

# Oil and NGL production data

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Richard Heede  
Climate Mitigation Services  
File started: 11 January 2005  
Last modified: May 2019

ExxonMobil Corporation, USA

**ExxonMobil**

Investor-owned

www.exxonmobil.com Irving, TX

## Production / Extraction data

Year

### Crude Oil & NGL

Company 1	Company 2	Company 3	Company 4	Sum production	Company 1	Company 2	Company 3	Company 4	Sum production
Thousand bbl /d	Thousand bbl /d	Thousand bbl /d	Thousand bbl /d	Thousand bbl /d	Million bbl /yr	Million bbl /yr	Million bbl /yr	Million bbl /yr	Million bbl /yr
Standard Oil (NJ) 1880-1971, Exxon 1972-99, ExxonMobil 2000-	SONJ sales Mbbl/y	Socony 1911-54, Socony Mobil 1955 65, Mobil Oil 1966- 75, Mobil 1976-99	Socony sales Mb/y		Standard Oil (NJ) 1880-1971, Exxon 1972-99, ExxonMobil 2000-		Socony 1911-54, Socony Mobil 1955 65, Mobil Oil 1966- 75, Mobil 1976-99		<b>Total</b>

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Prod/sale ratio	SONJ sales Heede 2003	Socony sales Heede 2003	Imperial Oil see below	SONJ Est. prod'n	Socony Estim. Prod'n	Total
1880						
1881						
1882						
1883						
1884	0.010	7.2	1.5	0.1	0.0	0.1
1885	0.020	7.6	1.5	0.2	0.0	0.2
1886	0.030	8.3	1.7	0.2	0.1	0.3
1887	0.040	8.8	1.8	0.4	0.1	0.4
1888	0.050	9.4	2.0	0.5	0.1	0.6
1889	0.060	11.7	2.4	0.7	0.1	0.8
1890	0.070	12.8	2.7	0.9	0.2	1.1
1891	0.080	15.5	3.2	1.2	0.3	1.5
1892	0.090	16.6	3.5	1.5	0.3	1.8
1893	0.100	17.7	3.7	1.8	0.4	2.1
1894	0.110	18.3	3.8	2.0	0.4	2.4
1895	0.120	17.5	3.7	2.1	0.4	2.5
1896	0.130	18.6	3.9	2.4	0.5	2.9
1897	0.140	20.7	4.3	2.9	0.6	3.5
1898	0.150	20.9	4.4	3.1	0.7	3.8
1899	0.160	19.7	4.1	3.2	0.7	4
1900		19	4	3.3	0.7	4
1901		21	4	3.8	0.8	5
1902		22	5	4.2	0.9	5
1903		23	5	4.5	0.9	5
1904		24	5	5.0	1.1	6
1905		26	5	5.7	1.2	7
1906		28	6	6.4	1.3	8
1907		31	6	7.4	1.6	9
1908		32	7	8.1	1.7	10
1909		35	7	9.1	1.9	11
1910		41	8	11	2.3	13
1911		43	9	12	2.5	14
1912		43	9	12	2.6	15
1913		39	9	12	2.6	14
1914		39	9	12	2.7	15
1915		45	10	15	3.3	18
1916		48	11	16	3.6	19
1917		54	12	18	4.2	22
1918		62	15	22	5.1	27
1919		73	18	26	6.3	33
1920		83	20	31	7.5	38
1921		82	20	31	7.8	39
1922		88	22	35	8.7	43
1923		114	29	46	12	57
1924		145	38	59	16	75
1925		143	38	60	16	76
1926		157	42	68	18	86
1927	net	190	43	69	19	88
1928	net	205	47	75	21	96
1929	net	238	54	87	24	111
1930	net	240	55	88	25	113
1931	net	234	51	85	25	110
1932	net	293	55	107	31	138
1933	net	375	66	137	41	177
1934	net	456	69	166	50	216
1935	net	488	73	178	54	232

ExxonMobil

A	B	C	D	E	F	G	H	I	J	K	L	M	N
73	1936	net	523	263	0.727	81		191		59		250	
74	1937	net	602	293	0.749	92		220		69		288	
75	1938	net	562	291		92	Oil	205		65		270	
76	1939	net	616	309	Million bbl /yr:	99	(continued)	225		72		297	
77	1940	gr	650	287	Humble 1940-48	49		207		67		274	
78	1941	gr	720	328		55		229		75		304	
79	1942	gr	530	296		56		168		56		224	
80	1943	gr	710	338		86		226		76		302	
81	1944	gr	923	417		113		293		100		393	
82	1945	gr	995	434		112		316		109		425	
83	1946	gr	1,091	436		113		347		121		468	
84	1947	gr	1,175	526		125		373		145		518	
85	1948	net	1,075	561		135		392		141		533	
86	1949	net	957	562				349		123		473	
87	1950	net	1,212	0.868	Humble prod'n			442		134		576	
88	1951	net	1,455	0.872	not added			531		155		687	
89	1952	net	1,559	0.871	to SONJ	527	gross	569	Est. of net prod	164		734	
90	1953	net	1,600	0.871		577	gross	584		180		764	
91	1954	net	1,651	0.872		595	gross	603		186		788	
92	1955	net	1,863	0.869		643	gross	680		201		881	
93	1956	net	2,057	0.869		705	gross	751		220		971	
94	1957	net	2,112	0.868		717	gross	771		224		995	
95	1958	net	2,028	0.871		750	gross	740		234		974	
96	1959	net	2,146	0.871		776	gross	783		242		1,025	
97	1960	net	2,196	0.873		823	gross	802		257		1,058	
98	1961	net	2,386	0.870		861	gross	871		269		1,140	
99	1962	gr	3,060	aver. 1950-1961		901	gross	972	Est. of net prod	281		1,253	
100	1963	gr	3,412	0.870		971	gross	1,084		303		1,387	
101	1964	gr	3,675			1,076	gross	1,168		336		1,503	
102	1965	gr	3,942			1,211	gross	1,252		378		1,630	
103	1966	gr	4,109			1,368	gross	1,305		427		1,732	
104	1967	gr	4,458			1,459	gross	1,416		455		1,872	
105	1968	gr	4,892			1,350	0.850 net	1,554		493		2,047	
106	1969	gr	5,044			1,395	0.846 net	1,602		509		2,112	
107	1970	gr	5,430			1,573	0.861 net	1,725		574		2,299	
108	1971	gr	5,554			1,735	0.863 net	1,764		633		2,398	
109	1972	gr	5,734			2,039	aver. 1968-1971	1,822		744		2,566	
110	1973	gr	5,525			2,131	0.855 net	1,755		778		2,533	
111	1974	gr	4,271			2,093	net	1,357		764		2,121	
112	1975	gr	3,684			2,240	gross	1,170		699		1,869	
113	1976	gr	2,683			2,156	gross			673		1,525	
114	1977	net	2,473			2,370	gross			740		1,642	
115	1978	net	2,422			2,117	gross			884		1,545	
116	1979	net	2,569			2,180	gross			938		1,618	
117	1980	na	1,974			1,991	gross			720		1,342	
118	1981	net	1,378			553	net			503		705	
119	1982	net	1,418			542	net			518	OGJ100	715	
120	1983	net	1,607			591	net			587	(for comparison)	802	
121	1984	net	1,678			675	net			612	590	859	
122	1985	net	1,720			772	net			628	626	910	
123	1986	net	1,796			727	net			656	626	921	
124	1987	net	1,835			709	net			670	637	929	
125	1988	net	1,919					1,919		700	660	937	
126	1989	net	1,804					1,804		658	249	907	
127	1990	net	1,712					1,712		625	584	868	
128	1991	net	1,715					1,715		626	584	901	
129	1992	net	1,705	XTO Energy				1,705		622	580	900	
130	1993	net	1,667	thousand bbl /d				1,667		608	568	893	
131	1994	net	1,709			9.5	1988 to 1996.	1,718		624	607	941	
132	1995	net	1,726			9.7		1,736		630	614	930	
133	1996	net	1,615			9.6		1,625		589	576	906	
134	1997	net	2,527			11.1	Imperial Oil	2,538		922	567	926	
135	1998	net	2,502			15.9	thousand bbl /day	2,518		913	553	919	
136	1999	net	2,517			17.6	70% owned by XOM	2,535		919	919	925	
137	2000	net	2,553			17.4	NOT added to XOM	2,570		932	932	938	
138	2001	net	2,542			18.0		2,827		928	928	934	
139	2002	net	2,496			18.1		2,47		911	911	918	
140	2003	net	2,516			19.4		2,791		918	918	925	
141	2004	net	2,571			30.2		2,863		938	938	949	
142	2005	net	2,523			49.5		2,834		921	921	939	
143	2006	net	2,681			56.9		3,010		979	979	999	
144	2007	net	2,616			60.6		2,952		955	955	977	
145	2008	net	2,405			71.6		2,733		878	878	904	
146	2009	net	2,387			86.9				871	871	903	
147	2010	net	2,422	Acquired 2010						884	884	884	
148	2011		2,312							844		844	
149	2012		2,185				Consolidated			798		798	
150	2013		2,202				Equity companies			804		804	
151	2014		2,111				Percent affiliates			771		771	
152	2015		2,345				Kbpd			856		856	
153	2016		2,365				Kbpd			863		863	
154	2017		2,283				Percent			833		833	
155	2018		2,266							827		827	
156	merger with ExxonMobil June 2010												
157	Total	na	na	na	na	na	na	66,990	na	19,079	183	86,253	
158													

# Natural gas production data

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Last modified: May 2019

ExxonMobil Corporation, USA

yellow column indicates original reported units  
Investor-owned

## Production / Extraction data

Year

### Natural Gas

Company 1	Company 2	Company 3	Company 4	Sum production	Company 1	Company 2	Company 3	Company 4	Sum production
Million cf/d	Million cf/d	Million cf/d	Million cf/d	Million cf/d	Billion cf/yr	Billion cf/yr	Billion cf/yr	Billion cf/yr	Billion cf/yr
Standard Oil (NJ) 1880-1971, Exxon 1972-99, ExxonMobil 2000-		Socony 1911-54, Socony Mobil 1955-65, Mobil Oil 1966-75, Mobil 1976-99			Standard Oil (NJ) 1880-1971, Exxon 1972-99, ExxonMobil 2000-		Socony 1911-54, Socony Mobil 1955-65, Mobil Oil 1966-75, Mobil 1976-99		<b>Total</b>

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Imperial Oil  
see below



Darren W. Woods, CEO 2 January 2017-



Former CEOs Lee Raymond & Rex Tillerson  
Citizen Report 2004.



