sup>

#### *Gateway pipeline timing uncertain*

Increasing oilsands exports from Canada's West Coast could occur via approval of the proposed Enbridge Northern Gateway pipeline, a \$5.5 billion, 727-mile oilsands pipeline from Alberta to British Columbia's coast. However, at this time both the timing and likelihood of this pipeline proceeding are highly uncertain. Polling shows that 80% of British Columbians oppose the Enbridge pipeline.<sup>51</sup>

There is also a lack of commercial support for this pipeline, which is currently in an early stage of the regulatory process, and

unprecedented opposition from a strong coalition of environmental, First Nations, labour and community groups. This opposition suggests that the regulatory process could be held up in court for years, and could even create the political conditions for the project to be denied.<sup>52</sup>

Sixty-one First Nations, who have aboriginal rights and title in the area, have indicated they will fight the pipeline, which could hold up the pipeline proposal in court for years. The Mackenzie Gas Pipeline in Canada was delayed for decades largely because of opposition from First Nations, who are empowered with notice and consultation powers under Canada's constitution. Considerably stronger Aboriginal opposition exists in British Columbia to the Northern Gateway pipeline.

Furthermore, in December 2010, the Canadian House of Commons passed a motion calling for the federal government to ban bulk oil tanker traffic off the north coast of British Columbia.<sup>53</sup> A ban on tanker traffic would make it extremely difficult for the Enbridge project to proceed.

#### *Oilsands by rail is unlikely*

The prospect of oilsands being shipped to Asian markets via Canada's West Coast in the near term by other pipeline proposals or by rail is highly improbable.

A highly speculative "pipeline on rail" has been advanced by Canadian National Railway to ship bitumen to the West Coast.<sup>54</sup> Rail transport is less efficient than pipelines for large volumes, and the safety record of rail is considerably worse.

Further, rail transport is equally vulnerable to the proposed tanker ban off the coast of Kitimat, British Columbia. As a result,

oilsands transport by rail at any significant scale remains a distant alternative.

### *Kinder Morgan pipeline only likely in mid to long-term*

Pipeline company Kinder Morgan has tested the idea of a 400,000 barrel per day expansion of its current TransMountain Pipeline to Vancouver, as well as an extension of that pipeline to Kitimat, British Columbia. However, the company recently withdrew its intention for both pipelines due to a lack of commercial interest.<sup>55</sup>

While some analysts suggest the Kinder Morgan options could act as an alternative to the Northern Gateway pipeline, constrained terminal capacity at Vancouver harbour would be a hurdle. Enlarging capacity would require dredging the Vancouver harbor and modifying regulations, the prospect of which has already generated public concern regarding increased tanker traffic and the risk of oil spills.

### *China's demand debatable*

There is also debate among financial and energy analysts over whether or not China's demand for energy will translate into substantial increased demand for oilsands.

*"The oil sands are too costly and too polluting. Gas has a brighter future...Shale gas is much cheaper and cleaner."*<sup>56</sup>

— Chen Weidong, Chief Energy Researcher, China National Offshore Oil Corp.

*"Still, many producers in Alberta see the Asian market as a long-term option at best, with competition from the Persian Gulf and increasing volumes of oil from Russia due to the opening of the East Siberia Pacific Ocean pipeline. In private meetings, one producer*

*said that the Asia market would only make sense when the US market is saturated."*<sup>57</sup>

— Robert Johnston, Director Energy and Natural Resources, Eurasia Group

Analysts have noted that China's investments in the oilsands are financially motivated and not necessarily about staking a claim to the resource.<sup>58</sup> Chinese government officials have said as much, suggesting their investment is more about earning a profit and less about ensuring access to the resource.<sup>59</sup> The assets being acquired by Chinese firms, with the exception of Syncrude, are also years away from production.

