

Oil and natural gas extraction data

Richard Heede
Climate Mitigation Services
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Oil and Natural Gas Corporation, India

www.ongcindia.com New Delhi

yellow column indicates original reported units **84.11% State-owned entity**

Production / Extraction data

Year	Crude Oil & NGL			Natural Gas			Background data	
	Net production	Net production	Net production	Net production	Net production	Net production		
	Thousand bbl /d	Million bbl /yr		Million cf/d	Million SCM/yr	Billion cf/yr		

Assam Oil Co / Oil India 1950-1959
ONGC 1956-2010

Assam Oil Co / Oil India 1950-1959
ONGC 1956-2010



1 cubic meter = 35.3147 cf



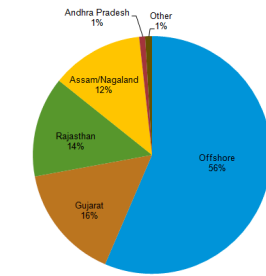
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77	2012
78	2013
79	2014
80	2015
81	2016
82	2017
83	2018
84	2019
85	2020
86	
87	
88	

India	ONGC India
Million bbl /yr	Million bbl /yr
2.9	3
3.2	3
3.3	3
3.4	3
3.4	3
3.4	3
3.4	3
8.0	8
12.3	12
17.0	17
22.5	22
35.6	36
43.4	43
43.6	44
51.7	52
52.6	53
52.1	52
57.0	57
55.4	55
55.7	56
61.6	62
64.6	65
72.6	73
82.5	82
89.4	89
66.4	66
118.6	119
142.7	143
175.6	176
190.2	190
227.0	227
231.8	232
224.8	222
235.1	232
259.2	247
244.6	243
228.1	227
215.0	204
205.9	195
231.7	228
273.9	256
266.8	239
	242
	212
	198
534	192
494	195
	192
	201
29.7	218
27.6	202
29.3	214
31.1	228
30.4	223
33.7	247
33.0	242
30.3	222
30.0	220
29.1	213
26.0	191
25.9	190
25.9	190
25.5	187
25.4	186

Oil and Natural Gas Commission formed in 1956

All Indian oil production to ONGC 1956-1986

India crude oil production by region, 2010



cia Sources: U.S. Energy Information Administration, ONGC, OIL, DGH
EIA Country Studies: India

ONGC oil production of total India, 1987-2010	
ONGCI, 1987-2010	5,299
India, 1987-2010	7,054
ONGCI of India, %	75.1%

ONGC India and OJ100, 1987-2010

OGJ100	312
OGJ100	374
OGJ100	438
OGJ100	485
OGJ100	569
OGJ100	552
OGJ100	601
OGJ100	691
OGJ100	761
OGJ100	789
OGJ100	650
OGJ100	665
OGJ100	869
OGJ100	896
OGJ100	898
OGJ100	918
OGJ100	908
OGJ100	811
OGJ100	849
OGJ100	887
OGJ100	898
OGJ100	984
OGJ100	988
OGJ100	894
OGJ100	901
OGJ100	895
OGJ100	878
OGJ100	818
OGJ100	796
OGJ100	822
OGJ100	869

Energy Intelligence	Energy Intelligence
million cf/day	Bcf
2,453	895.35
2,540	927.10

OGJ100: na 2006-2008

billion m^3
27.850
27.980
25.320
25.510
25.340
24.850
23.170
22.530
23.270
24.610

All Indian gas production to ONGC 1956-1986

interpolated
interpolated
interpolated

Gross production
Bcf/yr
55
50
53

See table, page 2, for details

ONGC gas production of total India, 1987-2010	
ONGCI, 1987-2010	17,061
India, 1987-2010	20,520
ONGCI of India, %	83.1%