Hibernia Southern Extension, XOM 2010 p. 34.

Mobil & Esso in Nigeria: natural gas		
Produced	Utilized	Flared
Bcf	Bcf	Bcf
584.2	454.1	130.1
100%	78%	22%

Estimated SONJ gas sales based on fraction of total marketed gas in US by SONJ 1900-1949	SONJ gas sales AnnRpt data 1930, 1934-35 and 1939 only		
6		3	9
9		4	13
10		5	15
11		6	17
12		6	19
15		8	23
19		10	28
20		10	29
19		10	29
23		12	35
24		12	37
25		13	37
27		14	41
28		14	42
28		14	43
30		15	46
36		18	55
38		19	58
35		18	52
36		18	54
39		20	59
32		16	49
37		19	56
49		25	74
56		28	84
58		30	88
64		33	97
71		36	107
77	(column U is not added to sum)	39	116
94		48	141
95	94.6	48	143
83		42	125
77		39	116
77		39	116
87	79.3	44	116
95	84.5	48	132
			143

O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC
73	1936								145		30		176	
74	1937								189		39		228	
75	1938								128		27		155	
76	1939								178	177.8	37		215	
77	1940								191		40		231	
78	1941								203		42		245	
79	1942								220		46		266	
80	1943								246		51		298	
81	1944								267		56		323	
82	1945								283		59		342	
83	1946								291		61		351	
84	1947								321		101		422	
85	1948								360		109		469	
86	1949								379		144		523	
87	1950										191		612	
88	1951							524		interpolated			679	
89	1952							594		interpolated			756	
90	1953							695		interpolated	254		823	
91	1954							765		interpolated	279		864	
92	1955							766		interpolated	280		937	
93	1956							852		interpolated	311		1,000	
94	1957							913		interpolated	333		1,064	
95	1958							974		interpolated	356		1,094	
96	1959							946		interpolated	345		1,160	
97	1960							1,013		interpolated	370		1,235	
98	1961							1,106		interpolated	404		1,299	
99	1962							1,169		interpolated	427		1,455	
100	1963							1,483		interpolated	541		1,534	
101	1964							1,483			580		1,741	
102	1965							1,588			702		1,994	
103	1966							1,924			727		2,282	
104	1967							1,993			796		2,482	
105	1968							2,181			869		2,892	
106	1969							2,382			959	estimated net	3,378	
107	1970							2,731			1,075	estimated net	3,920	
108	1971							3,063			1,186	estimated net	4,373	
109	1972							3,379			1,245	estimated net	4,665	
110	1973							3,545			1,262	estimated net	5,131	
111	1974							3,595			1,293	estimated net	5,196	
112	1975							3,682			1,257	estimated net	5,048	
113	1976							3,581			1,162	estimated net	5,002	
114	1977							3,311			1,104	estimated net	4,966	
115	1978							3,146			1,137	estimated net	4,932	
116	1979							3,240			1,148	estimated net	4,997	
117	1980							3,270			1,281	estimated net	3,868	
118	1981							3,649			1,263	estimated net	3,507	
119	1982							3,598			1,090		3,063	
120	1983							2,987			964		2,940	
121	1984							2,642			886		3,359	
122	1985							2,427			1,199		3,328	
123	1986							3,285			1,261	Mobil AnnR 1985	3,198	
124	1987							3,456			1,253		3,387	
125	1988							3,434			1,479		3,457	
126	1989							4,052			1,561		3,623	
127	1990							4,278			1,657		3,556	
128	1991							4,541			1,615		3,694	
129	1992							4,425			1,688		3,747	
130	1993							4,624			1,680	XTO Energy	3,809	
131	1994							4,604			1,683	Bcf/yr	3,908	
132	1995							4,610			1,705	21.2	3,886	
133	1996							4,670			1,662	28.6	4,112	
134	1997							4,554			1,674	37.2	4,026	
135	1998							4,587			1,674	49.6	3,959	
136	1999										1,030	83.8	3,868	
137	2000										11,030	105.1	3,901	
138	2001										11,030	125.5	3,904	
139	2002										11,030	152.2	4,003	
140	2003										11,030	187.6	3,937	
141	2004										11,030	244.0	3,905	
142	2005										11,030	304.6	3,754	
143	2006										11,030	377.1	3,840	
144	2007										11,030	433.0	3,957	
145	2008										11,030	532.1	4,015	
146	2009										11,030	695.5	4,204	
147	2010										11,030	818.9	4,434	
148	2011										11,030	Acquired 2010	4,804	
149	2012										11,030		4,498	
150	2013										11,030		4,320	
151	2014										11,030		4,068	
152	2015										11,030		3,838	
153	2016										11,030		3,696	
154	2017										11,030		3,727	
155	2018										11,030		3,433	
156														
157	Total													
158														



Mobil logo, 1960

Natural Gas (continued)

Heede 2003	
inferred net	277
inferred net	298
inferred net	394
inferred net	524
inferred net	594

no gas reporting by SONJ prior to 1963

Heede 2003

Year	Description	Value	Value	Value	Value
1963	"gas sales"	2,615	1,588	4,203	954
1964	"gas sales"	2,845	1,924	4,769	1,038
1965	"gas sales"	3,470	1,993	5,463	1,267
1966	"gas sales"	4,071	2,181	6,252	1,486
1967	"gas sales"	4,419	2,382	6,801	1,613
1968	"gas sales"	5,296	2,731	8,027	1,933
1969	"gas sales"	6,309	3,063	9,372	2,303
1970	"gas sales"	7,491	3,379	10,870	2,734
1971	"gas sales"	8,572	3,545	12,118	3,129
1972	"gas sales"	9,323	3,595	12,918	3,403
1973	"gas sales"	10,517	3,682	14,199	3,839
1974	"gas sales"	10,792	3,581	14,373	3,939
1975	"gas sales"	10,645	3,311	13,956	3,885
1976	"gas sales"	10,678	3,146	13,824	3,897
1977	"gas sales"	10,488	3,240	13,728	3,828
1978	"gas sales"	10,368	3,270	13,638	3,784
1979	"gas sales"	10,181	3,649	13,830	3,716
1980	gas available	7,137	3,598	10,735	2,605
1981	gas available	6,620	2,987	9,607	2,416
1982	gas available	5,749	2,642	8,391	2,098
1983	gas available	5,628	2,427	8,055	2,054
1984	gas available	5,918	3,285	9,203	2,160
1985	gas available	5,661	3,456	9,117	2,066
1986	gas available	5,329	3,434	8,763	1,945
1987	gas available	5,227	4,052	9,279	1,908
1988	gas available	5,192	4,278	9,470	1,895
1989	gas available	5,385	4,541	9,926	1,966
1990	gas available	5,318	4,425	9,743	1,941
1991	gas available	5,497	4,624	10,121	2,006
1992	gas available	5,661	4,604	10,265	2,066
1993	gas available	5,825	4,610	10,435	2,126
1994	gas available	5,978	4,670	10,706	2,182
1995	gas available	6,013	4,554	10,645	2,195
1996	gas available	6,577	4,587	11,266	2,401
1997	gas available	10,894	135.9	11,030	3,976
1998	gas available				

# Coal production data and energy & GHG figures

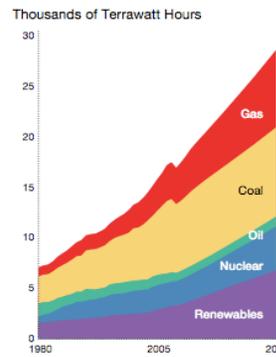
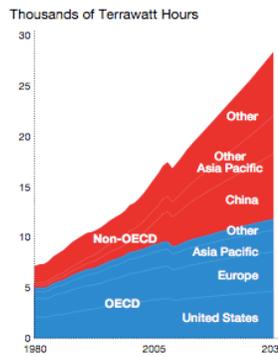
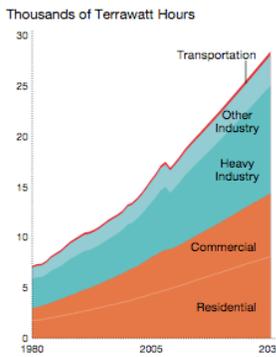
**Richard Heede**  
 Climate Mitigation Services  
 File started: 11 January 2005  
 Last modified: March 2019

## ExxonMobil Corporation, USA



Coal					
Company 1	Company 2	Sum production	Company 1	Company 2	Sum production
Million tons/yr	Million tons/yr	Million tons/yr	Million tonnes/yr	Million tonnes/yr	Million tonnes/yr
Exxon	Mobil				Total

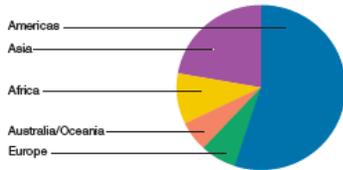
Year



ExxonMobil Corporation (2009) Outlook for Energy: A View to 2030

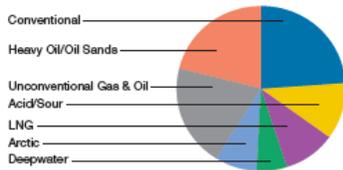
### Resource Base by Geographic Region

(percent, oil-equivalent barrels)



### Resource Base by Type

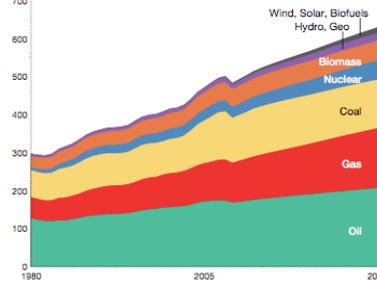
(percent, oil-equivalent barrels)



ExxonMobil's industry-leading resource base of 84 billion oil-equivalent barrels is diverse in terms of geology, resource type, and geography.

