Panipat Refinery

READY RECKONER

Oil Industry Information at a Glance

Petroleum Planning & Analysis Cell

(Ministry of Petroleum & Natural Gas)

June 2016

Suggestions & Feedback

Readers are invited to send their suggestions & feedback for improvement of the Ready Reckoner to:

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PPAC also thanks various organizations from the Oil & Gas sector for providing useful inputs for inclusion in the Ready Reckoner.

Preface

Petroleum Planning & Analysis Cell (PPAC), an attached office of the Ministry of Petroleum & Natural Gas (MoP&NG), collects data on the oil and gas sector and publishes aggregated data on an industry basis on its website, www.ppac.org.in. The data is obtained from the public sector and Government agencies as well as private companies. Given the ever increasing demand for energy, policymakers and analysts need to be well-informed about the current trends in the industry. Oil and gas statistics is a vital input for many stakeholders that include the Government, academia, industry and research agencies.

Apart from PPAC, other organizations also collect and disseminate oil and gas related data. This Ready Reckoner is an attempt to put together oil and gas sector statistics for stakeholders to access the same at one place. This edition comprising of 102 tables is organized in 10 chapters and contains the latest data/ information for the financial year 2015-16.

Comments and suggestions for enriching the contents of future editions of the Ready Reckoner are welcome.

All divisions of PPAC have worked tirelessly to bring out this edition. Timely inputs from various organizations, companies and sources in providing data/ information for this Ready Reckoner is also appreciated.

Atreyee Das

Atreyee Das
Director General
Petroleum Planning & Analysis Cell (PPAC)
(Ministry of Petroleum & Natural Gas)

New Delhi
June 23, 2016

Vision

To be the most authentic official source for data and policy analysis on the hydrocarbon sector in the country.

Mission

1. To strengthen the existing data system in PPAC by adopting the latest techniques and best practices.
2. To render effective assistance to the Ministry of Petroleum & Natural Gas in the discharge of its responsibilities, particularly pricing of petroleum products and administration of subsidy schemes.
3. To monitor and analyze developments in the domestic oil and gas sector.
4. To undertake analysis of domestic and international energy markets.
5. To develop a cooperative framework for exchange of information and conduct of studies with other countries and international organizations in the energy sector.

Objectives

1. To ensure effective administration of the subsidy schemes notified by the Government
2. To monitor and analyze trends in prices of crude oil, petroleum products and natural gas and their impact on the oil companies and consumers, and prepare appropriate technical inputs for policy making.
3. To monitor developments in the domestic market and analyze options for policy changes in pricing, transportation and distribution of petroleum products.
4. To collect, compile and disseminate data on the domestic oil and gas sector in a continuous manner and maintain the data bank.
5. To ensure quality of data in terms of prescribed parameters such as accuracy, completeness and timeliness.
6. To prepare periodic reports on various aspects of oil and gas sector.

CONTENTS

Chapter-1
General

Table 1.1 : Selected indicators of the Indian economy

GENERAL

Sl. no.	Particulars	Source	Unit/ Base	2011-12	2012-13	2013-14	2014-15	2015-16 (P)
1	Population (as on 1st March 2011)	Census of India	Billion	1.2	-	-	-	-
2	GDP at factor cost (constant prices)	MOC&I	(GR.%)	6.7	5.6	6.6	7.2	7.6
				(2nd RE) (NS)	(2nd RE) (NS)	(2nd RE) (NS)	(1st RE) (NS)	(PE)
3	Agricultural production (foodgrains)	MoA	Million tonne	259.3	257.1	265.0	252.0	252.2
								3rd AE
			(GR.%)	6.1	-0.8	3.1	-4.9	0.1
4	Index of Industrial Production	MOC&I	(GR.%)	2.9	1.1	-0.1	2.8	2.4
5	Imports	MOC&I	$ Billion	489.3	490.7	450.2	448.0	380.7
6	Exports	MOC&I	$ Billion	306.0	300.4	314.4	310.3	262.0
7	Trade balance	MOC&I	$ Billion	-183.4	-190.3	-135.8	-137.7	-118.6
8	Wholesale Price Index (all commodities) (average)	MOC&I	2004-05=100	156.1	167.6	177.6	181.2	176.7
9	All India Consumer Price Index (average):							
	i) Industrial workers	Labour Bureau, Govt. of India	2001=100	194.8	215.2	236.0	250.8	265.0
	ii) Agricultural labourers		1986-87=100	610.7	671.9	749.8	799.5	834.9
	iii) Rural labourers		1986-87=100	611.0	673.3	750.5	802.2	839.4
10	Foreign exchange reserves- Total (as of March 30, 2012, March 29, 2013, March 28, 2014, March 27, 2015 and March 25,2016)	RBI	$ Billion	294.4	292.6	303.7	341.4	355.6
11	Outstanding external liabilities	MOF	₹ Crore	1,67,950	1,72,302	1,82,729	1,94,286	2,08,998
	(as of end of financial year)			(RE)	(RE)	(RE)	(RE)	(RE)
12	Outstanding internal debt	MOF	₹ Crore	43,00,464	48,66,829	54,04,420	60,84,268	66,82,915
	(as of end of financial year)						(RE)	(RE)
13	Central plan outlay	MOF	₹ Crore	5,08,596	4,98,476	6,03,573	4,20,882	5,82,707
				(Actual)	(Actual)	(Actual)	(Actual)	(RE)
14	Gross fiscal deficit	MOF	%	-5.9	-4.9	-4.5	-4.1	-3.9
								(RE)

PETROLEUM

Sl.no.	Particulars	Source	Unit/ Base	2011-12	2012-13	2013-14	2014-15	2015-16 (P)
1	Crude oil production in India	ONGC, OIL & DGH	MMT	38.1	37.9	37.8	37.5	36.9
2	Consumption of petroleum products in India	OMCs /PPAC	MMT	148.1	157.1	158.4	165.5	183.5
3	Petroleum products production in India	Oil Cos	MMT	204.0	217.8	220.3	220.7	231.3
4	Imports & Exports							
	Crude oil imports	Oil Cos	$ Billion	139.7	144.3	143.0	112.7	64.0
	Petroleum products imports	Oil Cos & DGCIS	$ Billion	14.2	12.6	12.5	12.1	10.0
	Total petroleum imports (crude oil + petroleum products)	Oil Cos & DGCIS	$ Billion	153.9	156.9	155.4	124.9	74.0
	Petroleum products exports	Oil Cos	$ Billion	59.3	58.8	60.7	47.3	27.1
5	Gross petroleum imports as % of India's gross imports in value terms	MOC&I/PPAC	%	31.4	32.0	34.5	27.9	19.4
6	Gross petroleum exports as % of India's gross exports in value terms	MOC&I/PPAC	%	19.4	19.6	19.3	15.2	10.3
7	Import dependency (based on consumption)	PPAC	%	75.9	77.1	77.6	78.5	80.8

Note: (P):Provisional; RBI: Reserve Bank of India, MoF: Ministry of Finance, MOC&I: Ministry of Commerce & Industry, MoA: Ministry of Agriculture, OMCs: Oil Marketing Companies, PPAC: Petroleum Planning & Analysis Cell, RE: Revised Estimates, PE: Provisional Estimates, NS: New Series, MMT: Million Metric Tonnes; AE: Advance Estimates

Table 1.2 : Global energy consumption 2015

Sl.no.	Country	Oil (Mtoe)	Natural Gas (Mtoe)	Coal (Mtoe)	Nuclear Energy (Mtoe)	Hydro Electricity (Mtoe)	Renewables (Mtoe)	Total Energy (Mtoe)
	World	4331.3	3135.2	3839.9	583.1	892.9	364.9	13147.3
	% Share	32.9	23.8	29.2	4.4	6.8	2.8	100.0
	Per Capita Consumption (Toe)	0.60	0.43	0.53	0.08	0.12	0.05	1.81
1	**China**	559.7	177.6	1920.4	38.6	254.9	62.7	3014.0
	% Share	18.6	5.9	63.7	1.3	8.5	2.1	100.0
	Per Capita Consumption (Toe)	0.41	0.13	1.41	0.03	0.19	0.05	2.21
2	**USA**	851.6	713.6	396.3	189.9	57.4	71.7	2280.6
	% Share	37.3	31.3	17.4	8.3	2.5	3.1	100.0
	Per Capita Consumption (Toe)	2.67	2.24	1.24	0.60	0.18	0.22	7.15
3	**India**	195.5	45.5	407.2	8.6	28.1	15.5	700.5
	% Share	27.9	6.5	58.1	1.2	4.0	2.2	100.0
	Per Capita Consumption (Toe)	0.15	0.04	0.31	0.01	0.02	0.01	0.54
4	**Russian Federation**	143.0	352.3	88.7	44.2	38.5	0.1	666.8
	% Share	21.4	52.8	13.3	6.6	5.8	^	100.0
	Per Capita Consumption (Toe)	0.99	2.45	0.62	0.31	0.27	^	4.64
5	**Japan**	189.6	102.1	119.4	1.0	21.9	14.5	448.5
	% Share	42.3	22.8	26.6	0.2	4.9	3.2	100.0
	Per Capita Consumption (Toe)	1.49	0.80	0.94	0.01	0.17	0.11	3.53
6	**Canada**	100.3	92.2	19.8	23.6	86.7	7.3	329.9
	% Share	30.4	27.9	6.0	7.1	26.3	2.2	100.0
	Per Capita Consumption (Toe)	2.82	2.59	0.56	0.66	2.44	0.21	9.28
7	**Germany**	110.2	67.2	78.3	20.7	4.4	40.0	320.6
	% Share	34.4	20.9	24.4	6.5	1.4	12.5	100.0
	Per Capita Consumption (Toe)	1.36	0.83	0.97	0.26	0.05	0.49	3.96
8	**Brazil**	137.3	36.8	17.4	3.3	81.7	16.3	292.8
	% Share	46.9	12.6	5.9	1.1	27.9	5.6	100.0
	Per Capita Consumption (Toe)	0.67	0.18	0.08	0.02	0.40	0.08	1.42
9	**South Korea**	113.7	39.2	84.5	37.3	0.7	1.6	276.9
	% Share	41.0	14.2	30.5	13.5	0.2	0.6	100.0
	Per Capita Consumption (Toe)	2.25	0.78	1.67	0.74	0.01	0.03	5.49
10	**Iran**	88.9	172.1	1.2	0.8	4.1	0.1	267.2
	% Share	33.3	64.4	0.5	0.3	1.5	^	100.0
	Per Capita Consumption (Toe)	1.14	2.20	^	^	0.05	^	3.42
11	**Saudi Arabia**	168.1	95.8	0.1	-	-	^	264.0
	% Share	63.7	36.3	^	-	-	^	100.0
	Per Capita Consumption (Toe)	5.44	3.10	^	-	-	^	8.55
12	**France**	76.1	35.1	8.7	99.0	12.2	7.9	239.0
	% Share	31.8	14.7	3.6	41.4	5.1	3.3	100.0
	Per Capita Consumption (Toe)	1.15	0.53	0.13	1.49	0.18	0.12	3.61
13	**Indonesia**	73.5	35.8	80.3	-	3.6	2.4	195.6
	% Share	37.6	18.3	41.1	-	1.9	1.2	100.0
	Per Capita Consumption (Toe)	0.29	0.14	0.32	-	^	^	0.77
14	**United Kingdom**	71.6	61.4	23.4	15.9	1.4	17.4	191.2
	% Share	37.4	32.1	12.2	8.3	0.7	9.1	100.0
	Per Capita Consumption (Toe)	1.11	0.95	0.36	0.25	0.02	0.27	2.96
15	**Mexico**	84.3	74.9	12.8	2.6	6.8	3.5	185.0
	% Share	45.6	40.5	6.9	1.4	3.7	1.9	100.0
	Per Capita Consumption (Toe)	0.67	0.60	0.10	^	0.05	^	1.48

Source: BP Statistical Review of World Energy, June 2015

Note: Oil consumption is measured in million tonnes; other fuels in million tonnes of oil equivalent. For calculation of per capita consumption population figures have been taken from World Bank International Data Base for 2014 **Mtoe:** Million tonnes oil equavalent, **Toe:** Tonne oil equivalent; ^ Less than 0.05.

