Oil and natural gas extraction data

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

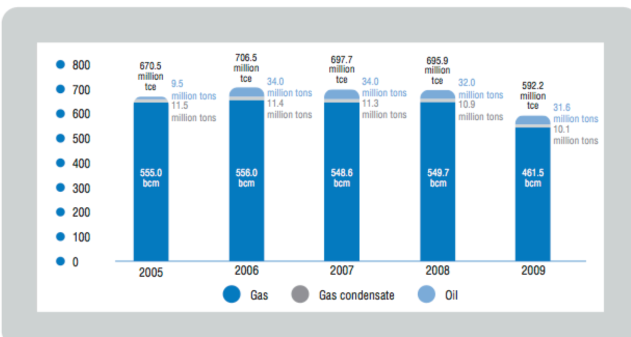
OAO Gazprom, Russia

www.gazprom.com St. Petersburgh

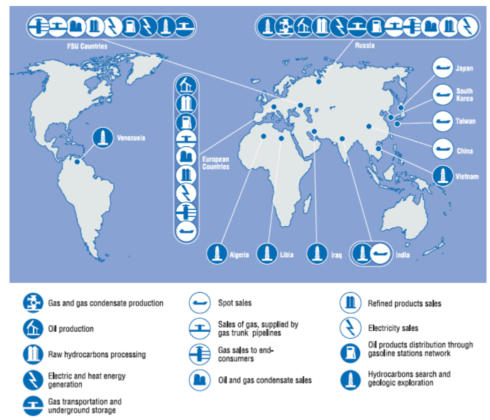
yellow column indicates original reported units

50.01% State-owned

Production / Extraction data



OAO Gazprom (2010) "Gazprom in Figures 2005-2009," gazprom.com



Gazprom in Figures 2005-2009, page 5.

Gazprom acquired Sibneft in 2005.

35.31466 cf/SCM

For further details, see: Victor, Nadejda, & Inna Sayfer (2012) "Gazprom: the struggle for power," in Victor et al, eds, Oil and Governance, pp. 655-700.

Note on Gazprom pipeline system

Year	Crude Oil & NGL					Natural Gas					
					Sum						Sum
	million tonnes	million tonnes	Million bbl /yr	Million bbl /yr	Million bbl /yr	Bcm/yr	Million m^3/yr	Million SCM/d	Billion cf/yr	Billion cf/yr	Billion cf/yr
1950											
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1986											
1987			Gazprom						Gazprom		Gazprom
1988			million bbl /yr	Gazprom established as a state concern in 1989					Bcf/yr		Bcf/yr
1989			85.7		85.7			Russia of FSU	22,764		22,764
1990		estimated based on	87.8		87.8			1989-1991	23,307		23,307
1991		constant NGL per Bcf	87.3		87.3		linked to cell O121	82.34%	23,178		23,178
1992		of gas production for	83.8		83.8				22,240		22,240
1993		1989-1998	80.8	Sibneft	80.8				21,452		21,452
1994			79.4	million bbl /yr	79.4			Gazprom of Russia	21,094		21,094
1995	Gazprom	Sibneft	77.8	50.0	128	Gazprom	Sibneft	1992-1998	20,657		20,657
1996	million tonnes/yr	million tonnes/yr	73.6	75.0	149	billion m^3/yr	million m^3/yr	98.34%	19,535	Sibneft	19,535
1997	no data	no data	70.0	100.0	170	no data	no data		18,587	Bcf/yr	18,587
1998	no data	no data	72.4	125.0	197	no data	no data		19,229	52.0	19,281
1999	9.9	16.32	72.6	117.7	190	545.6	1,344	Gazprom	19,268	47.5	19,315
2000	10.0	17.20	73.3	124.0	197	523.2	1,429	Gazprom	18,477	50.5	18,527
2001	10.2	20.67	74.8	149.0	224	512.0	1,639	Gazprom	18,081	57.9	18,139
2002	10.6	26.34	77.7	195.9	274	521.9	1,402	Gazprom	18,431	49.5	18,480
2003	11.0	31.45	80.6	233.8	314	540.2	2,002	Gazprom	19,077	70.7	19,148
2004	12.0	34.04	88.0	253.1	341	552.5	1,986	Gazprom	19,511	70.1	19,581
2005	21.0	Acquired 2005	153.9	147.7	302	555.0	Acquired 2005	Gazprom	19,600	40.9	19,641
2006	45.4		332.8		333	556.0		Gazprom	19,633		19,633
2007	45.3		332.0		332	548.6		Gazprom	19,372		19,372
2008	42.9	Condensate	314.5		314	549.7		Gazprom	19,414		19,414
2009	41.7	Mt/yr	305.6		306	461.5		Gazprom	16,298		16,298
2010	32.0	11.3	317.4		317	508.6		Gazprom	17,961		17,961
2011	32.3	12.1	325.1		325	513.2			18,122		18,122
2012	33.3	12.9	338.5		338	487.0			17,199		17,199
2013	42.4	14.7	418.3	Gazprom 2013-2	418	488.4	Gazprom 2013-2017 Factbook		17,247		17,247
2014	43.5	14.5	425.3	Gazprom 2013-2	425	444.9	Gazprom 2013-2017 Factbook		15,711		15,711
2015	44.0	15.3	435.3	Gazprom 2013-2	435	419.5	Gazprom 2013-2017 Factbook		14,815		14,815
2016	47.2	15.9	461.8	Gazprom 2013-2	462	420.1	Gazprom 2013-2017 Factbook		14,837		14,837
2017	48.6	15.9	473.3	Gazprom 2013-2	473	472.1	Gazprom 2013-2017 Factbook		16,670		16,670
2018	48.3	11.2	436.1	Gazprom AR2018	436	525.6	Gazprom AR2018		18,561		18,561
Total	na	na	6,335	1,571	7,907	na	na	-	570,330	439	570,769