ExxonMobil (2011) Annual Report, pages 26 and 30.

### Quadrillion BTUs



### UPSTREAM STATISTICAL RECAP

	2010	2009	2008	2007	2006
Earnings (millions of dollars)	24,097	17,107	35,402	26,497	26,230
Liquids production (net, thousands of barrels per day)	2,422	2,387	2,405	2,616	2,681
Natural gas production available for sale (net, millions of cubic feet per day)	12,148	9,273	9,095	9,384	9,334
Oil-equivalent production (net, thousands of barrels per day)	4,447	3,932	3,921	4,180	4,237
Proved reserves replacement <sup>(1)</sup> (percent)	211	100	143	107	135
Resource additions <sup>(2)</sup> (millions of oil-equivalent barrels)	14,580	2,860	2,230	2,010	4,270
Average capital employed <sup>(2)</sup> (millions of dollars)	103,287	73,201	66,064	63,565	57,871
Return on average capital employed <sup>(2)</sup> (percent)	23.3	23.4	53.6	41.7	45.3
Capital and exploration expenditures <sup>(2)</sup> (millions of dollars)	27,319	20,704	19,734	15,724	16,231

(1) Proved reserves exclude asset sales and the 2007 Venezuela expropriation. Includes non-consolidated interests and Canadian oil sands.

(2) See Frequently Used Terms on pages 98 through 101.

Note: Unless otherwise stated, production rates, project capacities, and acreage values referred to on pages 24 through 61 are gross.

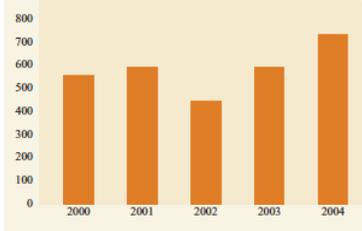
References to U.S. unconventional activities on pages 43 through 44 reflect the full year of 2010 activity for well count and gross-operated production.

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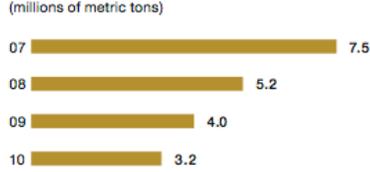
**Coal**  
(continued)

FLARING FROM WORLDWIDE OIL AND GAS PRODUCTION  
(million standard cubic feet per day)



XOM CSR 2004, page 19.

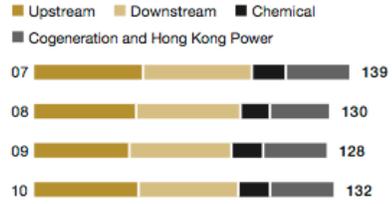
**Hydrocarbon Flaring from Upstream Oil and Gas Production**  
(millions of metric tons)



ExxonMobil SustRpt 2010

**Greenhouse Gas Emissions (Absolute)**

Direct equity, CO<sub>2</sub>-equivalent emissions  
(millions of metric tons)



ExxonMobil SustRpt 2010

Million tons/yr	Million tons/yr	Million tons/yr	Million tonnes/yr	Million tonnes/yr	Million tonnes/yr
Exxon	Mobil				<b>Total</b>

Exxon	Mobil				
1.5		1.5	1.4		1.4
3.1		3.1	2.8		2.8
4.6		4.6	4.2		4.2
6.1		6.1	5.6		5.6
7.7		7.7	7.0		7.0
9.2		9.2	8.3		8.3
10.7		10.7	9.7		9.7
12.3		12.3	11.1		11.1
13.8		13.8	12.5		12.5
15.3		15.3	13.9		13.9
16.9		16.9	15.3		15.3
18.4		18.4	16.7		16.7
19.9	0.0	20.0	18.1	0.0	18.1
21.5	1.3	22.8	19.5	1.2	20.7
23.0	2.6	25.6	20.9	2.3	23.2
26.0	3.8	29.8	23.6	3.5	27.0
27.0	4.8	31.8	24.5	4.4	28.9
30.0	5.9	35.9	27.2	5.3	32.6
32.0	6.5	38.5	29.0	5.9	34.9
36.0	7.6	43.6	32.7	6.9	39.5
40.0	7.8	47.8	36.3	7.1	43.4
39.0	8.2	47.2	35.4	7.4	42.8
37.0		37.0	33.6		33.6
36.0		36.0	32.7		32.7
36.0		36.0	32.7		32.7
16.0		16.0	14.5		14.5
15.0		15.0	13.6		13.6
15.0		15.0	13.6		13.6
15.5		15.5	14.1		14.1
16.9		16.9	15.3		15.3
16.6		16.6	15.1		15.1
12.6		12.6	11.4		11.4
3.0		3.0	2.7		2.7



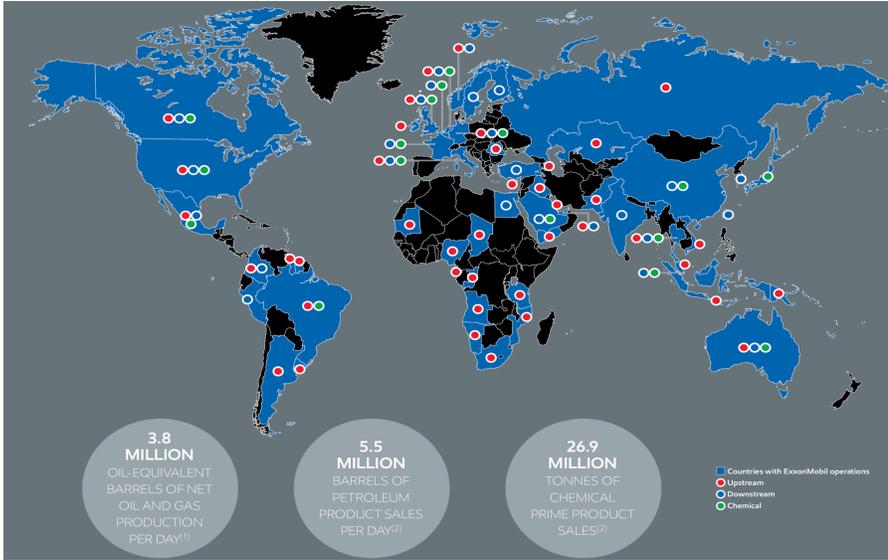
ExxonMobil AnnRpt 2013, p. 13 Papua New Guinea LNG facility

<b>634</b>	<b>48</b>	<b>682</b>	<b>575</b>	<b>44</b>	<b>619</b>
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**Total**

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ExxonMobil AnnRpt 2013, page 28, Global Operations.

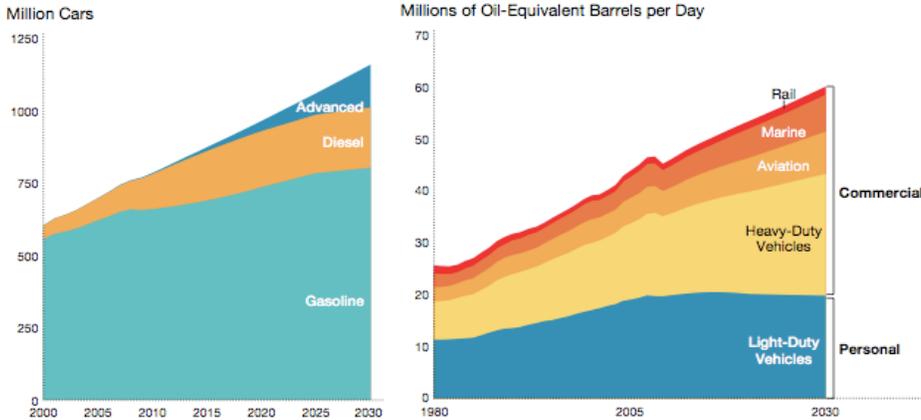


Construction of the Hebron platform in Newfoundland.

ExxonMobil (2015) Financial and Operating Review 2014, page 18:

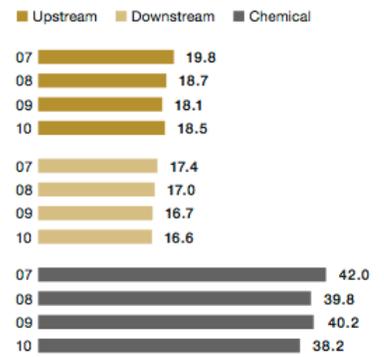
Increased proved oil and natural gas reserves by 1.5 billion oil-equivalent barrels, replacing more than 100 percent of production for the 21st consecutive year

- Added 3.2 billion oil-equivalent barrels of new resource, increasing total resource base to more than 92 billion oil-equivalent barrels
- Discovered 2.7 billion oil-equivalent barrels through exploration drilling



**Greenhouse Gas Emissions (Normalized)**

Direct equity, CO<sub>2</sub>-equivalent emissions excluding cogeneration and Hong Kong Power (metric tons per 100 metric tons of throughput or production)