Chapter-2

Exploration & Crude Production

ONGC Rig

Table 2.1 : Crude oil proved reserves

Sl. no.	Country	At the end 2015		
		Thousand million tonnes	Thousand million barrels	Reserves /Production ratio
1	Venezuela	47.0	300.9	313.9
2	Saudi Arabia	36.6	266.6	60.8
3	Canada	27.8	172.2	107.6
4	Iran	21.7	157.8	110.3
5	Iraq	19.3	143.1	97.2
6	Russian Federation	14.0	102.4	25.5
7	Kuwait	14.0	101.5	89.8
8	United Arab Emirates	13.0	97.8	68.7
9	US	6.6	55.0	11.9
10	Libya	6.3	48.4	306.8
11	Nigeria	5.0	37.1	43.2
12	Kazakhstan	3.9	30.0	49.3
13	Qatar	2.7	25.7	37.1
14	China	2.5	18.5	11.7
15	Brazil	1.9	13.0	14.1
16	Angola	1.7	12.7	19.0
17	Algeria	1.5	12.2	21.1
18	Mexico	1.5	10.8	11.5
19	Ecuador	1.2	8.0	40.4
20	Norway	1.0	8.0	11.3
21	Azerbaijan	1.0	7.0	22.8
22	**India**	**0.8**	**5.7**	**18.0**
23	Oman	0.7	5.3	15.3
24	Vietnam	0.6	4.4	33.3
25	Indonesia	0.5	3.6	12.0
26	South Sudan	0.5	3.5	64.9
27	Malaysia	0.5	3.6	14.2
28	Egypt	0.5	3.5	13.2
29	Australia	0.4	4.0	28.3
30	Yemen	0.4	3.0	176.5
	Sub total	**234.9**	**1665.1**	
	Others	4.4	32.5	
	Total World	**239.4**	**1697.6**	**50.7**
	of which: OECD	38.0	255.3	29.7
	Non-OECD	201.3	1442.3	58.0
	OPEC	169.9	1211.6	86.8
	Non-OPEC	69.4	486.0	24.9
	European Union	0.7	5.6	10.1
	Commonwealth of Independent States (CIS)	19.1	141.1	27.8
	Canadian oil sands: Total	27.0	166.2	
	of which: under active development	4.0	24.4	
	Venezuela: Orinoco Belt	35.7	222.3	

Source: BP Statistical Review of World Energy June 2016 which includes data from ICIS.

Notes: Total proved reserves of oil - Generally taken to be those quantities that geological and engineering information indicates with reasonable certainty can be recovered in the future from known reservoirs under existing economic and operating conditions. The data series for total proved oil does not necessarily meet the definitions, guidelines and practices used for determining proved reserves at company level, for instance as published by the US Securities and Exchange Commission, nor does it necessarily represent BP's view of proved reserves by country.

Reserves-to-production (R/P) ratio - If the reserves remaining at the end of any year are divided by the production in that year, the result is the length of time that those remaining reserves would last if production were to continue at that rate.

Source of data - The estimates in this table have been compiled using a combination of primary official sources, third-party data from the OPEC Secretariat, World Oil, Oil & Gas Journal and independent estimates of Russian reserves based on official data and Chinese reserves based on information in the public domain. Canadian oil sands 'under active development' are an official estimate. Venezuelan Orinoco Belt reserves are based on the OPEC Secretariat and government announcements.

Reserves include gas condensate and natural gas liquids (NGLs) as well as crude oil. Shares of total and R/P ratios are calculated using thousand million barrels figures.

Table 2.2 : Crude oil production, 2015

Sl.no.	Country	Production*	
		Million tonnes	Million barrels daily
1	Saudi Arabia	568.5	12.0
2	US	567.2	12.7
3	Russian Federation	540.7	11.0
4	Canada	215.5	4.4
5	China	214.6	4.3
6	Iraq	197.0	4.0
7	Iran	182.6	3.9
8	United Arab Emirates	175.5	3.9
9	Kuwait	149.1	3.1
10	Venezuela	135.2	2.6
11	Brazil	131.8	2.5
12	Mexico	127.6	2.6
13	Nigeria	113.0	2.4
14	Angola	88.7	1.8
15	Norway	88.0	1.9
16	Kazakhstan	79.3	1.7
17	Qatar	79.3	1.9
18	Algeria	68.5	1.6
19	Colombia	53.1	1.0
20	Oman	46.6	1.0
21	United Kingdom	45.3	1.0
22	Azerbaijan	41.7	0.8
23	**India**	**41.2**	**0.9**
24	Indonesia	40.0	0.8
25	Egypt	35.6	0.7
26	Malaysia	31.9	0.7
27	Argentina	29.7	0.6
28	Ecuador	29.1	0.5
29	Libya	20.2	0.4
30	Vietnam	17.4	0.4
	Sub total	**4153.8**	**87.2**
	Others	208.1	4.5
	Total World	**4361.9**	**91.7**
	of which: OECD	1087.9	23.5
	Non-OECD	3274.0	68.1
	OPEC	1806.6	38.2
	Non-OPEC	2555.3	53.4
	European Union	71.7	1.5
	Commonwealth of Independent States (CIS)	682.0	13.9

Source: BP Statistical Review of World Energy, June 2016 which includes data from ICIS.

Note: * Includes crude oil, shale oil, oil sands and NGLs (natural gas liquids-the liquid content of natural gas where this is recovered separately). Excludes liquid fuels from other sources such as biomass and derivatives of coal and natural gas.

Table 2.3 : Crude oil consumption, 2015

Sl. no.	Country	Consumption *	
		Million tonnes	Thousand barrels daily
1	US	851.6	19396
2	China	559.7	11968
3	**India**	**195.5**	**4159**
4	Japan	189.6	4150
5	Saudi Arabia	168.1	3895
6	Russian Federation	143.0	3113
7	Brazil	137.3	3157
8	South Korea	113.7	2575
9	Germany	110.2	2338
10	Canada	100.3	2322
11	Iran	88.9	1947
12	Mexico	84.3	1926
13	France	76.1	1606
14	Indonesia	73.5	1628
15	United Kingdom	71.6	1559
16	Singapore	69.5	1339
17	Spain	60.5	1226
18	Italy	59.3	1262
19	Thailand	56.6	1344
20	Australia	46.2	1006
21	Taiwan	46.0	1031
22	United Arab Emirates	40.0	901
23	Egypt	39.2	824
24	Turkey	38.8	835
25	Netherlands	38.7	835
26	Malaysia	36.2	831
27	Venezuela	32.0	678
28	Argentina	31.6	679
29	South Africa	31.1	661
30	Belgium	30.5	649
	Total	**3619.7**	**79839**
	Others	712	15169
	Total World	**4331.3**	**95008**
	of which: OECD	2056.4	45643
	Non-OECD	2274.9	49365
	European Union	600.2	12712
	CIS countries	188.5	4091

Source: BP Statistical Review of World Energy, June 2016

Note: Differences between these world consumption figures and world production statistics are accounted for by stock changes, consumption of non-petroleum additives and substitute fuels, and unavoidable disparities in the definition, measurement or conversion of oil supply and demand data.

* Inland demand plus international aviation and marine bunkers and refinery fuel and loss. Consumption of biogasoline (such as ethanol), biodiesel and derivatives of coal and natural gas are also included.

Table 2.4 : Crude Oil: Refinery capacities*

(Thousand barrels daily)

Sl.no.	Country	2005	2015	Addition	% Change
1	US	17339	18315	976	5.6
2	China	7752	14262	6510	84.0
3	Russian Federation	5408	6428	1020	18.9
4	**India**	**2558**	**4307**	**1749**	**68.4**
5	Japan	4531	3721	-810	-17.9
6	South Korea	2598	3110	512	19.7
7	Saudi Arabia	2107	2899	792	37.6
8	Brazil	1942	2278	336	17.3
9	Germany	2322	2032	-290	-12.5
10	Iran	1692	1985	293	17.3
11	Canada	1896	1966	70	3.7
12	Italy	2515	1915	-600	-23.9
13	Mexico	1463	1602	139	9.5
14	Spain	1377	1546	169	12.3
15	Singapore	1420	1514	94	6.6
16	France	1978	1375	-603	-30.5
17	United Kingdom	1819	1337	-482	-26.5
18	Venezuela	1291	1303	12	0.9
19	Netherlands	1274	1293	19	1.5
20	Thailand	1078	1252	174	16.1
21	United Arab Emirates	620	1143	523	84.4
22	Indonesia	1057	1116	59	5.6
23	Taiwan	1159	988	-171	-14.8
24	Kuwait	936	936	0	0.0
25	Egypt	810	840	30	3.7
26	Belgium	756	776	20	2.6
27	Argentina	615	657	42	6.8
28	Algeria	443	651	208	46.9
29	Turkey	613	613	0	0.0
30	Malaysia	522	612	90	17.2
	Sub total	**71892**	**82773**	**10881**	**15.1**
	Others	14671	14454	-217	-1.5
	Total World	**86562**	**97227**	**10665**	**12.3**
	of which: OECD	45139	44120	-1020	-2.3
	Non-OECD	41423	53107	11684	28.2
	European Union	15922	14124	-1798	-11.3
	Commonwealth of independent states (CIS)	7410	8260	850	11.5

Source: BP Statistical Review of World Energy, June 2016 which includes data from ICIS.
Note: * Atmospheric distillation capacity at year end on a calender-day basis.

Table 2.5 : Indigenous crude oil production

(Million metric tonne)

	2011-12	2012-13	2013-14	2014-15	2015-16 (P)
PSU companies					
ONGC	20.8	19.5	19.2	18.6	18.5
OIL	3.8	3.7	3.5	3.4	3.2
PSU total	**24.7**	**23.2**	**22.7**	**22.1**	**21.8**
PSU total (crore barrels)	**18.1**	**17.0**	**16.6**	**16.2**	**16.0**
Under PSC contracts					
PSC total	**10.4**	**11.6**	**12.0**	**11.7**	**11.3**
PSC total (crore barrels)	**7.6**	**8.5**	**8.8**	**8.6**	**8.3**
Total crude oil	**35.1**	**34.7**	**34.7**	**33.8**	**33.1**
Condensate	3.0	3.2	3.1	3.7	3.8
Total (crude oil + condensate)	**38.1**	**37.9**	**37.8**	**37.5**	**36.9**
Total (crude oil + condensate) (crore barrels)	**27.9**	**27.8**	**27.7**	**27.5**	**27.1**

Source: Oil Companies and DGH

Table 2.6 : Self sufficiency in petroleum products

(Million metric tonne)

	2011-12	2012-13	2013-14	2014-15	2015-16 (P)
i) Indigenous crude oil processing	**33.7**	**34.2**	**33.9**	**34.2**	**34.1**
a) Products from indigenous crude	31.5	31.9	31.6	32.0	31.9
b) Products from fractionators (including LPG and Gas)	4.2	4.1	3.9	3.7	3.4
ii) Total production from indigenous crude, condensate & gas (a+b)	**35.7**	**36.0**	**35.5**	**35.6**	**35.2**
iii) Total domestic consumption	**148.1**	**157.1**	**158.4**	**165.5**	**183.5**
% Self sufficiency (ii/iii)	**24.1**	**22.9**	**22.4**	**21.5**	**19.2**

Source: Oil companies

Note:

1. Production of petroleum products from indigenous crude considered at 93.3% of indigenous crude oil processing.
2. The balance demand of petroleum products is met through import of crude oil and POL products.