ONGC India and OJ100, 1987-2010

Oil & Natural Gas Commission	312
Oil & Natural Gas Commission	374
Oil & Natural Gas Commission	438
Oil & Natural Gas Commission	485
Oil & Natural Gas Commission	569
Oil & Natural Gas Commission	552
Oil & Natural Gas Commission	601
Oil & Natural Gas Commission	691
Oil & Natural Gas Commission	761
Oil & Natural Gas Commission	789
Oil & Natural Gas Commission	650
Oil & Natural Gas Commission	665
Oil & Natural Gas Commission	869
Oil & Natural Gas Commission	896
Oil & Natural Gas Commission	898
Oil & Natural Gas Commission	918
Oil & Natural Gas Commission	908
Oil & Natural Gas Commission	811
Oil & Natural Gas Commission	849
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Oil & Natural Gas Commission	898
Oil & Natural Gas Commission	984
Oil & Natural Gas Commission	988
Oil & Natural Gas Commission	894
Oil & Natural Gas Commission	901
Oil & Natural Gas Commission	895
Oil & Natural Gas Commission	878
Oil & Natural Gas Commission	818
Oil & Natural Gas Commission	796
Oil & Natural Gas Commission	822
Oil & Natural Gas Commission	869

	Unit	Production 2010-11	2009-10	2010-11	2009-10
Direct					
Crude Oil	(MMT)	*27.28	*26.46	22.94	22.33
Natural Gas	(BCM)	**25.32	**25.59	20.20	20.60
Ethane/Propane	000 MT	388	535	387	533
LPG	000 MT	1054	1105	1057	1108
Naphtha	000 MT	1570	1592	1600	1598
SKO	000 MT	116	165	118	166
ATF	000 NT	19	8	14	2
Others					

Total	na	8,948	na	na	na	25,185
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A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
89	Alternate production estimate for 2008														
90	Thousand bbl /d		Million bbl /yr		Million cf/d		Bcf/yr								
91	2008		696		254		2,231		814						
92	Source: Hulst, & Thurber, 2012, Introduction, Table 1.1, page 24, in Victor et al, eds, 2012, <i>Oil and Governance</i> .														
93	Table 1.1 is based on information from Wood Mackenzie's Pathfinder Database; www.woodmacresearch.com														