**Managing Climate Change Risks\***

	2007	2008	2009	2010	2011	2012
<sup>1</sup> Greenhouse gas emissions, absolute (direct equity, CO <sub>2</sub> -equivalent emissions), millions of metric tons	139	130	128	132	132	34
<sup>2</sup> Greenhouse gas emissions, normalized (direct equity, CO <sub>2</sub> -equivalent emissions, excluding cogeneration and Hong Kong Power), metric tons per 100 metric tons of throughput or production						
Upstream	19.8	18.7	18.1	18.5	18.5	34
Downstream	17.4	17.0	16.7	16.6	16.6	34
Chemical	42.0	39.8	40.2	38.2	38.2	34
Energy intensity, normalized versus Global Energy Management System (GEMS) base year (2000) – refining	93.2	93.4	92.6	91.4	91.4	34
Energy intensity, normalized versus GEMS base year (2001) – chemical steam cracking	90.6	91.3	90.3	89.3	89.3	34
Cogeneration capacity in which we have interest, gigawatts	4.5	4.6	4.9	4.9	4.9	35
<sup>2</sup> Hydrocarbon flaring (worldwide activities), millions of metric tons	8.0	5.7	4.4	3.6	3.6	34

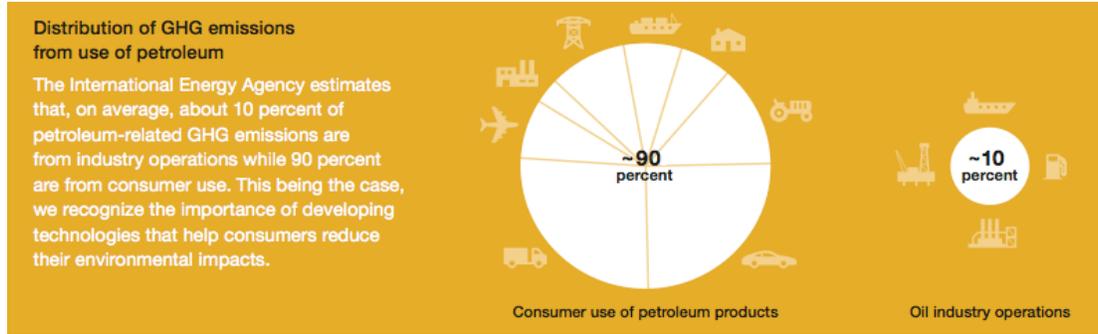
ExxonMobil SustRpt 2010

**Operating Highlights 2018**

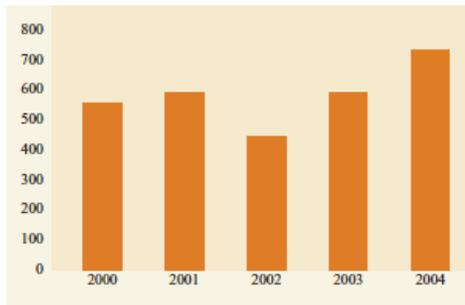
**OPERATING HIGHLIGHTS**

Liquids production (net, thousands of barrels per day)	2,266
Natural gas production available for sale (net, millions of cubic feet per day)	9,405
Oil-equivalent production <sup>(2)</sup> (net, thousands of oil-equivalent barrels per day)	3,833
Refinery throughput (thousands of barrels per day)	4,272
Petroleum product sales <sup>(3)</sup> (thousands of barrels per day)	5,512
Chemical prime product sales <sup>(3)</sup> (thousands of tonnes)	26,869

ExxonMobil 2018 Financial & Operating Review, p. 1.

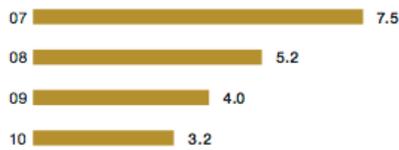


**FLARING FROM WORLDWIDE OIL AND GAS PRODUCTION**  
(million standard cubic feet per day)



XOM CSR 2004, page 19.

**Hydrocarbon Flaring from Upstream Oil and Gas Production**  
(millions of metric tons)



ExxonMobil SustRpt 2010

Direct scope 1	132 MtCO <sub>2</sub> e
Indirect scope 2	15 MtCO <sub>2</sub> e
	million cf/day      Bcf/yr
Flared gas 2006	875      319
Flared gas 2009	438      160
Flared gas 2010	350      128

SustRpt page 33.

**OPERATING SUMMARY**

	1999	1998	1997
<i>(thousands of barrels daily)</i>			
<b>Production of crude oil and natural gas liquids</b>			
Net production			
United States	729	745	803
Canada	315	322	287
Europe	650	635	641
Asia-Pacific	307	322	347
Other Non-U.S.	516	478	449
Worldwide	2,517	2,502	2,527
<i>(millions of cubic feet daily)</i>			
<b>Natural gas production available for sale</b>			
Net production			
United States	2,871	3,140	3,223
Canada	683	667	600
Europe	4,438	4,245	4,283
Asia-Pacific	2,027	2,352	2,632
Other Non-U.S.	289	213	156
Worldwide	10,308	10,617	10,894
<i>(thousands of barrels daily)</i>			
<b>Refinery throughput</b>			
United States	1,930	1,919	2,026
Canada	441	445	448
Europe	1,782	1,888	1,899
Asia-Pacific	1,537	1,554	1,559
Other Non-U.S.	287	287	302
Worldwide	5,977	6,093	6,234
<b>Petroleum product sales</b>			
United States	2,918	2,804	2,777
Canada	587	579	574
Europe	2,597	2,646	2,609
Asia-Pacific and other Eastern Hemisphere	2,223	2,266	2,249
Latin America	562	578	564
Worldwide	8,887	8,873	8,773
Gasoline, naphthas	3,628	3,417	3,317
Heating oils, kerosene, diesel oils	2,658	2,689	2,725
Aviation fuels	813	774	753
Heavy fuels	706	765	744
Specialty petroleum products	1,282	1,228	1,234
Worldwide	8,887	8,873	8,773
<i>(thousands of metric tons)</i>			
<b>Chemical prime product sales</b>			
	24,485	23,628	23,838
<i>(millions of metric tons)</i>			
<b>Coal production</b>			
	17	15	15
<i>(thousands of metric tons)</i>			
<b>Copper production</b>			
	248	216	205

Operating statistics include 100 percent of operations of majority owned subsidiaries; for other companies, crude production, gas, petroleum product and chemical prime product sales include ExxonMobil's ownership percentage, and refining throughput includes quantities processed for ExxonMobil. Net production excludes royalties and quantities due others when produced, whether payment is made in kind or cash.

Exxon Annual Report 1999, page F39.

**Cell:** H9**Comment:** Rick Heede:History (wikipedia: [en.wikipedia.org/wiki/ExxonMobil](http://en.wikipedia.org/wiki/ExxonMobil))

Exxon Mobil Corporation was formed in 1999 by the merger of two major oil companies, Exxon and Mobil. Both Exxon and Mobil were descendants of the John D. Rockefeller corporation, Standard Oil which was established in 1870. The reputation of Standard Oil in the public eye suffered badly after publication of Ida M. Tarbell's classic exposé *The History of the Standard Oil Company* in 1904, leading to a growing outcry for the government to take action against the company.

By 1911, with public outcry at a climax, the Supreme Court of the United States ruled that Standard Oil must be dissolved and split into 34 companies. Two of these companies were Jersey Standard ("Standard Oil Company of New Jersey"), which eventually became Exxon, and Socony ("Standard Oil Company of New York"), which eventually became Mobil.

In the same year, the nation's kerosene output was eclipsed for the first time by gasoline. The growing automotive market inspired the product trademark Mobiloil, registered by Socony in 1920.

Over the next few decades, both companies grew significantly. Jersey Standard, led by Walter C. Teagle, became the largest oil producer in the world. It acquired a 50 percent share in Humble Oil & Refining Co., a Texas oil producer. Socony purchased a 45 percent interest in Magnolia Petroleum Co., a major refiner, marketer and pipeline transporter. In 1931, Socony merged with Vacuum Oil Co., an industry pioneer dating back to 1866 and a growing Standard Oil spin-off in its own right.

In the Asia-Pacific region, Jersey Standard had oil production and refineries in Indonesia but no marketing network. Socony-Vacuum had Asian marketing outlets supplied remotely from California. In 1933, Jersey Standard and Socony-Vacuum merged their interests in the region into a 50-50 joint venture. Standard-Vacuum Oil Co., or "Stanvac," operated in 50 countries, from East Africa to New Zealand, before it was dissolved in 1962. Mobil Chemical Company was established in 1950. As of 1999, its principal products included basic olefins and aromatics, ethylene glycol and polyethylene. The company produced synthetic lubricant base stocks as well as lubricant additives, propylene packaging films and catalysts. Exxon Chemical Company (first named Enjay Chemicals) became a worldwide organization in 1965 and in 1999 was a major producer and marketer of olefins, aromatics, polyethylene and polypropylene along with specialty lines such as elastomers, plasticizers, solvents, process fluids, oxo alcohols and adhesive resins. The company was an industry leader in metallocene catalyst technology to make unique polymers with improved performance.

In 1955, Socony-Vacuum became Socony Mobil Oil Co. and in 1966 simply Mobil Oil Corp. A decade later, the newly incorporated Mobil Corporation absorbed Mobil Oil as a wholly owned subsidiary. Jersey Standard changed its name to Exxon Corporation in 1972 and established Exxon as a trademark throughout the United States. In other parts of the world, Exxon and its affiliated companies continued to use its Esso trademark.

On March 24, 1989, the Exxon Valdez oil tanker struck Bligh Reef in Prince William Sound, Alaska and spilled more than 11 million US gallons (42,000 m<sup>3</sup>) of crude oil. The Exxon Valdez oil spill was the second largest in U.S. history, and in the aftermath of the Exxon Valdez incident, the U.S. Congress passed the Oil Pollution Act of 1990. An initial award of \$5 billion USD punitive was reduced to \$507.5 million by the US Supreme Court in June 2008, and distributions of this award have commenced.

In 1998, Exxon and Mobil signed a US\$73.7 billion definitive agreement to merge and form a new company called Exxon Mobil Corporation, the largest company on the planet. After shareholder and regulatory approvals, the merger was completed on November 30, 1999. The merger of Exxon and Mobil was unique in American history because it reunited the two largest companies of John D. Rockefeller's Standard Oil trust, Standard Oil Company of New Jersey/Exxon and Standard Oil Company of New York/Mobil, which had been forcibly separated by government order nearly a century earlier. This reunion resulted in the largest merger in US corporate history.

