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Alberta's Bitumen Production Forecast To Continue To Grow

Alberta expected to produce over 3 million barrels of oil per day by 2018

Calgary, Alberta (June 10, 2009) The Energy Resources Conservation Board (ERCB) has released its annual report *Alberta's Reserves 2008 and Supply/Demand Outlook 2009-2018*. Based on the ERCB's own geological and technical analysis, this report is a source of information on the state of reserves and the supply and demand for Alberta's diverse energy resources: bitumen, crude oil, natural gas, natural gas liquids, coal, and sulphur. It includes estimates of reserves at December 31, 2008 and a 10-year supply/demand forecast for each resource. A supply/demand forecast of electricity in Alberta is also provided. The report also includes historical data for energy resources production.

The report notes that:

- The ERCB expects Alberta's annual bitumen production to increase to more than one billion barrels (or 3.0 million barrels per day) by 2018.
- Alberta's total remaining established bitumen and conventional oil reserves totaled 171.9 billion barrels, consisting of bitumen (170.4 billion barrels) and conventional oil (1.5 billion barrels).
- In 2008, bitumen production of 477 million barrels averaged 1.31 million barrels per day (a decrease of 1% over 2007), compared to conventional oil production of 184 million barrels, or 502,800 barrels per day (a decrease of 3.8% from 2007).
- Remaining established marketable conventional gas reserves stood at 39 trillion cubic feet.
- Remaining established coalbed methane gas reserves stood at 1 trillion cubic feet.
- Alberta's remaining established coal reserves are estimated at about 37 billion tons.

The ERCB ensures that the discovery, development, and delivery of Alberta's energy resources take place in a manner that is fair, responsible, and in the public interest.

-30-

Please see backgrounder for more detailed information. Alberta's Reserves 2008 and Supply/Demand Outlook 2009-2018 is available on the ERCB web site at www.ercb.ca or from ERCB Information Services, Main Floor, 640 - 5 Avenue SW, Calgary, Alberta, T2P 3G4.

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Alberta's Reserves 2008 and Supply/Demand Outlook 2009 - 2018

Fast Facts

Bitumen Reserves and Production

- Alberta raw bitumen production is expected to increase to 3.0 million barrels (470 000 m³) per day by 2018 based on announced expansions of existing projects and commencement of new projects.
- Based on newly available geological data and analysis, the ERCB has increased its estimate of the remaining established reserves under active mineable development from 18.3 billion barrels (2.91 billion m³) to 23.4 billion barrels (3.74 billion m³) due to the assessment and inclusion of the recently approved Kearl mine project (Imperial Oil/ExxonMobil).
- The total provincial remaining established reserve estimate was revised, based on new drilling data and updated analysis, from the previous year's 172.7 billion barrels (27.45 billion m³) to 170.4 billion barrels (27.07 billion m³). The change reflects an increase in the Surface Mineable Area (SMA) reserves and reductions resulting from ongoing production and changes to remaining in situ reserves. Changes to remaining in situ reserves result from an update of the Peace River Bluesky-Gething deposit which removed lean bitumen reserves.
- In 2008, Alberta produced 477 million barrels (75.9 million m³), or 1.31 million barrels (207 400 m³) per day, of bitumen from the oil sands, a 1% decrease from 2007. This decrease was due to planned and unplanned maintenance at the mineable oil sands plants.
- Upgraded bitumen yielded 239 million barrels (38 million m³) of synthetic crude oil, or 653,000 barrels (103 900 m³) per day.
- In 2008, 59% of the raw bitumen produced was upgraded in Alberta to synthetic crude oil. All mined bitumen and about 8% of in situ bitumen was upgraded. It is forecast that by 2018, 61% of raw bitumen will be upgraded in the province, with the contribution of in situ production being upgraded to synthetic crude oil increasing to 28 per cent by the end of the forecast.

Expansion of the Surface Mineable Area

- The SMA boundary is an ERCB administrative boundary that identifies the geographic extent of oil sands resources where it is presumed that the primary resource recovery method would be through surface mining methods rather than in-situ bitumen recovery.
- The SMA is the only area within the province where oil sands are close enough to surface to allow for surface mining; generally with overburden thickness less than 65 metres.
- The SMA carries no legal or regulatory authority, it does not restrict the type of recovery method used inside or outside the boundary, nor does it impact existing approvals or procedures currently in place to address oil sands resource development.
- The current SMA encompasses 37 townships. This expansion will add 14.5 townships to the SMA.
- The SMA boundary has not changed since the early 1980s. Last year's ST98 report stated that the ERCB was considering some expansion of the SMA outline, but no changes were made for that year.
- The leaseholders in the SMA expansion area are Shell, UTS Energy, and Total S. A. Exploration drilling has occurred in the expansion areas for a number of years and more than 2,000 exploratory wells have been drilled.
- The expansion area includes Shell's proposed Pierre River Mine. Also, in June 2006,

Synenco Energy Inc. applied for approval for a proposed surface mining operation in the expansion area but later withdrew the application.

- The SMA expansion area is located in Alberta's boreal forest.