Alternate production estimate for 2008

Oil	Oil		Natural gas	Natural gas
Thousand bbl /d	Million bbl /yr		Million cf/d	Bcf.yr
1,124	410		51,818	18,914

2008

Source: Hults, & Thurber, 2012, Introduction, Table 1.1, page 24, in Victor et al, eds, 2012, Oil and Governance.
Table 1.1 is based on information from Wood Mackenzie's Pathfinder Database; www.woodmacresearch.com

1 cubic meter = 35.314667 cubic feet

Additional gas data

	Bcf/yr	Bcf/yr	Bcf/yr
1936		49.44	
1950			
1951			
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2015			
2016			
2017			
2018			
Total		**277,091**	**967,349**
		1960-1988	1960-2017

Bcm: 9.00 — 318

Russia of FSU	US BuMines data	
Bcf/yr	1960-1971	
1,444	1,754	
1,872	2,273	
2,311	2,806	
2,661	3,231	
3,205	3,892	
3,763	4,570	
4,208	5,110	
4,612	5,601	USSR gross prod'n
4,973	6,039	for comparison only
5,317	6,457	6,860
5,816	7,063	7,520
6,133	7,448	7,900
6,858	8,328	interpolated
7,583	9,208	interpolated
8,307	10,089	interpolated
9,032	10,969	interpolated
9,757	11,849	interpolated
10,482	12,729	interpolated
11,207	13,610	interpolated
11,931	14,490	interpolated
12,656	15,370	EIA USSR gas data
13,529	16,430	1980-1991
14,558	17,680	Billion cf/yr
15,585	18,927	
17,082	20,744	
18,698	22,707	
19,923	24,195	
20,881	25,358	
22,391	27,192	
23,148	28,111	% Russia of USSR
23,700	28,782	1991/1992:
23,569	28,623	82.34%
	22,616	EIA Russia gas data:
	21,814	1992-2010
	21,450	
	21,005	
	19,865	
	18,901	
	19,554	
	19,593	
	19,335	
	19,222	
	19,685	
	20,507	
	20,991	
	21,224	
	21,736	
	21,595	
	21,515	
	19,303	
	21,458	
	22,208	
	21,742	
	22,139	
	21,468	
	21,531	
	21,750	
	23,508	
	-	

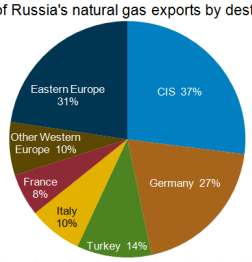
Russia flaring, World Bank

Bcm	Bcf
50.0	1,766
52.3	1,847
42.0	1,483
46.6	1,646
35.2	1,243

OGJ production estimates

Gazprom	Gazprom
liquids million bbl	gas Bcf
230.7	16,297
245.3	17,961

Share of Russia's natural gas exports by destination, 2010



Source: Eastern Block Energy, U.S. Energy Information Administration
EIA Country Studies, Russia, viewed April 2013.

