

Talk about Oil Sands

Reserves and Production

- Alberta has proven oil sands reserves of 167.9 billion barrels.
- Alberta ranks third, after Venezuela and Saudi Arabia in terms of proven global crude oil reserves.
- Total oil sands area = 140,200 km² (14 million ha); disturbed by oil sand mining = 715 km² (71,500ha) or 0.5% of total oil sands area.
- Oil sands are composed of three main materials: water, sand and a heavy oil called bitumen. Once separated, bitumen must be upgraded to convert it into a synthetic crude oil (SCO). Saturation levels of bitumen in the sand also vary from less than 1% to 18%.
- In 2012, bitumen production averaged 1.9 million barrels a day (bbl/d) while conventional oil production averaged about 557,000 bbl/d.
- Current forecasts indicate that by 2022 bitumen production will increase to 3.8 million bbl/d.
- In 2012, marketable oil sands production represented 55% of Canada's total crude oil production.

Upgraders

- Alberta has five operating upgraders with the following capacity:

Operating Upgraders in Alberta		
Company	Upgrader Name	Capacity (bbl/d) Products
CNRL	Horizon	119,000
Nexen	Long Lake	58,500
Suncor	Base and Millenium	357,000
Syncrude	Mildred Lake	350,000
Shell AOSP	Scotford	249,000
Total		1,133,500

Supply

- 2012, total crude oil and equivalent production in Alberta amounted to about 2.5 million bbl/d. Alberta exported about 0.3 million bbl/d within Canada (Saskatchewan, Ontario and BC.) and 1.9 million bbl/d to US markets and offshore. The remaining 0.4 million bbl/d were used within Alberta. Totals may not add up due to rounding.

Investment

- From 2001-2012, an estimated \$159.5 billion was invested in oil sands projects.
- In 2012, industry investment in the oil sands was estimated to be about \$25.2 billion.
- Almost \$125 billion in oil sands related projects are announced, proposed, under construction or nearing completion.

Technology

- There are two types of oil sands production methods: mining and in-situ.
- Mining: Oil sands are dug up by shovel and moved by truck to a cleaning facility where the material is mixed with warm water to separate the oil from the sand.
- In-situ: For deeper oil sands reservoirs, some form of in-situ or "in-place" recovery method is used to produce oil sands through wells similar to that of conventional oil production.
- It's estimated that approximately 80% of the total proven oil sands reserves will be recoverable via in-situ techniques.

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Innovative Energy Technologies Program

- Alberta's *Innovative Energy Technologies Program (IETP)* offers royalty adjustments of up to \$10 million per pilot project that demonstrates the use of new or innovative technologies to increase environmentally sound recovery of existing reserves and encourages responsible development of new oil, natural gas and in-situ oil sands reserves.
- Since 2005, \$149.6 million has been invested by the province in projects under the IETP.

Royalty Framework

- A world oil price sensitive sliding scale has been implemented for oil sands royalty rates. The rate is 1 – 9 percent of gross revenue before payout and the greater of 1 – 9 percent of gross revenue or 25 – 40 percent of net revenue after payout.
- Under the framework, the province is also considering exercising its right to take bitumen in-kind in lieu of cash royalties. The province's share could then be used to supply upgraders and refineries in Alberta.

Employment

- The benefits of oil sands development can be found throughout many sectors of the Alberta, Canadian and U.S. economies. The goods, materials, services and labour used to construct and operate oil sands projects and upgraders as well as the many components such as tires, trucks, gauges, valves, pumps, etc. come from across Canada and the U.S.

- According to the Conference Board of Canada, between 2012 and 2035, \$364 billion in price-adjusted oil sands investment is expected to take place to support oil sands development. This will directly support 880,000 person years of employment over the examined period, and resulting domestic supply chain effects will generate an additional 1.45 million person years of employment.
- The majority of supply chain effects over the 2012-2035 period will be in Alberta but nearly one-third will occur in other provinces, with Ontario receiving the largest benefit, followed by British Columbia, Quebec, the Prairies and Atlantic Canada.

Oil Sands Environmental Management

- Alberta's oil sands are a unique resource with unique environmental challenges. Every effort is made to ensure that oil sands development does not proceed at the expense of the long-term sustainability of the environment.
- Stringent legislation and on-the-ground measures are already in place to protect air, land and water during oil sands development.
- Companies must remediate and reclaim Alberta's land so that it is able to support a range of activities similar to its previous use.
- Strict limits are placed on industry water use from the Lower Athabasca River.
- In 2007, Alberta became the first jurisdiction in North America to legislate greenhouse gas reductions for large industrial facilities.