In 2000, ExxonMobil sold a refinery in Benicia, California and 340 Exxon-branded stations to Valero Energy Corporation, as part of an FTC-mandated divestiture of California assets. ExxonMobil continues to supply petroleum products to over 700 Mobil-branded retail outlets in California. In 2005, ExxonMobil's stock price surged in parallel with rising oil prices, surpassing General Electric as the largest corporation in the world in terms of market capitalization. At the end of 2005, it reported record profits of US \$36 billion in annual income, up 42% from the previous year (the overall annual income was an all-time record for annual income by any business, and included \$10 billion in the third quarter alone, also an all-time record income for a single quarter by any business). The company and the American Petroleum Institute (the oil and chemical industry's lobbying organization) put these profits in context by comparing oil industry profits to those of other large industries such as pharmaceuticals and banking.

On June 12, 2008, ExxonMobil announced that it was transitioning out of the direct-served retail market, citing the increasing difficulty of running gas stations under rising crude oil costs. The multi-year process will gradually phase the corporation out of the direct-served retail market, and will affect 820 company-owned stations and approximately 1,400 other stations operated by dealers distributing across the United States. The sale has not resulted in the disappearance of Exxon and Mobil branded stations; the new owners will continue to sell Exxon and Mobil-branded gasoline and license the appropriate names from ExxonMobil, who will in turn be compensated for use of the brands.

In 2010, ExxonMobil bought XTO Energy, the company focused on development and production of unconventional resources.

In terms of potential future developments, many gas and oil companies are considering the economic and environmental benefits of Floating Liquefied Natural Gas (FLNG). This is an innovative technology designed to enable the development of offshore gas resources that would otherwise remain untapped, because environmental or economic factors make it unviable to develop them via a land-based LNG operation. ExxonMobil is waiting for an appropriate project to launch its FLNG development, and the only FLNG facility currently in development is being built by Shell,[19] due for completion in around 2017.

In 2012, ExxonMobil confirmed a deal for production and exploration activities in the Kurdistan region of Iraq."

**Cell:** M11**Comment:** Rick Heede:

On this worksheet we report extractive data for each company or state-owned enterprise. Three columns under crude oil and natural gas allow for data reported in one of three formats (e.g., thousand barrels per day, or million barrels per year, or metric tonnes per year). Coal is normally reported in U.S. or metric tonnes per year.

Note: the carbon content of the extracted resources is adjusted by a number of factors before emissions estimates are made in the worksheet 1 to the left. Most important is the subtraction of the fraction typically sequestered in petrochemicals and other non-combusted uses such as road oils, waxes, lubricants, greases, etc. See the comment for each extracted resource for detailed discussions of the combusted vs sequestered fractions.

**Cell:** M12**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 gross production (before royalty production is netted out). More often, however, oil companies report production net of royalty production.

Crude production includes natural gas liquids (NGL) unless noted.

**Cell:** AB12**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.

**Cell:** AL12**Comment:** Rick Heede:

Coal production by coal mining companies and state-owned enterprises, including subsidiaries of oil and gas companies.

Coal types produced are not ordinarily reported by coal operators (except for metallurgical coal). We distinguish, where possible and reasonably well known, between hard and soft coals, especially for the larger companies operating in regions such as Australia and India where soft coals are predominant. Soft coals have a much lower carbon content per tonne than do hard coals. See "Coal" under "Extractive Activities" in each sheet 1 for details.

**Cell:** D13**Comment:** Rick Heede:

This expanded template for oil, gas, & coal is used to enter extraction data for extant companies that have merged with or acquired other significant production entities. Prominent examples include British Petroleum\* and ExxonMobil.\*\*

\* BP merged with Amoco (Standard Oil Company (Indiana)) in 1998 and its acquisition of Atlantic Richfield (ARCO) in 2000; Atlantic merged with Richfield in 1966, and ARCO had acquired Sinclair Petroleum in 1969.

\*\* Exxon Corporation and Mobil Corporation merged in 1999.

**Cell:** D15**Comment:** Rick Heede:

Neither Exxon nor Mobil acquired or merged with other oil or natural gas producers from 1950 until the two previous members of the original Standard Oil (dissolved in 1911) merged in 1999. Both companies acquired coal operators, however.

Standard Oil (NJ) acquired a 50 percent interest in Humble Oil & Refining Company in the 1930s. Socony purchased a 45 percent interest in Magnolia Petroleum Company, a major refiner, marketer and pipeline transporter. In 1931, Socony merged with Vacuum Oil Co., an industry pioneer dating back to 1866 and a growing Standard Oil spin-off in its own right. In 1933, Standard Oil (NJ) and Socony-Vacuum merged their Asian interests into a 50-50 joint venture called Standard-Vacuum Oil Company ("Stanvac") that operated in 50 countries from East Africa to New Zealand before it was dissolved in 1962.

From [www.exxonmobil.com/Corporate/About/History/Corp\\_A\\_H\\_PeaceWar.asp](http://www.exxonmobil.com/Corporate/About/History/Corp_A_H_PeaceWar.asp)

All of these acquisitions were completed prior to our production period of greatest interest (1950 to present), and no major acquisitions have been noted post-1950, hence we complete a "two-company" worksheet to reflect production from Exxon and Mobil's predecessors from 1950.

**Cell:** I15**Comment:** Rick Heede:

Neither Exxon nor Mobil acquired or merged with other oil or natural gas producers from 1950 until the two previous members of the original Standard Oil (dissolved in 1911) merged in 1999. Both companies acquired coal operators, however.

Standard Oil (NJ) acquired a 50 percent interest in Humble Oil & Refining Company in the 1930s. Socony purchased a 45 percent interest in Magnolia Petroleum Company, a major refiner, marketer and pipeline transporter. In 1931, Socony merged with Vacuum Oil Co., an industry pioneer dating back to 1866 and a growing Standard Oil spin-off in its own right. In 1933, Standard Oil (NJ) and Socony-Vacuum merged their Asian interests into a 50-50 joint venture called Standard-Vacuum Oil Company ("Stanvac") that operated in 50 countries from East Africa to New Zealand before it was dissolved in 1962.

From [www.exxonmobil.com/Corporate/About/History/Corp\\_A\\_H\\_PeaceWar.asp](http://www.exxonmobil.com/Corporate/About/History/Corp_A_H_PeaceWar.asp)

All of these acquisitions were completed prior to our production period of greatest interest (1950 to present), and no major acquisitions have been noted post-1950, hence we complete a "two-company" worksheet to reflect production from Exxon and Mobil's predecessors from 1950.

**Cell:** E18

**Comment:** Rick Heede:

Standard Oil Company total petroleum sales 1900 through 1949 from Heede (2003) spreadsheets based on historical data from the company annual reports and published company histories. Sales allocated to both Standard Oil (NJ) and Socony prior to 1911 based on the equity distribution to each company upon dissolution in 1911. See Heede (2003) for details.

**Cell:** I18**Comment:** Rick Heede:

Standard Oil Company (NJ) production as a share of SONJ asset value acquired upon dissolution in 1911 (44 percent of total Standard Oil Trust asset value). Production is estimated from the ratio of company production to company sales. See note at "D17" and "E17" for methodology.

**Cell:** BE24**Comment:** Rick Heede:

Construction of the 600-thousand-tonne concrete gravity-based structure for the Hebron platform in Newfoundland, Canada, is under way. Once complete, the structure will be nearly 400 feet tall and support a 65-thousand-tonne topside capable of producing 150 thousand barrels of oil per day when it starts up in 2017. ExxonMobil (2015) Financial and Operating Review 2014, page 16.

**Cell:** X31**Comment:** Rick Heede:

CMS estimates (Heede, 2003) that SONJ marketed 4.8 percent of total US natural gas based on the intersects with actual reported SONJ gas sales in 1930, 1934, 1935, and 1939). Given SONJ early entry into natural gas, these estimates may be conservative. Standard did not report natural gas production or sales in their AnnRpts from 1940-1963. This is typical for oil companies in the 1940s, although nearly all companies reported gas production or sales by the mid-1950s. CMS has interpolated or estimated SONJ gas production to 1962.

"Marketed production" in the United States, 1900 to 1970.

Sources: US Census Bureau (date unknown) Statistical Abstract of the United States, Historical tables (Natural Gas: M147). Energy Information Administration (2002) Annual Energy Review 2001, Appendix F: Energy Consumption in the United States, Selected Years, 1635-1945.

**Cell:** D37**Comment:** Rick Heede:

This column "D" rows 17-43 develops an allocation method for known Standard Oil marketed oil products from 1900 through 1926 taken from historical data in which gross (or net) production data are not reported. We calculate Standard's gross oil production as a ratio of marketed oil products for the years 1927 through 1937:

1927 = 0.443

1928 = 0.442

1929 = 0.448

1930 = 0.455

1931 = 0.479

1932 = 0.572

1933 = 0.617

1934 = 0.725

1935 = 0.742

1936 = 0.727

1937 = 0.749

From this data series we suppose it reasonable to gradually reduce Standard's own production as a share of total sales going back in time from the known year 1927 (0.443) by 0.10 per year so that 1926 equals 0.43, 1925 equals 0.42, etc, until 1900 equals 0.17. This is roughly consonant with Standard Oil Company's early history of being a refiner and marketer of oil products rather than a producer of crude oil.

**Cell:** K37**Comment:** Rick Heede:

We roughly estimate Mobil (and its predecessors Standard Oil of NY (Socony) and Standard Oil Company to 1900) based on the known production to sales ratio of Standard Oil (New Jersey)'s from 1929 to 1949. This ratio is then applied to Socony 1911 to 1949 as well as Socony's preceding share of Standard Oil Company from 1900 to 1911.