The EnSys report acknowledged some of the limitations of the West Coast options, stating that the Asian market "could absorb at least 1 mbd of WCSB crudes, potentially significant more..."<sup>60</sup> While the EnSys conclusion may be correct, the report does not adequately address the uncertainties associated with the Gateway and Kinder Morgan pipelines.

Overall, Asian markets are still several years away, and much further away than Keystone XL. The option most likely to proceed in the mid-term is Kinder Morgan's TMX 2&3 (exclusive of the Northern Leg). However, no commercial interests have been announced, and Kinder Morgan has not formally applied to the National Energy Board for approval to expand the pipeline. The project also faces many of the same political objections to oilsands tankers as the Gateway project.

**4. While alternative projects between PADD II and III could occur in the absence of Keystone XL, no other option of the scale and scope of KXL has been proposed. Consequently, other options are less likely to affect oilsands production.**

The EnSys report states that if KXL is not built, there would be demand for alternative projects that are “broadly similar to those that would be provided by KXL” to move Canadian crude from PADD II to PADD III.<sup>61</sup> While other pipelines to PADD III could move ahead, they are less certain, much smaller in scope, and may not move heavy oil, and will therefore not provide the same market signal to industry as Keystone XL. In other words, these alternatives are materially different from Keystone XL.

These alternative projects are detailed below. Evidence suggests that these projects are either limited, premature, or not commercially viable at this time.

- The ExxonMobil Pegasus system already exists and remains substantially smaller than Keystone XL, with a current capacity of less than 100,000 bpd (96,000 bbl).
- Small volumes are moved to the Gulf Coast by tanker via the Panama Canal and the Vancouver Westridge dock and barge. These volumes are not expected to increase in the near future.
- Enbridge’s Monarch Project (announced September/October, 2010) would transport crude to the Gulf Coast through a new 24” line from Cushing to Houston. The Monarch’s capacity to move heavy crude is planned at 250,000 bpd expandable to 325,000 bpd. However, the extent to which Monarch would be broadly similar to Keystone XL in terms of moving heavy oilsands crude is questionable. Based on publicly available information, the pipeline would most likely move light oil.<sup>62 63</sup>
- The 30” Seaway crude oil pipeline, owned by a 50:50 joint venture of Enterprise Products Partners and ConocoPhillips, currently runs north

from Freeport, Texas, to Cushing. The pipeline is rated at 350,000 bpd and has been reported as underutilized.<sup>64</sup> While the EnSys report suggests that the partners have examined the feasibility and cost of reversing the line to run from north to south, Seaway owner Conoco Phillips recently stated that it is not interested in reversing the line, presumably due to the economics of refining margins.<sup>65</sup> Furthermore, the EnSys report suggests that the potential capacity of Seaway to move heavy oil may be limited to 200,000 b/d.<sup>66</sup>

This briefing note argues that the Gulf Coast alternatives are not broadly similar to the Keystone XL. There are only two projects outlined in the EnSys report that could act as alternatives to Keystone XL, Monarch and Seaway, and they remain uncertain. Only the Monarch pipeline is considered a real possibility at this time. However, no shipper contracts have been announced, and the pipeline may very well move only light crude and not oilsands. The Seaway pipeline (a line reversal) is even more uncertain given its owner’s reluctance to pursue the reversal. The EnSys report notes these uncertainties but still concludes that these alternative projects are likely to move ahead.

In any event, both projects would have between one-third and one-half of the total baseline capacity of Keystone XL, and an even smaller fraction of the expandable capacity of 900,000 b/d. Neither option would provide a “bullet” line directly connecting production to the Gulf Coast.

## Endnotes

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<sup>1</sup> EnSys Energy & Systems, Inc. *Keystone XL Assessment – Final Report*. December 23, 2010. Prepared for the U.S. Department of Energy Office of Policy and International Affairs.

<http://www.keystonepipeline-xl.state.gov/clientsite/keystonexl.nsf/AssmtDrftAccpt.pdf?OpenFileResource> (accessed March 23, 2011). Hereinafter EnSys, *Keystone XL Assessment*.

