Oil & natural gas extraction data

Richard Heede
Climate Mitigation Services
File started: 11 January 2005
Last modified: April 2013

Former Soviet Union (FSU)

Moscow

yellow column indicates original reported units

State-owned enterprise

Production / Extraction data

Year	Crude Oil & NGL			Natural Gas			Add'l gas data	
	Net production	Net production	Net production	Dry natural gas	Gross production	Dry natural gas		
	Thousand bbl /day	Thousand bbl /day	Million bbl /yr	Billion cf/yr	Billion cf/yr	Billion cf/yr	Bcf/yr	
1945								
1946								
1947								
1948								
1949	200	Russia, not FSU 1949-1979	73					
1950	250		91					
1951	300		110					
1952	350		128					
1953	400		146					
1954	500		183					
1955	650		237					
1956	800		292	na	450	450		
1957	1,250		456	na	694	694		
1958	1,500		548	na	1,115	1,115		
1959	1,750		639	na	1,388	1,388		
1960	2,000		730	na	1,754	1,754		
1961	2,300		840	na	2,273	2,273		
1962	2,700		986	na	2,806	2,806		
1963	3,100		1,132	na	3,415	3,415		
1964	3,500		1,278	na	3,892	3,892		
1965	3,750		1,369	na	4,570	4,570		
1966	4,050		1,478	na	5,110	5,110		
1967	4,400		1,606	na	5,601	5,601		
1968	4,750		1,734	6,420	6,032	6,032		
1969	5,050		1,843	6,860	6,457	6,457		
1970	5,350		1,953	7,520	7,063	7,063	2,738	approx
1971	5,750		2,099	7,900	7,501	7,501		
1972	6,050		2,208	8,200	7,818	7,818		
1973	6,500		2,373	8,800	8,334	8,334		
1974	6,800		2,482	9,700	9,201	9,201		
1975	7,500		2,738	10,760	10,206	10,206	4,015	approx
1976	8,100		2,957	11,950	11,336	11,336		
1977	8,600	FSU	3,139	interpolated	12,344	12,344		
1978	9,400	NGLs	3,431	interpolated	13,353	13,353		
1979	9,900	k bbl /d	3,614	interpolated	14,361	14,361		
1980	11,706	285	4,377 FSU		15,370	15,370	8,030	approx
1981	11,850	300	4,435 FSU		16,430	16,430		
1982	11,912	315	4,463 FSU		17,680	17,680		
1983	11,972	330	4,490 FSU		18,927	18,927		
1984	11,861	340	4,453 FSU		20,744	20,744		
1985	11,585	350	4,356 FSU		22,707	22,707	14,600	approx
1986	11,895	440	4,502 FSU		24,195	24,195		
1987	12,050	430	4,555 FSU		25,358	25,358		
1988	12,053	450	4,564 FSU		27,192	27,192		
1989	11,715	425	4,431 FSU			Gazprom 1989-ff	attributed to Gazprom	
1990	10,975	425	4,161 FSU				attributed to Gazprom	
1991	9,992	420	3,800 FSU				attributed to Gazprom	
1992	7,862	230	2,954				attributed to Gazprom	
1993	6,950	220	2,617				attributed to Gazprom	
1994	6,335	200	2,385				attributed to Gazprom	
1995	6,175	180	2,320				attributed to Gazprom	
1996	6,035	185	2,270				attributed to Gazprom	
1997	6,115	195	2,303				attributed to Gazprom	
1998	6,074	220	2,297				attributed to Gazprom	
1999	6,310	231	2,387				attributed to Gazprom	
2000	6,711	232	2,534				attributed to Gazprom	
2001	7,154	237	2,698				attributed to Gazprom	
2002	7,654	246	2,884				attributed to Gazprom	
2003	8,522	390	3,253				attributed to Gazprom	
2004	9,261	456	3,547				attributed to Gazprom	
2005	9,500	457	3,634				attributed to Gazprom	
2006	9,664	417	3,679				attributed to Gazprom	
2007	9,863	426	3,755				attributed to Gazprom	
2008	9,779	422	3,723				attributed to Gazprom	
2009	9,918		3,620				attributed to Gazprom	
2010	10,131		3,698				attributed to Gazprom	
		1992-2010 excluded from total						
Total		1949-1991:	95,475		1956-1991:	335,678		