Table 2.7 : NELP blocks awarded in India upto IXth round

Parameter	I	II	III	IV	V	VI	VII	VIII	IX
Year of launch	1999	2000	2002	2003	2005	2006	2007	2009	2010
No. of blocks offered	48	25	27	24	20	55	57	70	34
No. of blocks bid for	28	23	24	21	20	52	45	36	33
No. of bids received	45	44	52	44	69	165	181	76	74
No. of blocks awarded	25	23	23	21	20	52	44	34	19
No. of PSC signed	24	23	23	20	20	52	41	32	19
Area awarded (Sq.Km)	2,31,527	2,67,883	2,04,608	1,92,810	1,15,180	3,06,389	1,12,985	52,573	26,428

Source: Directorate General of Hydrocarbons (DGH)
Note:
1. Upto IX[th] round, 254 PSCs for exploration blocks have been signed
2. Actual investment till 2014-15: US$ 25.06 billion (US$ 15.40 billion on exploration and US$9.66 billion on development)

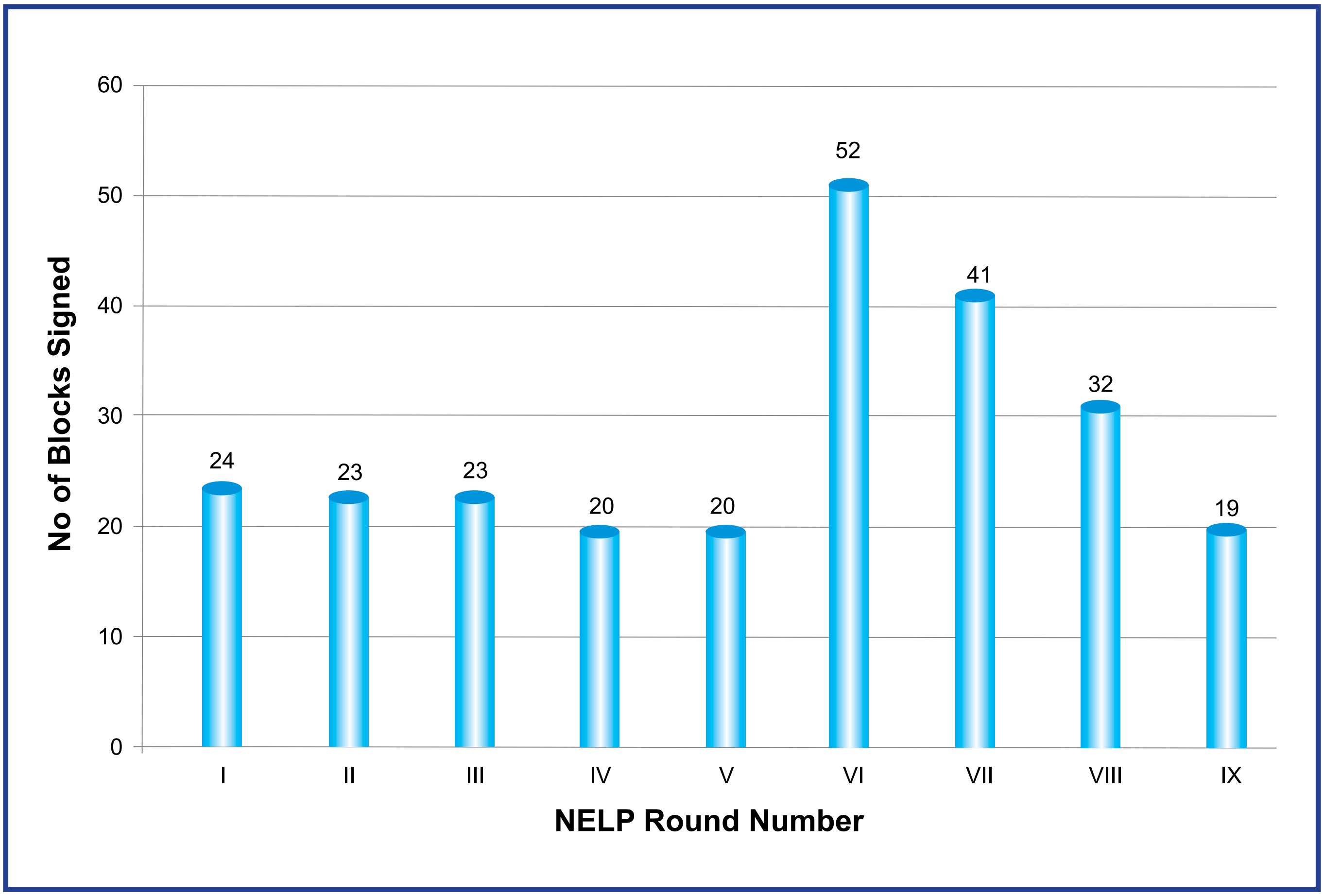


Table 2.8 : Hydrocarbon reserves in India

(Million metric tonne)

Details of reserves in India as of 01.04.2015	Initial in place			Ultimate reserves		
	Oil	Gas	O+OEG	Oil	Gas	O+OEG
ONGC	5229	2415	7644	1493	1297	2790
OIL	799	357	1156	83	44	127
Pvt./JV	975	1460	2436	215	767	983
Total	**7003**	**4232**	**11235**	**1792**	**2109**	**3900**
	Accretion of initial in place			Accretion ultimate reserves		
ONGC	44	91	135	31	27	58
OIL	-3	13	10	1	8	9
Pvt./JV	3	142	145	1	52	53
Total	**44**	**246**	**290**	**33**	**87**	**119**

Source: Annual report of DGH 2014-15
Note: O+OEG: Oil and Oil Equivalent of Gas

Table 2.9 : Domestic oil & gas production vis a vis overseas production

Year	2011-12	2012-13	2013-14	2014-15	2015-16 (P)
Total domestic production (MMTOE)	85.7	78.5	73.2	71.1	69.2
Overseas production (MMTOE)	8.8	7.3	8.8	9.6	9.7
Overseas production as % of domestic production	10.2%	9.3%	12.0%	13.5%	14.0%

Source: ONGC Videsh Ltd., OIL, GAIL, IOCL and HPCL

Table 2.10 : Coal Bed Methane (CBM) Gas development in India

Prognosticated CBM resources	92	TCF
Established CBM resources	9.9	TCF
Total available coal bearing area	26000	Sq.KM
Blocks awarded*	33	Nos.
Commercial production of CBM Gas (Avg. 2015-16)	1.07	MMSCMD

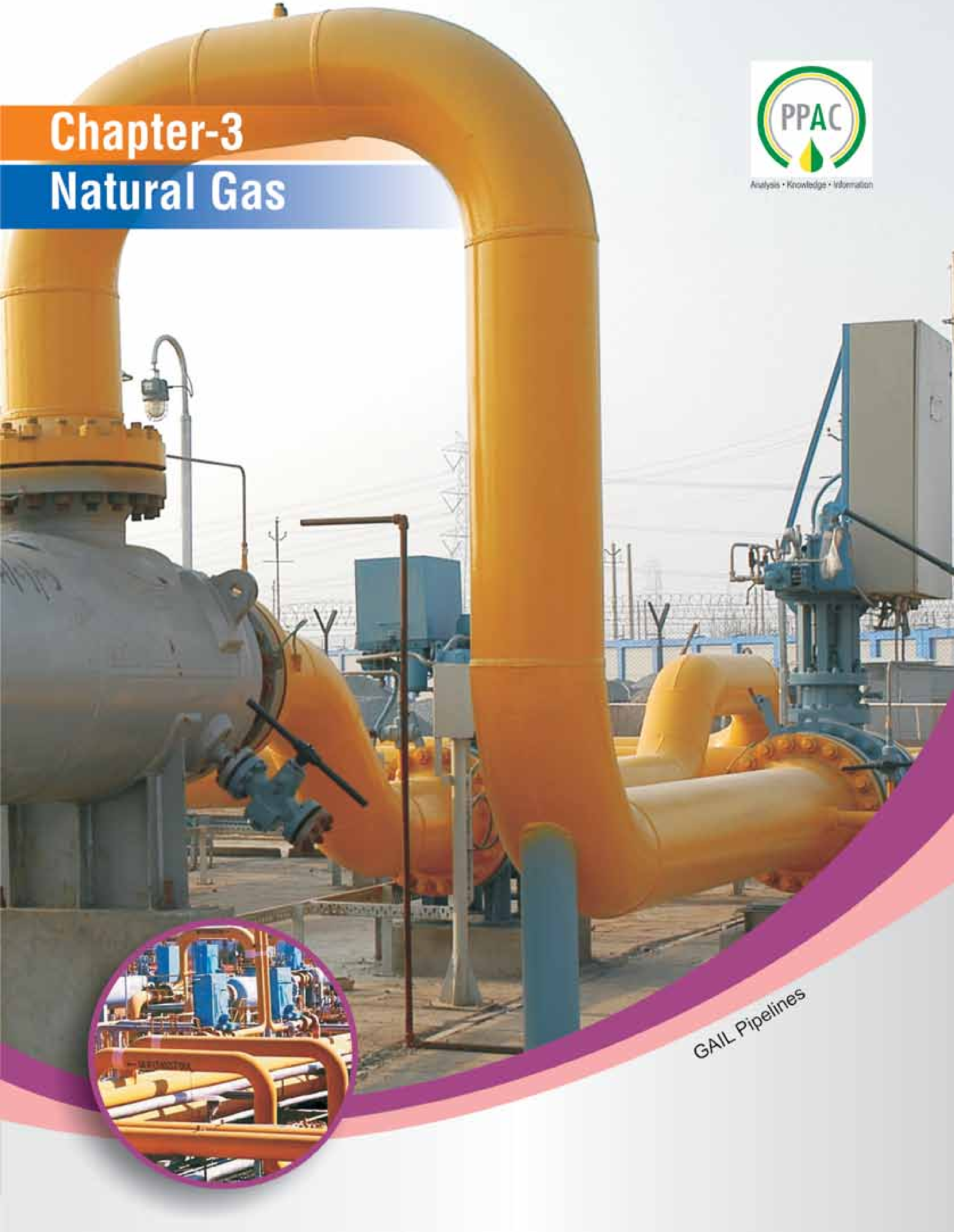
Source: DGH
*CBM blocks have been awarded in the states of Andhra Pradesh, Assam, Chhattisgarh, Gujarat, Jharkhand, Madhya Pradesh, Maharashtra, Odisha, Rajasthan, Tamil Nadu and West Bengal.

Table 2.11 : Status of Shale Gas and Oil development in India

a) Shale Gas spread in the sedimentary basins	Six basins have been identified to be the most prospective for shale exploitation - Cambay (in Gujarat), Assam-Arakan (in the North-East), Gondwana basin (in central India), KG onshore (in Andhra Pradesh), Cauvery onshore and Indo Gangetic Plain basins.
b) Re-Assessment of Prognosticated Hydrocarbon Resources: Government of India has rolled out an elaborate plan to reassess hydrocarbon resources in Indian sedimentary basins.	A Multi Organizational Team (MOT) comprising members from ONGC, OIL and DGH has been constituted to implement the project. The job will be taken up by ONGC in association with OIL. DGH will provide G&G data support for other than ONGC and OIL operated areas. The project will be executed simultaneously at designated work centres of ONGC. The project work has started since September 2015 and is likely to be completed in 27 months (by November 2017). The exercise will cover assessment of all the 26 sedimentary basins of India. It will generate better understanding of Indian sedimentary basins with integration of data and new interpretation techniques.
c) Policy Guidelines for Exploration and Exploitation of Shale Gas and Oil: Shale Gas and Oil Policy was announced on 14th October 2013. Under this policy the right to exploration and exploitation of Shale Gas & oil has been granted to the National Oil Companies (NOCs) holding Petroleum Exploration License (PEL) / Petroleum Mining Lease (PML) granted under the nomination regime.	NOCs have identified 55 blocks for Assessment Studies during Phase-I of three years. ONGC is presently carrying out shale gas and oil exploration in four onland basins namely, Cambay, KG, Cauvery,Assam and Arakan. ONGC has drilled total 19 wells in 17 blocks against the target of 57 wells in 50 blocks and one well is under drilling. ONGC has collected 69 number of conventional cores in 18 wells. OIL is presently carrying out Shale Gas and oil exploration in two onland basins namely Assam & Arakan and Jaisalmer basin. OIL has completed G&G evaluation of four Blocks in Assam & Arakan and Jaisalmer basin.