<sup>2</sup> EnSys, *Keystone XL Assessment*, p. 116.

<sup>3</sup> EnSys, *Keystone XL Assessment*, p. 116.

<sup>4</sup> Arguably, the EnSys report was not designed to consider whether Keystone XL would result in upstream impacts as part of a NEPA analysis. Rather the U.S. Department of Energy “sought to better understand the potential impacts of the presence or absence of the KXL pipeline on U.S. refining and petroleum imports and also on international markets” and to gain an understanding of the uncertainty associated with other markets.

<sup>5</sup> The key points in this summary are less a rebuttal of the EnSys report than an outline of the primary arguments supporting the close relationship between Keystone XL and production. As stated earlier, the EnSys report for the most part supports many of the arguments in this briefing note. We make note of the EnSys report when applicable.

<sup>6</sup> Keystone XL is part of a broader pipeline system. Phase 1, the main Keystone line, has a baseline capacity of 435,000 b/d (from Hardisty to Steele City) and the Cushing Extension has a capacity of 591,000 b/d. We assume 700,000 b/d as the baseline capacity for Keystone XL in this briefing note but make reference to the designed capacity of 900,000 b/d. The EnSys report stated that while the pipeline is designed to support an eventual capacity of 900,000 b/d, the maximum capacity for the system would be 1.5 m/d. EnSys, *Keystone XL Assessment*, p. 9. However, we used 700,000 as baseline because that is what was indicated in the draft EIS submitted in November 2008. In that document, TransCanada indicated the nominal capacity of the Gulf Coast line would initially be

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700,000 with the possibility of increasing that to 900,000 b/d.

<sup>7</sup> The EnSys model considered one alternative whereby there would be no expansion of pipelines to the Canadian West Coast or further expansions to the United States. In this event, there would be “significant impacts on the disposition of WCSB crudes.” EnSys, *Keystone XL Assessment*, p. 93.

<sup>8</sup> EnSys, *Keystone XL Assessment*, p. 117. See also EnSys Energy System, *Keystone XL Assessment Final Report – Appendix*, December 23, 2010, p. 33-34.

<sup>9</sup> EnSys, *Keystone XL Assessment*, p. 96.

<sup>10</sup> EnSys, *Keystone XL Assessment*, p. 7.

<sup>11</sup> EnSys, *Keystone XL Assessment*, p. 7.

<sup>12</sup> Keystone XL Pipeline Section 52 Application. Submitted to the National Energy Board, February 2009. Section 3: Supply and Markets, p. 6.

<sup>13</sup> Total flows to PADD III from western Canada has been reported to be 107,000 bpd. See EnSys *Keystone XL Assessment*, p. 14.

<sup>14</sup> Purvin and Gertz. *Western Canadian Crude Supply and Markets*. February 12, 2009. Prepared for TransCanada Keystone Pipeline GP Ltd. and submitted as part of the Keystone XL Pipeline Section 52 Application to the National Energy Board (February 2009), p. 1.

<sup>15</sup> TransCanada Keystone Pipeline GP Ltd., Pipeline Section 52 Application, Section 3: Supply and Markets, p. 2.

<sup>16</sup> Purvin and Gertz, p. 35.

<sup>17</sup> TransCanada Keystone Pipeline GP Ltd., Pipeline Section 52 Application, Section 3: Supply and Markets, p. 2 (emphasis added).

<sup>18</sup> Purvin and Gertz, p. 7 (emphasis added).

<sup>19</sup> Canadian Association of Petroleum Producers. *Crude Oil: Forecast, Markets & Pipelines*, June 2010, p. 14.

<sup>20</sup> The NEB acknowledged the pipeline overcapacity issue, which has since changed with the announcement of Bakken oil, but suggested that the combination of two other factors — the challenges of short-term loss in revenues associated with saturating the PADD II and developing another market for long-term supply —



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outweighed arguments against excess pipeline capacity. In sum, the NEB acknowledged that Keystone XL was about finding a home for future oilsands production.