US Energy Information Administration, International Energy Statistics									
www.eia.gov/emeu/international/energy.html									
Updated April 2013									
	India	India	India	India	India	India	India	India	India
	Crude oil, condensate, & NGPL	Crude oil, condensate, & NGPL	Prod Marketed Gas	Dry natural gas	Vented & Flared	gross	Reinjected	Gross Prod'n	
	k bbl per day	million bbl per yr	Bcf per year	Bcf per year	Bcf per year	%	Bcf per year	Bcf per year	
101	1980	182.00	66	NA	51	67	-	NA	
102	1981	325.00	119	NA	64	80	-	NA	
103	1982	391.00	143	NA	89	87	-	NA	
104	1983	481.00	176	NA	106	84	-	NA	
105	1984	521.00	190	NA	113	83	-	NA	
106	1985	622.00	227	NA	135	135	-	NA	
107	1986	635.00	232	NA	180	100	-	NA	
108	1987	616.00	225	NA	227	127	-	NA	
109	1988	644.00	235	NA	310	137	-	NA	
110	1989	710.00	259	NA	315	166	-	NA	
111	1990	670.00	245	399	399	177	27%	68	644
112	1991	625.00	228	465	449	201	30%	4	669
113	1992	589.00	215	482	477	172	26%	3	658
114	1993	564.00	206	546	532	88	14%	4	638
115	1994	634.71	232	611	594	71	10%	4	685
116	1995	750.45	274	651	628	94	13%	4	748
117	1996	731.02	267	721	696	86	11%	4	810
118	1997	759.62	277	743	717	87	10%	4	833
119	1998	751.42	274	786	761	86	10%	4	876
120	1999	742.66	271	778	752	86	10%	4	867
121	2000	739.24	270	821	719	26	3%	-	780
122	2001	745.40	272	893	709	26	3%	-	773
123	2002	782.95	286	975	921	57	5%	-	1,113
124	2003	785.33	287	1,079	964	47	4%	-	1,125
125	2004	806.61	294	1,096	996	39	3%	-	1,135
126	2005	783.56	286	1,153	1,056	37	3%	-	1,190
127	2006	810.72	296	1,088	1,088	32	3%	-	1,119
128	2007	808.23	295	1,108	1,108	32	3%	-	1,141
129	2008	808.91	295	1,137	1,137	32	3%	-	1,170
130	2009	794.41	290	1,437	1,437	36	2%	-	1,473
131	2010	869.32	317	1,848	1,848	35	2%	-	1,883
132	2011	904.46	330	1,682	1,682	34	2%	-	1,715
133	2012	899.21	328	1,460	1,473	37	-	-	1,510
134	2013	895.51	327	NA	1,240	30	-	-	1,270
135	2014	888.05	324	NA	1,158	28	-	-	1,186
136	2015	882.91	322	NA	1,103	30	-	-	1,133
137	2016	872.40	318	NA	1,092	-	-	NA	
138	2017	873.48	319	NA	1,114	-	-	NA	
139	2018	867.66	317	NA					
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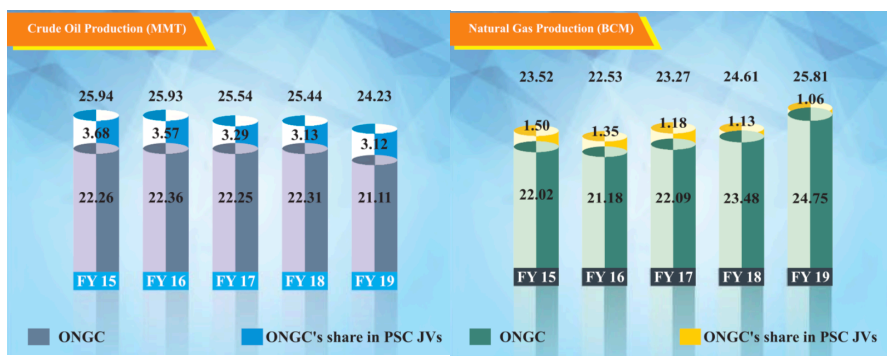
Updated June 2019
Crude oil, condensate, & NGPL

Updated June 2019

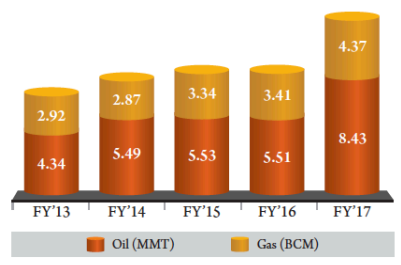
1990-2011 totals	20,498	19,668	1,580	7.2%	100	22,048
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million tonnes	2008	2007	billion m ³	2008	2007
crude	27.13	27.93	Natural gas	25.43	25.12
C2-C3	0.50	0.52	Bcf	898.05	887.10
LPG	1.03	1.04			
Naphtha	1.55	1.47			
Kerosene	0.16	0.17			
total liquids	30.36	31.12	average	3.2125 million tonnes	

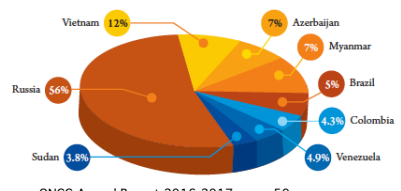
Source: ONGC India AnnRpt2008.



ONGC Annual Report FY2019, page 12



ONGC Videsh Ltd: Country-wise Production (FY'17)



ONGC Annual Report 2016-2017, page 50.