**Cell:** X37**Comment:** Rick Heede:

Natural gas SALES allocated to or reported by Standard Oil Company (New Jersey) from 1900 through 1949. Source: Standard Oil (NJ) Annual Reports,

**Cell:** Z37**Comment:** Rick Heede:

Socony gas sales estimated using the same methodology as for SONJ (see notes). Mobil started reporting natural gas production in 1952 (and SONJ not until 1963).

**Cell:** D64**Comment:** Rick Heede:

Net production of crude oil (in thousand bbl per day) for 1927-1939 from Larsen, Knowlton, & Popple (1971) History of Standard Oil Company (New Jersey): New Horizons 1927-1950, p. 148.

**Cell:** D66**Comment:** Rick Heede:

We use net production data from Larsen et al, but note gross production data here for 1929 through 1939 from Standard Oil Company annual reports from 1930-1939:

1929 gross production: 101.9 million bbl;

1930 gross production: 102.5 million bbl;

1931 gross production: 122.2 million bbl (missing data: interpolated);

1932 gross production: 141.9 million bbl;

1933 gross production: 156.2 million bbl;

1934 gross production: 179.3 million bbl;

1935 gross production: 193.5 million bbl;

1936 gross production: 206.4 million bbl;

1937 gross production: 237.1 million bbl;

1938 gross production: 220.1 million bbl;

1939 gross production: 242.3 million bbl.

Additional notes from SONJ annual reports:

Crude oil produced in 1929 and 1930 from Standard Oil (New Jersey) Annual Report for 1930, p. 4. Production for "all of the company's interests" of which US production totaled 51.91 million bbl and foreign production 50.61 million bbl. SONJ's own production supplied 56.7 percent of the crude run through its refineries. In 1931, the company marketed

According to Standard Oil (New Jersey) Annual Report for 1930, p. 4, SONJ produced 56.7 percent of the crude run through its refineries.

The company marketed a total of 193.2 million bbl of oil products in 1930. (Source, and details on sales by product type, from Heede (2003) ExxonMobil Corporation: Emissions Inventory 1882-2002, excel worksheets.)

**Cell:** Y67**Comment:** Rick Heede:

Natural gas SALES for 1930 from Standard Oil (New Jersey) Annual Report for 1930, p. 8. This amount is presumptively produced by SONJ and its numerous affiliates; no mention of purchased gas from other producers.

**Cell:** Y71**Comment:** Rick Heede:

SONJ only reports gas sales in VA, PA, and OH.

**Cell:** Y76**Comment:** Rick Heede:

Natural gas SALES for 1939 from SONJ Annual Report for 1939, p. 6. SONJ reports total production by several affiliates; we calculate SONJ production by applying company equity in each affiliate.

**Cell:** D77**Comment:** Rick Heede:

Crude oil production (gross) for 1940-1945 from SONJ Annual Report for 1945, p. 2 and bar graph p. 10. Net production is not reported.

**Cell:** F77**Comment:** Rick Heede:

Standard Oil (NJ) acquired Humble Oil and Refining in the early 1930s. Production data from Humble (1949) AnnRpt 1948, p. 7.

**Cell:** I77**Comment:** Rick Heede:

Estimates net production for 1940-1947 when Exxon only reports gross production. See cell note at E100.

**Cell:** P82**Comment:** Rick Heede:

SONJ does not report any natural gas data in its 1945 annual report.

**Cell:** D83**Comment:** Rick Heede:

Crude oil production (gross) for 1946 and 1947 from SONJ Annual Report, p. 2. Net not reported.

**Cell:** U84**Comment:** Rick Heede:

Since we have Socony data for gross production we estimate net for years 1947-1951 by multiplying gross by 71.6 percent (0.716), which is the average net/gross fraction for 1952-1956. Source for "Natural gas produced" 1947-1951: Socony Mobil Oil Company (1952) Annual Report for 1951, p. 5.

**Cell:** D85**Comment:** Rick Heede:

Crude oil production for 1948 and 1949 from SONJ Annual report for 1949, p. 5. This reports on both net and gross production.  
1948 Gross: 1,271 kbb/d, Net: 1,075 kbb/d; Net is 0.846 of gross;  
1949 Gross: 1,128 kbb/d, Net: 957 kbb/d; Net is 0.848 of gross.

**Cell:** F86**Comment:** Rick Heede:

Standard Oil of New Jersey acquired 50 percent of Humble Oil & Refining in 1919. CMS assumes that Jersey's equity share of production is reflected in Jersey's annual reports from 1919 through the company's full acquisition of Humble (year unknown, at the moment). Later research may change this tentative conclusion.

**Cell:** D87**Comment:** Rick Heede:

Crude oil production for 1950 and 1951 from SONJ Annual report for 1951, p. 33. This reports on both net and gross production.  
1950 Gross: 1,396 kbb/d, Net: 1,212 kbb/d; Net is 0.868 of gross;  
1951 Gross: 1,669 kbb/d, Net: 1,455 kbb/d; Net is 0.872 of gross.

**Cell:** K87**Comment:** Rick Heede:

The data gap of 1950 and 1951 is interpolated.

**Cell:** D89**Comment:** Rick Heede:

Crude oil production for 1952 and 1953 from SONJ Annual report for 1953, p. 26. This reports on both net and gross production.

1952 Gross: 1,790 kbb/d, Net: 1,559 kbb/d; Net is 0.871 of gross;  
1953 Gross: 1,838 kbb/d, Net: 1,600 kbb/d; Net is 0.871 of gross.

**Cell:** F89**Comment:** Rick Heede:

Crude oil and NGL production (gross) in 1952 through 1961 from Socony-Mobil Oil Company (1962) Annual Report for 1961, p. tk, Table on Ten Year Financial and Operating Data. Net production is not reported.

**Cell:** K89**Comment:** Rick Heede:

Data for Mobil from 1952 through 1983 is based on company annual reports cited in column "F" and converted to annual production. Estimates net production for 1952-1967 when Mobil only reports gross production. See cell note at E100 and Mobil net of gross calculation at cell at G110.

**Cell:** U89**Comment:** Rick Heede:

"Natural gas production, US and Canada, kbb/d" for 1952-1961 from SoconyMobil Oil Company (1962) Annual Report for 1961, Operating Results table.

**Cell:** D91**Comment:** Rick Heede:

Crude oil production for 1954 and 1955 from SONJ Annual report for 1955, p. 28. This reports on both net and gross production.  
1954 Gross: 1,893 kbb/d, Net: 1,651 kbb/d; Net is 0.872 of gross;  
1955 Gross: 2,143 kbb/d, Net: 1,863 kbb/d; Net is 0.869 of gross.

**Cell:** D93**Comment:** Rick Heede:

Crude oil production for 1956-1959 from SONJ Annual report for 1959, p. 14. This reports on both net and gross production.  
1956 Gross: 2,366 kbb/d, Net: 2,057 kbb/d; Net is 0.869 of gross;  
1957 Gross: 2,432 kbb/d, Net: 2,112 kbb/d; Net is 0.868 of gross;  
1958 Gross: 2,329 kbb/d, Net: 2,028 kbb/d; Net is 0.871 of gross;  
1959 Gross: 2,464 kbb/d, Net: 2,146 kbb/d; Net is 0.871 of gross.

**Cell:** D97**Comment:** Rick Heede:

Crude oil production for 1960-61 from SONJ Annual report for 1961, p. 30. This reports on both net and gross production.  
1960 Gross: 2,516 kbb/d, Net: 2,196 kbb/d; Net is 0.873 of gross;  
1961 Gross: 2,744 kbb/d, Net: 2,386 kbb/d; Net is 0.870 of gross.

**Cell:** D99**Comment:** Rick Heede:

Crude oil production for 1962-1966 from SONJ Annual report for 1966, Five-Year Summary Table. This reports only gross production.

**Cell:** F99**Comment:** Rick Heede:

Crude and NGL production (gross) 1962-1965 from Socony Mobil (1966) Annual Report for 1965, p. 21. Net production is not reported.

**Cell:** I99**Comment:** Rick Heede:

Estimates net production for 1962-1976 when Exxon only reports gross production. See cell note at E100.

**Cell:** U99**Comment:** Rick Heede:

Natural gas production worldwide 1962-1965 from Socony Mobil (1966) Annual Report for 1965, p. 21.

**Cell:** E100**Comment:** Rick Heede:

We calculate the average percentage net of gross reported production for 1950-1961. This factor is applied to the years when Exxon only reports gross production (1940-1947 and 1962-1976), and we use this as a proxy factor to estimate net production in column I.

**Cell:** S100**Comment:** Rick Heede:

"Natural gas sales" reported by Exxon for 1963-1964 only (gas is not a line item in the operating summary).  
Source: Standard Oil Company (New Jersey) (1965) Annual Report 1964, p. 3.

**Cell:** S102**Comment:** Rick Heede:

"Natural gas sales" worldwide shown for 1965-1969.  
Source: Standard Oil Company (New Jersey) (1970) Annual Report for 1969, p.31.

**Cell:** F103**Comment:** Rick Heede:

Crude and NGL production (gross) 1966-1968 from Socony Mobil (1969) Annual Report for 1968, p. 24. Net production is not reported.

**Cell:** D104**Comment:** Rick Heede:

Crude oil plus natural gas liquids production for 1967-1971 from SONJ Annual report for 1971, p. 31, Five-Year Summary Table. This reports only gross production.

**Cell:** U105**Comment:** Rick Heede:

Natural gas production worldwide for 1968-1971 from Mobil Oil Corporation (1972) Annual Report for 1971, p. 22. This appears to be gross production (surmised from the 1973 annual report).

**Cell:** F106**Comment:** Rick Heede:

Net crude oil and NGL production in 1969-1971 from Mobil Oil Corporation (1972) Annual Report for 1971, p. 22. This and subsequent also gross production. We use net production in the worksheet, and note gross production in the comments.

