



# The Keystone XL Pipeline: Not Needed, Too Expensive, Better Solutions

## Summary

In the past six months, pipeline companies completed the Keystone Pipeline (phase 1 of the Keystone Pipeline System) and the Alberta Clipper Pipeline. **Together these new pipelines doubled export capacity of tar sands crude oil to the Midwest.** Should the proposed Keystone XL Pipeline (phase 2 of the Keystone Pipeline System) be built, export capacity to the Midwest would increase to 167% of 2009 capacity. Past development rates in Canada and current economic trends indicate that much of the Keystone XL's capacity will not be needed for years, possibly not until well after 2020, with the result that per barrel pipeline shipping rates will be much higher than estimated. Further, shippers have alleged substantial cost overruns in the Keystone Pipeline that will also increase shipping rates. **Combined, toll and cost overrun increases will cut into shipper profits and increase costs at the pump.**

The primary concern driving development of the Keystone XL pipeline is the ability to use U.S. Gulf Coast refining capacity to process tar sands crude oil, especially in the event of lost imports from Venezuela, Mexico and Nigeria. **However, other more cost-effective and environmentally responsible solutions exist including more flexible use of our existing crude oil pipeline system and energy efficiency efforts that will help consumers adapt to increasing oil prices.**

## Pipeline Capacity from Canada to the U.S. Is Already Overbuilt

In 2009, Canada exported 1,238,937 barrels per day (bpd) of heavy crude oil, slightly less than in 2008.<sup>1</sup> This volume of oil filled most existing pipeline Canadian heavy oil export capacity, estimated by the Canadian Association of Petroleum Producers (CAPP) to be 1,428,000 bpd.<sup>2</sup> In anticipation of dramatic increases in tar sands production, TransCanada and Enbridge constructed the Keystone and Alberta Clipper Pipelines, respectively. These pipelines have a combined initial capacity of 885,000 bpd, expandable to 1,391,000 bpd<sup>3</sup> and double current export capacity to the U.S. Midwest.<sup>4</sup>

TransCanada and Enbridge committed to build these pipelines during the tar sands boom days, when oil prices rocketed to a high of \$147 per barrel,<sup>5</sup> making tar sands development very profitable. Oil companies feverishly committed billions of dollars to development of new mines and wells, and they demanded new pipeline capacity to match these commitments.

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<sup>1</sup> National Energy Board of Canada (NEB) Canadian crude oil export data from website, <http://www.neb.gc.ca/clf-nsi/rnrgynfntn/sttstc/crdlndptrlmprdct/ttlerdixprt-eng.html> (NEB Export Data).

<sup>2</sup> *Crude Oil Forecast, Markets & Pipeline Expansions*, Canadian Association of Petroleum Producers, June 2009, p. 19 (CAPP 2009). CAPP estimated in 2009 that heavy crude oil export capacity to the Midwest was 1,368,000 bpd.

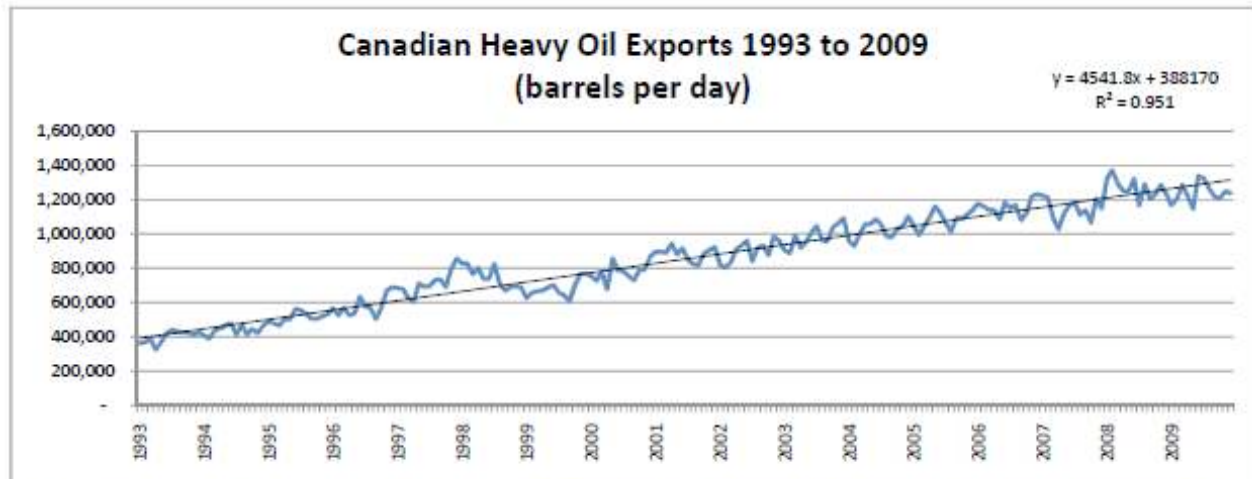
<sup>3</sup> *Oil Sands Awash in Excess Capacity*, Globe and Mail, Apr. 27, 2010.