Gazprom Proven reserves	
Bcm	Bcf
35,578	1,256,439

Gazprom in Figures, 2009, page 12.

EIA data	FSU dry gas
Eurasia	Bcf, 1992
Armenia	-
Azerbaijan	275
Belarus	10
Estonia	-
Former U.S.S.R.	--
Georgia	1
Kazakhstan	286
Kyrgyzstan	4
Latvia	-
Lithuania	-
Moldova	-
Russia	22,616
Tajikistan	4
Turkmenistan	2,020
Ukraine	738
Uzbekistan	1,511
Total "FSU"	27,465
Percent Russia	82.34%

US Energy Information Administration, International Energy Statistics

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

Updated May 2019

USSR / Russia	USSR / Russia	USSR / Russia	USSR / Russia	USSR / Russia	USSR / Russia	
Prod Marketed Gas	Dry natural gas	Vented & Flared	Flaring of gross	Reinjected	Gross Prod'n	
Bcf per year	Bcf per year	Bcf per year	%	Bcf per year	Bcf per year	
NA	15,370	-			NA	
NA	16,430	-			NA	
NA	17,680	-			NA	
NA	18,927	380			NA	USSR
NA	20,744	375			NA	
NA	22,707	400			NA	
NA	24,195	350			NA	
NA	25,358	321			NA	
NA	27,192	706			NA	
NA	28,111	689			NA	
29,142	28,782	113	0.38%		29,823	
28,980	28,623	424	1.44%		29,404	
22,616	22,616	390	1.70%	-	23,006	
21,814	21,814	-	0.00%	-	21,814	
21,450	21,450	-	0.00%	-	21,450	
21,005	21,005	-	0.00%	-	21,005	
20,235	19,865	-	0.00%	-	20,235	
19,257	18,901	-	0.00%	-	19,257	
19,914	19,554	-	0.00%	-	19,914	
19,953	19,593	-	0.00%	-	19,953	
19,692	19,335	-	0.00%	-	19,692	
19,579	19,222	-	0.00%	-	19,579	
20,126	19,685	177	0.87%	-	20,303	
20,963	20,507	194	0.92%	-	21,157	
21,450	20,991	494	2.25%	-	21,945	
21,698	21,224	528	2.38%	-	22,225	
22,220	21,736	551	2.42%	-	22,771	
22,150	21,595	597	2.62%	-	22,746	
22,051	21,515	706	3.05%	-	23,174	
19,901	19,303	688	3.34%	-	20,589	
22,372	21,458	671	2.92%	-	22,965	
23,686	22,208	657		-	23,678	
22,486	21,742	667		-	23,131	
23,031	22,139	560		-	23,590	
20,437	21,468	431		-	22,626	
	21,531	360		-	22,729	
	21,750				na (May19)	
	23,508					

Russian Federation

	For the year ended December 31,				
	2010	2011	2012	2013	2014
Natural gas and APG production, bcm	508.59	513.17	487.02	487.39	443.88
Including APG	4.28	4.73	5.66	6.71	7.55
Gas condensate, mm tons	11.29	12.07	12.85	14.66	14.49
Crude oil production, mm tons	32.01	32.28	33.33	33.84	35.29

Gazprom in Figures 2010-2014: The Power of Growth, page 26 "Gazprom Group's hydrocarbon production in Russia, 2010-2014.

Daily average hydrocarbon production of Gazprom Group in Russia

(including share in production of companies, investments in which are classified as joint operations)

	For the year ended 31 December				
	2011*	2012	2013	2014	2015
Natural and associated gas, mmcm / day	1,405.9	1,333.3	1,338.0	1,218.9	1,149.4
Gas condensate, thousand tonnes / day	33.1	35.1	40.2	39.7	42.0
Crude oil, thousand tonnes / day	88.4	115.5	116.2	119.3	120.7

* Excluding share of Gazprom Group in production of companies, investments in which are classified as joint operations.

Gazprom in Figures 2011-2015:page 24 "Gazprom Group's hydrocarbon production in Russia".

