

Briefing

Tar sands: the myth of tidewater access

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Summary:

The idea that greater pipeline capacity and access to tidewater would maximize the value Alberta receives for its tar sands crude is a standard talking point for industry, politicians, and other commentators in the ongoing oil price-induced recession in Alberta. With the province bearing significant consequences of the collapse of global oil prices, attention is rightfully focused on what can and should be done to support Alberta through, and out of, its economic rut.

However, if Alberta had expanded access to tidewater today, in the form of pipelines to east or west coasts, it would not be any better off for three key reasons:

- The value of Western Canadian Select (WCS) – the benchmark for Canadian tar sands crude – would not be any higher. This is because the completion of pipelines between Illinois, Cushing and the Gulf Coast in 2013 and 2014 has unlocked the regional transportation bottleneck that was causing an oversupply in the U.S. Midwest;
- Crude sent to Europe or Asia would likely fetch *lower* prices for Canadian producers than they currently receive at U.S. refineries. The best price available for Canadian heavy crude is at the world's largest heavy oil refining hubs in the United States, which producers currently enjoy full access to; and
- In late 2015, the United States lifted its 40-year ban on the export of domestically produced oil. The effects of the ban were complex, but in the long term they stood to drive down U.S. prices for light oil, as shale production expanded and had nowhere to go, creating a glut in Gulf Coast refineries. Whatever effect this had on light (synthetic and conventional) Canadian crudes, any price distortion it may have created is now gone.

The tar sands sector has sufficient pipeline capacity to get its existing production to the largest heavy oil markets in the world (the U.S. Gulf Coast and the U.S. Midwest) and obtain the best available global price for its product. Those markets have the highest demand for the heavy sour crude the Canadian tar sands yield.

Current pipelines to these markets have, in fact, some 500 kbpd of surplus capacity. The pipeline capacity therefore has no bearing on the price differential between Canadian heavy crude (WCS) and other continental prices, which reflect only quality differences and transport cost. **It is the global oil price that is the cause of the Alberta oil sector's woes, not the price differential. New pipeline capacity and 'tidewater' access would not solve this problem.**

Any major new infrastructure approved would only serve the prospects of expansion.¹ Given the capital intensive and long-lived nature of tar sands projects, approving and building new infrastructure both unlocks significant carbon in a carbon-constrained world, and exposes the economy to decades of further risk from the boom and bust patterns of global oil markets.

Tar sands expansion is not only high-risk in terms of driving dependency on a volatile sector, but it is also incompatible with a safe climate future. As the world moves to address climate change in line with international commitments (to limit global warming to less than 2 degrees and aspire to limiting it to 1.5 degrees), fossil fuel demand will necessarily decline.² This will turn major high cost infrastructure into stranded assets and hamstringing economies tightly tied to these sectors.

Critical debate around the economic and climate risks of expansion are happening at a time when economic and political opportunities for diversification have never been more important. With the collapse in the global oil price, Alberta needs a strategy for economic stability rather than entrenching itself further in the source of its current instability.

Price differentials: quality, geography, and supply and demand

The case for tidewater has always been made as an effort to reduce the price differential between Western Canadian Select (WCS) - the most important Canadian benchmark³ for heavy oil trading - and other key crude oil price benchmarks, such as West Texas Intermediate (WTI).

WCS trades at a discount to other crude benchmarks primarily for two reasons:

1. **Quality:** WCS is a blend of bitumen, conventional heavy crude oil and diluent (dilbit). This benchmark has a well defined set of characteristics pertaining to its composition. It is a lower quality crude with high carbon and high sulfur content, which requires more intensive refining to produce refined products such as gasoline and diesel. Generally, this accounts for \$2-3 per barrel of the price differential.
2. **Geography:** WCS price is set upon delivery to Hardisty, Alberta. The transportation costs associated with moving the product to a market that can accept heavy crude is responsible for a further portion of the differential depending on how far the product must be shipped and what the transportation rates are. Alberta's geographical distance from major markets means that this portion of the differential will always be a factor. As the Gulf Coast is the key market for heavy crude and it costs around \$10-12 per barrel to ship heavy crude by pipeline from Hardisty to Houston, WCS will usually trade at prices that account for this transport cost.