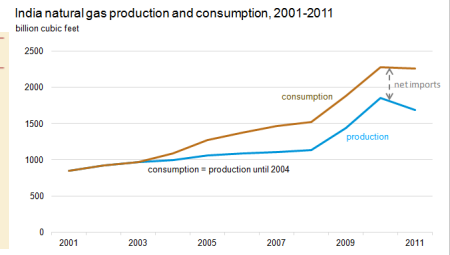
Performance at a Glance

(₹ in million unless otherwise stated)	2016-17*	2015-16*	2014-15	2013-14	2012-13	2011-12	2010-11
PHYSICAL							
Quantity Sold (Other than Trading)							
- Crude Oil (MMT)	23.86	24.15	24.11	23.61	23.69	23.09	22.94
- Natural Gas (MMM3)	17,935	17,100	17,983	19,633	20,160	20,202	20,288
- LPG (000'Tonnes)	1,352	1,191	1,090	1,073	1,005	1,033	1,057
- Naphtha/ARN (000'Tonnes)	1,087	1,065	1,124	1,379	1,520	1,557	1,600
- Ethane-Propane(C2-C3)/Ethane/Propane/Butane (000'Tonnes)	673	401	337	428	425	461	387
- Superior Kerosene Oil (000'Tonnes)	43	66	74	85	106	79	118

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	2008-09	2007-08	2006-07	2005-06	2004-05	2003-04	2002-03	2001-02	2000-01	1999-00
(Rupees in million unless otherwise stated)										
PHYSICAL										
Quantity Sold (Other than Trading)										
- Crude Oil (MMT)	22.88	24.08	24.42	22.45	24.09	23.94	23.90	22.86	23.38	23.39
- Natural Gas (MMM3)	20,534	20,432	20,306	20,500	20,644	21,103	21,110	20,446	20,501	20,064
- LPG (000 Tonnes)	1,029	1,037	1,033	1,084	1,086	1,161	1,198	1,157	1,211	1,208
- Naptha/ARN (000 Tonnes)	1,545	1,442	1,442	1,578	1,567	1,656	1,642	1,681	1,514	1,393
- Ethane/Propane (000 Tonnes)	497	520	548	535	528	534	619	528	570	557
- Superior Kerosene Oil (000 Tonnes)	153	168	156	176	177	218	234	231	221	228
Quantity Sold (Trading)										
- Superior Kerosene Oil (000 KL)	441	308	563	432	970	0	0	0	0	0
- HSD (000 KL)	1,742	1,539	1,994	874	1,538	0	0	0	0	0
- Motor Spirit (000 KL)	273	232	121	110	262	0	0	0	0	0

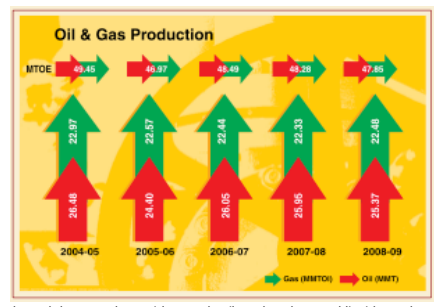


Source: U.S. Energy Information Administration, International Energy Statistics
EIA Country Studies: India

Overall Production and Sales Performance
Presented below are the highlights of production and sales of Crude Oil, Natural Gas and Value Added Products (VAP):

	Unit	Production Qty		Sales Qty		Value (₹ in million)	
		FY' 13	FY' 12	FY' 13	FY' 12	FY' 13	FY' 12
Direct							
Crude Oil	(MMT)	26.13	26.93	23.69	23.09	533,268	507,873
Natural Gas	(BCM)	25.34	25.51	20.16	20.20	165,400	141,396
Ethane/Propane	000 MT	428	463	425	461	13,440	12,741
LPG	000 MT	1,006	1,037	1,005	1,033	31,484	23,711
Naptha	000 MT	1,534	1,557	1,520	1,557	76,804	72,167
SKO	000 MT	108	79	106	79	3,686	1,520
Others						1,589	1,850
Sub Total						825,671	761,258

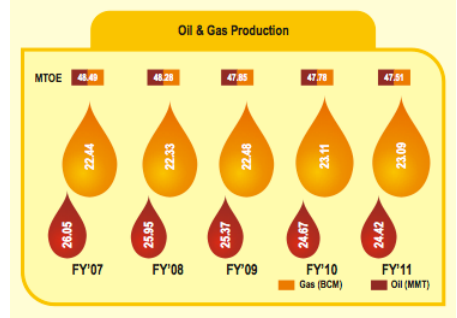
ONGC Annrpt 2012/2013, page 50.