Hydrocarbon reserves of Gazprom Group in Russia

(taking into account share in reserves of entities, investments in which are classified as joint operations)

Metric units

	As at 31 December				
	2013	2014	2015	2016	2017
Natural gas, bcm					
Reserves, Russian classification	35,696.6	36,101.4	36,147.3	36,443.9	35,355.4
share audited under PRMS standards	93%	94%	94%	95%	94%
Proved	18,939.3	18,894.7	18,791.2	18,596.5	18,253.4
Probable	4,325.2	4,616.0	4,913.8	5,258.6	5,893.2
Proved + probable	23,264.5	23,510.7	23,705.0	23,855.1	24,146.6
Gas condensate, mm tonnes					
Reserves, Russian classification	1,384.4	1,447.0	1,499.5	1,534.9	1,595.6
share audited under PRMS standards	89%	92%	92%	94%	93%
Proved	638.8	642.3	699.5	759.2	797.7
Probable	193.6	206.3	233.8	259.7	308.0
Proved + probable	832.4	848.6	933.3	1,018.9	1,105.7
Crude oil, mm tonnes					
Reserves, Russian classification	2,019.0	2,053.1	2,082.0	2,078.5	2,045.3
share audited under PRMS standards	89%	91%	92%	93%	94%
Proved	834.8	830.5	792.7	789.5	736.8
Probable	572.4	543.9	562.7	589.2	623.2
Proved + probable	1,407.2	1,374.4	1,355.4	1,378.7	1,360.0

Gazprom (2018) Gazprom in Figures 2013-2017 Factbook, page 15

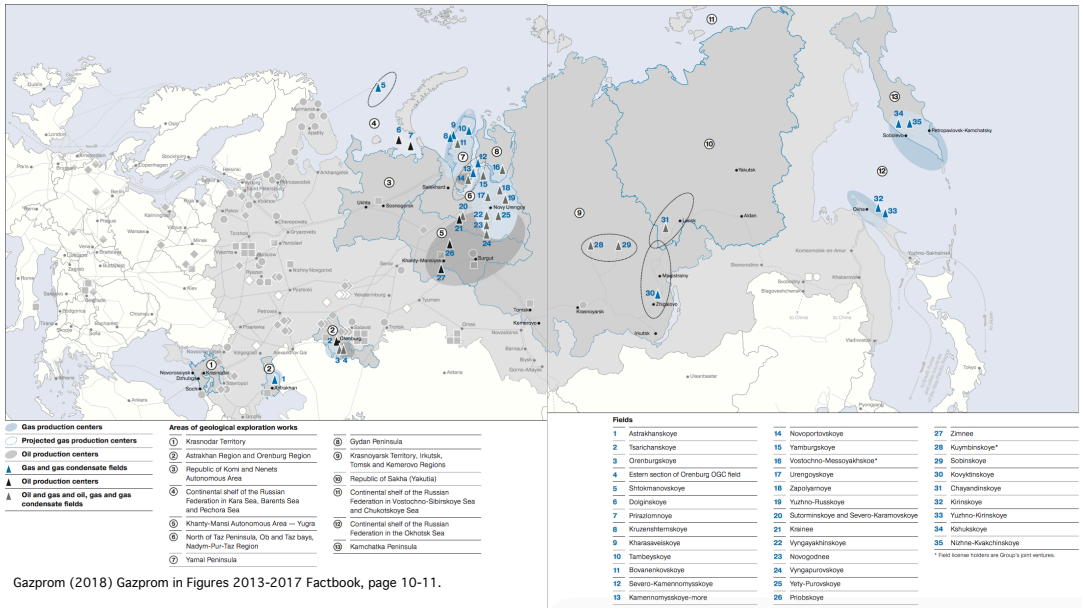
Hydrocarbon production of Gazprom Group in Russia

(taking into account share in production of entities, investments in which are classified as joint operations)

Metric units

	For the year ended 31 December				
	2013	2014	2015	2016	2017
Natural and associated gas, bcm	488.39	444.90	419.52	420.13	472.05
Gas condensate, mm tonnes	14.66	14.49	15.34	15.85	15.94
Crude oil, mm tonnes	42.41	43.53	44.04	47.15	48.63

Gazprom (2018) Gazprom in Figures 2013-2017 Factbook, page 25



Gazprom (2018) Gazprom in Figures 2013-2017 Factbook, page 10-11.

