

## **Pipelines and Canada's Oil Sands**

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Some strange developments in recent months have pitted environmentalists against Canada's oil sands. I say strange because the environmentalists must have had their heads in the sands for the past several decades. It takes little effort to figure out that production from Alberta's oil sands is set to increase dramatically. And what would become of that oil? Clearly it needs to move to export markets, whether the United States, Europe or Asia.

Investments in the oil sands have been ongoing for at least 50 years, but, beginning more than a decade ago, the size of such investments became serious. In 2008, companies invested \$20.7 billion, although, as a result of the financial crisis, investment fell to \$10.6 billion in 2009 rising slightly to \$11.2 billion for 2010. These are not paltry sums. Investors expect to receive a return on their investments and that entails the sale of crude oil.

Alberta's proven reserves of crude oil from oil sands amounts to 169.3 billion barrels (bbl) compared to 1.5 billion bbl of conventional oil. In 2010, Alberta's the oil sands produced 1.6 million barrels per day (bbl/d) of crude bitumen and the province exported some 1.4 million bbl/d of crude oil to the U.S. This accounted for 15% of U.S. imports, or 7% of that nation's crude oil consumption of around 18.5 million bbl/d. Canada as a whole exported 1.97 million bbl/d of crude oil to the U.S., accounting for 21% of total U.S. crude oil imports in 2010. Based on ongoing investments in the oil sands, production is expected to more than double to 3.5 million bbl/d by 2030, rising to some 5 million bbl/d soon thereafter. Alberta has enough proven reserves of bitumen to produce at that rate for more than 90 years.

In the fiscal year 2010/11, the Alberta government collected more than \$3.7 billion in royalties from oil sands projects. This translates into a royalty rate of about \$6.50 per bbl of bitumen. Once production reaches 3.5 million bbl/d, Alberta would collect more than \$8 billion annually in resource rents. Alberta's royalty rate is quite low and oil prices can be expected to rise compared to 2010/11. Thus, the province has the potential to collect substantially more rents in the future. Whatever the case, this is a massive windfall that the province has a strong incentive to protect.

### **Railroads and Bakken Oil**

Environmentalists in the U.S. have delayed the Keystone XL pipeline, and they oppose hydraulic fracturing ('fracking') of shale to release oil or natural gas because of fears that ground water will become contaminated. Despite opposition to pipelines, oil from the Bakken shale that

underlies Saskatchewan and especially North Dakota is being shipped to markets. Since pipeline capacity does not exist, it moves by rail.

As reported by Progressive Railroading, Bakken shale oil production is projected to reach 700,000 bbl/d by 2013 and 1 million bbl/d by 2015. BNSF Railway Co. and Canadian Pacific (CP) could capture between 20 and 25 percent of this traffic. BNSF already moves several unit trains per week from the Bakken to Stroud, Okla.; Bakersfield, Calif.; St. James, La.; and points in New Mexico and Texas. It also has inbound trains loaded with fracking sand, clay and pipe. CP is preparing to move 70,000 or more car loads of oil annually from Saskatchewan and North Dakota. With each rail car can holding about 650 bbl, this implies movement of some 125,000 bbl/d, well below the 900,000 bbl/d that Keystone XL is expected to deliver. Kansas City Southern railroad and others are also investing in infrastructure to ship Bakken oil to Texas by rail. Clearly, oil will flow by rail even if the Keystone XL pipeline were to go ahead.

If public lands in the U.S. were opened to the production of 'tight oil,' the U.S. could potentially become energy independent. In that case, Canadian oil will be marketed in Europe and Asia, where demand is growing by leaps and bounds.

### **Oil Sands and Pipelines**

U.S. opposition to the oil sands is based not only on fears of pipeline spills, but on the extra carbon dioxide that is emitted during extraction compared to conventional oil. This is also a concern of Canadian environmental groups, but they have focused instead on proposed pipelines from Alberta that cross British Columbia. There are two under consideration.

Enbridge Inc. has proposed construction of a new \$5.5 billion pipeline with a 550,000 bbl/d capacity. The Northern Gateway pipeline would run from Edmonton across northern British Columbia to the port of Kitimat. It is opposed by First Nations and environmentalists because there is fear that an oil spill could cause irreparable environmental damage to the pristine rivers and forests that the pipeline would traverse, or to the oceans off the west coast because maneuvering tankers in the narrow waters is risky.