1968 Gross: 1,589 kbbl/d Net: 1,350 kbbl/d; Net of gross = 0.850;

1969 Gross: 1,648 kbbl/d Net: 1,395 kbbl/d; Net of gross = 0.846;

1970 Gross: 1,827 kbbl/d Net: 1,573 kbbl/d; Net of gross = 0.861;

1971 Gross: 2,010 kbbl/d Net: 1,735 kbbl/d; Net of gross = 0.863.

**Cell:** V108**Comment:** Rick Heede:

"Gross production" is the only figure reported for global production (net is reported for the US (2,368 net of 2,853 gross, or 0.830 of gross in 1971, and 2,053 net of 2,396 gross, or 0.857 of gross in 1975) and Canada (230 of 270, or 0.852 of gross in 1971). Since we estimate internal gas consumption elsewhere, we report net production in the US and Canada plus gross in rest of world in the data reported here. Source: Mobil Corp (1976) Annual Report for 1975, p. 45.

CMS: estimated global net of gross factor: already accounted for in US and Canada (2,368 + 230 Mcf/day; 2,598 Mcf/d) of total 1971: 3,535, delta 937 Mcf/day; of we apply the averagr US and Canada net of gross factor (0.856), then  $937 * (1-0.856) = 135$  Mcf/d, and  $3,535 - 135 = 3,400$ ; net of gross  $(3,400/3,535) = 0.9618$

**Cell:** D109**Comment:** Rick Heede:

Crude oil plus natural gas liquids production for 1972-1976 from SONJ Annual report for 1976, p. 43, Five-Year Summary Table. This reports only gross production.

**Cell:** F109**Comment:** Rick Heede:

Net crude oil and NGL production in 1972-1974 from Mobil Oil Corporation (1975) Annual Report for 1974, p. 41. This and subsequent reports also contain gross production. We use net production in the worksheet, and note gross production in the comments.

1972 Gross: 2,399 kbbl/d Net: 506 kbbl/d; Net of gross = not relevant;\*

1973 Gross: 2,507 kbbl/d Net: 506 kbbl/d; Net of gross = not relevant;\*\*

1974 Gross: 2,462 kbbl/d Net: 449 kbbl/d; Net of gross = not relevant;\*\*\*

\* Note: Mobil reports net from US and Canada only. We apply the gross to net ratio to estimate worldwide net production for 1972: gross of 2,399 times 0.850 = 2,039 kbbl/d equals estimated net production.

\*\* Note: gross of 2,507 times 0.850 = 2,131 kbbl/d (estimated net production).

\*\*\* Note: gross of 2,462 times 0.850 = 2,093 kbbl/d (estimated net production).

**Cell:** U109**Comment:** Rick Heede:

Natural gas production worldwide (gross) for 1972-73 from Mobil Oil Corporation (1974) Annual Report for 1973, p. 41. Net production is not reported for global, net only for US and Canada.

"Gross production" is the only figure reported for global production (net is reported for the US (2,368 net of 2,853 gross, or 0.830 of gross in 1971, and 2,053 net of 2,396 gross, or 0.857 of gross in 1975) and Canada (230 of 270, or 0.852 of gross in 1971). Since we estimate internal gas consumption elsewhere, we report net production in the US and Canada plus gross in rest of world in the data reported here.

Source: Mobil Corp (1976) Annual Report for 1975, p. 45.

**Cell:** F112**Comment:** Rick Heede:

Crude oil production and NGL (gross) production for 1975-76 from Mobil Oil (1977) Annual Report for 1976, p. 6. Net production is NOT reported for oil or natural gas.

**Cell:** K112**Comment:** Rick Heede:

Estimates net production for 1975-1980 when Mobil only reports gross production. See cell note at E100 and Mobil net of gross calculation at cell at G110.

**Cell:** U112**Comment:** Rick Heede:

Natural gas production (gross) for 1975-76 from Mobil Oil (1977) Annual Report for 1976, p. 6. Net production is NOT reported for natural gas.

**Cell:** S113**Comment:** Rick Heede:

"Natural gas sales" worldwide shown for 1976-1979.

Source: Exxon Corporation (1980) Annual Report for 1979, Operating Summary, p. 43.

**Cell:** D114**Comment:** Rick Heede:

"Net production of crude oil and NGL and petroleum supplies available under special agreement" for 1977-1979 from SONJ Annual Report for 1979, p. 43, Table.

Note: We include line items and amounts for "net production of total consolidated affiliates" (1,308 kbbl/d) plus "proportional interest in production of equity companies" (1,160 kbbl/d) plus "oil sands production Canada" (5 kbbl/d). We do NOT include "supplies available under longterm agreements with foreign governments" (1,438 kbbl/d) or "other supplies available under special agreements" (1,180 kbbl/d). Thus, of total net production listed by SONJ for 1977 (5,091 kbbl/d) we include 2,473 kbbl/d, or 48.6 percent.

**Cell:** F114**Comment:** Rick Heede:

Crude oil and NGL production (gross) for 1977 from Mobil (1981) SEC Form 10-K, p. 2. Does not report net production (except US and Canada, not total net).

**Cell:** U114**Comment:** Rick Heede:

Natural gas production (gross) for 1977 from Mobil (1981) SEC Form 10-K, p. 2. Does not report net production (except US and Canada, not total net).

**Cell:** F115**Comment:** Rick Heede:

Crude oil and NGL production (gross) for 1978-79 from Mobil (1980) Annual report for 1979, p. 13. Net production is not reported. Natural gas production is not reported in the portion of this annual report made available.

**Cell:** D117

**Comment:** Rick Heede:

We were unable to find production data for 1980. Gap is interpolated.

**Cell:** F117**Comment:** Rick Heede:

Crude oil and NGL production (gross) for 1980 from Mobil (1981) SEC Form 10-K, p. 2. Does not report net production (except US and Canada, not total net).

**Cell:** D118**Comment:** Rick Heede:

Crude oil and NGL production (net) for 1981-1982 from Exxon (1986) SEC Form 10-K for 1985, p. 45. Does not report gross production.

**Cell:** F118**Comment:** Rick Heede:

Net crude oil and NGL production for 1981 and 1982 from Mobil Corporation (1984) SEC Form 10-K, p. 1-2.  
 CMS does not know why production declines from reported 1,991 kbbbl per day in 1980 to 553 kbbbl per day in 1981.  
 Gross production is also reported:  
 1981 Gross: 663 kbbbl/d, Net: 553 kbbbl/d, net/gross ratio: 0.834;  
 1982 Gross: 648 kbbbl/d, Net: 542 kbbbl/d, net/gross ratio: 0.836;  
 1983 Gross: 660 kbbbl/d, Net: 555 kbbbl/d, net/gross ratio: 0.841 (we use Mobil Annual Report for 1987 for 1983 net production).

**Cell:** S118**Comment:** Rick Heede:

Exxon's 1985 Form 10-K reports only "natural gas production available for sale," plus "proportional interest in production of equity companies," but not total sales, for 1981-1985.  
 1981 = 6,620 million cubic feet per day; 1982 = 5,749; 1983 = 5,628; 1984 = 5,918; and 1985 = 5,661.  
 Source: ExxonMobil (1986) Form 10-K, p. 45.

**Cell:** U118**Comment:** Rick Heede:

We estimate net global natural gas production by adding equity interest production from rest of world (a small amount: 78 to 78 million CF/day) to net world production, in millions of cubic feet per day.  
 Source: Mobil Corp (1984) SEC Form 10-K for 1983, p. 1-3.

**Cell:** J119**Comment:** Rick Heede:

Exxon Corporation oil production 1984 - 1998 from OGJ (various) OGJ400, 300, and 200. This data is for comparison purposes only, as we CMS uses Exxon annual reports of net global production shown in Column J.  
 OGJ data is NOT added to production sum in Column M.

**Cell:** D120**Comment:** Rick Heede:

Net crude oil and NGL production for 1983 from Exxon Corp (1994) SEC Form 10-K, p. F-27.

**Cell:** F120**Comment:** Rick Heede:

Crude oil and NGL production (net) for 1983-1987 from Mobil (1988) Annual Report for 1987. Gross production is NOT reported.

**Cell:** U120**Comment:** Rick Heede:

Natural gas production (net) for 1983-1987 from Mobil (1988) Annual Report for 1987. Gross production is NOT reported.

**Cell:** D121**Comment:** Rick Heede:

Net crude oil and NGL production for 1984-1994 from Exxon Corp (1995) SEC Form 10-K, p. F-27.

**Cell:** K122**Comment:** Rick Heede:

Mobil Corporation Annual Report 1985, shows oil production at 236 Mb in 1985 (217 Mb in 1984, and 191 Mb in 1983). Page 41. Although within the reserves statement; Mobil does not show production in a separate tabl..

**Cell:** Z122**Comment:** Rick Heede:

Mobil Corporation Annual report 1985, shows gas production at 1,318 Bcf in 1985 (1,164 Bcf in 1984, and 860 Bcf in 1983). Page 43. Although within the reserves statement; Mobil does not show production in a separate table).

**Cell:** S123**Comment:** Rick Heede:

"Natural gas made available for sale" reported for 1984-1994.  
 Source: Exxon Corp (1995) SEC Form 10-K, p. F27.

**Cell:** S124**Comment:** Rick Heede:

"Natural gas production available for sale" worldwide shown in Operating Summary for 1987-1997.  
 Source: Exxon Corporation (1998) SEC Form 10-K for 1997, page unknown.

**Cell:** U124**Comment:** Rick Heede:

"Net natural gas production, millions of cubic feet per day."  
 Source: Mobil Corp (1990) Annual Report 1989.

**Cell:** AH125**Comment:** Rick Heede:

Keystone Coal Industry Manual shows Mobil Coal Producing (US Production only) at 7.127 million tons in 1988.

**Cell:** U127**Comment:** Rick Heede:

"Net production of natural gas - worldwide" reported for 1990-1994.  
 Note: Only "net" reported from 1984 forward, no gross reported.  
 Source: Mobil Oil Company (1995) SEC Form 10-k for 1994, p. 11.

