

Canadian Energy Research Institute

The Eye of the Beholder:
Oil Sands Calamity or Golden Opportunity?

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**THE EYE OF THE BEHOLDER:
OIL SANDS CALAMITY OR GOLDEN OPPORTUNITY?**

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CHAPTER 1 DIDN'T SOMEONE ASK FOR A SLOWDOWN?

Background

With economic calamity sweeping across the world, it looks as if the sky is falling and the era of the Alberta Oil Rush is coming to a crashing end. If the doom and gloom that we hear and read on a daily basis in the media is any indication, then this may be a true statement. Undoubtedly the oil sands are coming off a bit of a sugar high and need a time out. Just over two years ago there were growing calls to slow the pace of development in the oil sands. Of the most prominent people to call for a slower pace of development was former Alberta Premier, Peter Lougheed.¹

The recent credit crisis and collapse in energy prices can be seen as a chance for the industry to step back, and focus on the next moves in the development of the oil sands. Herein lie opportunities: to secure high quality labour being let go by organizations, to secure components and products at costs that have not been seen in almost a decade, and to prepare for the eventual return of higher oil prices and economic activity while your competitors scramble to catch-up.

With an estimated initial volume in-place of approximately 1.7 trillion barrels of crude bitumen, Alberta's oil sands are one of the largest hydrocarbon deposits in the world.² Approximately 11 percent (i.e., 173 billion barrels) of this volume is generally accepted to be recoverable and should partially satisfy North America's thirst for petroleum products well into the 22nd century.³ While it could be debated as to when the rush for bitumen and the irrational bidding up of costs started, it is clear that the rampant speculation and regular announcements⁴ pertaining to new project development has come to a crashing halt over the past 4 months. More "bad news" is expected over the next 6 to 8 months as the industry begins to settle down and hopefully prepare for the eventual recovery.

Almost every community in Canada—from coast to coast to coast—has been touched by the development of the oil sands through the stimulating impact it has had on job creation and economic growth.⁵ For these reasons Alberta's oil sands have become the driving force in the

¹ It is widely accepted that in the summer of 2006 he started to comment on the need to slowdown the pace of oil sands development though increases government oversight. J. Tibbetts, with files from J. Komarnicki, "Alberta ground zero for green battle; Fight would divide nation, Lougheed says", 15 August 2007, Calgary Herald.

² Energy Resources Conservation Board. Alberta's Energy Reserves 2007 and Supply/Demand Outlook 2008-2017. 2008. http://www.eub.ca/docs/products/STs/st98_current.pdf, January 29, 2009.

³ This assumes that oil sands production peaks at around 5 to 6 million barrels per day no earlier than 2014 and continues to produce at that level until the current reserves are exhausted.

⁴ Announcements for oil sands growth were commonly made by various companies, through the media, industry events (the "PowerPoint" announcement), and investor updates.

⁵ In early 2000 the Canadian Energy Research Institute released an study looking at the Economic Impacts of Alberta's Oil Sands, available to the public at <http://www.ceri.ca/Publications/documents/OilSandsReport-Final.PDF>. An updated version looking at the

Canadian economy. Oil sands development is stalling; to recover it requires some lubrication in the form of increased liquidity and higher oil prices. As we discuss in this oil sands briefing, we anticipate the market-driven lubrication to start towards the end of this year as the recovery slowly and painfully starts; however, the Alberta Oil Rush is likely to be characterized as the Alberta Oil Slumber for the next few years as development stagnates. In the interim, excess global oil supply will continue to be consumed even while global demand stalls and begins a slow multi-year recovery.

Assessing Future Developments of the Oil Sands – Methodology in a “Nut Shell”

The Canadian Energy Research Institute frequently monitors oil sands developments. In that process, CERI has established a database of oil sands and upgrading projects. The database includes information on all existing and announced oil sands and upgrading projects, updated to January 25, 2009 for this briefing.