CMS note: The charted data matches neither crude oil produced or total liquids produced

(₹ in million unless otherwise stated)	2012-13	2011-12	2010-11
PHYSICAL			
Quantity Sold (Other than Trading)			
- Crude Oil (MMT)	23.69	23.09	22.94
- Natural Gas (MMM3)	20,160	20,202	20,288
- LPG (000 Tonnes)	1,005	1,033	1,057
- Naptha/ARN (000 Tonnes)	1,520	1,557	1,600
- Ethane/Propane (000 Tonnes)	425	461	387
- Superior Kerosene Oil (000 Tonnes)	106	79	118
Quantity Sold (Trading)			
- Superior Kerosene Oil (000KL)	-	-	-
- HSD (000KL)	-	-	3
- Motor Spirit (000KL)	1	1	1

Annual Report 2012/2013



	Unit	Production		Sales		Value (Rs. In million)	
		2008-09	2007-08	2008-09	2007-08	2008-09	2007-08
DIRECT							
CRUDE OIL	(MMT)	* 27.13	* 27.93	22.88	24.08	391,907	386,803
NATURAL GAS	(BCM)	** 25.43	** 25.12	20.53	20.43	75,528	71,780
C2-C3	000 MT	497	520	497	520	9,889	9,291
LPG	000 MT	1026	1035	1029	1037	22,752	20,169
NAPHTHA	000 MT	1553	1469	1545	1442	48,406	43,848
SKO	000 MT	156	167	153	168	4,448	3,374
OTHERS						1,554	937
SUB TOTAL						554,484	536,202

Cell: I9**Comment:** Rick Heede:

"ONGC was set up under the visionary leadership of Pandit Jawahar Lal Nehru, going against the wisdom of the then multinational oil companies operating in the country, who had almost written India off as a "Hydrocarbon Barren" country. Pandit Nehru reposed faith in Shri Keshav Dev Malviya who laid the foundation of ONGC in the form of Oil and Gas division, under Geological Survey of India, in 1955. A few months later, it was converted into an Oil and Natural Gas Directorate. The Directorate was converted into Commission and christened Oil & Natural Gas Commission on 14th August 1956. In 1994, Oil and Natural Gas Commission was converted into a Corporation, and in 1997 it was recognized as one of the Navratnas by the Government of India. Subsequently, it has been conferred with Maharatna status in the year 2010.

Over 50 years of its existence ONGC has crossed many a milestones to realize the energy dreams of India. The journey of ONGC, over these years, has been a tale of conviction, courage and commitment. ONGCs' superlative efforts have resulted in converting earlier frontier areas into new hydrocarbon provinces. From a modest beginning, ONGC has grown to be one of the largest E&P companies in the world in terms of reserves and production.

ONGC as an integrated Oil & Gas Corporate has developed in-house capability in all aspects of exploration and production business i.e., Acquisition, Processing & Interpretation (API) of Seismic data, drilling, work-over and well stimulation operations, engineering & construction, production, processing, refining, transportation, marketing, applied R&D and training, etc.

Today, Oil and Natural Gas Corporation Ltd. (ONGC) is, the leader in Exploration & Production (E&P) activities in India having 72% contribution to India's total production of crude oil and 48% of natural gas. ONGC has established more than 7 Billion Tonnes of in-place hydrocarbon reserves in the country. In fact, six out of seven producing basins in India have been discovered by ONGC. ONGC produces more than 1.27 million Barrels of Oil Equivalent (BOE) per day. It also contributes over three million tonnes per annum of Value-Added-Products including LPG, C2 - C3, Naphtha, MS, HSD, Aviation Fuel, SKO etc." www.ongcindia.com/history.asp

Sourcing Equity Oil Abroad (<http://www.ongcindia.com/wps/wcm/connect/ongcindia/Home/Investors/Company+Overview/>):
ONGC Videsh Limited (OVL) is operating in 15 countries with 30 projects with cumulative investment worth over USD 15 billion, to source equity oil & gas for energy security of the country. Over the years OVL has emerged as the biggest Indian Multinational.

