

# Backgrounder

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## Alberta's Energy Reserves 2014 and Supply/Demand Outlook 2015–2024

### Crude Oil Reserves and Production

- Alberta's remaining established reserves of crude oil are estimated at 1.8 billion barrels (288.2 million cubic metres), a 1.7 per cent increase from 2013.
- In 2014, Alberta produced 215.2 million barrels (34.2 million cubic metres) of crude oil, or 589.6 thousand barrels (93.7 thousand cubic metres) per day, an increase of 1.2 per cent from 2013 production.
- In 2014, 2577 oil wells were placed on production, a decrease of 6.9 per cent from 2013 levels.

### Crude Bitumen Reserves and Production

- Alberta's total remaining crude bitumen established reserve estimate fell slightly to 166.3 billion barrels (26.4 billion cubic metres) in 2014 from 167.2 billion barrels (26.6 billion cubic metres) in 2013, due to production.
- In 2014, Alberta produced 841.1 million barrels (133.7 million cubic metres), or 2.3 million barrels (366.3 thousand cubic metres) per day, of raw crude bitumen from the oil sands, a 10.5 per cent increase from 2013.
- Alberta raw crude bitumen production is expected to increase to 4 million barrels (641.8 thousand cubic metres) per day in 2024, based on announced expansions of existing projects and commencement of new projects.
- In 2014, upgraded crude bitumen totalled 954 thousand barrels (151.6 thousand cubic metres) per day. This corresponds to approximately 47.4 per cent of total raw crude bitumen production reporting to an upgrader in Alberta.<sup>1</sup>
- Upgraded bitumen production is forecast to increase by approximately 32.3 per cent to 1.3 million barrels (200.6 thousand cubic metres) per day in 2024.

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<sup>1</sup> Most upgrading projects use coking as their primary upgrading technology and achieve volumetric liquid yields (upgraded bitumen produced / bitumen processed) of 80 to 90 per cent. A volumetric liquid yield of 88 percent was achieved for 2014.

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## Total Oil Supply and Demand

- In 2014, Alberta produced 2.9 million barrels (462.9 thousand cubic metres) per day of crude oil, crude bitumen, and pentanes plus. This is an increase of 9.4 per cent from 2013.
- In 2024, the AER forecasts production of 4.4 million barrels (701.7 thousand cubic metres) per day, of which 3.8 million barrels per day is marketable crude bitumen (1.3 million barrels per day of upgraded bitumen—mainly as synthetic crude oil—and 2.5 million barrels per day of non-upgraded bitumen).
- Alberta's total remaining established crude bitumen and crude oil reserves includes 1.8 billion barrels of crude oil and 166.3 billion barrels of crude bitumen, which allows Alberta to remain a net supplier of oil for many decades to come.

## Natural Gas Reserves and Production

- In 2014, remaining established reserves of conventional natural gas stood at 30.7 trillion cubic feet (865.3 billion cubic metres).
- Alberta's remaining coalbed methane (CBM) reserves have been estimated at 1.7 trillion cubic feet (47.8 billion cubic metres).
- Alberta produced 3.4 trillion cubic feet (96.8 billion cubic metres standardized to 37.4 megajoules/cubic metre) or 9.4 billion cubic feet (265.2 million cubic metres) per day of marketable conventional natural gas in 2014, up 2.3 per cent from 2013.
- In 2014, Alberta produced 285.9 billion cubic feet (8.1 billion cubic metres) or 0.8 billion cubic feet (22.1 million cubic metres) per day of predominately CBM and some shale gas, a decrease of less than 1 per cent from 2013.

## Pentanes Plus

- Production of pentanes plus in 2014 increased by 19.9 per cent to 57.4 million barrels (9.1 million cubic metres) or 157.3 thousand barrels (25.0 thousand cubic metres) per day compared to 2013.
- Remaining established reserves of extractable pentanes plus is estimated at 268.7 million barrels (42.7 million cubic metres).

## Ethane

- Remaining established reserves of extractable ethane is estimated at 674.1 million barrels (106.5 million cubic metres).

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- Production of specification ethane in 2014 decreased by 3.1 per cent to 80.4 million barrels (12.7 million cubic metres) or 220.9 thousand barrels (34.9 thousand cubic metres) per day compared to 2013.

## Coal Reserves and Production

- The current estimate for remaining established reserves for all types of coal is 36.6 billion tons (33.2 billion tonnes).
- Alberta's total 2014 coal production was 32.7 million tons (29.6 million tonnes).

## Reserves and Production Summary, 2014

	Crude bitumen		Crude oil		Natural gas <sup>a</sup>		Raw coal	
	(million cubic metres)	(billion barrels)	(million cubic metres)	(billion barrels)	(billion cubic metres)	(trillion cubic feet)	(billion tonnes)	(billion tons)
Initial in-place	293 125	1 845	12 927	81.3	9 805	348	94	103
Initial established	28 092	177	3 010	18.9	5 590	198	34.8	38.4
Cumulative production	1 661	10.4	2 722	17.1	4 677	166	1.60	1.76
Remaining established	26 431	166	288	1.8	913 <sup>b</sup>	32.4 <sup>b</sup>	33.2	36.6
Annual production	134	0.841	34.2	0.215	104.9 <sup>e</sup>	3.7	0.030 <sup>c</sup>	0.033 <sup>c</sup>
Ultimate potential (recoverable)	50 000	315	3 130	19.7	6 276 <sup>d</sup>	223 <sup>d</sup>	620	683

<sup>a</sup> Expressed as "as is" gas, except for annual production, which is at 37.4 megajoules per cubic metre; includes coalbed methane natural gas.

<sup>b</sup> Measured at field gate.

<sup>c</sup> Annual production is marketable.

<sup>d</sup> Does not include unconventional natural gas.

<sup>e</sup> Includes unconventional natural gas.

## Reserves Definitions

**Initial volume in-place:** the gross volume of crude oil, crude bitumen, or raw natural gas calculated or interpreted to exist in a reservoir before any volume has been produced.

**Established reserves:** reserves recoverable under current technology and present and anticipated economic conditions specifically proved by drilling, testing, or production, plus that judgment

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portion of contiguous recoverable reserves that are interpreted to exist, from geological, geophysical or similar information, with reasonable certainty.

**Initial established reserves:** established reserves prior to the deduction of any production.

**Cumulative production:** initial established reserves less cumulative production.

**Remaining established reserves:** initial established reserves minus cumulative production.

**Ultimate potential:** an estimate of the initial established reserves which will have become developed in an area by the time all exploratory and development activity has ceased, having regard for the geological prospects of that area and anticipated technology and economic conditions. Ultimate potential includes cumulative production, remaining established reserves, and future additions through extensions and revisions to existing pools and the discovery of new pools.

## For more information contact:

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