

# Oil and natural gas extraction data

Richard Heede  
Climate Mitigation Services  
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Last modified: January 2020

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## Suncor Energy

www.suncor.com

Calgary

yellow column indicates original reported units  
Investor-owned

## Production / Extraction data

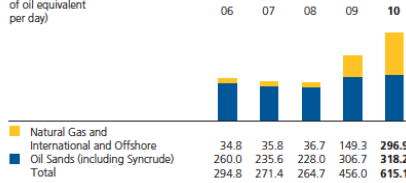
Year	Crude Oil & NGL			Natural Gas			Background data	
	Net production	Net production	Net production	Net production	Net production	Net production		
	Million bbl /yr	Million bbl /yr	Million bbl /yr	Billion cf/yr	Billion cf/yr	Billion cf/yr	Million tons/yr	Million tonnes/yr

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- 2017
- 2018



Suncor acquired Petro-Canada in August 2009

Production (thousands of barrels of oil equivalent per day)



Suncor Annual Rpt 2010, page 1.



Suncor's Fort McMurray plant in 1964

### Operating Summary

Year ended December 31	2013	2012	2011
Production Volumes (mboe/d)			
Oil Sands	392.5	359.2	339.3
Exploration and Production	169.9	189.9	206.7
Total	562.4	549.1	546.0

Suncor AnnRpt 2013,

Year	thousand BOE/day		thousand BOE/day		OGJ100		OGJ100			
	Petro-Canada	Suncor	Suncor	Canadian Oil Sands	Petro-Canada	Suncor	Suncor	Petro-Canada	Suncor	
	million bbl /yr	million bbl /yr	million bbl /yr	million bbl /yr	Bcf/yr	Bcf/yr	Bcf/yr	million bbl /yr	million bbl /yr	
1983	32.9	3.9						32.9	3.9	
1984	33.5	3.9						33.5	3.9	
1985	36.5	3.3						36.5	3.3	
1986	34.0	4.1						34.0	4.1	
1987	33.8	3.9						33.8	3.9	
1988	29.1	4.5						29.1	4.5	
1989	29.1	4.7						29.1	4.7	
1990	14.7	30.8						14.7	30.8	
1991	16.2	33.5						16.2	33.5	
1992	35.5	34.4						35.5	34.4	
1993	34.7	35.7						34.7	35.7	
1994	36.9	40.1						36.9	40.1	
1995	34.8	38.5						34.8	119.0	
1996	33.0	41.6						33.0	121.1	
1997	28.3	45.0						28.3	45.0	
1998	89.4	75.1						89.4	76.5	
1999	107.5	79.1						107.5	80.4	
2000	84.0	82.7						84.0	82.7	
2001	104.0	62.5						104.0	62.5	
2002	83.4	94.9						96.0	94.9	
2003	98.5	86.0						70.0	86.0	
2004	92.2	83.2						97.0	83.2	
2005	Suncor acq Petro-Can	139.3								
2006		189.5								
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Total	1,841	2,368	206	343	4,758	5,312	1,675	7,332	1,117	1,054

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**ANNUAL OPERATING SUMMARY**

(unaudited)