The oil sands information discussed in this briefing is at the aggregated industry level for oil sands mining and for in situ projects, in addition to integrated and stand-alone upgraders. Within the CERI database, oil sands projects are classified to reflect their various stages of development: projects announced to the public; disclosure documents⁶ made public; application submitted for regulatory approval; and project approved, under construction or operating.

The stage that a project is in provides some guidance as to how long it is likely to take for a project to achieve production. For example, a project that has been approved for a 2009 start date is not likely to start production until at least 2011/2012 if construction for the project has not yet commenced.

Information on which projects are included in the CERI database, including the delays used to form our analysis, and the data used and presented in this report, are available to organizations that purchase the 2008 report.⁷

This briefing assumes that the reader has a general knowledge of the oil sands region and the technologies used to recover and upgrade the bitumen produced. The government of Alberta is an excellent resource for the public to gain a basic understanding of the oil sands and processes used to extract it; see their website at <http://oilsands.alberta.ca/>.

petroleum sector is being prepared. Information on this new study can be found by visiting CERI's website, http://www.ceri.ca/Research/research=current_projects.asp, January 29, 2009.

⁶ Disclosure document for the project define the terms of reference of the oil sands project.

⁷ Contact information and an order form for the report is available through CERI's website, http://www.ceri.ca/documents/2008Orderform-osoutlookandsupplycosts_000.pdf, January 29, 2009.

CHAPTER 2 THE END OF AN ERA OR A PHENOMENAL OPPORTUNITY?

Alberta's Oil Sands

The oil sands are unevenly spread over 140,000 km² (54,000 square miles) in Northern Alberta. This bitumen occurs in three distinct areas – Athabasca, Peace River, and Cold Lake. Together, these oil sands areas contain an estimated 1.7 trillion barrels (initial volume-in-place) of an extremely heavy crude oil, referred to as bitumen, a resource base that could potentially rival all resources in the world. About 11 percent (i.e., 173 billion barrels) of this volume is recoverable.

Surface mining and in situ production are the current commercial methods used to recover this massive resource. Of the 173 billion barrels of bitumen remaining, 82 percent is estimated to be recoverable using in situ methods. The remainder is recoverable using mining techniques.⁸

Looking Ahead: Oil Sands Production 2009 to 2030

Projections of bitumen production from Canada's oil sands are typically based on the summation of all announced projects, with a wide variety of assumptions pertaining to the projects' schedules and delays, technologies, and stages of development. The method by which developments are delayed, and the rate at which production comes on stream, is based upon CERI's past experience and monitoring of the progress of various oil sands projects.

As a result of the crisis in the credit markets and low oil prices, CERI reviewed the assumptions in our most recent report cited above and adjusted them to reflect the current and likely near-term future outlook for oil sands development. As a result, we believe that the era of grand announcements for oil sands projects is over, and a more measured pace of development will take hold, with the current leases and announcements being developed at a slower pace and with more manageable costs.

This should not come as a surprise to industry observers, given that many of the "prime" oil sands leases have already been purchased and most are attached to various project announcements. The further into the future that CERI's projection goes the greater is the range applied to the estimates of total production. There is a strong possibility of a recovery in global demand and the need for increased supply sooner than anticipated; it is all too easy to be caught in the hyperbole and to view the world of the future through today's looking glass. Remember when oil prices were rising and the chorus of voices was for ever-higher prices, with but a few lonely voices suggesting lower prices?