<sup>4</sup> CAPP estimates that in 2009 that heavy crude oil export capacity to the Midwest was 1,368,000 bpd. CAPP 2009 p. 19.

<sup>5</sup> *Times Topic: Oil*, New York Times, May 7, 2010, <http://www.nytimes.com/info/oil/?pagemode=print>.

Even with this effort, growth in Canadian heavy oil exports did not increase dramatically and instead remained within historical trends. See Figure 1. Average annual growth in heavy oil exports from Canada to the U.S. averaged only 52,495 bpd between 1993 and 2009, and it actually declined 28,952 bpd between 2008 and 2009.<sup>6</sup>

Figure 1



National Energy Board of Canada, Canadian crude oil export data, <http://www.neb.gc.ca/clf-nsi/rnrqynfmrtn/sttstc/crdlndprrlmpdct/ttlcrdlxprt-eng.html>

But the global economic crisis resulted in cancellation or delay of \$90 billion in tar sands projects,<sup>7</sup> resulting in dramatically lowered extraction and export forecasts.<sup>8</sup> Regardless, TransCanada and Enbridge forged ahead with construction. The result is that too much pipeline capacity is currently chasing too few barrels of oil.

To make matters worse, the cost of building these pipelines appears to have more than doubled. Three of TransCanada's shippers have alleged that TransCanada sent a letter to them in 2008 reporting a 145% project cost increase in Canada and a 92% cost increase in the U.S.<sup>9</sup> The same factors that affected TransCanada's cost may also have impacted the cost of constructing the Alberta Clipper.

Given that there was a small amount of excess capacity before the new pipelines were built,<sup>10</sup> that development in the tar sands remains slow, and that U.S. oil demand appears to be growing slowly but is still well below historical demands,<sup>11</sup> it is likely that these new pipelines could have been delayed to 2013 without limiting exports from Canada or creating crude oil shortages in the U.S.

<sup>6</sup> NEB Export Data.

<sup>7</sup> *Athabasca in Canada's largest IPO*, Upstream Online, Mar. 31, 2010.

<sup>8</sup> Compare CAPP 2006 through 2009.

<sup>9</sup> *Pipeline Fee Revolt Widens*, Globe and Mail, Apr. 27, 2010.

<sup>10</sup> Total Canadian 2009 heavy oil exports were 1,238,937 bpd (footnote 1) and 2009 heavy oil export capacity to the US Midwest was 1,368,000 bpd (footnote 2) leaving an unused export capacity to the Midwest of at least 129,063 bpd, or at least 9% of capacity.

<sup>11</sup> *Short-Term Energy and Summer Fuels Outlook*, US Energy Information Administration (USEIA), Apr. 7, 2010, p. 4. The USEIA stated: "U.S. liquid fuels consumption declined by 810,000 bbl/d (4.2 percent) to 18.7 million bbl/d in 2009, the fourth consecutive annual decline. . . . The economic recovery contributes to projected growth in total liquid fuels consumption of 160,000 bbl/d in 2010 and 210,000 bbl/d in 2011. Nevertheless, expected U.S. consumption in 2011 is lower than it was in 1999 and is 1.7 million bbl/d lower than the highest level of annual consumption, reached in 2005."

Even optimistic industry forecasts predict that the entire capacity of the Keystone Phase 1 and Alberta Clipper will not be needed until at least 2017.<sup>12</sup> To achieve a development rate fast enough to fully utilize both pipelines by 2017, the industry would need to bring almost 217,152 bpd of additional tar sands capacity on-line every year for the next seven years.<sup>13</sup> However, Canadian exports of heavy crude oil to the U.S. have shown a very steady linear annual average increase of 54,000 bpd.<sup>14</sup> Even the highest single-year increases were 131,000 bpd in 1997 and 127,000 bpd in 2008.<sup>15</sup> Therefore, a steady increase of 217,152 bpd in each of the next seven years appears very unlikely. Growth in export rate is restrained by a number of factors including the difficulty of coordinating development of heavy oil extraction, pipeline, and refining infrastructure and commercial transition away from long-term contractual obligations to import crude from overseas suppliers.

To put the excess capacity in perspective, even if growth in tar sands exports maintains its 1993 to 2009 average annual increase of approximately 54,000 bpd, it would take almost 26 years to fully use the capacity (1,391,000 bpd) of the Keystone Phase 1 and Alberta Clipper Pipelines.