Oil Sands	2013	2012	2011	2010	2009
<b>Total Production (mmbbls/d)</b>	392.5	359.2	339.3	318.2	306.7
<b>Oil Sands Operations</b>					
<b>Production (mmbbls/d)</b>					
Upgraded product (sweet SCO, sour SCO and diesel)	282.6	276.7	279.7	251.4	277.9
Non-upgraded bitumen	77.9	48.1	25.0	31.6	12.7
<b>Oil Sands operations production</b>	360.5	324.8	304.7	283.0	290.6
<b>Bitumen production (mmbbls/d)</b>					
Mining	269.8	266.2	287.1	266.2	289.6
In Situ – Firebag	143.4	104.0	59.5	53.6	49.1
In Situ – MacKay River	28.5	27.0	30.0	31.5	12.4
<b>Total bitumen production</b>	441.7	397.2	376.6	351.3	351.1
<b>Sales (mmbbls/d)</b>					
Light sweet crude oil	91.5	93.8	85.5	82.3	99.6
Diesel	23.5	24.5	24.3	20.4	29.1
Light sour crude oil	166.0	161.1	170.6	145.2	135.7
Bitumen	76.0	44.5	24.0	31.4	11.8
<b>Total sales</b>	357.0	323.9	304.4	279.3	276.2
<b>Average sales price<sup>(1)</sup> (dollars per barrel)</b>					
Light sweet crude oil	97.98	91.17	98.50	79.03	67.26
Other (diesel, light sour crude oil and bitumen)	77.62	77.83	84.93	68.63	64.18
<b>Average*</b>	82.83	81.69	88.74	71.69	65.29
<b>Average</b>	82.83	81.69	88.74	69.58	61.66
<b>Operating costs (dollars per barrel)</b>					
Cash operating costs <sup>(2)</sup>	37.00	37.05	39.05	36.70	33.95
Cash operating costs – In situ bitumen production only <sup>(2)</sup>	16.50	19.40	25.50	20.25	20.25
<b>Synchrude</b>					
<b>Production (mmbbls/d)</b>	32.0	34.4	34.6	35.2	16.1
<b>Average sales price<sup>(1)</sup> (dollars per barrel)</b>	99.82	92.69	101.80	80.93	77.36
<b>Operating costs (dollars per barrel)****</b>					
Cash operating costs <sup>(2)</sup>	43.20	39.30	40.45	36.05	32.50

Suncor AnnRpt 2013, page 144

**ANNUAL OPERATING SUMMARY** (continued)

(unaudited)

Exploration and Production	2013	2012	2011	2010	2009
<b>Total Production (mboe/d)</b>	169.9	189.9	206.7	296.9	149.3
<b>Total Average Sales Price<sup>(1)</sup> (dollars per barrel)</b>	91.44	84.05	79.95	61.06	76.77
<b>North America Onshore</b>					
<b>Production</b>					
Natural gas (mmcf/d)	192	290	357	522	397
Natural gas liquids and crude oil (mmbbls/d)	5.3	5.6	5.1	8.8	8.1
<b>Total production (mmcf/d)</b>	224	323	388	575	446
<b>Average sales price<sup>(1)</sup></b>					
Natural gas (dollars per mcf)	3.42	2.17	3.55	4.04	4.10
Natural gas* (dollars per mcf)	3.42	2.17	3.55	4.04	4.08
Natural gas liquids and crude oil (dollars per barrel)	81.34	76.93	85.30	67.06	56.84
<b>East Coast Canada</b>					
<b>Production (mmbbls/d)</b>					
Terra Nova	14.2	8.8	16.2	23.2	8.7
Hibernia	27.1	26.1	30.9	30.9	11.4
White Rose	14.9	11.6	18.5	14.5	4.2
	56.2	46.5	65.6	68.6	24.3
<b>Average sales price<sup>(1)</sup> (dollars per barrel)</b>	112.39	112.15	108.42	80.20	76.86
<b>International</b>					
<b>Production (mboe/d)</b>					
<b>North Sea</b>					
Buzzard	55.8	48.0	42.9	55.5	20.0
Other North Sea	—	—	3.8	23.5	12.0
<b>Other International</b>					
Libya	20.6	41.5	12.1	35.2	13.7
Syria	—	—	17.6	11.6	—
Trinidad and Tobago	—	—	—	6.7	4.9
	76.4	89.5	76.4	132.5	50.6
<b>Average sales price<sup>(1)</sup> (dollars per boe)</b>					
Buzzard	107.44	106.12	105.18	77.91	69.53
Other North Sea	—	—	92.49	78.16	73.52
Other International**	107.94	110.65	95.76	70.39	61.25