Source: DGH

Chapter-3
Natural Gas



GAIL Pipelines

Table 3.1 : World top 30 natural gas reserve countries

(Billion cubic metre)

Sl. no.	Country	2014	2015
1	Iran	34020.0	34020.0
2	Russian Federation	32355.6	32271.0
3	Qatar	24528.1	24528.1
4	Turkmenistan	17479.0	17479.0
5	US	10440.5	10440.5
6	Saudi Arabia	8325.2	8325.2
7	United Arab Emirates	6091.0	6091.0
8	Venezuela	5617.2	5617.2
9	Nigeria	5111.0	5111.0
10	Algeria	4504.0	4504.0
11	China	3666.2	3841.3
12	Iraq	3694.0	3694.0
13	Australia	3471.4	3471.4
14	Indonesia	2839.0	2839.0
15	Canada	1987.1	1987.1
16	Norway	1922.0	1856.9
17	Egypt	1846.3	1846.3
18	Kuwait	1784.0	1784.0
19	Libya	1504.9	1504.9
20	**India**	**1427.1**	**1488.5**
21	Malaysia	1169.3	1169.3
22	Azerbaijan	1166.2	1148.3
23	Uzbekistan	1085.9	1085.9
24	Kazakhstan	936.0	936.0
25	Oman	688.1	688.1
26	Netherlands	674.7	674.7
27	Vietnam	617.1	617.1
28	Ukraine	616.2	604.1
29	Pakistan	542.6	542.6
30	Myanmar	528.4	528.4
	Total	**180638.1**	**180694.7**
	Others	6330.4	6180.0
	Total World	**186968.5**	**186874.7**
	of which: OECD	19650.7	19561.8
	Non-OECD	167317.9	167312.9
	European Union	1315.7	1302.0
	CIS	53672.3	53556.6

Source: BP Statistical Review of World Energy, June 2016

Table 3.2 : World top 30 natural gas producing countries

(Billion cubic metre)

SL. no.	Country	2014	2015
1	US	728.5	767.3
2	Russian Federation	581.7	573.3
3	Iran	182.0	192.5
4	Qatar	174.1	181.4
5	Canada	162.0	163.5
6	China	131.6	138.0
7	Norway	108.8	117.2
8	Saudi Arabia	102.4	106.4
9	Algeria	83.3	83.0
10	Indonesia	75.3	75.0
11	Turkmenistan	69.3	72.4
12	Malaysia	66.7	68.2
13	Australia	61.3	67.1
14	Uzbekistan	57.3	57.7
15	United Arab Emirates	54.2	55.8
16	Mexico	57.1	53.2
17	Nigeria	45.0	50.1
18	Egypt	48.8	45.6
19	Netherlands	55.7	43.0
20	Pakistan	41.9	41.9
21	Thailand	42.1	39.8
22	United Kingdom	36.8	39.7
23	Trinidad & Tobago	42.1	39.6
24	Argentina	35.5	36.5
25	Oman	33.3	34.9
26	Venezuela	28.6	32.4
27	**India**	**30.4**	**29.2**
28	Bangladesh	23.9	26.8
29	Brazil	22.6	22.9
30	Bolivia	21.0	20.9
	Total	**3203.4**	**3275.3**
	Others	259.7	263.4
	Total World	**3463.2**	**3538.6**
	of which: OECD	1253.6	1293.2
	Non-OECD	2209.6	2245.5
	European Union	130.5	120.1
	CIS	756.2	751.6

Source: BP Statistical Review of World Energy, June 2016

Table 3.3: World top 30 natural gas consuming countries

(Billion cubic metre)

Sl. no.	Country	2014	2015
1	US	756.0	778.0
2	Russian Federation	411.9	391.5
3	China	188.4	197.3
4	Iran	180.0	191.2
5	Japan	118.0	113.4
6	Saudi Arabia	102.4	106.4
7	Canada	104.2	102.5
8	Mexico	86.8	83.2
9	Germany	71.1	74.6
10	United Arab Emirates	66.3	69.1
11	United Kingdom	66.7	68.3
12	Italy	56.3	61.4
13	Thailand	52.7	52.9
14	**India**	**50.6**	**50.6**
15	Uzbekistan	48.8	50.3
16	Egypt	48.0	47.8
17	Argentina	47.1	47.5
18	Qatar	39.7	45.2
19	South Korea	47.8	43.6
20	Turkey	44.7	43.6
21	Pakistan	41.9	43.4
22	Brazil	39.4	40.9
23	Malaysia	40.8	39.8
24	Indonesia	40.9	39.7
25	France	36.2	39.1
26	Algeria	37.5	39.0
27	Venezuela	30.7	34.5
28	Australia	36.0	34.3
29	Turkmenistan	27.7	34.3
30	Netherlands	32.0	31.8
	Total	**2950.6**	**2995.3**
	Others	459.6	473.4
	Total World	**3410.2**	**3468.6**
	of which: OECD	1582.8	1606.1
	Non-OECD	1827.4	1862.6
	European Union	384.5	402.1
	Former Soviet Union	565.5	545.4

Source: BP Statistical Review of World Energy,June 2016

Table 3.4 : Natural gas at a glance

(MMSCMD)

	2011-12	2012-13	2013-14	2014-15	2015-16 (P)
Gross production	129.93	111.45	97.01	92.21	88.11
Net production (net of flare and loss)	126.92	108.91	94.72	89.57	85.08
LNG import*	42.11	39.57	48.57	50.78	58.22
Total consumption including internal use (net production + LNG import)	169.03	148.48	143.29	140.35	143.30
Total consumption (in BCM)	61.9	54.2	52.3	51.2	52.4
Total consumption (in MMSCM)	61866	54197	52302	51229	52448

Source : ONGC / OIL/ DGH / PLL/ HLPL/ GSPCL / GAIL/ RIL/IOCL
Notes :*LNG imports include both term and spot cargo
*RIL LNG import data is not included in the years 2011-12 and 2012-13.
LNG imports data in Million Metric Ton (MMT), converted to MMSCM, 1MMT=1325 MMSCM
BCM= Billion cubic meter
MMSCMD : Million Standard Cubic Meter per Day
MMT= Million Metric Tonne

Table 3.5: PNG data as on 31.03.2016

State	Geographical area covered	CGD companies	Domestic connections	Commercial connections	Industrial connections
Haryana	Sonipat, Gurgaon, Faridabad	GAIL Gas Ltd., Adani Gas Ltd., Haryana City Gas Distribution Ltd.	31042	135	213
Andhra Pradesh/ Telangana	Kakinada, Hyderabad,Vijayawada	Bhagyanagar Gas Ltd. (BGL)	4270	46	3
Assam	Tinsukia, Dibrugarh, Sivasagar, Jorhat, Golaghat	Assam Gas Company Ltd.	29000	941	397
Gujarat	Ahmedabad, Baroda, Surat, Ankeleswar	Sabarmati Gas Ltd., Gujarat Gas Ltd. (Merger of GSPC and GGCL), Hindustan Petroleum Corporation Ltd., Vadodara Gas Ltd., Adani Gas Ltd., Charotar Gas Sahakari Mandli Ltd.	1507580	16849	4009
Madhya Pradesh	Dewas, Indore, Ujjain, Gwalior	GAIL Gas Ltd., Aavantika Gas Ltd.	6000	34	85
Maharashtra	Mumbai, Thane, Mira-Bhayender, Navi Mumbai, Pune, Kalyan, Ambernath, Panvel, Bhiwandi	Mahanagar Gas Ltd., Maharashtra Natural Gas Ltd.	892956	2998	175
Delhi/NCR	National Capital Territory of Delhi (Including Noida and Ghaziabad)	Indraprastha Gas Ltd.	636318	1750	821
Rajasthan	Kota	GAIL Gas Ltd.	189	1	16
Tripura	Agartala	Tripura Natural Gas Company Ltd.	22615	322	47
Uttar Pradesh	Agra, Kanpur, Bareilly, Lucknow, Meerut, Mathura, Moradabad, Khurja, Firozabad	Green Gas Ltd. (Lucknow), Central UP Gas Limited (Kanpur), Sanwaria Gas Ltd., GAIL Gas Ltd., Adani Gas Ltd., Siti Enegy Ltd.	33618	229	466
Total			**3163588**	**23305**	**6232**

Sources: CGD companies

Table 3.6: CNG activities in India as on 31.03.2016

CNG Sales

(Sales in TMT)

State	Company name	No. of companies	2013-14	2014-15	2015-16 (P)
Gujarat	Adani Energy, Gujarat Gas Ltd., (JV of GSPC + GGCL), Sabermati Gas Ltd., Hindustan Petroleum Corporation Ltd., (HPCL), Vadodara Gas Limited (JV of GAIL Gas Ltd+ VMSS)	5	463.50	475.90	503.05
Delhi	Indraprastha Gas Ltd. (IGL) New Delhi	1	697.60	717.10	738.30
Rajasthan	GAIL Gas Ltd.	1	1.60	2.60	3.68
Maharashtra	Mahanagar Gas Ltd. (MGL) Mumbai, Maharashtra Natural Gas Ltd., (MNGL), Pune, GAIL Gas Ltd.	3	476.00	531.40	565.01
Andhra Pradesh / Telangana	Bhagyanagar Gas Ltd.(BGL) Hyderabad.	1	24.60	25.80	27.45
Uttar Pradesh	Green Gas Ltd. (Lucknow), Central UP Gas Ltd., Kanpur, Siti Energy, GAIL Gas Ltd., Sanwaria Gas Ltd., Indraprastha Gas Ltd., Adani Gas Ltd.	5	162.60	184.80	211.61
Tripura	Tripura Natural Gas Co. Ltd. (TNGCL) Agartala.	1	6.80	9.50	11.19
Madhya Pradesh	Aavantika Gas (Indore) and GAIL Gas Ltd.	2	15.90	16.60	19.19
Haryana	Haryana City Gas Ltd., GAIL Gas Ltd., Adani Gas Ltd.	3	78.20	72.30	74.59
West Bengal	Great Eastern Energy Corporation Ltd.	1	1.15	1.24	1.36
Total		**18***	**1927.95**	**2037.24**	**2155.44**

Source : CGD companies
*GAIL Gas Ltd. is operating in five States, Adani Gas in three States, Bhagyanagar Gas Ltd and Indraprastha Gas Ltd. are operating in two States. Hence, their number is taken once only.

Table 3.7: CNG stations and vehicles as on 31.03. 2016

State	Company name	No. of CNG stations	No. of CNG vehicles
Gujarat	Adani Energy, Gujarat Gas Ltd., (JV of GSPC + GGCL), Sabarmati Gas Ltd., Hindustan Petroleum Corporation Ltd., Vadodara Gas Limited (JV of GAIL/ Gas Ltd+ VMSS)	377	864735
Delhi / NCR	Indraprastha Gas (IGL) New Delhi	340	823298
Maharashtra	Mahanagar Gas Ltd. (MGL) Mumbai, Maharashtra Natural Gas Ltd., (MNGL) Pune, GAIL Gas Ltd.	225	567785
Andhra Pradesh / Telangana	Bhagyanagar Gas Ltd. (BGL) Hyderabad.	33	37270
Rajasthan	GAIL Gas Ltd.	3	4720
Uttar Pradesh	Green Gas Ltd. (Lucknow), Central UP Gas Ltd. (Kanpur), Siti Energy, Adani Energy, GAIL Gas Ltd., Sanwaria Gas Ltd.	45	105238
Tripura	Tripura Natural Gas Co. Ltd., Agartala.	5	8063
Madhya Pradesh	Aavantika Gas Ltd. (Indore), GAIL Gas Ltd.	22	21139
Haryana	Haryana City Gas Limited, GAIL Gas Ltd., Adani Gas Ltd.	24	123372
West Bengal	Great Eastern Energy Corporation Ltd.	7	2275
All India		**1081**	**2557895**

Source : CGD companies
Notes: 1. Vehicle figures of IGL -Noida, Greater Noida and Ghaziabad is not available.
2. The average no. of CNG vehicles in Gujarat Gas Ltd. (GGL) is based on average no. of vehicles filled at company's CNG station per day. In case of Vadodara Gas Limited the no. of vehicles is based on no. of vehicles filled during the month.

Chapter-4
Refining & Production

Naphtha Cracker, Panipat

Map of Refineries in India

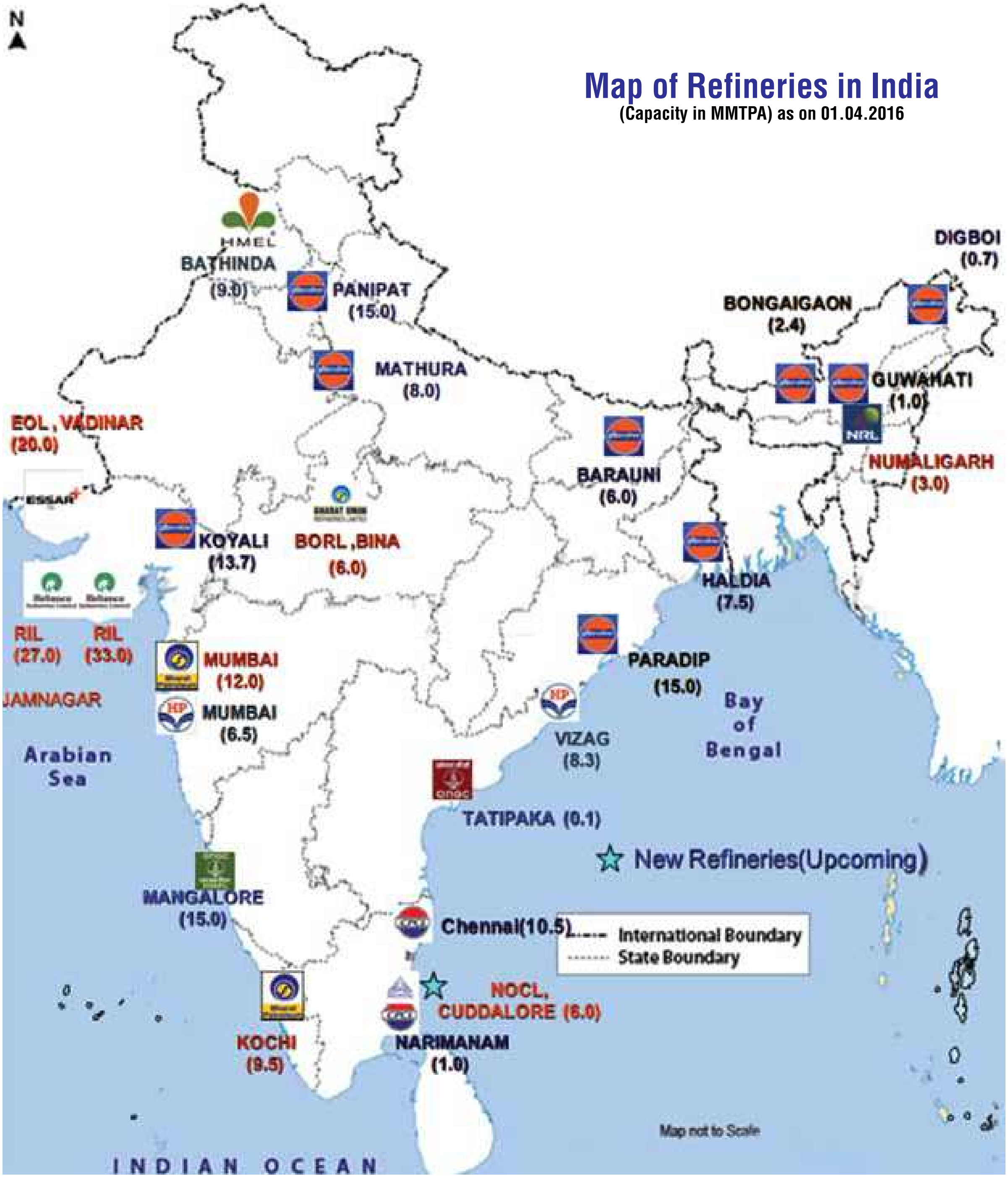


Table 4.1 : Refineries: Installed capacity and crude oil processing

(Million metric tonnes per annum / Million metric tonnes)

