

Canadian Crude Oil Production Potential

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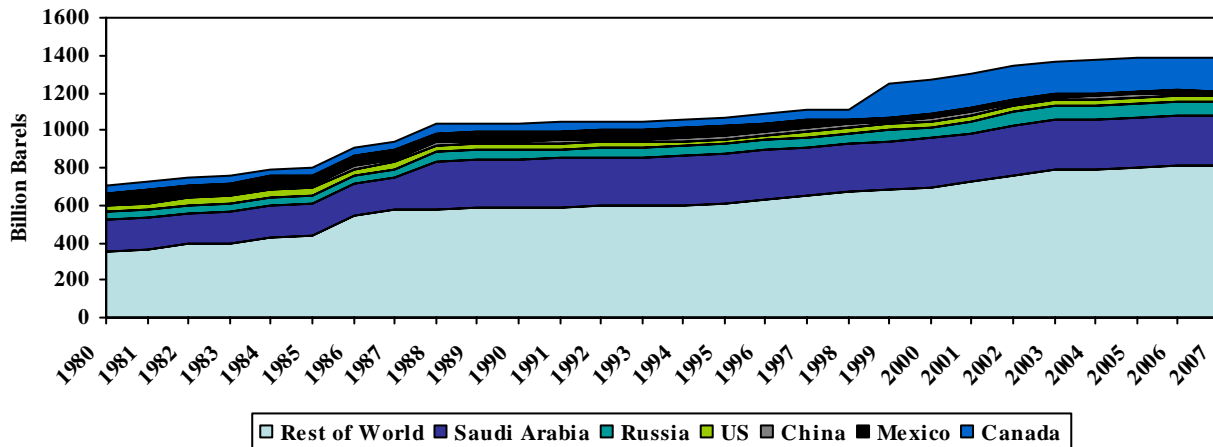
Overview

Canada with over 180 billion barrels of remaining crude oil reserves contributes to over 13 percent of total global volumes. Canadian crude oil reserves consists of conventional crudes that range from light crude with a gravity measured by American Petroleum Institute (API) of 32 degrees to heavier crude with API gravity of 18 degrees and extra heavy crude or bitumen with API gravity of 10 to 12 degrees.

The Western Canada Sedimentary Basin holds the largest deposits in Canada with some 60 percent of the total deposits of conventional crude. The majority of these reserves are in Alberta with over 1.5 billion barrels of remaining established reserves. The East-Coast of Canada holds the second largest deposits with over 32 percent share. Canada's conventional crude oil was on a steady decline from the early 1990's until 2003. Reserves increased thereafter as a result of growth in the East Coast. Recent developments have put spotlight on the east coast at a modest pace primarily focusing on Newfoundland off shore and Nova Scotia deep water. In 2003 significant off shore developments and activities took place off the coast of Newfoundland and Labrador, increasing the projection for eastern Canadian oil production and reserve sizes. The most recent discovery of conventional crude oil within Canada is the Bakken formation.

In late 1990s Canada re-evaluated its reporting practices for bitumen reserves. It only booked bitumen reserves that were under active areas for in situ projects. These reserves constituted a small portion of the total bitumen reserves in the province. In 1999, the Energy Resources Conservation Board (ERCB), an independent regulatory body of the Alberta government, significantly increased its booked remaining established bitumen reserves to 175.1 billion barrels. Canada's crude oil reserves are depicted in the following figure and compared with reserves in selected countries with current production above Canada. The global recoverable crude oil reserves are reported at 1390.1 billion barrels. It increased from some 800 billion barrels in 1980 to some 1500 billion barrels in 2007 or an average annual growth rate of 2.4 percent.