Conventional Oil Reserves and Production

- Alberta's remaining established reserves of conventional oil are estimated at 1.5 billion barrels (233 million m³), a 3% decrease from 2007. This decline is consistent with the trend over previous years.
- In 2008, drilling added 130 million barrels (20.6 million m³) of conventional oil reserves, replacing 77% of production for 2008.
- The ERCB estimates the remaining ultimate potential of conventional oil at 3.7 billion barrels (590 million m³).
- In 2008, Alberta produced 184 million barrels (29.25 million m³) of conventional oil, or 502 800 barrels (79 900 m³) per day.
- In 2008, the number of wells placed on crude oil production decreased slightly to 1,738 compared with 1,745 in the previous year.
- The ERCB estimates the number of new wells placed on production will decrease to 1 200 wells in 2009 and 2010, then increase to 1500 in 2011 and 1700 in 2012 and stay at this level for the remaining forecast period.

Total Oil Supply and Demand

- In 2008, Alberta produced 1.85 million barrels (294 000 m³) per day of conventional oil, marketable crude bitumen, and pentanes plus. This is a decrease of 1% compared to 2007 due primarily to planned and unplanned maintenance at the mineable oil sands plants.
- By 2018, the ERCB forecasts production of 3.1 million barrels (486 000 m³) per day, of which 2.7 million barrels per day is synthetic crude (1.5 million barrels per day) and non-upgraded bitumen (1.2 million barrels per day). The ability to increase bitumen production has offset the continuing decline in conventional crude oil.
- Alberta's total remaining established bitumen and oil reserves includes 1.5 billion barrels of conventional oil and 170.4 billion barrels of bitumen. This positions Alberta as a net supplier of oil for many decades to come.

Conventional Natural Gas Reserves and Production

- In 2008, remaining established reserves of conventional natural gas stood at 39 trillion cubic feet (1098 billion m³).
- Reserve additions as a result of new drilling replaced 81 per cent of 2008 gas production.
- The ERCB estimates remaining ultimate potential of marketable natural gas at 83 tcf (2325 billion m³).
- Alberta produced 4.4 trillion cubic feet (125 billion m³ standardized to 37.4 MJ/m³) of marketable conventional natural gas in 2008, down 6.5 per cent from last year's production.
- The ERCB estimates the number of new conventional gas well connections in the province to decline to 6800 in 2009, a 14 per cent decrease relative to the 2008 well connections of just over 7900.

Coalbed Methane

- A conservative estimate of Alberta's coalbed methane remaining reserves of 1006 billion cubic feet (28.3 billion m³) has been determined. This is up slightly from 2007.
- In 2008, Alberta produced 284 billion cubic feet (8.0 billion m³) of commingled gas production from coalbed methane wells, an 8% increase over last year's revised production of 263 billion cubic feet (7.4 billion m³).
- In 2003, the Alberta Geological Survey (part of the ERCB) released an estimate of 500 trillion cubic feet (14.1 trillion m³) of gas in place within all the coal of Alberta.

Ethane

- Remaining established reserves of extractable ethane is estimated at 761 million barrels (121 million m³).
- Production of specification ethane in 2008 decreased by 11% to 82 million barrels (12.9 million m³) compared to 2007.

Coal Reserves and Production

- The current estimate for remaining established reserves for all types of coal is about 37 billion tons (34 billion tonnes). In 2008, coal-fired power plants generated 59 per cent of the province's electricity.
- Alberta's total 2008 marketable coal production was 36 million tons (32 million tonnes) and Alberta's total 2008 raw coal production under active development was 42 million tons (38 million tonnes). Coal production is expected to increase over the forecast period to meet future anticipated demand for electrical generation and metallurgy.

Reserves and production summary, 2008

	Crude bitumen		Crude oil		Natural gas ^a		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	275 128	1 731	10 782	67.8	9 046	321	94	103
Initial established	28 092	177	2 773	17.5	5 096	181	35	38
Cumulative production	1 020	6.4	2 540	16.0	3 970	141	1.38	1.52
Remaining established	27 072	170	233	1.5	1 126	40^b	34	37
Annual production	76	0.477	29.3	0.184	133	4.7	0.038	0.042
Ultimate potential (recoverable)	50 000	315	3 130	19.7	6 276 ^c	223 ^c	620	683

^a Includes coalbed methane (CBM). Expressed as "as is" gas, except for annual production which is at 37.4 MJ/m³.

^b Measured at plant gate (or 36.8 trillion cubic feet at straddle plant exit).

^c Does not include CBM.

Reserves Definitions

Initial in-place: The volume or mass of oil, gas, bitumen or coal calculated or interpreted to exist in the ground before any quantity has been produced.

Established reserves: Reserves recoverable under current technology and present and anticipated economic conditions specifically proven by drilling, testing, or production, plus the portion of reserves 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: The sum of production volumes or mass from all prior years.

Remaining established reserves: Initial established reserves minus cumulative production.

Ultimate potential: An estimate of initial established reserves that will have been developed in an area by the time all exploratory and development activity has ceased, having regard for the

geological prospects of the area and anticipated technology and economic conditions.

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