Sl. no.	Refinery	Installed capacity					Crude oil processing				
		01.04.2012	01.04.2013	01.04.2014	01.04.2015	01.04.2016	2011-12	2012-13	2013-14	2014-15	2015-16 (P)
1	Barauni	6.0	6.0	6.0	6.0	6.0	5.7	6.3	6.5	5.9	6.5
2	Koyali	13.7	13.7	13.7	13.7	13.7	14.3	13.2	13.0	13.3	13.8
3	Haldia	7.5	7.5	7.5	7.5	7.5	8.1	7.5	8.0	7.7	7.8
4	Mathura	8.0	8.0	8.0	8.0	8.0	8.2	8.6	6.6	8.5	8.9
5	Panipat	15.0	15.0	15.0	15.0	15.0	15.5	15.1	15.1	14.2	15.3
6	Guwahati	1.0	1.0	1.0	1.0	1.0	1.1	1.0	1.0	1.0	0.9
7	Digboi	0.7	0.7	0.7	0.7	0.7	0.6	0.7	0.7	0.6	0.6
8	Bongaigaon	2.4	2.4	2.4	2.4	2.4	2.2	2.4	2.3	2.4	2.4
9	Paradip	-	-	-	-	15.0	-	-	-	-	1.8
	IOCL total	**54.2**	**54.2**	**54.2**	**54.2**	**69.2**	**55.6**	**54.6**	**53.1**	**53.6**	**58.0**
10	Mumbai	6.5	6.5	6.5	6.5	6.5	7.5	7.7	7.7	7.4	8.0
11	Visakh	8.3	8.3	8.3	8.3	8.3	8.7	8.0	7.8	8.8	9.2
12	HMEL - Bathinda	9.0	9.0	9.0	9.0	9.0	-	4.9	9.3	7.3	10.7
	HPCL total	**23.8**	**23.8**	**23.8**	**23.8**	**23.8**	**16.2**	**20.7**	**24.8**	**23.5**	**27.9**
13	Mumbai	12.0	12.0	12.0	12.0	12.0	13.0	12.7	12.7	12.8	13.4
14	Kochi	9.5	9.5	9.5	9.5	9.5	9.5	10.1	10.3	10.4	10.7
15	BORL - Bina	6.0	6.0	6.0	6.0	6.0	2.0	5.7	5.4	6.2	6.4
	BPCL total	**27.5**	**27.5**	**27.5**	**27.5**	**27.5**	**24.5**	**28.6**	**28.4**	**29.4**	**30.5**
16	Manali	10.5	10.5	10.5	10.5	10.5	9.9	9.1	10.1	10.2	9.1
17	CBR	1.0	1.0	1.0	1.0	1.0	0.6	0.6	0.6	0.5	0.5
	CPCL total	**11.5**	**11.5**	**11.5**	**11.5**	**11.5**	**10.6**	**9.7**	**10.6**	**10.8**	**9.6**
18	Numaligarh	**3.0**	**3.0**	**3.0**	**3.0**	**3.0**	**2.8**	**2.5**	**2.6**	**2.8**	**2.5**
19	Tatipaka	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
20	MRPL- Mangalore	15.0	15.0	15.0	15.0	15.0	12.8	14.4	14.6	14.6	15.5
	ONGC total	**15.1**	**15.1**	**15.1**	**15.1**	**15.1**	**12.9**	**14.5**	**14.7**	**14.7**	**15.6**
21	RIL-Jamnagar (DTA)	33.0	33.0	33.0	33.0	33.0	32.5	32.6	30.3	30.9	32.4
22	RIL-Jamnagar (SEZ)	27.0	27.0	27.0	27.0	27.0	35.2	35.9	37.7	37.2	37.1
23	EOL-Vadinar	18.0	20.0	20.0	20.0	20.0	13.5	19.8	20.2	20.5	19.1
	All India	**213.1**	**215.1**	**215.1**	**215.1**	**230.1**	**203.8**	**218.8**	**222.5**	**223.3**	**232.9**

Source: Oil companies

Table 4.2 : High Sulphur (HS) & Low Sulphur (LS) crude oil processing

(Million metric tonne)

Sl.no.	Type of crude	2011-12	2012-13	2013-14	2014-15	2015-16 (P)
1	HS crude	139.0	153.0	160.2	161.4	165.4
2	LS crude	64.8	65.8	62.2	61.9	67.5
	Total crude	**203.8**	**218.8**	**222.5**	**223.3**	**232.9**
	Share of HS crude in total crude processing	68.2%	69.9%	72.0%	72.3%	71.0%

Source: Oil companies

Table 4.3 : Imported crude & indigenous crude oil processing

(Million metric tonne)

Sl. no.	Indigenous/ Imported crude	2011-12	2012-13	2013-14	2014-15	2015-16 (P)
1	Imported crude	170.1	184.7	188.6	189.0	198.7
2	Indigenous crude	33.7	34.2	33.9	34.2	34.1
	Total crude	**203.8**	**218.8**	**222.5**	**223.3**	**232.9**
	Share of imported crude in total crude processing	**83.4%**	**84.4%**	**84.8%**	**84.7%**	**85.3%**

Source: Oil companies

Table 4.4 : Production of petroleum products

(Million metric tonne)

	2011-12	2012-13	2013-14	2014-15	2015-16 (P)
A) From crude oil / refineries					
Light ends of which:	**59.0**	**63.0**	**62.6**	**64.6**	**69.9**
LPG	7.3	7.7	7.9	7.7	8.6
MS	27.2	30.1	30.3	32.2	35.3
Naphtha	17.0	17.2	17.0	16.2	16.6
Others	7.4	8.0	7.4	8.5	9.5
Middle distillates of which:	**105.2**	**112.5**	**117.3**	**117.5**	**122.2**
SKO	7.9	8.0	7.4	7.6	7.4
ATF	10.0	10.1	11.2	11.1	11.8
HSD	82.9	91.1	93.8	94.3	98.6
LDO	0.5	0.4	0.4	0.4	0.4
Others	3.8	3.0	4.6	4.2	4.0
Heavy ends of which:	**35.6**	**38.2**	**36.6**	**34.9**	**35.8**
Furnace Oil	17.7	14.5	13.0	11.5	10.3
LSHS	1.7	1.3	0.5	0.7	0.4
Lube Oil	1.0	0.9	0.9	0.9	1.0
Bitumen	4.6	4.7	4.8	4.7	5.2
Others	10.6	16.8	17.4	17.1	18.9
Total production	**199.8**	**213.7**	**216.4**	**217.1**	**227.9**
B) From Natural Gas/ fractionators					
Total production out of which:	**4.2**	**4.1**	**3.9**	**3.7**	**3.4**
LPG	2.2	2.1	2.1	2.2	2.0
Naphtha	1.7	1.7	1.5	1.2	1.1
SKO	0.1	0.1	0.1	0.1	0.07
HSD	0.01	0.02	0.02	0.01	0.008
Others	0.2	0.2	0.2	0.2	0.2
Total indigenous production	**204.0**	**217.8**	**220.3**	**220.7**	**231.3**

Source: Oil companies

Table 4.5 : Production of petroleum products : All sources

(Million metric tonne)

Major products	2011-12	2012-13	2013-14	2014-15	2015-16 (P)
HSD	82.9	91.1	93.8	94.3	98.6
MS	27.2	30.1	30.3	32.2	35.3
Naphtha	18.7	18.9	18.5	17.5	17.7
FO	17.7	14.5	13.0	11.5	10.3
ATF	10.1	10.1	11.2	11.1	11.8
LPG	9.6	9.8	10.0	9.8	10.6
SKO	8.0	8.1	7.4	7.6	7.5
Bitumen	4.6	4.7	4.8	4.7	5.2
LSHS	1.7	1.3	0.5	0.7	0.4
Lubes	1.0	0.9	0.9	0.9	1.0
LDO	0.5	0.4	0.4	0.4	0.4
Others#	22.0	28.0	29.5	30.0	32.5
Total	**204.0**	**217.8**	**220.3**	**220.7**	**231.3**

Source: Oil companies
Others include products like Propylene, Solvents (Hexane, Benzene, Toluene, Xylene and Specialty solvents), Reformate, Mineral Turpentine Oil, Carbon Black Feed Stock, Raw and Calcined Petroleum Coke, Waxes, Sulphur etc.

Table 4.6 : Production vs consumption of petroleum products

(Million metric tonne)

Year	Consumption $	Production from refineries & other sources*	Surplus (+) / Deficit (-)
	(A)	(B)	(B)-(A)
1997-98	84.3	64.7	-19.6
1998-99	90.6	68.4	-22.1
1999-00	97.1	82.9	-14.2
2000-01	100.1	99.6	-0.5
2001-02	100.4	104.3	3.9
2002-03	104.1	108.7	4.5
2003-04	107.8	117.6	9.9
2004-05	111.6	122.7	11.1
2005-06	113.2	124.1	10.9
2006-07	120.7	140.1	19.3
2007-08	128.9	149.9	20.9
2008-09	133.6	157.4	23.8
2009-10	137.8	185.0	47.2
2010-11	141.0	195.8	54.8
2011-12	148.1	204.0	55.9
2012-13	157.1	217.8	60.7
2013-14	158.4	220.3	61.9
2014-15	165.5	220.7	55.2
2015-16 (P)	183.5	231.3	47.8

Note:
$ includes direct imports by private parties
*Fractionators and gas processing plants

Table 4.7 : Gross Refining Margins (GRM) of refineries

($/bbl)

Company	Refinery	2011-12	2012-13	2013-14	2014-15	2015-16
PSU refineries						
IOCL	Barauni	0.39	2.40	6.68	(1.20)	2.93
	Koyali	5.07	4.61	4.52	4.79	6.80
	Haldia	2.38	0.85	2.84	(1.51)	3.96
	Mathura	0.59	0.55	2.10	(2.19)	3.30
	Panipat	4.39	3.34	3.62	(1.97)	4.15
	Guwahati	11.94	9.52	6.38	8.68	15.88
	Digboi	14.85	20.81	15.41	13.73	16.17
	Bongaigaon	6.25	5.26	6.71	(0.26)	11.09
	Paradip	NA	NA	NA	NA	(0.65)
	Average	**3.63**	**3.16**	**4.24**	**0.27**	**5.06**
BPCL	Kochi	3.09	5.36	4.80	3.17	6.87
	Mumbai	1.73	4.67	3.95	3.97	6.37
	Average	**2.29**	**4.97**	**4.33**	**3.62**	**6.59**
HPCL	Mumbai	1.74	2.08	5.38	4.88	8.09
	Visakh	2.95	2.08	1.50	1.12	5.46
	Average	**2.39**	**2.08**	**3.43**	**2.84**	**6.68**
CPCL	Chennai	4.16	0.99	4.08	1.97	5.27
MRPL	Mangalore	5.60	2.45	2.67	(0.64)	5.20
NRL	Numaligarh	12.45	10.52	12.09	16.67	23.68
JV refineries						
BORL	Bina	NA	7.00	7.70	6.10	11.70
Private refineries						
RIL	Jamnagar	8.60	9.20	8.10	8.60	10.80
Essar	Vadinar	4.23	7.96	7.98	8.37	*
Singapore		8.27	7.74	5.62	6.36	7.52

Source: Indian refineries - published results/ information provided by oil companies
Singapore - Reuters
*Not yet declared.