**Cell:** E131**Comment:** Rick Heede:

Cross Timbers Oil Company (later XTO Energy) Annual Rpt 1996, page 1, reports both crude oil production.

**Cell:** T131**Comment:** Rick Heede:

Cross Timbers Oil Company Annual Rpt 1999, natural gas production in million cf/day.

**Cell:** X131**Comment:** Rick Heede:

No note in OGJ 100 re: reason for this big jump in gas production.

**Cell:** D132

**Comment:** Rick Heede:

Net crude oil and NGL production for 1995-1996 from Exxon Corp (1998) SEC Form 10-K, p. F-tk.

**Cell:** D134

**Comment:** Rick Heede:

Net crude oil and NGL production for 1997 from Exxon Corp (2000) Annual Report for 1999, p. F-39. The SEC Form 10-K for 1997 lists that year's net production of oil and NGL as 1,599 kbb/d; insufficient information to discern reporting differences.

**Cell:** E134

**Comment:** Rick Heede:

Cross Timbers Oil Company (later XTO Energy) Annual Rpt 1999, page 1, reports both NGL and oil production.

**Cell:** G134

**Comment:** Rick Heede:

ExxonMobil controls 69.6 percent of Imperial Oil Ltd, which is Canada's largest oil and gas producer, markets gasoline and diesel under the Esso brand (wikipedia). CMS does not add Imperial's oil and natural gas production to XOM's production, but merely enters data from the 2008 Annual Rpt -- in case Imperial's production is NOT included as equity production in ExxonMobil's own annual reports.

**Cell:** S134

**Comment:** Rick Heede:

"Net natural gas available for sale" for 1997 in ExxonMobil Corp Annual Report for 1999, p. F-39. Exxon and Mobil did not merge until year 1999, but the 1999 report combines reporting for both companies.

**Cell:** T134

**Comment:** Rick Heede:

Cross Timbers Oil Company Annual Rpt 1999, natural gas production in million cf/day.

**Cell:** V134

**Comment:** Rick Heede:

ExxonMobil controls 69.6 percent of Imperial Oil Ltd, which is Canada's largest oil and gas producer, markets gasoline and diesel under the Esso brand (wikipedia). CMS does not add Imperial's oil and natural gas production to XOM's production, but merely enters data from the 2008 Annual Rpt -- in case Imperial's production is NOT included as equity production in ExxonMobil's own annual reports.

**Cell:** D135

**Comment:** Rick Heede:

Net production of crude oil and NGL for 1998, 1999, and 2002 from XOM (2003) AnnRpt 2002, p. 35.

**Cell:** S135

**Comment:** Rick Heede:

Net natural gas production available for sale for 1998, 1999, and 2002 from XOM (2003) AnnRpt 2002, p. 35.

**Cell:** J136

**Comment:** Rick Heede:

We replace OGJ data with XOM net production data from XOM Annual reports for 1999-2004. Original XOM data is a bit higher than reported in OGJ, for unknown reasons; e.g., 1999 in OGJ is 892 million bbl and XOM (though reported in kbb/d) equals 919 million bbl. 2000 OGJ = 913, 2001 OGJ = 928, 2002 OGJ = 899, 2003 OGJ = 881, and 2003 OGJ = 893.

**Cell:** X136

**Comment:** Rick Heede:

OGJ reports natural gas production a bit higher than XOM annual reports for 1999-2003. Since OGJ is reporting natural gas production whereas XOM reports natural gas for sale, we use OGJ data.

**Cell:** D137

**Comment:** Rick Heede:

Oil production data from EI (2003) Top 100, p. 147.

**Cell:** E137

**Comment:** Rick Heede:

XTO Energy Annual Rpt 2003, page 2, reports both NGL and oil production. E.g., in 2003 6,463 bbl NGL plus 12,943 bbl crude oil per day.

**Cell:** G137

**Comment:** Rick Heede:

We do not add Exxon's 70 percent equity in Imperial Oil on the assumption that Imperial's production is reflected in Exxon's reporting.

**Cell:** S137

**Comment:** Rick Heede:

Gas production data from EI (2003) Top 100, p. 147.

**Cell:** T137

**Comment:** Rick Heede:

XTO Energy Annual Rpt 2003, page 2, natural gas production, million cf/day.

**Cell:** G138

**Comment:** Rick Heede:

Imperial Oil Annual Rpt 2005, page, "Gross crude oil and NGL production."

**Cell:** V138

**Comment:** Rick Heede:

Imperial Oil Annual Rpt 2005, page 6, "gross natural gas production."

**Cell:** D141

**Comment:** Rick Heede:

XOM (2005) AnnRpt 2004, p. 45.

**Cell:** E141

**Comment:** Rick Heede:

XTO Energy Annual Rpt 2008, page 8, reports both NGL and oil production. E.g., in 2008 15,600 bbl NGL plus 56,000 bbl crude oil.

**Cell:** G141

**Comment:** Rick Heede:

Imperial Oil Annual Rpt 2008, page 9, "Gross crude oil and NGL production." CMS does NOT add Imperial's production to ExxonMobil's (since XOM's equity production should already be shown in its own production data. Imperial's 2008 production of 256,000 bbl per day equals 93.4 million bbl -- or ~10.6 percent of XOM's total reported oil production.

**Cell:** S141

**Comment:** Rick Heede:

XOM (2005) AnnRpt 2004, p. 45.

**Cell:** T141

**Comment:** Rick Heede:

XTO Energy Annual Rpt 2008, page 8, natural gas production, million cf/day.

**Cell:** V141

**Comment:** Rick Heede:

Imperial Oil Annual Rpt 2008, page 9, "gross natural gas production." CMS does NOT add Imperial's production to ExxonMobil's (since XOM's equity production should already be shown in its own production data). Imperial's 2008 production of 310 million cf per day equals 113 Bcf -- or ~3.4 percent of XOM's total reported gas production.

**Cell:** T144

**Comment:** Rick Heede:

XTO Energy Annual Rpt 10-K, page 14.

**Cell:** D145

**Comment:** Rick Heede:

XOM AnnRpt for 2008 (rpts 2004-2008 data for "liquids production"), p. 19.  
 Note: "Petroleum product sales" (net of purchases/sales) are higher: 6.76 million bbl per day in 2008 (and 7.52 million bbl per day in 2005); p. 27.  
 Note: "Refinery throughput" average 5.42 million bbl per day in 2008 (and 5.72 million bbl per day in 2005).

**Cell:** S145

**Comment:** Rick Heede (9Dec09):

XOM AnnRpt for 2008 (rpts 2004-2008 data for "natural gas production available for sale"), p. 19.

**Cell:** E146

**Comment:** Rick Heede:

XTO AR 2009 pdf report pg 14, daily and annual production reported; values in this table for 2007-2008 consistent with 2009 report

**Cell:** S146

**Comment:** Rick Heede:

XOM Annual Report 2010, page 26, shows net natural gas production 2006-2010; in 2010 daily production of 12.148 Bcf per day = 4,434 Bcf/yr (sharp increase over 2009 figure of 3,385 Bcf -- presumably from acquisition of XTO).  
 Note: OGJ150 Oct11 p. 38 shows 2,920 Bcf worldwide gas production.

**Cell:** E147

**Comment:** Rick Heede:

Wiki: XTO Energy Inc. is an energy company, principally operating in the United States, specializing in the drilling and production of unconventional oil and natural gas assets, typically from shale rock through a process known as hydraulic fracturing. It is a subsidiary of Exxon Mobil Corporation.

The acquisition of XTO Energy in 2010 made ExxonMobil the largest producer of natural gas in the U.S. Since then, XTO Energy's resource portfolio has tripled through several acquisitions. The company owns interests in approximately 40,000 active oil and natural gas sites across North America.

**Cell:** D148

**Comment:** Rick Heede:

ExxonMobil Form 10-K, crude oil and NGL production, plus bitumen and synthetic oil production, in thousand bbl per day. In 2013, crude 1,730, NGL 259, bitumen 148, and synthetic 65 thousand bbl per day; total liquids production: 2,202 thousand bbl /d.

**Cell:** S148

**Comment:** Rick Heede:

ExxonMobil Form 10-K. Natural gas production available for sale, in million cf per day.

**Cell:** D151

**Comment:** Rick Heede:

ExxonMobil (2015) Financial and Operating Review 2014, page 18.

**Cell:** S151

**Comment:** Rick Heede:

ExxonMobil (2015) Financial and Operating Review 2014, page 18.

**Cell:** D152

**Comment:** Rick Heede:

Exxon Mobil 2015 10-K. Total liquid: 2,345 kbbbl per day, of which 1,741 kbbbl /d is crude oil, 257 kbbbl /d is NGLs, 289 kbbbl /d of bitumen, and 58 kbbbl /d of synthetic oil.

**Cell:** S152

**Comment:** Rick Heede:

Exxon Mobil 2015 10-K.

**Cell:** D153

**Comment:** Rick Heede:

ExxonMobil Form 10-K, 22Feb17, for 2016, page 8, liquids production: 1,742 kbbpd crude oil, 252 kbbpd NGL, 304 kbbpd bitumen (Canada, S America), and 67 kbbpd synthetic oil production (Canada/S America).

**Cell:** S153

**Comment:** Rick Heede:

ExxonMobil Form 10-K, 22Feb17, for 2016, page 8, natural gas production available for sale: 6,205 Mcfpd consolidated production, plus 3,922 Mcfpd production by equity companies.

**Cell:** D154

**Comment:** Rick Heede:

ExxonMobil (2019) SEC Form 10-K for 2018, page 5. 2017 and 2018 production. In 2018: crude oil 1,648 kbbpd, NGL 248 kbbpd, bitumen 310 kbbpd, synthetic 60 kbbpd, total liquid 2,266 kbbpd.

**Cell:** S154

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ExxonMobil (2019) SEC Form 10-K for 2018, page 5.

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