<sup>21</sup> “Glut of oil affecting prices at Cushing,” Tulsa World, March 4, 2011. <http://newsok.com/glut-of-oil-affecting-prices-at-cushing/article/3545760>

<sup>22</sup> Deutsche Bank. *European Integrated Oils: The WTI price disconnect and US refining*, February 21, 2011, p. 6.

<sup>23</sup> Philip Verleger, “If gas prices go up further, blame Canada: Pipeline plan would manipulate what Midwest farmers and consumers pay,” Minneapolis Star Tribune, March 13, 2011. <http://www.startribune.com/opinion/commentary/117832183.html>

<sup>24</sup> Deutsche Bank. *European Integrated Oils: The WTI price disconnect and US refining*, February 21, 2011.

<sup>25</sup> Shawn McCarthy and Nathan Vanderclippe, “Surge of Alberta oil tames rise in prices,” Globe and Mail, January 19, 2011. <http://www.theglobeandmail.com/globe-investor/surge-of-alberta-oil-tames-rise-in-prices/article1876536/>

<sup>26</sup> CAPP, Crude Oil Supply, p. i.

<sup>27</sup> National Energy Board. *Reasons for Decision*, TransCanada Keystone Pipeline GP Ltd. OH-1-2009, March 2010, p. 17 (emphasis added).

<sup>28</sup> CAPP, Crude Oil Supply, p. 14-15.

<sup>29</sup> “Bakken oil may soon go to the Gulf Coast refineries,” Bismark Tribune, September 14, 2010. [http://www.bismarcktribune.com/news/state-and-regional/article\\_cd298d4c-bfc0-11df-a94c-001cc4c002e0.html](http://www.bismarcktribune.com/news/state-and-regional/article_cd298d4c-bfc0-11df-a94c-001cc4c002e0.html)

<sup>30</sup> Dan Healing, “Keystone XL delays could hurt bitumen prices,” February 3, 2011 (emphasis added). <http://communities.canada.com/calgaryherald/blogs/pipeline/archive/2011/02/03/keystone-xl-delays-could-hurt-bitumen-prices.aspx>.

<sup>31</sup> Deutsche Bank. *European Integrated Oils: The WTI price disconnect and US refining*, p. 6.

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<sup>32</sup> TransCanada Keystone Pipeline GP Ltd., Pipeline Section 52 Application, Section 3: Supply and Markets, p. 7.

<sup>33</sup> TransCanada Pipelines Limited. Management’s Discussion and Analysis and Audited Consolidated Financial Statements: 2009, p. 29. [http://www.transcanada.com/docs/Investor\\_Centre/TCPLAnnualReport2009.pdf](http://www.transcanada.com/docs/Investor_Centre/TCPLAnnualReport2009.pdf)

<sup>34</sup> Collectively, the shippers call themselves the Keystone XL Shippers Group. The group is comprised of Canadian Natural Resources Limited, ConocoPhillips Canada Marketing & Trading ULC, EnCana Corporation, Shell Trading Canada, Total E & P Canada Ltd., and Trafigura Canada General Partnership.

<sup>35</sup> EnSys, *Keystone XL Assessment*, p. 25.

<sup>36</sup> Strategy West Inc. *Existing and Proposed Canadian Commercial Oil Sands Projects*, January 2011. [http://www.strategywest.com/downloads/StratWest\\_OSProjects\\_2011\\_01.pdf](http://www.strategywest.com/downloads/StratWest_OSProjects_2011_01.pdf)

<sup>37</sup> Letter to National Energy Board Secretary Claudine Dutil-Berry from Total Manager of Regulatory Affairs Geoff Chow regarding NEB Hearing Order OH-1-2009, June 9, 2009.