Table 4.8 : GRM of North East refineries excluding excise duty benefit

($/bbl)

Company	Refinery	2011-12	2012-13	2013-14	2014-15	2015-16
IOCL	Guwahati	3.73	3.43	0.88	0.96	1.26
	Digboi	6.41	13.25	8.50	5.42	4.16
	Bongaigaon	0.56	0.25	2.34	(6.51)	0.08
NRL	Numaligarh	5.80	4.86	6.98	9.46	8.06

Source: Information provided by oil companies

Table 4.9 : Distillate yield of PSU refineries

(Distillate %)

Company	Refinery	2011-12	2012-13	2013-14	2014-15	2015-16 (P)
IOCL	Barauni	85.2	86.2	87.9	87.2	88.7
	Koyali	77.9	78.0	78.4	80.1	83.1
	Haldia	66.5	66.9	67.3	69.0	69.6
	Mathura	73.8	73.3	68.9	71.9	74.7
	Panipat	82.3	82.7	82.0	82.4	83.7
	Guwahati	82.9	79.7	83.1	81.3	80.8
	Digboi	70.9	73.7	73.5	74.8	69.7
	Bongaigaon	81.8	82.3	85.4	84.0	84.5
CPCL	Manali	71.3	68.3	72.3	73.7	73.6
	CBR	86.6	87.5	85.1	71.6	79.3
HPCL	Mumbai	73.5	74.6	72.6	74.5	76.0
	Visakh	72.2	72.1	75.7	75.5	75.7
BPCL	Mumbai	79.6	80.5	81.0	81.8	84.3
	Kochi	78.7	78.9	81.9	84.7	85.7
NRL	Numaligarh	91.6	91.1	92.2	90.7	90.8
MRPL	Mangalore	73.3	76.5	74.6	73.1	77.7
PSU oil cos. average		**78.0**	**78.3**	**78.9**	**78.5**	**79.9**

Source: Oil companies

Table 4.10 : Fuel & Loss

Sl. no.	Company	Refinery	2012-13			2013-14			2014-15			2015-16 (P)		
			Through put (Million tonne)	Fuel & Loss		Through put (Million tonne)	Fuel & Loss		Through put (Million tonne)	Fuel & Loss		Through put (Million tonne)	Fuel & Loss	
				Qty (Million tonne)	%		Qty (Million tonne)	%		Qty (Million tonne)	%		Qty (Million tonne)	%
1	IOCL	Barauni	6.3	0.6	9.2	6.5	0.6	9.0	5.9	0.5	9.2	6.5	0.6	8.8
2		Koyali	13.2	1.3	9.7	13.0	1.3	9.7	13.3	1.3	9.6	13.8	1.3	9.2
3		Haldia	7.5	0.7	9.4	8.0	0.7	9.2	7.7	0.7	8.7	7.8	0.7	8.7
4		Mathura	8.6	0.7	8.7	6.6	0.6	8.9	8.5	0.7	8.2	8.9	0.7	8.1
5		Panipat	15.1	1.6	10.5	15.1	1.5	10.0	14.2	1.4	10.2	15.3	1.5	9.7
6		Guwahati	1.0	0.1	12.2	1.0	0.1	11.6	1.0	0.1	12.1	0.9	0.1	13.0
7		Digboi	0.7	0.1	10.1	0.7	0.1	10.0	0.6	0.1	10.3	0.6	0.06	11.3
8		Bongaigaon	2.4	0.2	10.5	2.3	0.2	9.7	2.4	0.2	9.2	2.4	0.2	8.5
9		Paradip	-	-	-	-	-	-	-	-	-	1.8	0.5	25.1
		IOCL Total	**54.6**	**5.3**	**9.7**	**53.1**	**5.1**	**9.6**	**53.6**	**5.0**	**9.4**	**58.0**	**5.6**	**9.6**
10	HPCL	Mumbai	7.7	0.5	6.6	7.7	0.5	6.9	7.4	0.6	7.6	8.0	0.6	7.7
11		Visakh	8.0	0.6	7.6	7.8	0.6	7.6	8.8	0.7	7.4	9.2	0.7	7.7
12		HMEL-Bathinda	4.9	0.5	9.8	9.3	0.6	6.4	7.3	0.5	6.5	10.7	0.7	6.4
		HPCL Total	**20.7**	**1.6**	**7.8**	**24.8**	**1.7**	**6.9**	**23.5**	**1.7**	**7.2**	**27.9**	**2.0**	**7.2**
13	BPCL	Mumbai	12.7	0.6	5.0	12.7	0.7	5.2	12.8	0.6	4.8	13.4	0.6	4.4
14		Kochi	10.1	0.7	7.1	10.3	0.6	6.3	10.4	0.7	6.3	10.7	0.6	5.9
15		BORL-Bina	5.7	0.5	9.2	5.4	0.5	8.6	6.2	0.5	7.7	6.4	0.5	7.0
16		NRL	2.5	0.3	10.6	2.6	0.3	10.3	2.8	0.3	10.3	2.5	0.2	9.8
		BPCL Total	**31.1**	**2.2**	**6.9**	**31.0**	**2.0**	**6.6**	**32.2**	**2.0**	**6.3**	**33.0**	**1.9**	**5.8**
17	CPCL	Manali	9.1	0.9	10.1	10.1	0.9	9.0	10.2	0.9	8.9	9.1	0.9	9.6
18		CBR	0.6	0.03	3.9	0.6	0.03	4.8	0.5	0.023	4.3	0.5	0.03	4.6
		CPCL Total	**9.7**	**0.9**	**9.7**	**10.6**	**0.9**	**8.8**	**10.8**	**0.9**	**8.7**	**9.6**	**0.9**	**9.4**
19	ONGC	Tatipaka	0.1	0.0	1.2	0.1	0.0	1.3	0.1	0.0	1.4	0.1	0.0	1.7
20		MRPL-Mangalore	14.4	1.0	7.0	14.6	1.1	7.9	14.6	1.5	10.1	15.5	1.5	9.9
		ONGC Total	**14.5**	**1.0**	**7.0**	**14.7**	**1.1**	**7.8**	**14.7**	**1.5**	**10.1**	**15.6**	**1.5**	**9.9**
21	RIL	Jamnagar (DTA)	32.6	2.6	8.1	30.3	2.6	8.5	30.9	2.3	7.5	32.4	2.6	8.0
22		Jamnagar (SEZ)	35.9	3.4	9.3	37.7	3.3	8.8	37.2	3.2	8.7	37.1	3.4	9.2
23	EOL	Vadinar	19.8	1.2	5.9	20.2	1.0	5.1	20.5	1.1	5.3	19.1	1.1	5.8
		Total	**218.8**	**18.2**	**8.3**	**222.5**	**17.9**	**8.0**	**223.3**	**17.8**	**8.0**	**232.9**	**19.0**	**8.2**

Source: Oil companies

Note: IOC - Paradip refinery commissioned during Feb 2016 and is under stablization.

Table 4.11 : Specific energy consumption (MBN number) of PSU refineries

(MBTU/Bbl/NRGF)

Company	Refinery	2011-12	2012-13	2013-14	2014-15	2015-16 (P)
IOCL	Barauni	57.7	58.3	60.6	61.5	60.1
	Koyali	59.3	57.4	58.1	55.7	55.4
	Haldia	54.7	54.3	52.3	51.2	50.7
	Mathura	59.3	58.8	60.5	56.2	55.5
	Panipat	52.4	51.0	49.9	48.7	47.9
	Guwahati	60.4	64.6	58.1	61.8	64.7
	Digboi	67.6	64.8	61.5	61.1	71.7
	Bongaigaon	81.3	74.7	68.6	67.5	63.5
CPCL	Manali	67.2	65.8	62.5	62.3	65.8
	CBR	108.7	103.9	123.3	118.6	112.2
HPCL	Mumbai	81.4	82.6	76.1	79.8	90.5
	Visakh	84.2	84.0	84.3	83.7	82.8
BPCL	Mumbai	67.2	65.5	66.5	69.2	69.0
	Kochi	84.5	79.1	76.6	76.9	76.4
NRL	Numaligarh	59.6	53.2	53.6	51.5	50.4
MRPL	Mangalore	57.9	61.0	60.9	67.5	76.7
PSU oil cos. average		**69.0**	**67.4**	**67.1**	**67.1**	**68.3**

Source: Oil companies

Table 4.12 : Import / export of crude oil and petroleum products

Import / Export	Crude Oil & Petroleum Products	2012-13			2013-14			2014-15			2015-16 (P)		
		Quantity	Value		Quantity	Value		Quantity	Value		Quantity	Value	
		Million tonne	US$ (Billion)	Rs. (Crores)	Million tonne	US$ (Billion)	Rs. (Crores)	Million tonne	US$ (Billion)	Rs. (Crores)	Million tonne	US$ (Billion)	Rs. (Crores)
IMPORT*	**Crude oil**	184.8	144.3	784652	189.2	143.0	864875	189.4	112.7	687416	202.9	64.0	416361
	Products												
	LPG	6.3	5.8	31674	6.6	6.1	37213	8.3	6.0	36571	8.9	3.9	25626
	Petrol	0.1	0.2	891	0.2	0.2	1481	0.4	0.4	2301	1.0	0.7	4258
	Naphtha	1.8	1.7	9272	1.0	1.0	6044	1.0	0.7	4592	3.0	1.5	10166
	Kerosene	0.0	0.0	0	0.0	0.0	0	0.03	0.03	172	0.04	0.02	158
	Diesel	0.5	0.5	2771	0.1	0.1	452	0.1	0.1	670	0.2	0.1	655
	Lubes	2.0	2.1	11339	2.1	2.1	12985	2.1	2.1	12702	1.9	1.3	8487
	Fuel Oil/ LSHS	1.0	0.8	4218	1.3	0.9	5759	0.9	0.6	3659	1.2	0.4	2575
	Bitumen	0.1	0.05	272	0.2	0.1	801	0.5	0.3	1623	0.8	0.3	1820
	Others**	4.5	1.5	8415	5.1	1.8	11162	7.9	2.0	12356	11.4	1.8	12060
	Total product import	**16.4**	**12.6**	**68852**	**16.7**	**12.5**	**75896**	**21.3**	**12.1**	**74644**	**28.3**	**10.0**	**65803**
	Total import (crude oil + product)	**201.1**	**156.9**	**853504**	**205.9**	**155.4**	**940771**	**210.7**	**124.9**	**762060**	**231.2**	**74.0**	**482164**
EXPORT	**Products**												
	LPG	0.2	0.2	1294	0.2	0.3	1589	0.3	0.2	1455	0.2	0.1	785
	Petrol	16.7	17.5	95346	15.2	15.4	92977	16.0	13.5	81971	16.8	9.1	59575
	Naphtha	8.6	8.0	43533	8.3	7.6	46059	7.0	5.2	31619	7.1	3.1	20056
	Aviation Turbine Fuel	4.7	4.6	25223	5.7	5.5	33246	5.5	4.2	25413	5.7	2.4	16007
	Kerosene	0.02	0.03	140	0.02	0.02	98	0.02	0.01	81	0.01	0.01	35
	Diesel	22.5	21.3	115554	26.5	24.3	148138	25.6	18.9	115149	24.0	10.2	66486
	LDO	0.01	0.01	42	0.03	0.02	135	0.01	0.00	28	0.0	0.0	0
	Lubes	0.1	0.1	381	0.02	0.03	138	0.01	0.02	100	0.02	0.02	127
	Fuel Oil/ LSHS	5.9	3.8	20415	6.2	3.7	22407	4.8	2.3	14251	2.8	0.7	4471
	Bitumen	0.1	0.1	281	0.1	0.1	321	0.09	0.04	245	0.10	0.03	176
	Others***	4.7	3.3	17880	5.5	3.8	23169	4.7	3.0	18267	3.8	1.4	9054
	Total product export	**63.4**	**58.8**	**320090**	**67.9**	**60.7**	**368279**	**63.9**	**47.3**	**288580**	**60.5**	**27.1**	**176773**
	Net import	**137.7**	**98.0**	**533415**	**138.1**	**94.8**	**572492**	**146.8**	**77.6**	**473481**	**170.6**	**46.9**	**305391**
	Net Product Export	**47.1**	**46.3**	**251238**	**51.2**	**48.2**	**292383**	**42.6**	**35.1**	**213936**	**32.2**	**17.0**	**110969**

Source: Oil companies & DGCIS

Note:

1. *Import does not include LNG imports

2. **Other imports include Pet coke, Paraffin Wax, Petroleum Jelly, LSWR, Aviation Gas, MTBE & Reformate etc.