The second proposal is an expansion of the existing Trans Mountain pipeline that runs from the Edmonton area to the Westridge Terminal in Burnaby on Burrard Inlet. The owner of the pipeline, Kinder Morgan, has lined up sufficient buyers of crude oil to warrant expansion of the pipeline from a capacity of 300,000 bbl/d to 850,000 bbl/d. Currently, one tanker loads crude oil at Westridge every four days on average; the pipeline expansion would increase this to one every day. The environmental concerns include the possibility of a pipeline rupture, a possible oil spill in Burrard Inlet as happened in 2007 (which is why the Tsleil-Waututh Nation opposes pipeline expansion), and increased tanker traffic in waters inhabited by resident killer whales.

## **Federal-Provincial Matters**

The federal government recognizes that, as oil production increases, there is a real need to resolve the environmental issues and come up with solutions to facilitate the movement of oil. In the absence of an agreement, the clear alternative is the 'pipeline on rail,' which would send oil to the west coast ports of Prince Rupert and Vancouver at Roberts Bank. This would mitigate some of the tanker traffic issues because it would make the routes somewhat shorter and perhaps somewhat less risky. However, it would increase the likelihood of oil spills, although they would be limited to at most 65,000 barrels (assuming a 100-car train) at any given time. To confine a break in an oil pipeline to less than that amount would, in a worst case scenario, require shutting off the pumps within 2 to 2½ hours. Of course, shipping oil by rail is more costly, thereby dissipating rents.

To facilitate planning, reduce uncertainty and protect the potentially large economic rents available from transporting oil to market, the federal government has implemented legislation that would combine the federal and provincial environmental assessments and limit the process to two years. The reason is to prevent activists from overwhelming public hearings and delaying a decision for many years.

The issue raises a question concerning federal-provincial jurisdiction. Can one province ever prevent another from moving commodities to export markets by preventing transit? While one country can prevent another from using its soil to move commodities, under Canada's Constitution this is a federal matter. While the current federal government appears willing to take up Alberta's case, it is unlikely that another federal government would use its powers to deny transit of oil. Although a 'greener' government might deny the construction of Northern Gateway, it would put itself in a very awkward position if it denied all pipeline applications or somehow blocked movement of oil by rail. In my view, it could not legally prevent movement of oil by rail or ship (although it could require that oil be transported through coastal waters on ships meeting certain standards). Doing so would signal the breakup of Canada, because it would, in principle, enable any province to prevent transshipment of goods inbound or outbound from any other province across its territory.

## **Endgame**

The environmental problems related to oil spills can be addressed through enhanced monitoring and safety features (e.g., double-hull ships, automatic shut off valves on pipelines). Unfortunately, it is not oil spills that constitute the major objection to Alberta oil. Rather, it is general opposition to fossil fuels and, especially in the case of bitumen from oil sands, the higher greenhouse gas emissions required to extract the oil. This makes it all the more

surprising that British Columbia objects to the transit of such oil across its territory. After all, the number one export from BC in terms of value is coal!

In 2010, BC exported 25 million metric tons of coal from Roberts Bank, which is part of the Port of Metro Vancouver, but one-fifth came from U.S. sources. Coal exports in 2010 amounted to \$5.1 billion, and are set to increase significantly as ten additional coal mines are to come into production in the province in the next several years. The reason for this increase in exports is increasing demand in Asia to use coal to generate electricity and produce steel. The provincial government has mandated against the use of coal for generating electricity in BC because of its high CO<sub>2</sub> emissions, but sees nothing wrong with exporting coal for the same purpose elsewhere. The rents earned from coal are simply too good to pass up; after all, unless a jurisdiction is able to produce something of value to others, it cannot generate wealth required to fund hospitals, schools and the other services citizens demand of government.

As noted, Alberta collects but a small portion of the resource rents available from oil. Suppose that it costs an average of \$65/bbl to produce the oil, another \$20/bbl to transport it to market, and that the price at market is \$100/bbl. Given that Alberta collects \$6.50/bbl in rents, this leaves about \$8/bbl in uncollected rents; this amounts to some \$1.6 billion annually for Northern Gateway proposal and about the same for the proposed Trans Mountain expansion. If 10,000 First Nations people are directly impacted by the proposed projects and each person is paid \$25,000 annually, I am sure that opposition from that corner would disappear, at a cost of \$250 million annually. The provincial government could collect some of the resource rents by charging a transit fee. Shipping firms and pipeline companies could be required to provide a deposit or guarantee to ensure payouts should an environmental situation arise.

The point is simply this: rather than attempting to oppose pipelines and other means of shipping oil from Alberta, or Saskatchewan or even elsewhere in BC, there is room to negotiate collection of resource rents. The surprise is not that environmental groups oppose transit of oil, but that they are so late in the game in negotiating a settlement.