The company now has participation in 30 E&P projects in 15 countries namely Vietnam (1 project), Russia (2 projects), Sudan (2 projects), South Sudan(2 projects), Iraq (1 project), Libya (1 project), Myanmar (2 projects), Syria (2 projects), Cuba (2 projects), Brazil (4 projects), Nigeria (1 project), Colombia (6 projects), Venezuela (2 projects) and Kazakhstan (1 project). Out of 30 projects, ONGC Videsh is Operator in 9 projects and Joint Operator in 7 projects.

OVL continued to maintain its robust growth with production of 6.214 MMT of Crude Oil and 2.539 BCM of Gas during 2011-12. Its proved reserves (1P) as on 1st April 2012 stood at 193.381 MTOE, which next to ONGC, is the second largest holding of proved oil and gas reserves by any Indian Company. OVL's share of total reserves (3P) of oil and oil equivalent gas as on 1st April 2012 was 425.941 MTOE. As on 31st March, 2012, the Reserves-to-Production (R/P) Ratio considering proved reserves was 22.09.

Also see Rai, Varun (2012) Fading star: explaining the evolution of India's ONGC, in Victor et al, eds, Oil and Governance, pp. 753-808.

Cell: M9**Comment:** Rick Heede:

Ganguly, Sumit (2007) "The Oil and Natural Gas Corporation: The Oil and Natural Gas Corporation: Charting a New Course? Department of Political Science Indiana University, Bloomington, in: The Changing Role Of National Oil Companies In International Energy Markets, James Baker III Institute for Public Policy, Rice University, 1 March 2007.

Rai, Varun (2012) Fading star: explaining the evolution of India's ONGC, in Victor et al, eds, Oil and Governance, pp. 753-808.

Cell: E12**Comment:** Rick Heede:

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

Cell: I12**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: E15**Comment:** Rick Heede:

"After 1990. The liberalized economic policy, adopted by the Government of India in July 1991, sought to deregulate and de-license the core sectors (including petroleum sector) with partial disinvestments of government equity in Public Sector Undertakings and other measures. As a consequence thereof, ONGC was re-organized as a limited Company under the Company's Act, 1956 in February 1994.

After the conversion of business of the erstwhile Oil & Natural Gas Commission to that of Oil & Natural Gas Corporation Limited in 1993, the Government disinvested 2 per cent of its shares through competitive bidding.

Subsequently, ONGC expanded its equity by another 2 per cent by offering shares to its employees.

During March 1999, ONGC, Indian Oil Corporation (IOC) - a downstream giant and Gas Authority of India Limited (GAIL) - the only gas marketing company, agreed to have cross holding in each other's stock. This paved the way for long-term strategic alliances both for the domestic and overseas business opportunities in the energy value chain, amongst themselves. Consequent to this the Government sold off 10 per cent of its share holding in ONGC to IOC and 2.5 per cent to GAIL. With this, the Government holding in ONGC came down to 84.11 per cent.

In the year 2002-03, after taking over MRPL from the A V Birla Group, ONGC diversified into the downstream sector. ONGC will soon be entering into the retailing business. ONGC has also entered the global field through its subsidiary, ONGC Videsh Ltd. (OVL). ONGC has made major investments in Vietnam, Sakhalin and Sudan and earned its first hydrocarbon revenue from its investment in Vietnam."
www.ongcindia.com/history.asp#b

Cell: D21**Comment:** Rick Heede:

Natural gas production data for India 1956-1979 from U.S. Bureau of Mines Minerals Yearbook, various years, Oil & Gas Journal OJG100 1987-2003, and ONGC Annual Reports 2004-2010.

Cell: B23**Comment:** Rick Heede:

Oil and Natural Gas Corporation of India in 1956 (originally as a state commission) to lead India's indigenous exploration and production projects, in part motivated by energy security, independence, and opportunistic behavior by IOCs.