3. *** Other exports include VGO, Benzene, Hexane, MTO, Pet coke, CBFS & Sulphur etc.

Table 4.13 : Exchange rates of Indian Rupee (₹)

Year	US dollar ($)	British pound (£)	Euro (€)	Japanese yen (¥)
	Indian rupee (₹) / foreign currency			
2002-03	48.41	74.84	48.07	0.40
2003-04	45.92	77.74	54.01	0.41
2004-05	44.95	82.95	56.55	0.42
2005-06	44.28	79.02	53.88	0.39
2006-07	45.29	85.72	58.11	0.39
2007-08	40.24	80.80	56.99	0.35
2008-09	45.91	78.45	65.14	0.46
2009-10	47.42	75.88	67.08	0.51
2010-11	45.58	70.88	60.21	0.53
2011-12	47.95	76.40	65.90	0.61
2012-13	54.45	86.02	70.06	0.66
2013-14	60.50	96.23	81.14	0.60
2014-15	61.15	98.56	77.47	0.56
2015-16	65.46	98.76	72.31	0.55
2016-17 (up to 31.05.2016)	66.72	96.42	75.57	0.61
2016 : Month wise				
Jan-16	67.25	97.11	73.08	0.57
Feb-16	68.24	97.66	75.77	0.59
Mar-16	67.02	95.37	74.49	0.59
Apr-16	66.47	95.27	75.41	0.61
May-16	66.91	97.25	75.69	0.61

Source: Reserve Bank of India (RBI) website

Chapter-5

Major Pipelines in India

IOCL, Eastern Region Pipelines

Map of Pipeline Network in India

Table 5.1 : Gas pipeline network as on 31.03.2016

Network/Region	Entity	Length (Kms)	Design capacity (mmscmd)	Pipeline size	Average flow 2015-16 (mmscmd)	% Capacity utilisation 2015-16
Hazira- Vijaipur- Jagdishpur Pipeline/Gas rehabilitation and expansion project Pipeline/Dahej-Vijaipur Pipeline & Spur / Vijaipur Dadri Pipeline	GAIL	4658.00	53.00	36"	33.06	62.38
DVPL-GREP Upgradation (DVPL-2 & VDPL)	GAIL	1119.00	54.00	48"	25.51	47.24
*Chhainsa- Jhajjar -Hissar Pipeline (CJPL) (Including Spur lines) commisioned up to Sultanpur, Jhajjar- Hissar under hold (111 Km)	GAIL	265.00	5.00	36" /16"	0.77	15.40
Dahej-Uran-Panvel Pipeline (DUPL/ DPPL) including Spur Lines	GAIL	875.00	19.90	30"/18"	9.53	47.89
*Dadri- Bawana- Nangal Pipeline (DBPL), Dadri- Bawana: 106Km, Bawana - Nangal: 501 KM, Spur Line of BNPL : 196 Km.	GAIL	834.80	31.00	36"/30"/24"/18"	4.06	13.10
Dabhol -Bengaluru Pipeline (Including spur)	GAIL	1097.00	16.00	36"-4"	0.98	6.13
Kochi-Koottanad-Bengaluru-Mangalore (Phase-1)	GAIL	48.00	6.00	16"-4"	0.57	9.50
Assam (Lakwa)	GAIL	8.00	2.50	24"	0.40	16.00
Tripura (Agartala)	GAIL	61.00	2.26	12"	1.47	65.04
Ahmedabad	GAIL	133.00	2.91	12"	0.27	9.28
Rajasthan (Focus Energy)	GAIL	152.00	2.35	12"	1.40	59.57
Bharuch , Vadodara (Undera) including RLNG+ RIL	GAIL	538.00	15.42	24"/16"	1.68	10.89
Mumbai	GAIL	129.00	7.04	26"	6.17	87.69
KG Basin (including RLNG+ RIL)	GAIL	881.00	16.00	18"	4.88	30.51
Cauvery Basin	GAIL	278.00	8.66	18"	2.74	31.63
East- West Pipeline (RGTIL)	Reliance	1469.00	80.00	48"	19.00	23.75
GSPL Network including Spur Lines	GSPL	2539.70	43.00	Assorted	24.49	56.95
Assam Regional Network	AGCL, DNPL	1000.00	6.00	16"	3.81	63.46
Dadri -Panipat	IOCL	140.41	9.50	30"/10"	3.80	40.00
Uran -Trombay	ONGC	24.00	6.00	20"	3.80	63.33
Total		**16249.91**	**386.54**		**148.39**	

Source: Pipeline operating companies
*CJPL and DBPL Pipelines are the extension of DVPL-2 / VDPL.

Table 5.2 : Gas pipeline under execution / construction (as on 31.03.2016)

Sl. no.	Network/Region	Entity	Length in Kms	Design capacity (mmscmd)	Pipeline size	Status of pipeline laid (Km)
1	Kochi - Kottanad - Bengaluru - Mangalore	GAIL(India) Ltd.	1063	16.00	24"/18"/12"	40.35
2	Dabhol -Bengaluru (DBPL)	GAIL(India) Ltd.	315	16.00	36"/30"/ 24"/18"	70.47
3	Surat - Paradip*	GAIL(India) Ltd.	2112	74.81	36"/24"/18"	0
4	Jagdishpur- Haldia (Phase-1, 755 Km, 7.44 MMSCMD Capacity)	GAIL(India) Ltd.	1860	32.00	30”/24"/18"/ 12”/8”/4”	0
5	Mallavaram - Bhilwada*	GSPC India Transco Ltd.	2042	78.25	42”/36"/30"/ 24"/18"/12”	0
6	Mehsana - Bathinda*	GSPC India Gasnet Ltd.	2052	77.11	36”/24”/ 18”/12”	0
7	Bathinda -Jammu-Srinagar*	GSPC India Gasnet Ltd.	725	42.42	24”/18”/16”/ 12”/8”/6”	0
8	Kakinada - Vizag-Srikakulam *	AP Gas Distribution Corporation.	391	90.00	24”/18”/8”/4”	0
9	Shadol-Phulpur *	Reliance Gas Pipelines Ltd.	312	3.50	16”	312
10	Ennore- Nellore*	Gas Transmission India Pvt. Ltd.	430	36.00	24”/12”/8”	0
11	Ennore-Thiruvallur-Bengaluru-Puducherry-Nagapattinam-Madurai-Tuticorin*	Indian Oil Corporation Ltd.	1385	84.67	28"/24"/16”/ 12"/10"	0
	Total		**12687**			

Source : PNGRB, GAIL (India) Ltd, Pipeline authorized companies
*Competitive bidding.

Table 5.3 : Major crude oil pipelines in India

Onshore / offshore oil pipelines

Existing pipelines	Oil company	Length in Kms.	Annual capacity	2015-16 Capacity	2015-16 Act. Qty.	2015-16 Utilisation %	Remarks
			(MMT)	(MMT)	(MMT)		
CTF (Central Tank Farm) Kalol to CTF Nawagam - New (New line commissioned in Aug'2010)	ONGC	62.5	3.1	3.1	1.0	33.0	
Nawagam-Koyali (18" line)		78.4	5.4	5.4	2.3	41.8	
Nawagam-Koyali (14" line)		78.4	3.3	3.3	1.4	41.8	78 km X 14" Nawagam-Koyali line was given on lease to IOC in 2000 and was handed back to ONGC on 1st Apr.'10. The line was restored and re-commissioned in Oct.'12.
MHN-NGM (Mehsana-Nawagam) trunk line - New (New crude oil trunk line commissioned. Under operation since Dec'2010)		77.0	2.3	2.3	2.1	93.0	
CTF (Central Tank Farm), Ankleshwar to Koyali oil pipeline (AKCL- Ankleshwar Koyali Crude Line) *		94.8	2.2	2.2	0.7	33.8	
CTF (Central Tank Farm), Ankleshwar to CPF (Central Processing Facility), Gandhar		44.3	0.4	0.4	0.0	0.0	Crude oil from CTF Ankleshwar was being dispatched to CPF, Gandhar through 8" X 44.30 km pipeline up to 25.8.2013. Crude oil dispatched includes crude oil of PSC and JV also. After damage / rupture of 8" CTF to CPF line on 25.08.2013, this line is not in use.
CPF (Central Processing Facility), Gandhar to Saraswani 'T' point		56.7	1.8	1.8	0.6	32.6	Length and capacity includes length capacity of branch lines from GNAQ (well) and Dabka meeting at Magnad 'T' point and Mobha 'T' point respectively.
Akholjuni- Koyali oil pipe line (commissioned in July 2010). Akholjuni to Laxmipura T' point		65.5	0.5	0.5	0.1	25.8	
Lakwa-Moran oil line		17.5	1.5	1.5	0.3	20.2	
Geleki-Jorhat oil line		48.5	1.5	1.5	0.5	32.9	
Borholla- Jorhat		42.8	0.6	0.6	0.1	24.3	
NRM (Narimanam) to CPCL (Chennai Petroleum Corporation Limited)		5.3	0.7	0.7	0.0	0.0	
KSP-WGGS to TPK Refinery (Kesnapalli-West-Group Gathering Station to Tatipaka)		13.5	0.1	0.1	0.02	24.8	
GMAA EPT (Gopavaram Early Production Terminal) to S.Yanam unloading terminal (1st line - 4", 3.5 Km long)		3.5	0.1	0.1	0.1	92.7	
GMAA EPT (Gopavaram Early Production Terminal) to S. Yanam unloading terminal (3.5 Km long and 4"). New line commissioned on 28.07.10		3.5	0.1	0.1	0.0	0.0	
Mumbai High - Uran - Trunk (MUT) 30'' pipeline		204.0	15.6	15.6	8.8	56.5	
Heera - Uran - Trunk (HUT) 24'' pipeline		81.0	11.5	11.5	4.2	36.9	
Bombay-Uran Trunk (BUT) 30'' pipeline		203.0	6.4	6.4	0.0	0.0	
Salaya-Mathura pipeline (SMPL)**	IOCL	2226.0	21.0	21.0	25.1	119.7	
Paradip-Haldia-Barauni pipeline (PHBPL)		1447.0	11.0	11.0	16.7	151.6	63 KM added in PHBPL by commissioning of Khana Bolpur loopline on 22.9.15 and Dumri Barauni on 31.3.16.
Mundra-Panipat pipeline		1194.0	8.4	8.4	8.7	103.9	
Duliajan-Digboi-Bongaigaon-Barauni	OIL	1193.0	8.4	8.4	6.4	75.8	
Mangla-Bhogat pipeline	CAIRN	670.0	8.7	8.7	8.6	98.5	
Mundra- Bathinda pipeline	HMPL	1017.0	9.0	9.0	10.7	118.9	
Vadinar-Bina pipeline	BPCL /BORL	937.0	6.0	6.0	6.4	107.0	

Source: Oil companies
Note: ONGC: * CTF Ankleshwar to Makan 'T' point section i.e. HOEC Junction (about 47.51 km) of CTF Ankleshwar-Koyali Refinery trunk pipeline was not in use up to August 2013. After damage / rupture of 8" CTF to CPF line on 25.08.2013, CTF to Koyali Trunk pipeline is in use from 31.08.2013 for dispatch of Ankleshwar crude oil including PSC & JV. CTF Ankleshwar to Koyali Crude Line (AKCL) actual quantity includes Ankleshwar, PSC, JV and Cambay crude oil also.
**356 km added in SMPL by commissioning of SMPL-CP section rerouted to add new Pump station at Rewari on 26.9.15, Chaksu-Manpuria loopline in CM section on 24.12.15, Moda-Gauridad loopline in SV section commissioned on 17.3.16 and Rajola-Chaksu section in VC section on 31.3.16.