Russia 1949-1979
Crude oil
thousand bbl /day

Russia
Total oil supply
million bbl /yr

Russia
gross gas prod'n
Bcf/yr

Russia
marketed production
Bcf/yr

Attributed to FSU
Bcf/yr

Felder Russia data
Billion cf/yr

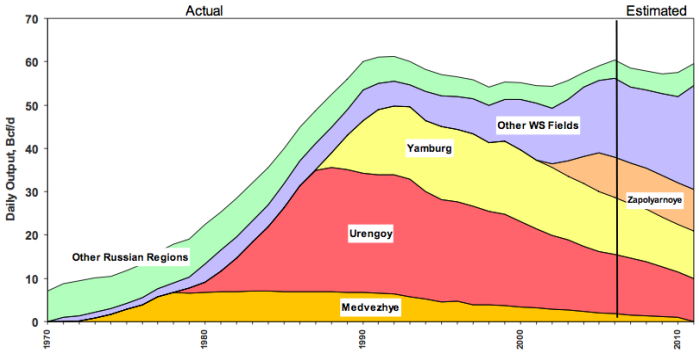
Russia, consumption Bcf	oil, k bbl/day
6.8	200
7.4	204
8.0	
10.4	

US Energy Information Administration, International Energy Statistics

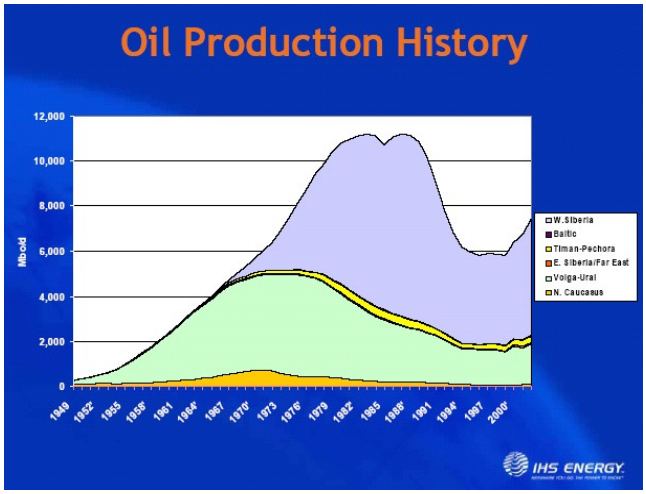
www.eia.gov/emeu/international/energy.html

updated April 2013

	FSU Crude, condensate, NGPL thousand bbl /d	FSU liquids million barrels/yr	FSU natural gas Bcf/yr	
1980	11,991	**4,377**	15,370	
1981	12,150	**4,435**	16,430	
1982	12,227	**4,463**	17,680	
1983	12,302	**4,490**	18,927	U
1984	12,201	**4,453**	20,744	S
1985	11,935	**4,356**	22,707	S
1986	12,335	**4,502**	24,195	R
1987	12,480	**4,555**	25,358	
1988	12,503	**4,564**	27,192	
1989	12,140	**4,431**	28,111	
1990	11,400	**4,161**	28,782	
1991	10,412	**3,800**	28,623	FSU
1992	7,862	2,870	22,616	Russian Federation
1993	6,950	2,537	21,814	R
1994	6,335	2,312	21,450	u
1995	6,175	2,254	21,005	s
1996	6,035	2,203	19,865	s
1997	6,115	2,232	18,901	i
1998	6,074	2,217	19,554	a
1999	6,310	2,303	19,593	n
2000	6,711	2,450	19,335	
2001	7,154	2,611	19,222	F
2002	7,654	2,794	19,685	e
2003	8,522	3,111	20,507	d
2004	9,261	3,380	20,991	e
2005	9,500	3,468	21,224	r
2006	9,664	3,527	21,736	a
2007	9,863	3,600	21,595	t
2008	9,779	3,569	21,515	i
2009	9,918	3,620	19,303	o
2010	10,131	3,698	21,536	n
2011	10,213	3,728	23,686	
2012	10,371	3,785		