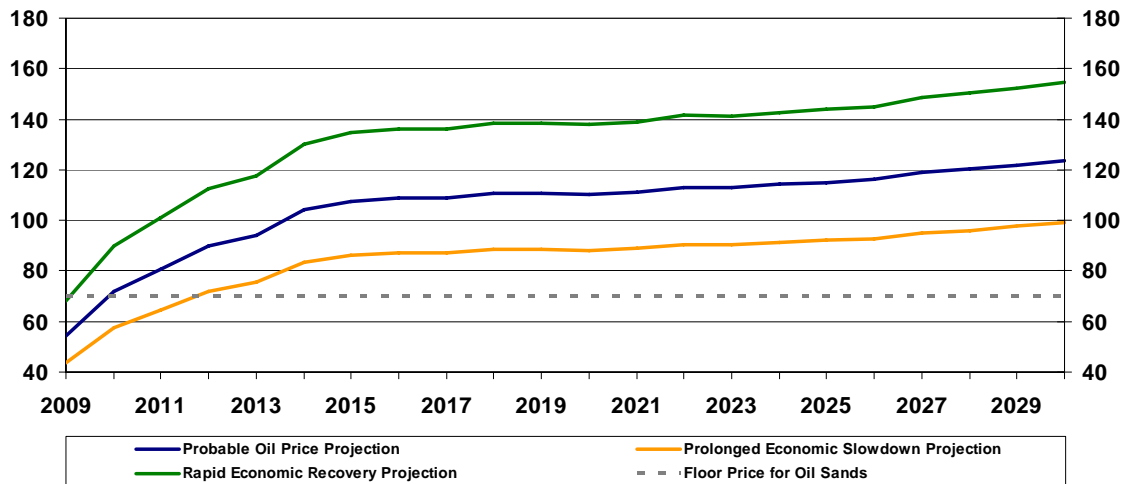
⁸ Energy Resources Conservation Board. Alberta's Energy Reserves 2007 and Supply/Demand Outlook 2008-2017. 2008. http://www.eub.ca/docs/products/STs/st98_current.pdf, January 29, 2009.

A recovery is inevitable,⁹ but it will take time and some hardship will be incurred. During this time there will be layoffs, and project delays and cancellations. However, this province was built on the entrepreneurial spirit of Albertans, many of whom will recognize this for the opportunity that it is: a chance to secure materials and equipment—and the best labour available—at rates not seen since early last decade, when the oil sands was just starting to boom. The industry (and its entrepreneurs) will be readying itself for the economic recovery before it even begins; and probably are already doing so.

Looking Ahead: Global Oil Price Forecasts 2009 to 2030

Understanding where oil sands production could go requires an understanding that global supply and demand interact to create a market price for crude oil that reflects complex relationships. The measure of the global price of oil as used in this briefing is an equivalent barrel of West Texas Intermediate (WTI) crude oil. We anticipate that a price in excess of US\$70 (roughly C\$75 to C\$85 depending on the exchange rate) is required for the industry to resume a period of growth and expansion. We are assuming that construction and operating costs rise in tandem with the price of oil, beyond the US\$70 threshold, starting in 2010. As the global economy begins to rebound, demand will return for oil and the excess supply will be consumed: the market will return to a tight supply-demand balance for crude oil.

Figure 1
Long Term Oil Price Projections US\$ / bbl WTI Equivalent¹⁰



⁹ If a recovery doesn't happen it would signal a wholesale shift in the economy and energy use; since the world will continue to rely on hydrocarbons for decades to come this would not be a positive shift for the world economy.

