
Tar Sands Oil Means High Gas Prices

RESEARCH NOTE



5/6/2010

By Lorne Stockman

Contact: kbruno@corpethics.org

Tar Sands Oil Means High Gas Prices

RESEARCH NOTE

Summary

Tar sands (also known as oil sands) oil production is the most expensive oil production in the world. The Keystone XL pipeline will create significant over capacity for tar sands crude into the U.S. raising pipeline tariffs and adding to the already high cost of tar sands production. The growth in tar sands production needed to fill the Keystone XL pipeline will only occur if oil prices keep rising. Tar sands production exerts little if any influence over global oil prices because it maintains no spare production capacity. **Tar sands production is a symptom of high oil prices and not a basis for lower prices.**

Tar Sands Production is Expensive

Tar sands oil production is the most expensive oil production in the world today and has been labeled the 'marginal barrel' by the International Energy Agency.ⁱ

In April 2010 Marvin Odum, Shell's head of tar sands, announced that the company would not go ahead with any new tar sands projects in the next five years and perhaps longer because of the expense of doing so. He said that, '*the oil sands have become one of the most costly places on earth to pursue oil projects*'.ⁱⁱ 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*'.ⁱⁱⁱ He stated that the 100,000 barrel a day (b/d) project will require minimum oil prices of \$70-75 to turn a profit.

Further, construction costs in Alberta are only going up. The rush to develop tar sands projects and the huge requirements for labor, cement, steel, engineering equipment and other resources mean that everything from rigs to housing are at a premium in the tar sands regions. A recent decline in costs spurred by the recession is already being reversed.^{iv}

In November 2009, one of Canada's respected energy think tanks, the Canadian Energy

Research Institute (CERI) produced its 2009 to 2043 forecast for the tar sands industry.^v In this 35 year timeline it expects oil prices to rise to around \$200/bbl stimulating growth in

The Keystone XL Pipeline will not lower prices at the pump, because tar sands oil is the most expensive in the world, and pipeline capacity is already overbuilt.

tar sands production of between 5 and 6 million b/d by the 2030s to 2040s. It calculates that the oil price required to facilitate this level of production ranges from \$119 to \$134/bbl. The last time oil prices were at this level, in mid-2008, U.S. gasoline prices averaged \$3.96 per gallon.^{vi}

The tar sands industry is clearly betting on high oil prices in order produce much of the as yet undeveloped resource. However, there is a raft of economic analysis including that from the IEA^{vii} and others^{viii} that shows that high oil prices hinder economic growth and are therefore unsustainable. CERI and the tar sands industry are counting on a situation that would be devastating for the U.S. economy. If oil prices ever did reach \$200/bbl, gasoline prices would probably be above \$7 per gallon.

Tar sands production is expensive primarily because it is bitumen, a solid or semi-solid form of degraded oil. Extracting and processing it requires more complex procedures than most conventional oil production. These processes require extensive specialized infrastructure leading to huge capital investment costs and high operating costs.

Compare for example the estimated cost of developing a heavy oil field in Saudi Arabia with Shell's recent tar sands mining expansion. The Manifa Field in Saudi Arabia is estimated to cost \$15.75 billion to develop and as such is one of the most expensive developments in the country. It is slated to produce 900,000 b/d of oil as well as significant quantities of natural gas and condensate.^{ix} In contrast, Shell's Athabasca Oil Sands Project (AOSP) expansion cost \$14 billion but only added 100,000 b/d of crude oil capacity.



Pipeline construction in Alberta forest

Keystone XL Will Raise Costs Further

With the recent completion of both the Keystone and Clipper pipelines, substantial excess pipeline capacity has already been created between Alberta and the U.S. Mid-west.^x These two pipelines alone have the potential to be expanded to 1.39 million b/d, more than total tar sands production in 2009.^{xi} The excess capacity has already led

to a 33% hike in shipping tolls between Alberta and the Mid-west.^{xii}

Should Keystone XL be built, excess capacity would rise further. Current estimates suggest that with XL added to the system, spare capacity in pipelines from Alberta to the U.S. will be at 41%.^{xiii} This could result in a tripling of tolls for moving crude oil from Canada to the U.S.^{xiv} The increase in tolls is likely to be passed onto the consumer adding to the already high costs of increasing dependence on tar sands oil.

Tar Sands Production Cannot Alleviate Rising Oil Prices

Some argue that with other oil sources declining tar sands production may have a cooling effect on oil prices. The reality is the effect on prices is negligible.

The ability to control oil prices is in the hands of those who have spare production capacity or the ability to add spare capacity relatively quickly. Neither exists in the Canadian tar sands industry. Nor is it ever likely to.

During 2003-2008, which were considered boom years for the tar sands industry, tar sands companies invested \$50 billion to bring on a mere 350,000 b/d of production capacity.^{xv} In roughly the same period global oil demand rose by 8 million b/d, while on average oil prices tripled.

Canada's ability to maintain any spare capacity is restricted by the high capital intensity of tar sands production, the long lead-in time to bring on new capacity and the fact that the industry is run by the private sector. No independent oil company is going to idle capacity given the level of investment required to create it.

"...every time that the United States or non-OPEC production increases OPEC decreases its production accordingly (...) So, we'll drill more, they will drill less. It won't affect the price. It won't affect the amount of oil in the market. (...) it's not going to break the monopoly of oil in transportation (...) it's a short-term solution."

