

Oilsands – Boom or Bust?

a report by

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Over recent years the province of Alberta has experienced an economic boom reminiscent of the first oil boom in Canada in the 1980s. Driving the boom are oilsands, also known as tar sands or ultra heavy oil, which are deposits of bitumen – a highly viscous and dense mixture of hydrocarbons – trapped in sand or porous rock. Despite high production costs and environmental challenges, the attractiveness and potential of this resource is undeniable: Canada's proven oilsands reserves are estimated at 173 billion barrels, which places the country in second place globally in terms of oil reserves (behind only Saudi Arabia).

Oilsands production has been steadily increasing since 2000, spurred by high oil prices and by strong demand from the US, which sees unconventional oil as a part of the solution to its energy security issues. Oilsands currently represent over 40% of Canada's crude oil production, and numerous additional projects are planned or under construction trying to capitalise on the success of the earlier deals.

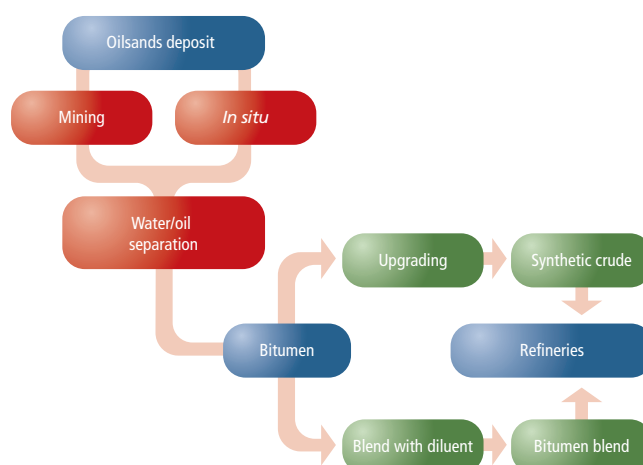
However, the recent decline in oil prices and rising costs are threatening the sector's profitability and its ability to secure financing in a credit-constrained environment. Oilsands projects currently in operation are estimated to be profitable with oil prices at US\$60 per barrel, but the upcoming projects are likely to require prices in the US\$75–90 range.

Oilsands – Not Your Average Oilfield

Due to the complex extraction and upgrading process, oilsands projects are significantly more expensive to develop than conventional oil fields. Oilsands extraction techniques can be divided into two groups: mining, which is used for shallow deposits, and *in situ*, which was developed to monetise deeper reserves. Both methods are energy-intensive, requiring large amounts of natural gas to heat the bitumen, use considerable amounts of freshwater to separate the bitumen from the sands and emit considerable amounts of greenhouse gases. Technologies are being developed to mitigate these issues, but have not yet reached full commercial scale. Oilsands projects are therefore exposed to natural gas price risk, as well as regulatory risk in the form of possible carbon taxation and other measures enacted in Canada to curb climate change.

Once the bitumen has been extracted and separated from the water and sand, it still needs to be upgraded to at least pipeline-quality crude. Due to the high price differential between ultra-heavy crude and light sweet crudes such as West Texas Index (WTI), producers have strong incentives to further upgrade the bitumen and also to build refineries on-site to lower costs and capture as much of the oilsands value chain as possible. In addition, due to the nature of bitumen, not all refineries are equipped to process oilsands crude, which limits its market penetration. Dedicated refineries help to improve market access,

Figure 1: Oilsands Processing Chain



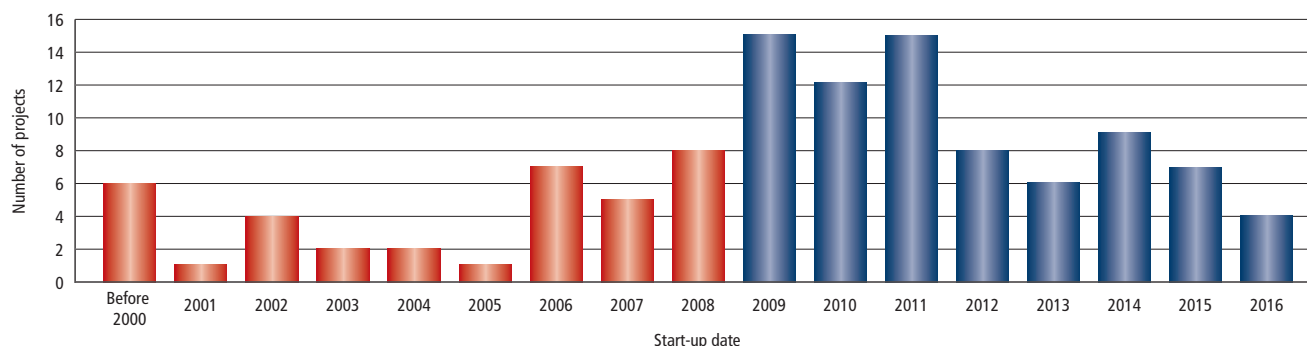
although the constraint in pipeline capacity is another important roadblock to the export from Alberta to markets in the US and beyond.