Suncor AnnRpt 2013, page 145

Oil Sands	2018	2017	2016	2015	2014
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**Cell:** J9**Comment:** Rick Heede:

History: "The skeptics said Canada's oil sands could never be developed commercially. In 1967, Suncor Energy proved them wrong. Our people — their perseverance, dedication and innovation — turned vision into reality. Today, Suncor is Canada's premier integrated energy company, the fifth largest North American energy company and has a place on the global stage as one of the largest independent energy companies in the world. We provide thousands of well-paid jobs, put millions of dollars into Canadian businesses every year, take action on environmental issues, and support our communities by funding local initiatives. Our track record as an oil sands pioneer is both cause for celebration and inspiration for the future. Look to Suncor to continue leading the way — expanding our oil sands operations to one of the world's largest positions, developing renewable energy and investing in new technologies to improve our environmental performance. We're still making history." [www.suncor.com/en/about/1918.aspx](http://www.suncor.com/en/about/1918.aspx)

"Suncor was founded in 1919 in Montreal as Sun Company of Canada, a subsidiary of Sun Oil (now Sunoco). In 1979, Sun formed Suncor by merging its Canadian refining and retailing interests; Great Canadian Oil Sands (a majority-owned subsidiary, which constructed and operated the first commercial plant to develop Canada's Athabasca oil sands and went on production in 1967); and its conventional oil and gas interests. In 1981, the Government of Ontario purchased a 25% stake in the company; it divested in 1993. In 1993 Sun Oil also divested its interest in the company, although Suncor maintained the Sunoco retail brand in Canada. Suncor took advantage of these two divestitures to become an independent, widely-held public company.

On March 23, 2009, Suncor announced the acquisition of Petro-Canada. This merger created a company with a combined market capitalization of C\$43.3 billion. On 4 June 2009, a 98% approval rate was reached by Suncor's shareholders for the acquisition of Petro-Canada and the competition bureau approved the merger on June 21, 2009. The merger with Canada's 11th largest company was completed on August 1, 2009 in a \$21 billion deal to form the second-largest company in Canada." Suncor ([wikipedia.org/wiki/Suncor\\_Energy](http://wikipedia.org/wiki/Suncor_Energy))

In 2016 Suncor Energy purchased all of the shares of Canadian Oil Sands Limited.

**Cell:** D12**Comment:** Rick Heede:

Total net worldwide crude oil plus natural gas liquids produced by each company or state-owned enterprise. Where data is available, we list net production. Crude production includes natural gas liquids (NGL) unless noted.

**Cell:** J12**Comment:** Rick Heede:

Natural gas is typically reported as dry gas; natural gas liquids are reported under crude oil.

Carbon dioxide is normally removed from the gas flow at the production site (see "Vented Carbon Dioxide").

"SCM/d" = standard cubic meters per day. "cf/d" = cubic feet per day.

Net production typically excludes a number of diverted gas streams. Quantities and fractions vary; ExxonMobil's exclusions are probably typical of the industry: "Net production available for sale quantities are the volumes withdrawn from ... natural gas reserves, excluding royalties and volumes due to others when produced, and excluding gas purchased from others, gas consumed in producing operations, field processing plant losses, volumes used for gas lift, gas injections and cycling operations, quantities flared, and volume shrinkage due to the removal of condensate or natural gas liquids production." ExxonMobil Corporation (2004) 2003 Financial and Operating Review, [www.exxonmobil.com](http://www.exxonmobil.com), p. 55.

**Cell:** N40**Comment:** Rick Heede:

Suncor's (then Sun Oil Company Ltd) started construction of its Great Canadian Oil Sands plant in Fort McMurray in 1964.

Photo courtesy Suncor website: The Oil Sands Story (1960s, 1970s & 1980s).

**Cell:** D54**Comment:** Rick Heede:

OGJ data for 1987-2005, company data 2006-2008; see column "L".