## Slow Growth in Tar Sands Projects

The tar sands industry is counting on a remarkable acceleration in Canadian development, but indications are that development there is still very slow. Recently, Royal Dutch Shell, one of the biggest players in the tar sands, indicated that it did not intend to resume substantial development in the tar sands until the price of oil is higher because the cost of development in the tar sands far exceeds the cost of development in other oil fields.<sup>16</sup> The company's head of tar sands development stated, "[T]he oil sands have become one of the most costly places on earth to pursue oil projects."<sup>17</sup> Referring to the company's recent \$14 billion expansion of its tar sands mining project he said that it represented, "some of the most expensive production that we have."<sup>18</sup>

In comparison, the Manifa Field in Saudi Arabia is estimated to cost \$15.75 billion to develop and is slated to produce 900,000 bpd of oil, as well as significant quantities of natural gas and condensate.<sup>19</sup> In contrast, Shell's expansion cost \$14 billion but only added 100,000 bpd of crude oil capacity.<sup>20</sup>

While projects already under construction in the tar sands are proceeding at a slower pace, for the vast majority of the projects proposed during the boom years, the development schedule is "TBD" (To Be Determined),<sup>21</sup> indicating that development of these projects is on indefinite hold.

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<sup>12</sup> *Enbridge Says Oil Pipelines May Run at Reduced Rates Until 2017*, Bloomberg Business Week, Mar. 2, 2010.

<sup>13</sup> The combined maximum capacity of the Keystone Phase 1 and Alberta Clipper Pipelines is 1,391,000 bpd (Footnote 3). Current excess pipeline capacity into the Midwest is at least 129,063 bpd (footnote 10), creating excess capacity of 1,520,063. To use this entire capacity in the next seven years, the rate of Canadian heavy crude oil exports would need to increase by 217,152 bpd during each year.

<sup>14</sup> NEB export data. Growth in Canadian heavy oil exports show a linear growth rate between 1993 and 2009. A linear trend line for Canadian heavy crude exports shows an annual increase of 54,502 bpd, similar to the numerical average of 52,495 bpd.

<sup>15</sup> *Id.*

<sup>16</sup> *Shell Puts Oil Sands Expansion Plans on Hold*, Globe and Mail, Apr. 29, 2010; Lorne Stockman, *Tar Sands Oil Means High Gas Prices*, Corporate Ethics International Research Note, May 6, 2010 (CEI Research Note).

<sup>17</sup> CEI Research Note.

<sup>18</sup> *Id.*

<sup>19</sup> *Arab Oil & Gas Magazine*, January 2010, Vol. XLVII.

<sup>20</sup> *Shell Puts Oil Sands Expansion Plans on Hold*, Globe and Mail, Apr. 29, 2010.

## Industry Fallout

The industry can ill afford to let assets worth billions of dollars lay idle. The tariff and contract rates for these pipelines will increase to provide the pipeline companies with their return on investment, but this means that pipeline shippers – and the consumers they serve – will pay what is likely to be billions of dollars in excess shipping fees, cutting into producer and refiner margins and increasing the price we pay at the pump.

Already oil producers, refiners and pipeline companies have started fighting amongst themselves in attempts to offload the cost of this excess pipeline capacity. Led by Suncor, a group of Canadian tar sands companies and crude oil buyers petitioned the Federal Energy Regulatory Commission (FERC) to limit tariff rates, arguing that Enbridge should not have built the Alberta Clipper.<sup>22</sup> Although FERC upheld the tariffs, it did not deny that the Alberta Clipper created excess capacity and instead merely decided who would pay for it.<sup>23</sup>

Using a different tactic, three of TransCanada's refinery customers sued TransCanada in Alberta to get out of their contracts to ship 95,000 bpd, based on the cost overruns.<sup>24</sup> These refinery customers argue that TransCanada should not have proceeded with construction because the costs of project development were too high.<sup>25</sup> If they are held to their contracts, they seek almost a combined \$1 billion in damages.<sup>26</sup> All three of these customers are relatively small independent refineries that may be hard-pressed to absorb the cost overruns and/or increased costs resulting from underutilization.

If economic recovery is slow and/or oil prices do not rise to the level necessary to allow rapid industry growth in the tar sands, then companies that pay to use tar sands pipelines could face years of very high shipping costs that will cut into their profits and ultimately be passed onto consumers at the pump.

## Keystone XL: Even More Pipeline Capacity?

Despite this overcapacity, now TransCanada wants to expand the Keystone Pipeline System by building the Keystone XL Pipeline from Alberta to Texas. It hopes to start operations in 2012. This pipeline would initially add another 700,000 bpd of export capacity, expandable to 900,000 bpd.<sup>27</sup> If built, an additional 2,291,000 bpd of tar sands crude oil could be exported to the U.S., a 160% increase over current exports.

A number of major oil companies have stated that the Keystone XL Pipeline is not needed, including British Petroleum, Imperial Oil, Suncor, and Nexen (Nexen says not needed until 2020).<sup>28</sup> Suncor proposed that only the segment of the Keystone XL Pipeline from Oklahoma to Texas be built, putting on hold the segment from Alberta to Nebraska.<sup>29</sup> There can be no doubt that the Keystone XL pipeline would further exacerbate the current pipeline overcapacity problem.

