

# Upgrading and Refining

## Production

- In 2011, Alberta produced about 1.7 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 51% and in-situ for 49% of the production.
- In 2011 about 57%, or 990,000 bbl/d of crude bitumen production, was sent for upgrading in Alberta

## Upgrading

- There are currently five operating upgraders in Alberta with the capacity to handle approximately 1.3 million bbl/d of bitumen.

Project Name	Location	Capacity (bbl/d) Bitumen
Athabasca Oil Sands Project - Shell Scotford	Fort Saskatchewan	255,000
Suncor Base and Millennium	Fort McMurray	440,000
Syncrude Mildred Lake	Fort McMurray	407,000
Nexen Long Lake	Fort McMurray	72,000
Canadian Natural Resources Ltd Horizon	Fort McMurray	135,000
<b>Total</b>		<b>1,309,000</b>

NOTE: total capacity does not equal total production

- Most upgraders produce synthetic crude oil, but some also produce products such as diesel.
- Upgraders (and refineries) also produce off-gases, gaseous mixtures rich in alkanes and alkenes, which are potential feedstocks for Alberta's petrochemical industry.

## Refining

- There are three operating refineries in Alberta with a combined crude processing capacity of over 420,000 bbl/d.

Company	Location	Capacity (bbl/d)
Suncor	Edmonton	135,000
*Imperial Oil	Edmonton	187,200
Shell Canada	Scotford	100,000
<b>Total</b>		<b>422,200</b>

\*Refining feedstock is conventional oil. The other two refineries are configured to handle feedstock from oil sands.

## New Projects

- Alberta also has a number of new projects which are either under construction or approved for development.

Project Name	Scheduled Start-up	Capacity (bbl/d) Products
CNRL Horizon (Expansion) • Phase 2 • Phases 2A, 2B, 3	TBD Approved	(5,000) Total 140,000
Sturgeon Refinery Phase 1 Phases 2-3	2014 Approved	(50,000) Total 150,000
Suncor Voyageur • Phase 1 • Phases 2-3	Project Idled	(127,000) Total 190,000
<b>Total</b>		<b>480,000</b>