¹ Oil Change International, October, 2015. Lockdown: The end of growth in the tar sands. <http://priceofoil.org/2015/10/27/lockdown-the-end-of-growth-in-the-tar-sands/>

² Joe Romm, February, 2016. Climate Progress. Peak oil returns: why demand will likely peak by 2013. <http://thinkprogress.org/climate/2016/02/22/3720343/peak-oil-demand/>

³ Crude oils are traded in global markets based on 'benchmark' indexes that are used as reference points for pricing. A benchmark is of a specified composition (of light and heavy hydrocarbon compounds, and impurities), and delivered at a specific geographical location.

However, there is a third factor that impacts differentials, sometimes dramatically:

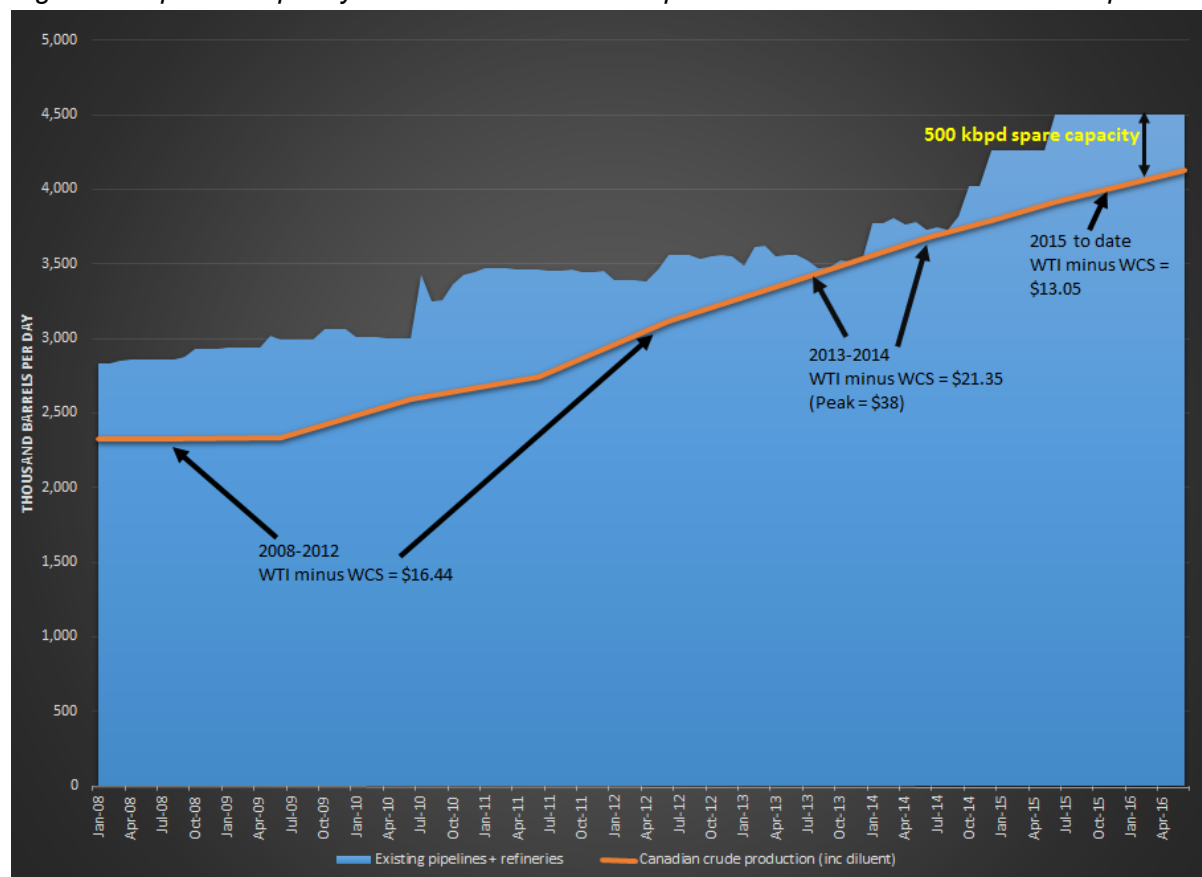
3. **Supply and demand:** Regional transportation infrastructure plays an important role in price setting, particularly for tar sands crude because of its special refining needs and because Alberta is a long way from markets. When the supply of tar sands crude exceeds either available pipeline capacity or the ability of refineries at the terminus of those pipelines to process it, the price of tar sands crude goes down relative to other crudes in the market.