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<sup>21</sup> *Existing and Proposed Canadian Commercial Oil Sands Projects*, Strategy West, February 2010.

<sup>22</sup> *Petition of Suncor Energy Marketing Inc. for Declaratory Order and Establishment of Near-Term Rate Treatment*, Jan. 13, 2010, FERC Docket OR10-5 (Suncor FERC Petition).

<sup>23</sup> *FERC Order on Tariffs and Petition for Declaratory Order*, Mar. 31, 2010.

<sup>24</sup> *Pipeline Fee Revolt Widens*, Globe and Mail, Apr. 27, 2010.

<sup>25</sup> *Id.*

<sup>26</sup> *Id.*

<sup>27</sup> *NEB Reasons for Decision*, OH-1-2009, March 2010.

<sup>28</sup> *Id.* at 15-16.

<sup>29</sup> *Id.* at 16.

## Excess Pipeline Capacity Increases Costs

When excess pipeline capacity is built, regulatory mechanisms result in cost increases for all pipeline customers, regardless of the pipeline they use or their contractual arrangements. FERC has approved two types of approved contract arrangements between pipeline companies and shippers: common carrier contracts and take-or-pay contracts. Common carrier contracts are typically shorter term contracts in which regulators guarantee a rate of return for the pipeline company. If the pipeline is not used at capacity, the per barrel cost of shipping is increased so that this return is generated. The Enbridge and Express-Platte crude oil pipeline systems that export oil from Canada are regulated as common carriers.

Take-or-pay contracts are typically longer-term contracts that are entered into via capacity auctions (open seasons) conducted before permitting and construction. In take-or-pay contracts, shippers buy a set capacity on the pipeline and pay approximately the same amount for this capacity regardless of the amount of oil shipped. This means that the per barrel shipping cost increases if shippers use a pipeline less than expected. The vast majority of TransCanada's Keystone Pipeline System is supported by take-or-pay contracts, with a small amount reserved for common carrier use.

If too few barrels of crude oil are available to ship through either type of pipeline, the cost per barrel increases. For example, in its FERC Petition, Suncor argued that the addition of the Alberta Clipper Pipeline would increase the costs of shipping oil on the Enbridge Lakehead crude oil pipeline system.<sup>30</sup> It stated, "[S]hippers will experience annual rate increases on Lakehead System (through implementation of the Alberta Clipper Surcharge) of 23% to 30% (based on 2009 rates), which will result in a total additional payment to Enbridge of \$965 million over the first five years of the Alberta Clipper's operation" (emphasis added).<sup>31</sup> Thus, shipping costs for tar sands crude oils on Enbridge pipelines may more than double over the next five years due to overcapacity.

Take-or-pay contracts of the type used by TransCanada have only recently been approved by regulators, so it is unclear how well this arrangement will function. They may increase pipeline shipping costs because take-or-pay contracts tend to lock shippers into use of the take-or-pay pipeline, with the result that shippers would use TransCanada's pipelines more (to avoid paying for nothing) and common carrier pipelines less. As demand shifts away from common carrier pipelines, the cost of shipping on them also increases.

Tar sands oil is the most expensive oil to extract in the world. The pipelines just built may be the most expensive pipelines to use in the world. The increased cost of shipping on these pipelines will further reduce tar sands profitability and raise prices at the pump.

## Better, Less Expensive Ways to Deal with Oil Security and Oil Demand

TransCanada and its shippers are gambling that at some time in the future the Keystone XL pipeline will be needed, primarily because of a belief that imports from Mexico, Venezuela, and Nigeria will drop, perhaps suddenly. Although oil security is an important issue, the questions that need to be answered are when is this capacity needed and are there better, less expensive ways of addressing these security needs?

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<sup>30</sup> Suncor FERC Petition, pp. 22-23.

<sup>31</sup> *Id.*

The industry has not given adequate thought to using the existing crude oil pipeline system more flexibly to allow for reversal of flows should tanker imports to the Gulf Coast be suddenly reduced. Such modifications would allow existing infrastructure to be used in the event of unforeseen changes instead of building and paying for dedicated new underutilized pipelines all the way from Canada to the Gulf Coast.

Also, as global oil prices increase and oil supplies tighten, U.S. consumers are likely to use less oil. We need to focus on intelligently down-sizing U.S. oil pipeline and refining capacity to minimize costs to consumers. The current pipeline development system is biased towards new development rather than efficient use of existing infrastructure, with the result that excess pipeline capacity will likely cost consumers and investors billions of dollars. Investors should consider supporting projects that use existing infrastructure more efficiently instead of building new, unneeded pipelines.