<sup>38</sup> U.S. Securities and Exchange Commission. Canadian Natural Resources Limited. Annual Information Form, Form 40-F, December 31, 2009, [http://www.sec.gov/Archives/edgar/data/1017413/000095014210000571/form40f\\_2009.htm](http://www.sec.gov/Archives/edgar/data/1017413/000095014210000571/form40f_2009.htm).

“During 2009, the Company contributed approximately 140,000 bbl/d of heavy crude oil blends to the WCS stream. *The Company has entered into a 20 year transportation agreement to commit to ship 120,000 bbl/d of heavy sour crude oil on the proposed 500,000 bbl/d Keystone Pipeline US Gulf Coast expansion from Hardisty, Alberta to the US Gulf Coast.* Contemporaneously, the Company also entered into a 20 year crude oil purchase and sales agreement to sell 100,000 bbl/d of heavy sour crude oil to a major US refiner. Deliveries under the agreements are expected to commence in 2012 upon completion of the pipeline expansion and are subject to Keystone’s receipt of regulatory approval of the pipeline expansion.”

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<sup>39</sup> U.S. Securities and Exchange Commission, Form 40-F for the fiscal year ending December 31, 2010. Cenovus Energy Inc.

[http://www.sec.gov/Archives/edgar/data/1475260/000110465911010143/a11-5658\\_140f.htm](http://www.sec.gov/Archives/edgar/data/1475260/000110465911010143/a11-5658_140f.htm)

<sup>40</sup> ConocoPhillips has two joint business ventures with Cenovus Energy Inc.: FCCL Partnership (a Canadian upstream general partnership) and WRB Refining LP (a U.S. downstream limited partnership). FCCL's assets, operated by Cenovus, include the Foster Creek and Christina Lake SAGD bitumen projects, both located in the eastern flank of the Athabasca oilsands in northeastern Alberta.

<sup>41</sup> Leslie Moore Mira, "TransCanada mulls breaking up Keystone XL to complete project," Platts News Service, February 16, 2011. This article reports on a conference call with TransCanada where TransCanada President of Energy and Oil Pipelines Alex Pourbaix suggested TC would consider "decoupling" the XL project. The article, however, also reports that TC CEO Russ Girling said KXL would no longer be economic if severed.

<sup>42</sup> TransCanada Keystone Pipeline GP Ltd., Pipeline Section 52 Application, Section 3: Supply and Markets, p. 1.

<sup>43</sup> The EnSys model considered one alternative whereby there would be no expansion of pipelines to the Canadian West Coast or further expansions to the United States. In this event, there would be "significant impacts on the disposition of WCSB crudes." EnSys, *Keystone XL Assessment*, p. 93.

<sup>44</sup> EnSys, *Keystone XL Assessment*, p. 117. See also EnSys Energy System, *Keystone XL Assessment Final Report – Appendix*, p. 33-34.

<sup>45</sup> EnSys, *Keystone XL Assessment*, p. 93.

<sup>46</sup> EnSys, *Keystone XL Assessment*, p. 96.

<sup>47</sup> EnSys, *Keystone XL Assessment*, p. 7.

<sup>48</sup> EnSys, *Keystone XL Assessment*, p. 78.

<sup>49</sup> Canadian Association of Petroleum Producers. *Crude Oil: Forecast, Markets & Pipelines*, June 2010.

<sup>50</sup> The Pembina Institute. *Briefing Note: The uncertain prospect of oilsands exports to Asia from Canada's West Coast*, January 2011. <http://pubs.pembina.org/reports/pipelinetonowher>

[e-usbriefingnote.pdf](#)

<sup>51</sup> On May 26, 2010, a poll showed 80% of British Columbians support banning crude oil tankers in B.C.'s coastal waters, up from 72% in a similar 2008 poll. The poll results are part of a Mustel Group omnibus random telephone survey of 500 British Columbians in May 2010. Results on a sample size of 500 random surveys are considered accurate to within +/- 4.5 percentage points, 19 times out of 20.