For a period, this was indeed a factor in the price that Canadian producers received for WCS. For much of 2013 and 2014, an additional discount on WCS (in addition to the more static quality and geography-driven discounts) was caused by a pipeline bottleneck in the U.S. Midwest. There was plenty of pipeline capacity to carry tar sands from Alberta to Chicago and surrounding refineries, and those refineries were consuming all of the tar sands crude they could handle. But there was very little capacity to take the heavy crude south to the Gulf Coast, where over 2 million barrels per day of heavy oil refining capacity lay waiting. The supply glut drove down WCS prices and widened its differential to WTI, at which point the case for accessing different and new markets was a relevant one.

Figure 1 shows the last eight years of pipeline capacity and western Canadian production. During much of 2013 and 2014, WCS traded at a substantial discount to WTI as pipeline capacity to carry Canadian crudes to market tightened considerably. The discount averaged \$21.35 for 2013-2014 with the monthly average peaking at \$38 in October 2013 and daily peaks that hit above \$40.

However, over the past three years, significant new pipeline capacity has come online connecting the Midwest to the Gulf Coast, where the largest concentration of refining capacity in the world is located, much of it configured for heavy oil. First, the completion of the Seaway pipeline expansion and twinning of the TransCanada Gulf Coast pipelines unlocked the bottleneck between Cushing, Oklahoma and the Gulf Coast. This eased some pressure, but for the tar sands the bottleneck was effectively pushed up to the Midwest. Enbridge completed a line from Flanagan, Illinois to Cushing in 2015 that effectively eliminated the market-driven portion of the price differential.

Figure 1: Pipeline capacity and western Canadian production between 2008 and the present.



So with ample capacity to the Gulf Coast, what would access to tidewater actually achieve today? The answer is “nothing”. The problem for tar sands producers today is not the WCS discount to other crudes (which is currently due to factors of quality and geography as outlined above, rather than pipeline capacity issues), but the global price of oil against which WCS is priced.

Other international markets

As described above, the U.S. is home to the largest heavy oil markets in the world. Nonetheless, some have suggested that direct access to European and/or Asian markets would unlock new markets and higher prices for Canadian crude. But market realities clearly show that this is not the case. In fact, if sent to Europe or Asia, tar sands crude would fetch notably *lower* prices than in the U.S.

While little tar sands crude makes it to either market, another similar international benchmark for heavy sour crude, Mexican Maya, does. The price of Mexican Maya is adjusted monthly by the State owned oil company PEMEX according to a formula for different global regions. Since January 2015 through to the current contract that prices deliveries for March 2016, the

formula prices Maya on average at \$3.70 less in Europe than in the U.S. Gulf Coast and \$8.73 less in the 'Far East'.⁴

So not only would tar sands producers need to pay the additional cost of shipping their product to Europe and Asia, but when it gets there it will sell for less than the price on the U.S. Gulf Coast. In other words, in today's market, it would make no sense at all to ship tar sands crude to either destination.

Reaching the same conclusion as the previous section, given that the world's largest heavy oil markets are the U.S. Gulf Coast and U.S. Midwest, this is where the highest prices for Canadian crude can be obtained, and there is currently sufficient access to both for existing production.

Conclusion

The case for urgently accessing tidewater to maximize the value of Alberta's resource is no longer a valid one. The sector already has ample and unfettered access to the largest heavy oil markets in the world and the best global prices for all current production.

Pressure for new pipelines to reach tidewater is a veiled attempt to use the current economic downturn - which is unrelated to pipeline capacity - as a way to accelerate infrastructure needed only for future expansion of tar sands production.

Expansion in the tar sands is not only incompatible with Canada's climate goals, but it would only serve to deepen Alberta's economic dependence on oil at a time when the consequences of such a dependence have become painfully clear. In a sector that is known for its boom and bust cycles, locking in decades' worth of additional infrastructure and production is only guaranteeing that the next bust will be inescapable.

Alberta and Canada are faced with an unprecedented opportunity - the need and potential for serious discussions and efforts around economic diversification have never been more acute. With national commitments to limit global warming to 1.5 degrees Celsius and decarbonize Canada's economy, robust, long-term economic planning must be aligned with meeting these objectives.

This could mean a precedent-setting occasion not only to stop expansion of the tar sands, but to use revenue from existing production to diversify the economy and develop a robust plan to manage the decline of the tar sands sector as we move towards a decarbonized economy by mid-century.

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⁴ Data from Reuters reporting of the pricing formula an example of which is here: <http://www.reuters.com/article/mexico-oil-pricing-idUSL2N14X1ZV20160113>

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