Global Reserves of Crude Oil
source: BP Statistical Review 2008, ERCB



Methodology

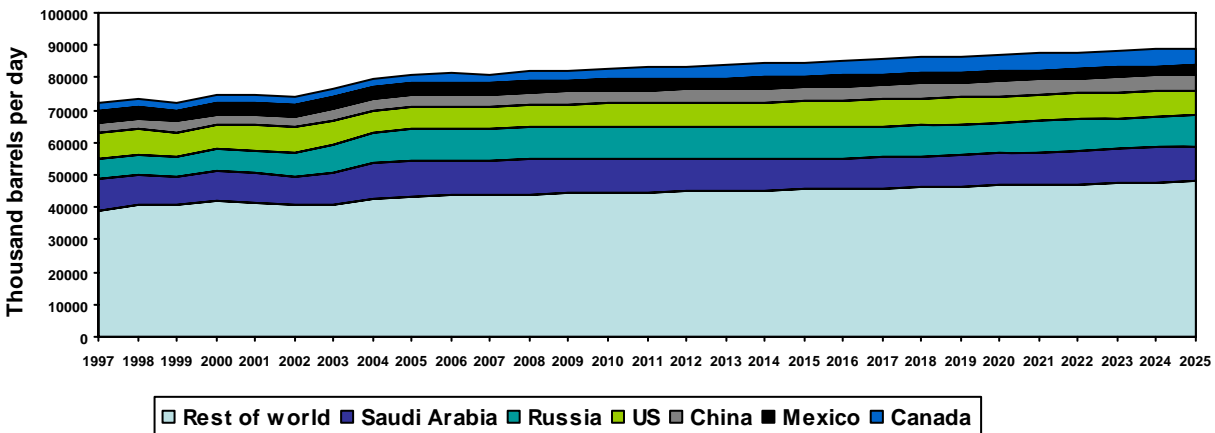
A bottom up approach and market intelligence is used to prepare a forecast for Canadian crude oil production over the next three decades. The size of reserves is the limiting factor in ultimate production. This reserves and investment based forecast provides a potential outlook for what Canada can contribute to the global oil market. In this simple approach, global crude oil reserves and productions are divided into several baskets of crude oil, namely Canadian, Saudi Arabia (mainly for comparison purpose), Russia, China, United States, Mexico and others. For Canada, over the first 10 years of forecast it is assumed that all projects that are under construction will proceed on time. As well project that are announced and are in advance stage will also proceed. However, some days in the start up dates are incorporated in the forecast. As well, the start up production for some of the projects are also trimmed down to be more realistic, giving the experience with some of the existing projects. For future years beyond the first 10 years, raw bitumen production is assumed to grow at an average annual growth of some 35 thousand barrels per day for in situ bitumen operations and by some 30 thousand barrels per day each year for mining operations. These growth volumes are below the historical trends for these operations.

It is also assumed that OPEC will be the swing producer and will provide the incremental barrels required beyond what the non-OPEC producers can provide. This is reflected for simplicity in Saudi Arabia's production outlook. It is assumed that the global demand will grow at a rate of 0.5 percent per year over the forecast period. For the large oil producing nations it is assumed that: China's output will increase at a rate of 2 percent per year; Production in United States will increase by 1.8 percent until 2018 and start to decline at the rate of 1 percent per year (based on US Department of Energy forecast, June 2008); Russia's production will decline by some 0.3 percent per year; and finally Mexico's crude oil production will decline at a rate of 1 percent per year over the projected time period.

Results

In 2007, Canada ranked the 6th largest crude oil producing country in the world. Canada produced 2767.8 thousand barrels per day of crude oil and equivalent and positioned itself after Saudi Arabia, Russia, United States, China and Mexico. Canada's production accounted for over 3.5 percent of global crude oil production. In the last 10 years production within Canada has increased by 28% or 721 thousand barrels per day. Its production consisted of over 1.5 million barrel per day of conventional crude and the remaining 1.3 million barrel per day was extracted from its oil sands deposits as raw bitumen. It is expected that with moderate growth, crude oil production will account for a 6 percent share in the global crude oil market by 2025 or a 50 percent increase in market share for Canada. This level of production will also boost Canada's crude oil production rank to the 4th place after Saudi Arabia, Russia and United States.

Global Crude Oil Production



Summary

Canada has proved to be one of the strongest and most reliable suppliers of crude oil to the world market, maintaining its stronghold as the 8th largest producer in the world. Through the advancement of drilling technology, developing enhanced oil recovery techniques and the progressive use of extraction processes, Canadian crude oil production will only become more prominent. The crude oil environment has developed into an era of high prices and in turn provided the Canadian oil and gas industry with record profits. Interest has soared in the oil sands sector attracting billions of dollars of investment. Within the next 30 years Canada can expect to see record production largely attributable to the extensive Alberta oil sands reserves base and to a lesser extent the, and east coast developments and our steady decline of conventional production in the WCSB.