<sup>52</sup> While a Joint Review Panel, convened by the National Energy Board and Canadian Environmental Assessment Agency, will issue a ruling on the application, it is a non-binding recommendation to the Federal cabinet. The ultimate decision is political. Over 2,000 submissions on the pipeline's Terms of References were received by the federal government, the most of any project in Canada to date.

<sup>53</sup> Andrew Mayeda, "Motion calls for oil tanker ban off B.C. coast," Vancouver Sun, Dec. 8, 2010. <http://www.vancouversun.com/business/Motion+call+s+tanker+coast/3943415/story.html> (accessed Dec. 9, 2010).

<sup>54</sup> Canadian National Railway, Ship your crude oil products on CN's PipelineOnRail. <http://www.cn.ca/en/shipping-north-america-alberta-pipeline-on-rail.htm>

<sup>55</sup> Personal communication, Kinder Morgan, June 30, 2010.

<sup>56</sup> Carrie Tait, "CNOOC's chief researcher paints grim picture of oil sands," Financial Post, Jan. 14, 2011. <http://www.financialpost.com/CNOOC+chief+researcher+paints+grim+picture+sands/4111522/story.html>

<sup>57</sup> Robert Johnston, Outlook: Oilsands – Canada's unconventional oil mega-play faces new challenges and opportunities, Eurasia Group, May 19, 2010.

<sup>58</sup> Peter Tertkzajian, "Oilsands being claimed by cash-rich and resource-hungry Asia," December 3, 2010. <http://www.calgaryherald.com/business/Tertkzajian+Oilsands+being+claimed+cash+rich+resource+hungry+Asia/3899442/story.html>

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<sup>59</sup> Jeff Lewis, “Industrial China fuels Canadian export visions,” Alberta Oil, August 3, 2010.

<http://www.albertaoilmagazine.com/2010/08/eastern-appetites-continue-to-fuel-canadian-export-visions/>

<sup>60</sup> EnSys, *Keystone XL Assessment*, p. 6.

<sup>61</sup> EnSys, *Keystone XL Assessment*, p. 7.

<sup>62</sup> Enbridge. Investor Presentation by Stephen Wuori, President of Liquids Pipelines, 2010.

<http://www.enbridge.com/investorrelations/~media/Site Documents/Investor Relations/Liquids - Enbridge Day 2010 FINAL.ashx>

Slide titled “Market Extensions,”; Dina O’Meara, “Enbridge Inc. take Monarch pipeline project off back burner,” Calgary Herald, January 20, 2011.

<http://communities.canada.com/calgaryherald/blogs/pipeline/archive/2011/01/20/enbridge-inc-takes-monarch-pipeline-project-off-back-burner.aspx>

<sup>63</sup> “Enbridge, TransCanada pitch separate pipelines from Oklahoma to Gulf Coast,” Oilweek, November 18, 2010.

<http://www.oilweek.com/news.asp?ID=31059>

Citing Enbridge vice-president Vern Yu as stating “We believe that this project is necessary to alleviate that light crude bottleneck in Cushing and hopefully get (West Texas Intermedia) back closer to world crude oil pricing.” In another article, the Enbridge president of liquids pipelines suggested that Cushing needs more of a drain of light oil supplies. Jeffrey Jones, “UPDATE 2-Enbridge plots new US pipeline, earns seen intact,” Reuters, October 5, 2010.

<http://www.reuters.com/article/2010/10/05/enbridge-idUSN0518384320101005>

<sup>64</sup> EnSys, *Keystone XL Assessment*, p. 28.

<sup>65</sup> Aaron Clark, “ConocoPhillips Not Interested in Reversing Seaway Pipeline,” Bloomberg, February 15, 2011. <http://www.bloomberg.com/news/2011-02-15/conocophillips-not-interested-in-reversing-seaway-pipeline.html>

<sup>66</sup> EnSys, *Keystone XL Assessment*, p. 28.