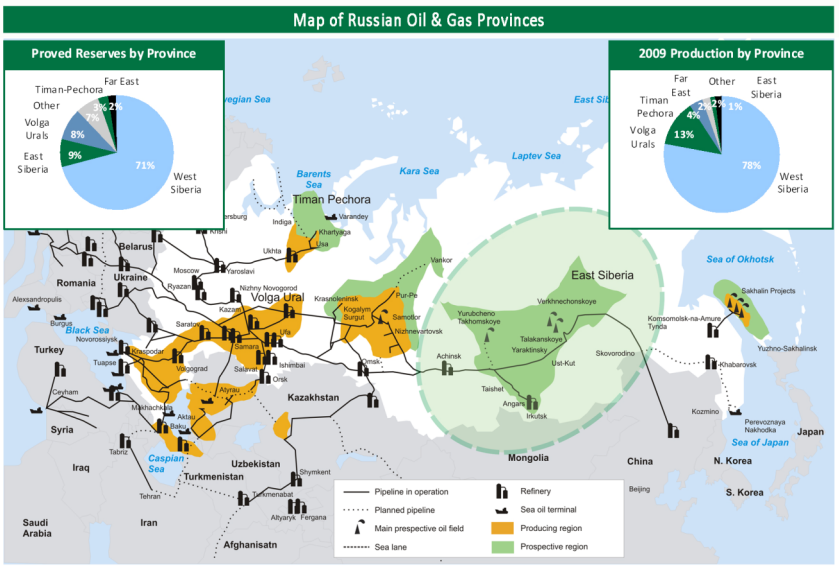


Theodor Felder (~2005) "Russian Oil: Current Status and Outlook," IHS Global Insight.



Gas production (EIA data): Bcf/yr	1991	1992	Percent of 1992
Eurasia	28,623	27,465	100.0%
Armenia	--	-	0.0%
Azerbaijan	--	275	1.0%
Belarus	--	10	0.0%
Estonia	--	-	0.0%
Former U.S.S.R.	28,623	--	
Georgia	--	1	0.0%
Kazakhstan	--	286	1.0%
Kyrgyzstan	--	4	0.0%
Latvia	--	-	0.0%
Lithuania	--	-	0.0%
Moldova	--	-	0.0%
Russia	--	22,616	82.3%
Tajikistan	--	4	0.0%
Turkmenistan	--	2,020	7.4%
Ukraine	--	738	2.7%
Uzbekistan	--	1,511	5.5%

Crude oil & condensate prodn (EIA): thousand bbl /d	1991	1992	Percent of 1992
Eurasia	9,992	8,541	100.0%
Armenia	--	-	0.0%
Azerbaijan	--	213	2.5%
Belarus	--	40	0.5%
Estonia	--	-	0.0%
Former U.S.S.R.	9,992	--	
Georgia	--	3	0.0%
Kazakhstan	--	444	5.2%
Kyrgyzstan	--	2	0.0%
Latvia	--	-	0.0%
Lithuania	--	-	0.0%
Moldova	--	-	0.0%
Russia	--	7,632	89.4%
Tajikistan	--	1	0.0%
Turkmenistan	--	98	1.1%
Ukraine	--	72	0.8%
Uzbekistan	--	36	0.4%



smartcorpinc.com

Cell: I9
Comment: Rick Heede:
Oil and natural gas production is detailed from 1949 to 1991 and from 1956 to 1988 (for natural gas; Gazprom production from 1989 to 2010). The later Russian Federation dominated oil and gas production in the Former Soviet Union. Natural gas production was 82.3 percent Russia in 1992 (Turkmenistan, Ukraine, and Uzbekistan accounting for most of the rest). Oil production was 89.4 percent Russia in 1992 (Azerbaijan and Kazakhstan accounting for most of the rest).
See Tables for 1991 and 1992 oil and gas production by nation-state on page 2.

Cell: D11
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 million 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: 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 or marketed production.
Crude production includes natural gas liquids (NGL) unless noted.

Cell: H12
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, p. 55

Cell: D20
Comment: Rick Heede:
Data estimated from a chart in Theodor Felder (~2005) “Russian Oil: Current Status and Outlook,”IHS Global Insight, Lakewood, Colorado, cited in Dave Cohen (2006) “Uncertainties about Russian Reserves and Future Production,” posted at www.theoildrum.com.
CMS note: CMS does not have detailed numerical data; estimated from a line chart of Russian oil production 1949-2003. Also note that these estimates are for the geographic area now in the Russian Federation, not the USSR, and includes Western Siberia, Baltic, Timan-Pechora, East Siberia/Far East, Volga-Ural, and North Caucasus basins. Chart is reproduced at right.