Gazprom Group Results

Operating Results

	2011	2012	2013	Change 2013/2012
Gas Production in Russia				
Gazprom Group's production, bcm	513.2	487.0	**487.4**	0.1%
Share of the *Gazprom Group* in the production of affiliates, bcm	11.3	12.8	**14.0**	9.4%
Gas Condensate production in Russia				
Gazprom Group's production, mm tons	12.1	12.8	**14.7**	14.8%
Share of the *Gazprom Group* in the production of affiliates, mm tons	1.0	1.1	**1.3**	18.2%
Crude oil production in Russia				
Gazprom Group's production, mm tons	32.3	33.3	**33.8**	1.5%
Share of the *Gazprom Group* in the production of affiliates, mm tons	20.5	19.7	**18.8**	–4.6%
Hydrocarbons refining				
Natural and associated gas refining, bcm	33.2	32.4	**31.5**	–2.8%
Oil anf gas condensate refining, mm tonnes	53.5	61.5	**66.1**	7.5%
Sales of Gas				
Sales of gas in Russia, bcm	265.3	249.7	**228.1**	–8.7%
Sales of gas in Far Abroad countries, bcm	156.6	151.0	**174.3**	15.4%
Sales of gas in the FSU countries, bcm	81.7	66.1	**59.4**	–10.1%
Production of electricity and heat				
Production of electricity, billion KW·h	173.2	168.2	**162.5**	–3.4%
Production of heat, mm Gcal	100.2	102.5	**112.5**	9.8%

Gazprom 2013 Annual Report: Unlocking the Planet's Potential, page 6.

Cell: H9
Comment: Rick Heede:
Natural gas lanterns were first lit in Russia on the Aptekarsky Island of Saint Petersburg back in 1819. The history of "big gas" in the Soviet Union began in 1946 upon commissioning of the Saratov – Moscow gas trunkline. Gazprom State Gas Concern was established in 1989 on the basis of the USSR Gas Industry Ministry. In 1993 the Concern laid the foundation for setting up Gazprom Russian Joint Stock Company, which was renamed in 1998 as Gazprom Open Joint Stock Company. www.gazprom.com/about/
The Soviet Union created a natural gas ministry in 1965 to help develop the USSR's natural gas industry.
Also see the history section of: Victor, Nadejda, & Inna Sayfer (2012) "Gazprom: the struggle for power," in Victor et al, eds, Oil and Governance, pp. 655-700.

Cell: N9
Comment: Rick Heede:
The Russian Govt owns a controlling share, 50.01 percent. Wikipedia, Apr12.
Victor & Sayfer state 49 percent publicly owned. Russia's privatization, via a 1992 presidential decree, stipulated voucher auctions of formerly state-owned enterprises with ownership limited to workers and Russian citizens. Gazprom was established as a joint stock company. Along with similar oil companies such as Lukoil, Rosneft, and Yukos, a required 38 to 45 perecnt of shares would remain in government hands for the first three years, ending in 1994 (note: the government ownership exludes shares owned by the company and its managers; in 2000, Gazprom maanagers' offical stake was ~35 percent, "leaving about 20 percent in other, hidden hands." Victor and Sayfer, page 693, fn 4, citing Black et al, 2000, "Russian Privatization and Corporate Governance: What Went Wrong?" Stanford Law Review, vol. 52:1731-1808).
In Gazprom's case, 40 percent of its shares were in government hands, and 9 percent set aside for foreign ownership. In the second stage of privatization beginning in 1995 Gazprom was spared further privatization because gas prices were too low to make Gazprom a viable commercial enterprise and Prime Minister Chernomyrdin did not want to further weaken his control by introducing new competitive pressures. In 1998, President Yeltsin approved the sale of a further 5 percent of the government's shares in Gazprom. Foreign participation was increased to 14 percent, but only a 2.5 percent stake was sold to Ruhrgas for $660 million. President Putin sought to increase control over the oil and gas sectors, and, after taking control over Gazprom, signed amendments to a federal bill that allowed the state to have a controlling interest in the gas monopoly, by holding 50 percent plus one share. "In 2005, as a result of state-owned Rosneftegaz's purchase of a 10.74 percent stake in Gazprom, the government's stake in Gazprom increased to 50.1 percent."
Victor, Nadejda, & Inna Sayfer (2012) "Gazprom: the struggle for power," in Victor et al, eds, Oil and Governance, at pages 656-665, and 674.
World Bank, 2008b, page 221: "Gazprom is the world's largest gas company basically focused on geological exploration, production, transmission, storage,processing and marketing of gas and other hydrocarbons. The state owns a 50.002 per cent controlling stake in Gazprom." World Bank (2008b) A Citizen's Guide to National Oil Companies, Part B: Data Directory, World Bank, Washington, & Center for Energy Economics, Bureau of Economic Geology Jackson School of Geosciences University of Texas, Austin, 764 pp.