**Cell:** E54**Comment:** Rick Heede:

OGJ data for 1987-1998, company data 1999-2008; see column "M".

**Cell:** J54**Comment:** Rick Heede:

CMS cites Oil & Gas Journal OGJ100 natural gas production estimates for 1987-2005, and Petro-Canada's AnnRpt data for 2006-2008.

**Cell:** K54**Comment:** Rick Heede:

CMS cites Oil & Gas Journal OGJ100 data for 1987-2003, and company data for 2004-2008.

**Cell:** K58**Comment:** Rick Heede:

OGJ100 reports 0.0 gas production in 1991. In view of bracketed by higher production in prior and subsequent years suggests erroneous data for 1991-1993.

**Cell:** E66**Comment:** Rick Heede:

Suncor Annual Rpt 2003, page 3. Suncor oil sands production in 2003 of 216,600 bbl per day = 79.1 million bbl per year.

**Cell:** G70**Comment:** Rick Heede:

Oil & Gas Journal OGJ100. Sept 2004. The company has been operating since 1995, but earlier production data has not been found.

**Cell:** E71**Comment:** Rick Heede:

Suncor Annual Rpt 2007, page 34 confirms Oil & Gas Journal OGJ100 production estimates, e.g., Suncor oil sands production in 2007 of 235,600 bbl per day = 62.5 million bbl per year.

**Cell:** K71**Comment:** Rick Heede:

Suncor 2008 Annual Rpt, page 1 shows natural gas production in BOE. CMS uses the conventional 6,000 cf per bbl of oil equivalent in Suncor's absence of definition. Thus 2008: 36.7 thousand BOE \* 6,000 cf/BOE \* 0.365 = 80.4 Bcf.

**Cell:** D73**Comment:** Rick Heede:

Petro-Canada Annual Rpt 2008, page 33; oil sands production and bitumen production totaled 52,200 bbl per day in 2006, 56,900 bbl per day in 2007, and 59,900 bbl per day in 2008. CMS converts to million bbl per year.

Petro-Canada reports crude oil and oil sands production in three separate tables (pp. 33, 38, and 42, oil sands, other Canada, and international production, respectively). In 2008, production in these regions totaled, in thousand bbl per day: (59.9+90.5+157.2)\*0.365 = 112.3 million bbl for the year. Then, on page 48, total average daily production for 2008 is 266,000 bbl per day for crude oil, NGL, and bitumen ("net before royalties," and 222,900 bbl /day "net after royalties," PLUS 34,700 of synthetic crude oil (before royalties, or 29,700 bbl /day after royalties).

Thus CMS revises the previous calculation by reporting total petroleum (after royalties of 222,900 + 29,700 bbl per day = 92.20 million bbl in 2008.

Similar data for 2007 shows 238,700 + 31,100 bbl per day = 98.48 million bbl in 2007.

**Cell:** J73**Comment:** Rick Heede:

Petro-Canada (2009) 2008 Annual Report, page 29. 2006 gas production of 701 million cf/d, 2007 = 674 million cf/d, and 2008 = 665 million cf/d. CMS converts to Bcf/yr.

Suncor AnnRpt 2008, page 48: 2008 gas production "net before royalties" totaled 706 million cf/day (and 585 million cf/day "net after royalties"). And for 2007: gas production "net before royalties" totaled 728 million cf/day (and 594 million cf/day "net after royalties").

CMS uses "net after royalties" data for 2007 and 2008.

**Cell:** G74**Comment:** Rick Heede:

Canadian Oil Sands Trust Annual Report 2008. Page 3 shows "sales volumes, net of crude oil purchases" for 2007 and 2008. 2008: 105,986 bbl per day (39 Mb). CAI also estimates daily production from chart (p. 3) of sales 2004 to 2008 (see below).

**Cell:** E75**Comment:** Rick Heede:

Suncor 2008 Annual Rpt, page 3.