Cell: I27
Comment: Rick Heede:
U.S. Bureau of Mines Minerals Yearbook 1960, Table 16 page 336. Marketed production, USSR.

Cell: L29
Comment: Rick Heede:
Note that the gas production data is roughly half of the Bureau of Mines data, e.g., Felder data 1980: ~8,030 Bcf, USBOM: 15,370. Felderdata for 1975: ~4,015 Bcf, USBOM 10,969.
USBOM data is for marketed gas. The large discrepancy is only partially explained by Felder’s data for Russian territory whereas the USBOM and later EIA data is for USSR. While gas production was declining 1991 to 1992, estimated production in the non-Russian territories of the collapsing USSR is ~21 percent of the FSU.

Cell: I31
Comment: Rick Heede:
U.S. Bureau of Mines, Minerals Yearbook 1964, page 348, marketed production 1960-1964.

Cell: O33
Comment: Rick Heede:
U.S. Bureau of Mines, Minerals Yearbook, citing UN Stat Yrbk, consumption in Russia for 1952-1955.

Cell: I35
Comment: Rick Heede:
U.S. Bureau of Mines, Minerals Yearbook 1968, page 750, marketed production 1964-1967. Gross production not shown.

Cell: I39
Comment: Rick Heede:
U.S. Bureau of Mines, Minerals Yearbook 1970, page 764, gross and marketed production 1968-1970.

Cell: I42
Comment: Rick Heede:
U.S. Bureau of Mines, Minerals Yearbook 1972, page 846, gross and marketed production 1970.

Cell: I43
Comment: Rick Heede:
U.S. Bureau of Mines Minerals Yearbook 1974, page 887, reports both gross and marketed production for 1972-1973.

Cell: I45
Comment: Rick Heede:
U.S. Bureau of Mines Minerals Yearbook 1976, page 887, reports both gross and marketed production for 1974-1976.

Cell: D51
Comment: Rick Heede:
Energy Information Administration data on International Crude oil, NPGL, and other liquids production 1980-2010 (including EIA online data), FSU for 1980-1991, and Russia for 1992-2010.
Source: www.eia.gov/emeu/internationalenergy.html

Cell: E51

Comment: Rick Heede:
Gazprom NGL production for 1980 through start of actual Gazprom data is based on assuming that the relationship between NGL and gas production is constant. That proportion is known for 1999-2003 (and increased in 2004). We assume the ratio known in 1999 and applied the same factor to gas production estimated for 1980-1998.

Cell: I51
Comment: Rick Heede:
Energy Information Administration International Energy Annual 2006, Table 2.4 World Dry Natural Gas Production, data for"Former U.S.S.R" 1980-2006 (converted to Bcf by CMS). CMS adds dry natural gas production for 2007-2008 from EIA's online database. EIA places the end of "USSR" in 1991, and Russia "beginning" in 1992.

Cell: O71
Comment: Rick Heede:
Oil production data from EI (2003) Top 100, p. 147.

Cell: E73
Comment: Rick Heede:
Inconsistent reporting in OGJ (2004) -- 5.2 million bbl -- and OGJ (2003) -- 73 million bbl -- both for data year 2002. This is probably erroneous, considering that the higher figure agrees (though for 2001, not 2002) with both EI Top 100 and Gazprom's own data. Hence we use Gazprom data (converted from million tonnes of oil per year) into million bbl/yr at 7.3 bbl per tonne.

Cell: E75
Comment: Rick Heede:
OAO GazProm (2009) GazProm in Figures 2004-2008, page 28. Data in million tonnes of liquids production: chiefly condensate in 2004, ~equal in 2005, ~75 percent crude oil 2006-2008, e.g., 32 Mt oil & 10.9 Mt NGL in 2008.
Note: while Oil & Gas Journal gas production estimates agree well with GazProm data, OGJ100 are low for oil production (OGJ100 2006-2008 ~248 million bbl per year).. CMS uses GazProm data.

Cell: J111
Comment: Rick Heede:
Felder data for Russian oil production (left) and gas production (right). Note Felder data in column "L".