Cell: H12
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: O12
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: J49
Comment: Rick Heede:
Gazprom Neft was created under the name Sibneft in 1995 by Presidential Decree #872, issued on 24Aug95. A government resolution was signed on 29Sep95, and the State Property Committee on 11Oct95 ordered that the state's shares in oil producing enterprise Noyabrskneftegas, the Omsk Refinery, exploration enterprise Noyabrskneftegasgeophysica and marketing company Omsknefteprodukt all be transferred to Sibneft.
Sibneft initially combined Russia's largest oil refining complex in Omsk (dba Omsky NPZ), an oil and gas production enterprise based in the city of Noyabrsk in the Yamal-Nenets autonomous district (Noyabrskneftegas), a geological exploration enterprise and an oil products distribution network.
In 1996-1997 Sibneft was privatised through a series of Loans-for-Shares' auctions, and it was acquired by Roman Abramovich and Boris Berezovsky for US$100 million, bidding through several front companies that they set up for the purpose.
Sibneft twice attempted a merger with Yukos, to form Russia's largest oil company YukosSibneft. The first attempt in 1998 failed due to a dispute over management. The process was well under way the second time in 2003 when the federal government cracked down on Yukos, and Sibneft's shareholders called off the merger in November of that year.
In September 2005, Russia's largest corporate takeover occurred when Gazprom bought 73% of Sibneft's shares for US$13.1 billion. Later, Sibneft was renamed Gazprom Neft.
en.wikipedia.org/wiki/Gazprom_Neft

Cell: J53
Comment: Rick Heede:
Gazprom owns the largest piepline system in the world, which totaled 159,500 km at year-end 2008. The system includes 219 compressor stations with a capacity of 42 GW.
Victor, Nadejda, & Inna Sayfer (2012) "Gazprom: the struggle for power," in Victor et al, eds, Oil and Governance, pp. 655-700. At page 680.

Cell: F56
Comment: Rick Heede:
CMS assumes a constant proportion of NGL production to natural gas production for 1989 - 1998. No data available from Oil & Gas Journal, or Gazprom data.

Cell: L56
Comment: Rick Heede:
We estimate Gazprom's natural gas production for the years in which we do not have Gazprom annual reports (1989-1998) by (a) estimating Gazprom of Russian gas production total: 98.34 percent in 1999).
In addition, for 1989-1991 only, we also apply a factor of 82.3 percent in order to estimate Russia's portion of total FSU gas production (82.34 percent in 1991).

Cell: M56
Comment: Rick Heede:
Gazprom estimates for 1989-1998 are equal to EIA dry gas production data for Russia times the fraction of Russian production that is know to have been Gazprom in 1999, namely, 92.5 percent of Russia total.

Cell: L61
Comment: Rick Heede:
We estimate Gazprom's natural gas production for the years in which we do not have Gazprom annual reports (1989-1998) by (a) estimating Gazprom of Russian gas production total: 98.34 percent in 1999).

Cell: G62
Comment: Rick Heede:
We assume, for lack of production data from either Sibneft or Oil & Gas Journal, that Sibneft produced crude oil 1995 to 1997; we conservatively estimate that 1995 production equaled 40 percent of the known production in 1998, 1996 = 60 % of 1998, and 1997 = 80 percent of 1998. Sibneft's production likely exceeds these estimates.

Cell: E63
Comment: Rick Heede:
Sibneft varies its bbl per tonne conversion factor: "Miller & Lents used a 7.21 conversion factor to convert tons into barrels from 1996 through 2001. From 2002, the conversion factor used in audits is 7.436." Sibneft Modeling Databook, p. 9.

Cell: D66
Comment: Rick Heede:
Gazprom (2004) Annual Report for 2003, pp. 8 & 42-43. www.gazprom.com
Oil and condensate production averages ~92+ percent condensate, e.g, 10.8 of 11.0 million tonnes in 2003.

Cell: J66
Comment: Rick Heede:
Gazprom (2004) Annual Report for 2003. www.gazprom.com

Cell: M66
Comment: Rick Heede:
1999 data from Gazprom Annual report -- converted from 1.495 billion SCM/d to 19,268 Bcf/yr.

Cell: M67
Comment: Rick Heede:
Data from OGJ100 for Gazprom 2000-2003.