Sliding Profitability

Oilsands projects became attractive in the early 2000s as oil prices increased and technological developments contributed to decreasing operating costs. Current operating costs for mining and upgrading range from US\$20–30 per barrel, compared with US\$35 for earlier projects. Certain newer *in situ* technologies command higher operating costs, at US\$40 per barrel. Extraction costs are approximately US\$10–12 per barrel (with less than US\$1 difference between mining and *in situ*), and upgrading costs range between US\$12 and US\$16. Generally speaking, existing oilsands projects are economical if crude oil prices (WTI) are above approximately US\$60 per barrel.

Production costs are highly sensitive to changes in capital costs and natural gas prices, making oilsands projects vulnerable to increases in raw material costs. Increased construction costs are compounded by labour shortages and wage inflation, which are particularly acute in Alberta. The inclusion of upgraders in the projects contributes to larger project sizes, which in turn can lead to an erosion of the project's economics.

The economic viability of the sector is deeply dependent on high prices, which allow ultra-heavy crude to compete with conventional sources of crude. In addition, most of the 'easy' deposits are already being exploited and upcoming projects are more challenging geologically, leading to less attractive economics for the upcoming projects. Internal rate of return (IRR) is, on average, decreasing as each new generation of oilsands projects is slated to come online. This can be attributed to higher capital expenditures (construction costs have increased by 30% since 2007), as well as more challenging reservoirs.

Figure 2: Number of Projects by Start-up Date (Existing and Upcoming)

Source: Oilsands Review.

Projects that are expansions of existing facilities also tend to have more attractive economics than greenfield projects. Most existing and brownfield projects can achieve an IRR equal to their weighted average cost of capital (WACC) at approximately US\$60/barrel, but, according to CERA, upcoming projects will require WTI crude prices ranging from US\$78 to US\$87 per barrel, depending on the technology. In order for upcoming projects to achieve an IRR of 20%, the WTI future prices would need to be around US\$140 on average. The peak of attractiveness of oilsands observed in 2007, when high oil prices and increased technology efficiency led to record profits, appears to have subsided, at least temporarily. Existing projects are likely to remain profitable in the current pricing environment (assuming that the dip into the US\$50 range is only temporary), but the economic viability and bankability of upcoming projects appear to be seriously affected by the downturn in prices combined with the increased cost and reduced availability of capital.

However, unconventional resources such as oilsands and oil shale, especially when held by junior companies, present major strategic value and are attractive targets for strategic investors. Unlike conventional oil fields, unconventional resources do not experience major declines in production; rather, they reach a production plateau at which they can remain for the life of the project, which makes unconventional companies challenging to value. Besides oilsands pioneers such as Suncor and Syncrude, numerous oil companies are active in the oilsands industries, ranging from supermajors such as Shell and Total to independents with only one lease such as North Peace and E-T Energy. The economic boom generated by oilsands combined with the stable investment environment of Canada has drawn an increasingly diverse slate of companies to Alberta, making oilsands a key sector for foreign direct investment in Canada.

Survival of the Fittest?

Over 5 million barrels per day of new capacity have been announced by sponsors (to enter production between 2009 and approximately 2015), which would correspond to a 184% increase in production capacity compared with 2008. Low IRRs, decreasing oil prices and liquidity restrictions are likely to lead to the cancellation of some of the least economically viable upcoming projects. A proposed increase in royalties by the government of Alberta (which would raise the government's share of revenue from 47 to 64%) is putting additional pressure on oilsands operators. Several of the largest producers including Shell, Petro-Canada, EnCana, Canadian Natural Resources Ltd, Talisman Energy and ConocoPhillips have already announced that they would

revise their capital spending plans and shelve several upcoming projects due to the threat of reduced returns. Suncor's Voyageur upgrader project (at US\$16.5 billion one of the largest projects under construction) will see its completion delayed by approximately one year from 2012 to 2013 as Suncor slashes capital spending for 2009 by one-third in response to credit difficulties and falling oil prices. The effect of the credit crunch is likely to be felt even more strongly by smaller independent developers who lack the balance sheet and the track record of Suncor and who are likely to find it very difficult to raise funds for projects with limited collateral and, in some cases, unproven extraction technologies.

Most greenfield oilsands projects have been equity-financed due to technology and reserve risks. Many existing oilsands projects were also developed by major sponsors such as Encana or Shell with the necessary balance sheet to enter into corporate financing of the project. The two exceptions to the rule were Long Lake in 2004 and MEG's Lake Christina in 2006. Both were developed by smaller

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sponsors for whom corporate financing would have been difficult to structure; the projects were also financed at a time when the perception of technology risks for oilsands projects had been lowered and high oil prices rendered their economics particularly attractive. The picture is very different today.

While oilsands, unlike other similar unconventional oil sources such as oil shale, are no longer an unproven technology, tight credit markets, low IRRs and uncertainty about oil prices are likely to make the financing process more challenging. Securing financing is likely to become the 'make or break' point for many projects, even for those with attractive economics. While some of the largest players still have equity to invest, smaller developers may be able to project finance if the economics of their projects are robust enough to shore up financing in a market where banks have severely tightened their lending conditions and liquidity seems concentrated in public hands. ■