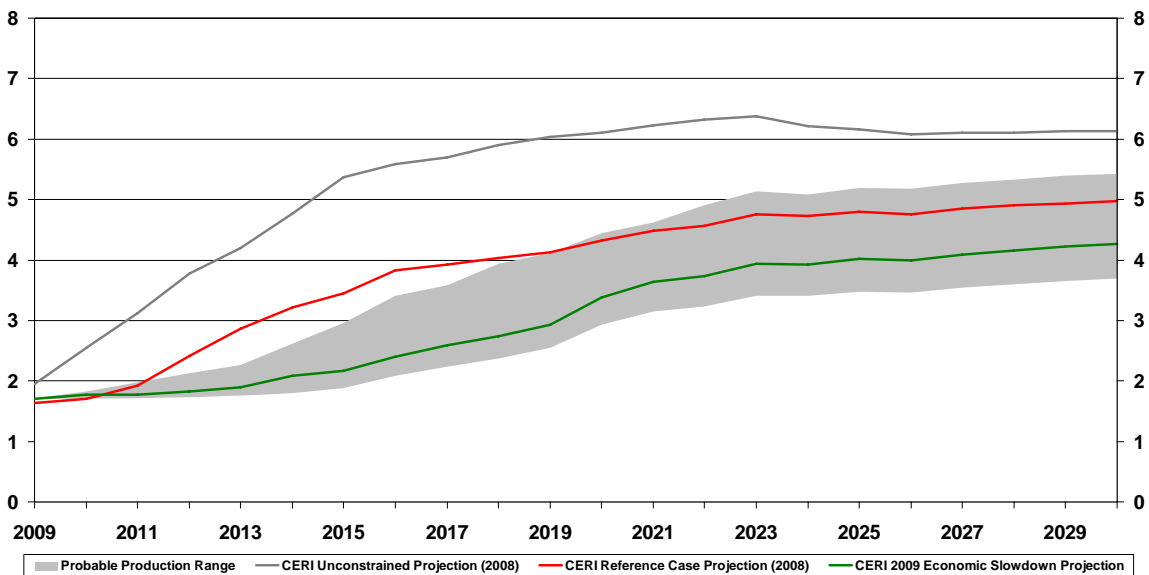
¹⁰ The oil price projections are based upon oil price forecasts performed by the DOE/EIA. The Rapid and Prolonged projections reflect a 25 percent rise or fall in the price of delivered crude to the U.S. relative to the Probable Oil Price Projection which reflects the EIA's forecast for the average price of delivered crude oil to the U.S. It has been assumed that the price of delivered crude serves as a long-term proxy for a WTI equivalent barrel derived from the oil sands. Source: DOE/EIA-0383(2009) Early Release, available to the public through the EIA website, <http://www.eia.doe.gov/oiaf/forecasting.html>, January 29, 2009.

Currently-operating projects should be able to withstand prices under US\$50/bbl for the short-term. However, higher prices are essential to allow operators to generate a rate of return that can be reinvested into the Canadian economy, thereby stimulating jobs, household incomes, tax revenues, and the Gross Domestic Product (GDP).¹¹

Oil Sands Production and Investment Projections

In late 2008, CERI released¹² updated oil sands projections;¹³ the landscape has dramatically changed since then. Various proponents of oil sands projects have withdrawn their applications, announced delays and/or placed their proposed projects on hold until the economy rebounds and the investment can generate a reasonable rate of return. The figure below represents our outlook for oil sands production.

Figure 2
Bitumen Production Capacity, Million Barrels per Day (mmbpd)



In 2008, CERI was projecting a potential for oil sands production of over 5 million barrels per day (mmbpd) by 2015, and over 6 mmbpd by 2030. It was our opinion that the likely development path of the oil sands would be far lower than the CERI Unconstrained Projection (2008). The CERI Reference Case Projection (2008) indicated 3.4 mmbpd of bitumen production by 2015,

¹¹ Please visit our website to download a report that discusses some of the benefits to Canada from the oil sector, <http://www.ceri.ca/Publications/documents/OilSandsReport-Final.PDF>

¹² D. McColl, M. Slagorsky, "Canadian Oil Sands Supply Costs and Development Projects (2008 – 2030)", Study No. 118, November 2008: <http://www.ceri.ca/#OilSandsIndustryUpdate>, January 29, 2009.

¹³ The values that are presented in this briefing reflect the "name plate capacity" for the oil sands and will be higher than actual production. While a facility is built for a certain capacity it typically doesn't achieve that level production on a constant basis. There is a litany of reasons why this is the case, and discussing it goes beyond the scope and purpose of this briefing. Actual production values are only slightly under the name plate capacity.

increasing to 5 mmbpd by 2030. In the 2008 report, CERI provided a global slowdown case: based upon information available in late October, relating to both the global slowdown and the initial signs of an eventual slowdown in the oil sands. While these data are not presented in this report, CERI has updated the scenario and it is now presented as the "CERI 2009 Economic Slowdown Projection".