Cell: F69
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: J70
Comment: Rick Heede:
Victor & Sayfer quote Gazprom Financial reports for natural gas sales 2003-2008 (494 Bcm, 525 Bcm, 540 Bcm, 579 Bcm, 572 Bcm, and 568 Bcm, respectively; note that we quote production data rather than sales, and sales data may include amounts purchased from producers. See Table 15.3, page 678.
Victor, Nadejda, & Inna Sayfer (2012) "Gazprom: the struggle for power," in Victor et al, eds, Oil and Governance, pp. 655-700.

Cell: F71
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: J71
Comment: Rick Heede (Dec09):
OAO GazProm (2009) GazProm in Figures 2004-2008, page 28. Data in billion cubic meters, gas production.

Cell: G72
Comment: Rick Heede:
Gazprom acquired Sibneft in August 2005, and 7 of 12 months are added for 2005.

Cell: M72
Comment: Rick Heede (Dec09):
Oil & Gas Journal OGJ100, various years, Bcf per year. Similar data data 2005-2008: 19,599 Bcf, 19,635 Bcf, 19,373 Bcf, and 19,412 Bcf.
CMS uses the GazProm data from column "J."

Cell: N72
Comment: Rick Heede:
Gazprom acquired Sibneft in August 2005, and 7 of 12 months are added for 2005.

Cell: D76
Comment: Rick Heede:
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Cell: B77
Comment: Rick Heede:
While Russian energy strategies project rising natural gas production -- from about 610 Bcm in 2010 to 760 Bcm in 2030 (EIA; the Russian Energy Strategy projects production as high as 900 Bcm in 2030). About ninety percent of Gazprom's production is the Urals and Western Siberia, many of its discovered resources are not currently being produced. Additional exploration, development, and pipelines to offshore Arctic areas from Shtokman north of Murmansk and offshore Yamal Peninsula are ongoing, although cost, complexity, and markets have slowed development.
In addition, Gazprom's domestic prices are controlled, end use is frequently very inefficient as a result, 60 percent of total domestic gas consumption is used for electricity generation (to make things worse: gas-fired power plants are ~33 percent efficient), and "more than ninety percent of residential and industrial gas consumers lack meters." Victor, Nadejda, & Inna Sayfer (2012) "Gazprom: the struggle for power," in Victor et al, eds, Oil and Governance, pp. 655-700. At page 672, and 695 (fn 16).
Gazprom owns 51 percent of Shtokman Development Company; Total SA has 25 percent, and Statoil owns 24 percent.

Cell: D77
Comment: Rick Heede:
Gazprom in Figures 2010-2014: The Power of Growth, page 26 "Gazprom Group's hydrocarbon production in Russia, 2010-2014, in million tonnes (Mt), for crude oil (this column) and gas condensate (clmn "E").

Cell: H77
Comment: Rick Heede:
CMS uses Gazprom production of oil plus condensate (column D) in million tonnes per year. Oil & Gas Journal reports liquids production of 245 million barrels; Gazprom 320 million bbl.

Cell: J77
Comment: Rick Heede:
CMS: these are incomplete estimates, and ver low. Compare, for example, the World Bank estimates, which suggest Russia's flaring alone is ~one-quarter of the gobal total.

Cell: D78
Comment: Rick Heede:
Gazprom 2013 Annual Report: Unlocking the Planet's Potential, page 6: Operating Results, gas condensate + crude oil production in Russia, in million tonnes per year. The ratio of condensate production is ~24 percent of total liquids.

Cell: J78
Comment: Rick Heede:
Gazprom in Figures 2010-2014: The Power of Growth, page 26 "Gazprom Group's hydrocarbon production in Russia, 2010-2014. Note: Gazprom perviously reported somewhat higher gas production in 2011 and 2012, which we revise here.

Gazprom 2013 Annual Report: Unlocking the Planet's Potential., page 6: Operating Result. Gas production in Russia + Share of production by affiliates. In Bcm.

Cell: D80
Comment: Rick Heede:
Gazprom (2018) Gazprom in Figures 2013-2017 Factbook, page 25.
Production in Mt for condensate and crude oil, in Mt, for 2013 to 2017. This publication increased production of liquids in 2014 and 2015.

Cell: J80
Comment: Rick Heede:
Gazprom (2018) Gazprom in Figures 2013-2017 Factbook, page 25. Natural and associated gas production 2013-2017, in Bcm.