Gal Luft, Executive Director of the Institute for the Analysis of Global Security (10/15/2009).

In March 2010, OPEC reported over 6 million b/d of spare production capacity among its members, around 4mb/d of which is in Saudi Arabia.^{xvi} Depending on your point of view, it is the withholding of this production capacity that is maintaining oil prices at today's high levels or its existence as spare capacity that is preventing prices spiraling out of control. Whichever way you perceive it the existence of tar sands production merely assists OPEC in maintaining its position. Canada produces more and OPEC produces less in order to maintain prices.

In fact the IEA has predicted that whether tar sands production grows or not, OPEC's domination of global oil production and exports will grow. In its 2009 Reference Scenario, OPEC's market share is estimated to rise from 44% in 2008 to 52% in 2030. This is despite tar sands production potentially reaching 3.9mb/d as non-OPEC conventional oil production is in terminal decline. Even with this aggressive growth scenario for tar sands, this represents 18% growth in OPEC's share of the global oil market.^{xvii}

So OPEC's ability to control oil prices is unlikely to diminish whether tar sands production grows or not.

Conclusion

The Keystone XL pipeline will not help to lower gasoline prices in the USA because the tar sands oil it will deliver relies on a high oil price to be brought into production. Tar sands producers require oil prices that will translate into \$4 gasoline in order to fill the Keystone XL pipeline. The excess pipeline capacity created by XL will raise the cost of tar sands production further.

Tar sands oil does not exert significant downward pressure on global oil prices and if anything enables OPEC to maintain its grip on the market. Tar sands production is a symptom of high oil prices and not a basis for lower prices.

Table 1:

Oil prices needed to sustain tar sands growth and the gasoline prices they imply.

	2010-2011	Long-term to 2040s
Minimum oil price needed to grow tar sands prod.	\$70-75/bbl*	\$119-134/bbl**
Retail price of gasoline/gallon	\$2.74***	\$3.96****

Notes: Prices based on 2008-10 dollars. Future nominal prices will likely be higher.

* Based on Shell's AOSP expansion which is scheduled to come on stream 2010/11. See footnote 2.

** Based on CERI November 2009. See footnote 6.

*** Average of weekly U.S. regular gasoline, all formulations during two periods when monthly WTI oil prices averaged between \$69-81/bbl, May-August 2006 and August 2009 to March 2010. Sources same as footnote 7.

**** Average of weekly U.S. regular gasoline, all formulations during May-July 2008 when monthly WTI oil prices averaged between \$119-134/bbl. Note that in July 2008 WTI famously peaked at \$147 but the monthly average was \$133.44. Therefore for oil prices to be regularly above the equivalent of \$134/bbl in 2008 dollars, gasoline prices will likely be well above the \$4.11 peak that they reached in July 2008. Sources same as footnote 7.

ⁱ International Energy Agency, June 2009. *Medium-Term Oil Market Report*. P.48

ⁱⁱ *The Globe & Mail*, 28 April, 2010. *Shell puts oil sands expansion plans on hold*.

ⁱⁱⁱ Ibid.

^{iv} *The Globe & Mail*, Nathan Vanderklippe, 5 March 2010. *Rising oil sands costs 'a worry'*. And *Financial Post*, 30 April, 2010. *Inflation alarm bells ringing in oil patch*.

^v Canadian Energy Research Institute, 3 November 2009. *Oil sands industry update: production outlook and supply costs 2009-2043, Media Brief*.

^{vi} Based on http://www.data360.org/dataset.aspx?Data_Set_Id=428 for monthly averages for WTI oil price and <http://tonto.eia.doe.gov/oog/ftparea/wogirs/xls/pswrgvwreg.xls> (data set 3) for an average of historical gasoline prices. For details see table 1.

^{vii} www.iea.org/papers/2004/High_Oil_Prices.pdf

^{viii} Douglas Westwood Energy Business Analysts, 22 June 2009. *Oil: What price can America afford?* Available at: http://www.dw-1.com/files/files/438-06-09_-_Research_Note_-_Oil_-_What_Price_can_America_Afford_-_DWL_website_version.pdf

^{ix} *Arab Oil & Gas Magazine*, January 2010, Vol. XLVII.

^x *Globe & Mail*, 27 April, 2010. *Oil sands awash in excess pipeline capacity*

^{xi} Total tar sands production in 2009 averaged 1.3 million b/d.

^{xii} *Globe & Mail*, 27 April, 2010. *Oil sands awash in excess pipeline capacity*

^{xiii} *The Daily Oil Bulletin*, 13 August, 2009. *Proposed Keystone XL Pipeline Could Drive Up Enbridge System Tolls*

^{xiv} *Globe & Mail*, 27 April, 2010. *Oil sands awash in excess pipeline capacity*

^{xv} Canadian Association of Petroleum Producers, *Statistical Handbook 2009*.

<http://www.capp.ca/library/statistics/handbook/Pages/default.aspx>

^{xvi}

http://www.opec.org/opec_web/static_files_project/media/downloads/press_room/Slides_SG_IEF_Speech_2010.pdf

^{xvii} International Energy Agency, *World Energy Outlook 2009*. It should be noted that the IEA's Reference Scenario is a business as usual scenario that assumes no further action to constrain CO₂ emissions. The IEA has stated that this entails catastrophic consequences for the planet's climate and economy. Its 450ppm scenario, in which these consequences are avoided, forecasts significantly less oil demand and cites Canadian tar sands production as significantly reduced.