The slowdown projection reflects a scenario in which the price of oil stays below US\$60 WTI / bbl for most of 2009 and the credit markets still lack liquidity. Under this projection, economic recovery begins in early 2010, as indicated by the previously provided oil price forecast, and liquidity slowly starts to return to the economy. In conjunction with the economic recovery, oil sands development stalls until 2013, with no major growth until 2015. Previously announced and approved (by government) projects remain delayed, and some remain in peril. This scenario is similar to what is currently taking place in the oil sands industry.

While the price of oil and the global economy are expected to rebound in 2010, it will take another two years before oil sands production growth resumes. We assume this resumption to be limited to established oil sands projects and others with adequate financing in place prior to the credit collapse of 2008; it takes at least two years for most mining and in situ projects to start production after construction begins. However, many projects will not start construction in 2010, but will begin a reassessment and refinancing period that could take several years. Some projects are likely to be deferred until 2015, which will create a further backlog in projects, pushing those with 2015 plans (as announced in 2006 to early 2008) beyond 2020.

While we do not anticipate a rapid recovery and explosion in growth, as many had previously projected, we have included a margin of error in our projections, as indicated by the grey area on Figure 2. This reflects the Probable Production Range for oil sands development, which is highly dependent upon the recovery in the price of oil and increased liquidity in the capital markets. In 2015 the total production band is 1.9 to 2.9 mmbpd, which broadens by 2030 to 3.7 to 5.4 mmbpd.

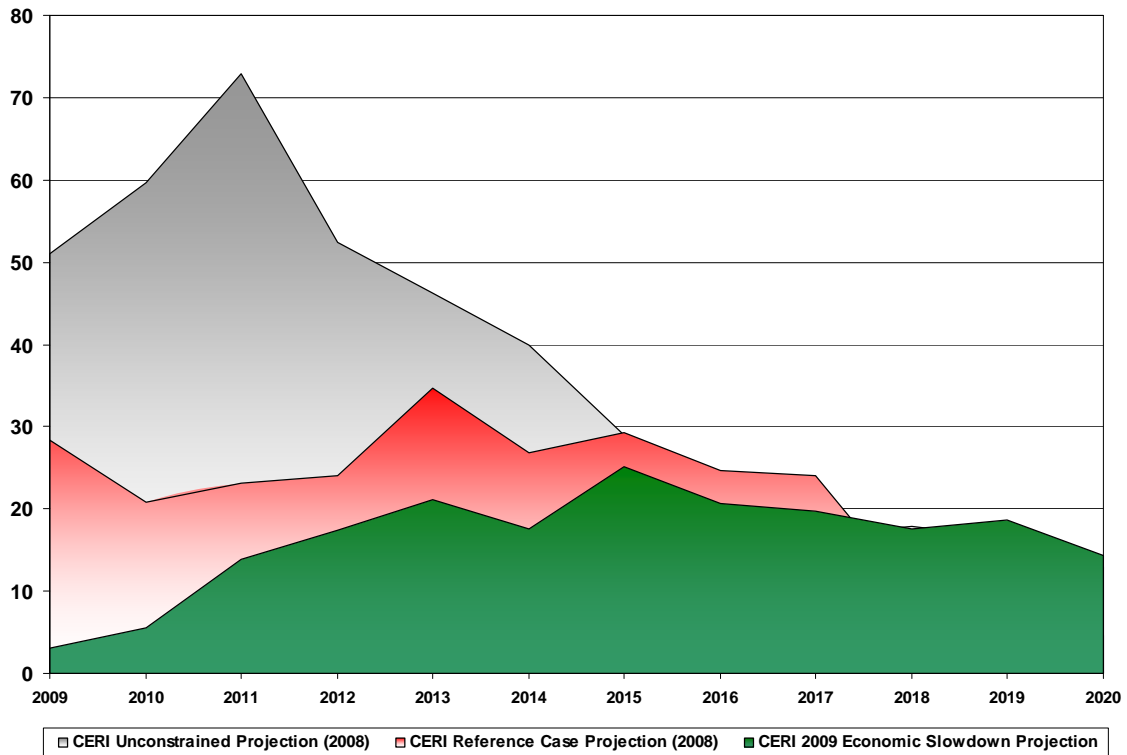
If we consider the CERI 2009 Economic Slowdown Projection as a reasonable outlook, then it is clear that oil sands production will not achieve CERI's previous projections until at least 2020. This will trickle down into many areas of the Canadian economy, having a material impact on some while leaving all but a few unscathed. Our purpose is not to provide an assessment of the economic impacts in this briefing, but to provide insight into the magnitude of the impact that the oil sands slowdown will have on Canada. With over 70 percent of the initial capital investment (required for construction) taking place in Alberta, and the remaining taking place primarily in other parts of Canada, project delays will have real economic consequences.^{14,15}