Rai, 2012, gives a good overview of the formation and history of ONGC, India's experience with Stanvac in the Bengal Basin in the early 1950s, and Russia's favorable technological and financial assistance to India in the 1950s and 1960s. Rai, Varun (2012) Fading star: explaining the evolution of India's ONGC, in Victor et al, eds, Oil and Governance, pp. 753-808.

Cell: D23**Comment:** Rick Heede:

U.S. Bureau of Mines 1962) Minerals Yearbook 1960, Crude petroleum and petroleum products, Kirby, James G.; Messner, Walter G.; Moore, Betty M. pp. 361-496. Data for 1956-1958, Table 89, page 487.

Cell: J23**Comment:** Rick Heede:

U.S. Bureau of Mines (1962) Minerals Yearbook 1960, natural gas.

Cell: F25**Comment:** Rick Heede:

Oil & Gas Journal attributes all of Indian crude and natural gas production to Oil & Natural Gas Corporation of India, and CMS adopts this full attribution. OJG may not have accounted for unknown levels of joint production agreements with international oil companies, and this percentage may be adjusted.

Cell: D26**Comment:** Rick Heede:

U.S. Bureau of Mines (1965) Minerals Yearbook 1964, world oil production; Crude petroleum and petroleum products, James G. Kirby, & Betty M. Moore, pp. 381-497, GPO Washington.

Cell: J28**Comment:** Rick Heede:

U.S. Bureau of Mines has no data for Indian natural gas production 1961-1963 and is interpolated.

Cell: J31**Comment:** Rick Heede:

U.S. Bureau of Mines (1969) Minerals Yearbook 1968 Natural gas, Harper, William B.; Fanelli, Leonard L. pp. 723-750.

Cell: J36**Comment:** Rick Heede:

U.S. Bureau of Mines (1965)

Minerals Yearbook 1964, Natural gas, Zaffarano, Richard F.; Avery, Ivan F. pp. 319-352.

Cell: L36

Comment: Rick Heede:

Minerals Yearbook for 1971, p. 798, shows India's marketed natural gas production as well as gross production (marketed plus vented, flared, and re-injected natural gas) for 1969-1971:
 1969: gross = 55.0 Bcf, marketed production = 25.7 Bcf;
 1970: gross = 50.3 Bcf, marketed production = 23.9 Bcf;
 1971: gross = 53.0 Bcf, marketed production = 25.9 Bcf (0.489 of gross).

Cell: D37

Comment: Rick Heede:

US Bureau of Mines (various years) Minerals Yearbook 1972, 1974, 1976.

Cell: J40

Comment: Rick Heede:

U.S. Bureau of Mines (1974) Minerals Yearbook 1974, Natural gas, Koelling, Gordon W.; Fanelli, Leonard L. pp. 833-871.

Cell: J42

Comment: Rick Heede:

U.S. Bureau of Mines (1976) Minerals Yearbook 1976, Natural gas, Koelling, Gordon W.; Fanelli, Leonard L. pp. 847-888.

Cell: J44

Comment: Rick Heede:

Interpolated between U.S. Bureau of Mines, India 1976, and EIA International Energy Statistics, 1980.

Cell: D47

Comment: Rick Heede:

Energy Information Administration International Energy Annual 2006, Table 2.2 World Crude Oil including Lease Condensate Production, 1980-2006 (Thousand Barrels per Day) - converted by CMS to million bbl per year, attributed to ONGC through 1986, after which OGJ100 data is used for 1987 through 2003.

Cell: E54

Comment: Rick Heede:

Oil & Gas Journal OGJ100, various years, for 1987-2003.

