

Upgraders and Refineries

Facts and Stats

Production

In 2017, Alberta produced about 2.8 million barrels per day (bbl/d) of crude bitumen from three oil sands regions - Athabasca, Cold Lake and Peace River, with surface mining accounting for 45% and in-situ (using steam to pump bitumen to the surface from deep underground) for 55% of the production. In 2017 about 42%, or 1.2 million bbl/d of Alberta crude bitumen production was sent for upgrading.

Upgraders

Upgraders are facilities that improve (or 'upgrade') the quality of crude oil products such as bitumen, which is very viscous and dense, to synthetic crude oil. This is done by breaking down large oil molecules into smaller ones by injecting fluids or adding heat. This process reduces the bitumen's viscosity so that it flows more easily and is more valuable.

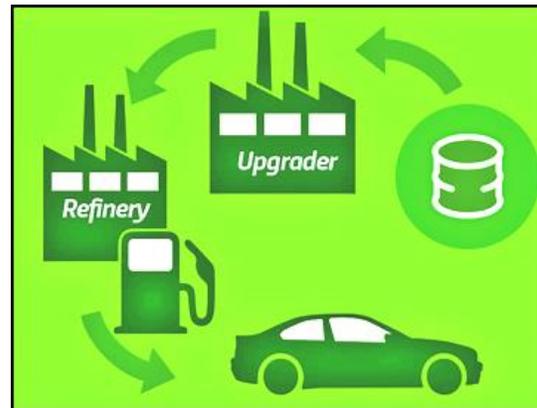
Upgraders in Alberta

The four existing upgraders in Alberta with a total capacity of 1,427,000 bbl/day include:

- Athabasca Oil Sands Project – Shell Scotford in Fort Saskatchewan- Capacity 269,000 bbl/day
- Suncor Base and Millennium in Fort McMurray – Capacity 440,000 bbl/day
- Syncrude Mildred Lake in Fort McMurray – Capacity 407,000 bbl/day
- Canadian Natural Resources Ltd. Horizon in Fort McMurray – Capacity 311,000 bbl/day

Refineries

Refineries are facilities where crude oil is converted or "refined" into higher-value petroleum products like gasoline, diesel, aviation fuel and asphalt. This is primarily done by distilling the oil so that lighter products separate from heavier ones.



Refineries in Alberta:

The four existing refineries in Alberta with a total capacity of 454,000 bbl/day include:

- The Suncor Refinery in Edmonton is configured to handle feedstock from oil sands and has a capacity of 142,000 bbl/day.
- The Imperial Oil Refinery in Edmonton handles feedstock from conventional oil and has a capacity of 191,000 bbl/day.
- The Shell Canada Refinery in Scotford is configured to handle feedstock from oil sands and has a capacity of 92,000 bbl/day.
- The Husky Asphalt Refinery in Lloydminster, AB is integrated with the Husky Upgrader in Lloydminster, SK which produces synthetic crude oil from heavy oil in the two provinces. The refinery produces asphalt products which are then transported to market. The refinery has a capacity of 29,000 bbl/day.

Projects Under Construction

North West Sturgeon Refinery is scheduled to start commercial production in 2019. The refinery will have a capacity of 79,000 bbl/day, increasing total Alberta refinery capacity to 533,000 bbl/day.

For more information, visit energy.alberta.ca

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