Cell: D85
Comment: Rick Heede:
Gazprom Annual Report 2018, 236 pp. Page 96 and 98: 2018 prodn: Oil: Russia: 48.3 Mt, plus international: 11.2 Mt.
Page 92: Reserves: 24,255 Bcm; gas condensate: 1,090 Gt; Oil: 1,335 Gt; Total: 712.3 Gboe.

Cell: J85
Comment: Rick Heede:
Gazprom Annual Report 2018, 236 pp. 2018 prodn: Russia: Gas (nat & Assoc): 498.7 Bcm, plus international net equity 26.9 Bcm, page 96.
Page 92: Reserves: 24,255 Bcm; gas condensate: 1,090 Gt; Oil: 1,335 Gt; Total: 712.3 Gboe.

Cell: G93
Comment: Rick Heede:
Gazprom "working interest liquids production in 2008" at 1,124 thousand bbl per day.
Victor, Hults, & Thurber, 2012, Introduction, Table 1.1, page 24, in Victor et al, eds, 2012, Oil and Governance. Table 1.1 is based on information from Wood Mackenzie's Pathfinder Database; www.woodmacresearch.com

Cell: L93
Comment: Rick Heede:
Gazprom"working interest natural gas production in 2008" at 51,818 thousand cf per day.

Victor, Hults, & Thurber, 2012, Introduction, Table 1.1, page 24, in Victor et al, eds, 2012, Oil and Governance. Table 1.1 is based on information from Wood Mackenzie's Pathfinder Database; www.woodmacresearch.com

Cell: N101
Comment: Rick Heede:
"A + B + C1" Gaprom Group's hydrocarbon reserves in Russia., datum for 2009. Gazprom in Figures 2005-2009, page 12.

Cell: E103
Comment: Rick Heede:
US Bureau of Mines (~1955) Minerals Yearbook 1952, Colby, Barton, & Oppegard, "Natural Gas, page 300.

Cell: N107
Comment: Rick Heede:
EIA International Energy Statistics, dry gas production in FSU states in 1992.

Cell: D111
Comment: Rick Heede:
USSR(chiefly western Russian and Ukraine) produced 9 Bcm in 1955. Victor, Nadejda, & Inna Sayfer (2012) "Gazprom: the struggle for power," in Victor et al, eds, Oil and Governance, pp. 655-700. At page 658.

Cell: E116
Comment: Rick Heede:
We estimate Russia's gas production of total USSR (FSU) based on the Russia proportion of FSU gas production in 1992 (EIA data); see calculations at right.

Cell: F116
Comment: Rick Heede:
US Bureau of Mines, Minerals Yearbook 1964, p. 348, shows USSR's "marketed production of natural gas" for 1960-1964.

Cell: F125
Comment: Rick Heede:
US Bureau of Mines, Minerals Yearbook 1971, Table 19, p. 797, shows both marketed and gross production of natural gas for 1969-1971. Russian gross production totaled 6.860 Tcf (x1.0624 of marketed production) in 1969, 7.520 Tcf (x1.0647) in 1970, and 7.9 Tcf (x1.0607) in 1971. Gross gas production includes gas that is vented or flared or re-injected; no data published to quantify vented or flared quantities in any country.

Cell: K133
Comment: Rick Heede:
USSR data for 1980-1991, and Russian Federation 1992-2017: EIA International Energy Statistics / Gas data to 2017 (2018 for crude oil and liquids).
For the purposes of attributing a proportion of USSR, or Former Soviet Union (FSU), we calculate that 82.344 percent of FSU's 1992 dry gas production (22.62 Tcf of 27.46 Tcf) was produced in Russia. We apply this factor above in allocating a percent of Russian gas production to Gazprom for

Cell: F150
Comment: Rick Heede:
World Dry Natural Gas Production, Bcf, Russia 1994-2003p, EIA (2005) Annual Energy Review, Table 11.11. Dry gas production is a proportion of gross production (81.5 percent of world gross prod'n in 2000, EIA International Energy Annual, Table 4.1: 88,093 Tcf dry vs 108,088 Tcf gross, or gross is 1.227x dry).
In any case, we use EIA dry gas production for Russian 1994-2003 as a proxy data set for Gazprom prior to known Gazprom starting in 1999: in 1999, known Gazprom equals 92.5 percent of EIA data for 1999, and we apply this fraction to EIA data 1994-1998.
1990 to 2011 data updated April 2013 with EIA International Energy Statistics, at right.

Cell: H165
Comment: Rick Heede:
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