Cell: B57

Comment: Rick Heede:

ONGC started with 450 employees in 1956; by 1990 it employed 47,000 people. Rai, 2012, page 762.
 ONGC started having problems with flooding and erratic production of its Mumbai High offshore fields, and the company decided to shut in all 90 flooded fields in order to build reservoir pressure. This caused a 30 percent drop in total ONGC production between 1990 and 1994.
 Rai's table 17.3 shows crude oil production in India for 1989/1990 of 21.71 Mt (159.1 million bbl), 1990/1991 of 20.38 Mt (149.4 million bbl), 1991/1992 of 18.96 Mt (139.0 million bbl), 1992/1993 of 15.75 Mt (115.5 million bbl), and 1993/1994 of 15.38 Mt (112.7 million bbl). This is substantially below the Oil and Gas Journal estimates for 1990 to 1994. While ONGC also produces petroleum internationally (via ONGC's Videsh Ltd), this was zero to negligible in the 1990s. Also, O&G reports crude oil plus NGLs whereas the ONGC's reported data (Rai cites IndiaStat.com, to which we do not have access) is for crude oil only.

Cell: D66

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).
 Note: the carbon content of the extracted resources is adjusted by a number of factors before emissions estimates are made. 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 worksheets on non-energy uses and factors for oil and natural gas in SumOil.xls and SumGas.xls

Cell: D70

Comment: Rick Heede:

Oil & Natural Gas Corporation (2009) Annual Report 2008-2009, New Delhi. www.ongcindia.com.
 Does not contain clear data on production, except for 2007 & 2008. E.g., chart below does not include NGL production. Better data on petroleum sales by year. CMS thus adds average 2007 and 2008 NGL production (3.21 million tonnes per year) to stated crude oil production for 2004-2006, and actual data for 2007 and 2008.
 Oil & Gas Journal does not estimate ONGC production for 2006-2008.

Cell: E71

Comment: Rick Heede (Jan10):

Oil & Gas Journal does not report ONGC production for oil or gas for 2006 - 2008, and CMS calculates total liquids from the company's AnnRpt08. OGJ100 estimates liquids production at 202 and 193 million bbl in 2004 and 2005, respectively -- slightly lower than CMS estimates that include NGL production.

Cell: D76

Comment: Rick Heede:

ONGC AR 2010 pdf pg 83 crude oil production MMT

Cell: I76

Comment: Rick Heede:

ONGC Annual Report 2010 pdf pg 83, natural gas production Bcm.
 Rai, 2012, Figure 17.4 "Natural gas production by ONGC, 1980-2007" (citing IndiaStat.com and Ministry of Petroleum and Natural Gas) shows gas production ranging from approximately 21 Bcm in 1995-1996 to ~23 Bcm in 2001-2002 and ~22 Bcm in 2007-2008.

Cell: J76

Comment: Rick Heede:

calculated, 1 CM= 35.315 CF

Cell: I79

Comment: Rick Heede:

ONGC Annrpt 2012/2013, page 50 (see chart below). Natural gas, in Bcm.

Cell: D81

Comment: Rick Heede:

ONGC Annual Report 2016-2017, page 10 :26 Mt (@7.33 bbl per tonne = 191 Mb. OGJ100 for 2014: 227 Mb. No evident reason for the discrepancy.

Cell: I81

Comment: Rick Heede:

ONGC Annual Report 2016-2017, page 10: Gas production (ONGC + JVs) in Bcm, FY2014-FY2017. FY2014 gas: 24.85 Bcm (=878 Bcf): compare OGJ100 estimate of 1,171 Bcf; OGJ100 has 930 Bcf for 2015 (ONGC 818 Bcf). No OGJ data for 2016.

Cell: D85

Comment: Rick Heede:

ONGC AnnRpt FY2019, page 12. FY 2018 Crude Oil production: 25.44 Mt (*7.33 t/b = 186 Mb). Includes ONGC's share in PSC JVs. See charts. FY2019 Oil reserves: 550 Mt.

Cell: I85

Comment: Rick Heede:

ONGC AnnRpt FY2019, page 12. FY 2018 Gas production: 24.61 Bcm = 869 Bcf). Includes ONGC's share in PSC JVs. See charts. FY2019 Gas reserves: 847 Bcm.

Cell: E93

Comment: Rick Heede:

ONGC "working interest liquids production in 2008" at 696 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: J93

Comment: Rick Heede:

ONGC "working interest natural gas production in 2008" at 2,231 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: N235

Comment: Rick Heede:

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