¹⁴ Please visit our website to download a report that discusses some of the benefits to Canada from the oil sector, and how the investment is spread across the country, <http://www.ceri.ca/Publications/documents/OilSandsReport-Final.PDF>

¹⁵ An updated version looking at the petroleum sector is being prepared. Information on this new study can be found by visiting CERI's website, http://www.ceri.ca/Research/research=current_projects.asp, January 29, 2009.

Figure 3 depicts the total capital expenditure on new oil sands projects (i.e., excluding ongoing or sustaining capital) for the period 2009 to 2020.¹⁶

Figure 3
Oil Sands Capital Investment (2008 Billion Canadian Dollars)



As is apparent, capital spending peaks that were previously projected are not likely to occur over the next 11 years.¹⁷ Oil sands spending will be modest, and at a level that CERI believes the Canadian economy can easily absorb (based upon historic oil sands spending).

The harsh reality is the total “loss” of investment that CERI is projecting. While part of this is a direct result of the economic slowdown, it cannot be solely attributed to the slowdown; there are other factors involved, such as labour and equipment availability. Another way to look at the “loss” is as a gain that is created by the existence and development of the oil sands. The CERI 2009 Economic Slowdown Projection indicates that C\$218 billion will be invested in the oil sands for new production. This is C\$97 billion less (the “loss”) than previously projected under the CERI Reference Case Projection (2008) and a shocking C\$241 billion less than the CERI Unconstrained Projection (2008).

¹⁶ Upon request, annual capital spending beyond 2020 is available to organization that purchase(d) our 2008 report.

¹⁷ The previous peaks were over 70 billion in 2011 for the CERI Unconstrained Projection (2008), and over 40 billion in 2013 for the CERI Reference Case Projection (2008).

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CHAPTER 3 WHERE DO WE GO FROM HERE?

With remaining established reserves of 173 billion barrels of bitumen, Alberta's oil sands are one of the largest deposits of oil in the world. While the economic slowdown of 2009 will have a material impact on near-term production and investment, the long-term impacts are uncertain.

Will production be less than 3 mmbpd or over 5 mmbpd by 2030? We will not know the answer with more certainty for well over a decade. What is clear to us is that, over the next few years, oil sands production growth will be almost at a stand still, and new capital investment will collapse to levels not seen since before the turn of the century (in 2000 oil sands investment was just over 4 billion dollars¹⁸).

It is important—if not imperative—to recognize the current opportunities in the oil sands. As investment levels plummet, there are potentially staggering opportunities for current oil sands operators and new project proponents to seek out and source products—materials and equipment—at some of the lowest rates that they may have seen in almost a decade. The result could be a drastic reduction in supply costs, followed by a rapid growth in the oil sands. It almost goes without saying that those who source their materials today (or at least in the very near future) will undoubtedly reap the rewards of their forward thinking and actions in the years to come.

¹⁸ Canadian Association of Petroleum Producers (CAPP) Statistical Series, November 2006.

About CERI

The Canadian Energy Research Institute (CERI) is a co-operative research organization established through an initiative of government, academia, and industry in 1975. The Institute's mission is to provide relevant, independent, objective economic research and education in energy and related environmental issues. Related objectives include reviewing emerging energy issues and policies as well as developing expertise in the analysis of questions related to energy and the environment.

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