**Cell:** E76**Comment:** Rick Heede:

AR 2010 pg 10, oil sands in 306.7 thousand boe/d in 2009 and 318.2 k bbl/day in 2010.

**Cell:** K76**Comment:** Rick Heede:

Suncor AR 2010 pg 10; nat gas continuing operations+discontinued operations; equals 2008 reported production. Units in BOE of gas production (at 6,000 cf per bbl).

**Cell:** G78**Comment:** Rick Heede:

Canadian Oil Sands production of oil bitumen and/or synthetic oil, in Mb. Oil&Gas Journal OGJ100 Sep 2013.

**Cell:** H78**Comment:** Rick Heede:

Suncor Annual Report 2013, Operating Summary, page 19 (see table above). Only reports BOE (bbl oil equivalent), with no gas to oil conversion nor gas production volumes data. I add data on oil sands production plus exploration and production (which in Suncor language means conventional oil and gas, offshore and onshore, Canada, United States, Syria, Libya, North Sea, etc), in thousands bbl per day converted to annual liquids production -- then subtract gas production (OGJ data, since Suncor provides none) at 6,000 cf per bbl. Whew.

**Cell:** K78**Comment:** Rick Heede:

Suncor natural gas production, in Bcf. Oil&Gas Journal OGJ100 Sep 2013.

**Cell:** D81**Comment:** Rick Heede:

Suncor 40-F for 2015. Inscrutable and unclear regarding annual production. I surmise that SCO (synthetic crude oil) and bitumen production is listed on page 14, and shows sum of sweet SCO and sour SCO (458.3 thousand bbl per day in 2015). Crude oil and NGLs are shown on page 17, totaling 106.1 thousand bbl per day. E&P International includes UK North Sea and Norway, and Libya; Syria operations force majeure as of 2011. Intermittent production in Libya as of 2013.

**Cell:** K81**Comment:** Rick Heede:

Suncor 40-F for 2015. E&P Canada 3.0 thousand boe per day; plus E&P international 1.5 kboepd. Conversion rate not stated, but assumed at 5,800 cf per boe.

**Cell:** E83**Comment:** Rick Heede:

Suncor 2017 Ann rpt, page 17: in 2017: 685.3 kboepd (100% liquids, of which 563.7 kboepd oil sands). In 2016: 622.8 kboepd total, of which 504.9 kboepd oil sands and 117.9 kboepd "exploration and production" (presumably crude oil); 2016 product mix: 99% liquids, 1% gas. Gas data from OGJ Sep 2017, OGJ100.

**Cell:** R83**Comment:** Rick Heede:

Suncor 2017 Ann rpt, page 17: in 2017: 685.3 kboepd (100% liquids, of which 563.7 kboepd oil sands). In 2016: 622.8 kboepd total, of which 504.9 kboepd oil sands and 117.9 kboepd "exploration and production" (presumably crude oil); 2016 product mix: 99% liquids, 1% gas. Gas data from OGJ Sep 2017, OGJ100.

**Cell:** E85**Comment:** Rick Heede:

Suncor Annual Report 2018, page 137. Shows Five year operating summary. Oil Sands, Total production as 628.6 thousand bbl per day for oil sands and bitumen (both mined and in situ). No table for conventional oil production of either oil or natural gas.

**Cell:** K85**Comment:** Rick Heede:

Suncor does produce associate gas -- on Canada's east coast operations (Terra Nova, Hibernia, White Rose, and Hebron) -- but provides no production data, which suggests offshore gas production is flared. Gas production averred in Five year operating summary (Suncor Annual Report 2018, page 139) which does not specify gas production but does report total production in North Sea and Libya in thousand boe per day (49.5 thousand boe per day).

**Cell:** R85**Comment:** Rick Heede:

Suncor Annual Report 2018, page 137. Shows Five year operating summary. Oil Sands, Total production as 628.6 thousand bbl per day for oil sands and bitumen (both mined and in situ). No table for conventional oil production of either oil or natural gas.