Table 5.4 : Major petroleum products pipeline in India

Pipeline	Oil company	Length in KMs	Annual capacity (MMT)	2015-16		
				Capacity (MMT)	Act. Qty. (MMT)	Utilisation %
Petroleum products pipelines						
Barauni - Kanpur pipeline	IOCL	745	3.5	3.5	2.4	**68.6**
Guwahati -Siliguri pipeline		435	1.4	1.4	1.9	**134.1**
Haldia-Barauni pipeline		526	1.3	1.3	1.4	**108.1**
Haldia-Mourigram-Rajbandh pipeline		277	1.4	1.4	1.8	**133.3**
Koyali-Ahmedabad pipeline		116	1.1	1.1	0.8	**68.9**
Koyali-Sanganer pipeline (1)		1288	4.6	4.6	3.3	**71.4**
Koyali-Ratlam pipeline		265	2.0	2.0	1.4	**69.4**
Koyali-Dahej pipeline		197	2.6	2.6	0.6	**22.2**
Mathura-Tundla pipeline		56	1.2	1.2	0.4	**76.8**
Mathura-Bharatpur		21			0.5	
Mathura-Delhi (including Bijwasan-Panipat) pipeline		258	3.7	3.7	2.3	**63.1**
Panipat-Ambala-Jalandhar (Including Kurukshetra-Roorkee-Najibabad branch line)		434	3.5	3.5	2.8	**78.9**
Panipat-Delhi (Including Sonepat-Meerut branch line) pipeline		189	3.0	3.0	1.6	**53.9**
Panipat-Bathinda pipeline		219	1.5	1.5	1.4	**93.3**
Panipat-Rewari pipeline		155	2.1	2.1	1.6	**75.3**
Chennai-Trichy-Madurai pipeline		683	2.3	2.3	2.6	**113.5**
Chennai - Meenambakkam ATF pipeline		95	0.2	0.2	0.2	**91.1**
Chennai-Bengaluru pipeline		290	2.5	2.5	1.2	**50.2**
Digboi - Tinsukia pipeline		75	1.0	1.0	0.4	**44.0**
Devangonthi - Devanhalli pipeline		36	0.7	0.7	0.2	**32.7**
Paradip Raipur Ranchi pipeline(PRRPL) (2)		105	5.0	0.1	0.01	**14.6**
Mumbai-Manmad-Bijwasan pipeline	BPCL	1389	6.0	6.0	6.7	**112.3**
Bina-Kota pipeline		259	4.4	4.4	2.9	**65.5**
ATF pipeline Mumbai Refinery (MR)-Santacruz		15	1.4	1.4	0.8	**52.8**
ATF pipeline Kochi Refinery (KR)-Kochi Airport		34	0.6	0.6	0.2	**35.0**
Kota - Jobner pipeline(1)		210	1.7	1.7	0.1	**8.5**
Cochin-Coimbatore-Karur (CCK) pipeline	Petronet CCK	293	3.3	3.3	2.7	**82.1**
Mumbai-Pune-Solapur pipeline	HPCL	508	4.3	4.3	4.4	**103.4**
Vizag-Vijaywada-Secunderabad pipeline		572	5.4	5.4	4.4	**82.2**
Mundra-Delhi pipeline		1054	5.0	5.0	2.9	**58.2**
Ramanmandi-Bahadurgarh pipeline		243	4.7	4.7	4.5	**94.6**
Ramanmandi-Bathinda pipeline		30	1.1	1.1	0.8	**74.2**
Awa-Salawas pipeline		93	2.3	2.3	0.7	**29.7**
Bahadurgarh-Tikrikalan pipeline		14	0.8	0.8	0.5	**70.8**
Rewari- Kanpur pipeline(1)		443	8.0	8.0	0.2	**2.4**
Mangalore-Hassan-Bengaluru (MHB) pipeline	Petronet MHB	362	2.1	2.1	3.3	**155.0**
Numaligarh-Siliguri pipeline	OIL	654	1.7	1.7	1.7	**101.2**
LPG Pipelines						
Panipat-Jalandhar pipeline	IOCL	274	0.7	0.7	0.6	**79.7**
Mumbai-Uran pipeline	BPCL	28	0.8	0.8	0.3	**36.3**
Jamnagar-Loni pipeline	GAIL	1414	2.5	2.5	2.1	**82.5**
Vizag-Secunderabad pipeline		618	1.3	1.3	1.7	**124.9**

Source: Oil companies
Note:
IOCL
1) Mohanpura mainline commissioned on 14.9.15.
2) Paradip -Jatni section of PRRPL commissioned on 25.3.16.
BPCL
1) Kota-Jobner pipeline is a branch pipeline of Mumbai Manmad Bijwasan pipeline with annual capacity of 1.7 MMTPA.
HPCL
1) Rewari Kanpur pipeline was commissioned on 08.10.2015.

Chapter-6

Sales

Analysis • Knowledge • Information

Table 6.1 : Consumption of petroleum products

(Million metric tonnes)

Products	11th Plan					12th Plan			
	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16 (P)
LPG	12.0	12.2	13.1	14.3	15.3	15.6	16.3	18.0	19.6
MS	10.3	11.3	12.8	14.2	15.0	15.7	17.1	19.1	21.8
Naphtha	13.3	13.9	10.1	10.7	11.2	12.3	11.3	11.1	13.4
ATF	4.5	4.4	4.6	5.1	5.5	5.3	5.5	5.7	6.2
SKO	9.4	9.3	9.3	8.9	8.2	7.5	7.2	7.1	6.8
HSD	47.7	51.7	56.2	60.1	64.8	69.1	68.4	69.4	74.6
LDO	0.7	0.6	0.5	0.5	0.4	0.4	0.4	0.4	0.4
Lubes	2.3	2.0	2.5	2.4	2.6	3.2	3.3	3.3	3.2
FO/LSHS	12.7	12.6	11.6	10.8	9.3	7.7	6.2	6.0	6.7
Bitumen	4.5	4.7	4.9	4.5	4.6	4.7	5.0	5.1	5.8
Others	11.6	10.9	12.0	9.6	11.1	15.6	17.7	20.4	24.9
All India	**128.9**	**133.6**	**137.8**	**141.0**	**148.1**	**157.1**	**158.4**	**165.5**	**183.5**
Growth (%)	**6.8**	**3.6**	**3.2**	**2.3**	**5.0**	**6.0**	**0.9**	**4.5**	**10.9**

Source: Oil companies and Directorate General of Commercial Intelligence and Statistics (DGCIS)
(Oil company sales + private imports = consumption)

Table 6.2 : Petroleum products demand & Gross Domestic Product (GDP) during plan periods

Plan period	7th Plan (1985-90)	8th Plan (1992-97)	9th Plan (1997-02)	10th Plan (2002-07)	11th Plan (2007-12)
POL demand CAGR (%)	6.9	6.8	4.9	3.8	4.2
GDP growth CAGR (%)	6.0	6.8	5.5	7.7	7.9

End-use analysis of HSD sales (as of 2012-13)

Sl. no.		End-use sectors	% of Total sales *
(I)		(II)	(III)
1		**Transport, of which**	**70.00**
	a	Commercial vehicles	8.94
	b	Private vehicles	13.15
	c	3 - Wheelers	6.39
	d	Truck	28.25
	e	Buses/STU	9.55
	f	Railways	3.24
	g	Others (Shipping & Aviation)	0.48
2		**Agriculture**	**13.00**
3		**Industrial application**	**4.96**
4		**Power generation**	**4.06**
5		**Mobile towers**	**1.54**
6		**Others (Including private imports)**	**6.45**
		Total	**100.0**

* Figures include consumption through retail & direct imports. End use sector wise break up as per PPAC survey and direct sales as reported by oil companies for the year 2012-13.

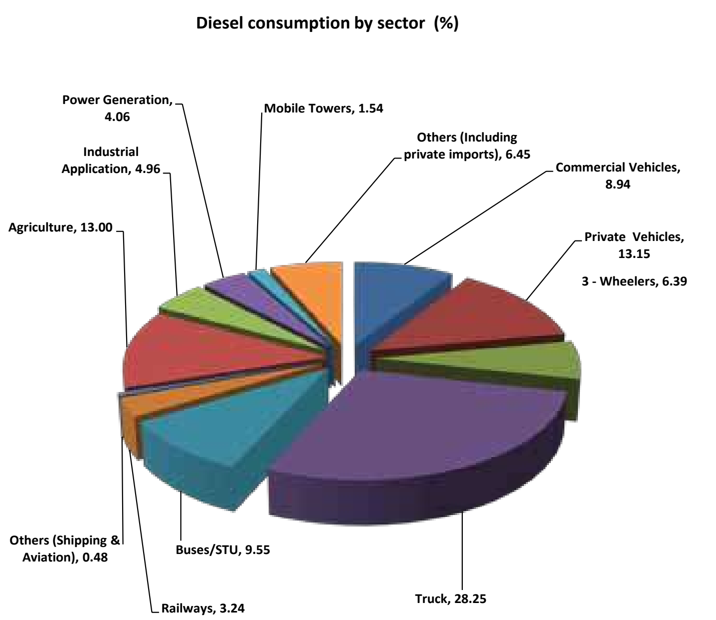


Table 6.3 : State-wise sales of selected petroleum products : April 2015 - March 2016 (P)

(Sales figures in thousand metric tonnes)

State/UT	LPG		MS		SKO		HSD		Total (All products)*	
	Sales	Per capita sales (Kg)	Sales	Per capita sales (Kg)	Sales	Per capita sales (Kg)	Sales	Per capita sales (Kg)	Total Sales	Per capita sales (Kg)
Chandigarh	45.7	43.4	100.7	95.5	0.7	0.7	114.7	108.7	440.3	417.4
Delhi	776.7	46.4	901.6	53.8	0.7	0.0	1508.3	90.0	4995.8	298.2
Haryana	629.5	24.8	782.7	30.9	57.7	2.3	5013.8	197.8	10772.3	424.9
Himachal Pradesh	130.6	19.0	162.9	23.8	22.7	3.3	575.7	84.0	1549.2	225.9
Jammu and Kashmir	169.0	13.5	199.6	15.9	141.7	11.3	635.4	50.6	1341.5	106.9
Punjab	779.7	28.1	745.2	26.9	66.5	2.4	3302.0	119.2	5961.5	215.2
Rajasthan	995.2	14.5	1183.5	17.2	377.0	5.5	5315.9	77.5	11217.7	163.5
Uttar Pradesh	2351.4	11.8	2164.4	10.8	1215.9	6.1	7098.5	35.6	15011.6	75.2
Uttarakhand	232.0	22.9	252.9	25.0	30.9	3.1	746.7	73.8	1519.4	150.2
SUB TOTAL NORTH	**6109.8**	**16.6**	**6493.5**	**17.6**	**1913.9**	**5.2**	**24311.0**	**66.0**	**52809.2**	**143.3**
Andaman & Nicobar Islands	8.7	22.8	14.0	36.8	4.6	12.0	124.3	327.2	179.7	473.0
Bihar	769.0	7.4	545.4	5.3	618.6	6.0	2254.8	21.7	4632.8	44.6
Jharkhand	215.9	6.5	349.4	10.6	202.8	6.2	1602.2	48.6	2768.0	84.0
Odisha	391.9	9.3	553.8	13.2	299.8	7.1	2231.7	53.2	4464.4	106.4
West Bengal	1226.3	13.4	654.6	7.2	736.0	8.1	2955.2	32.4	7191.8	78.7
SUB TOTAL EAST	**2611.7**	**9.7**	**2117.1**	**7.8**	**1861.7**	**6.9**	**9168.1**	**33.9**	**19236.7**	**71.1**
Arunachal Pradesh	16.5	11.9	31.4	22.7	14.2	10.3	118.5	85.7	199.8	144.5
Assam	294.7	9.5	267.5	8.6	251.6	8.1	851.7	27.3	2115.4	67.9
Manipur	23.6	8.7	43.5	16.0	18.6	6.8	87.8	32.3	179.5	66.0
Meghalaya	17.1	5.8	65.3	22.0	19.9	6.7	294.5	99.4	418.5	141.2
Mizoram	21.6	19.8	23.7	21.7	5.2	4.7	57.1	52.4	113.1	103.7
Nagaland	18.7	9.4	26.3	13.3	13.2	6.7	59.4	30.0	127.3	64.2
Sikkim	12.0	19.8	16.1	26.4	11.8	19.4	57.5	94.6	100.2	164.9
Tripura	35.4	9.6	37.9	10.3	29.9	8.1	93.0	25.3	212.1	57.8
SUB TOTAL NORTH EAST	**439.6**	**9.6**	**511.6**	**11.2**	**364.2**	**8.0**	**1619.6**	**35.5**	**3465.8**	**76.0**
Chhattisgarh	197.7	7.7	418.2	16.4	124.1	4.9	1461.4	57.2	2872.6	112.5
Dadra & Nagar Haveli	16.0	46.8	16.8	49.0	1.4	4.2	150.8	439.8	410.9	1198.5
Daman & Diu	9.5	39.0	18.6	76.6	0.8	3.2	81.4	334.9	181.1	745.5
Goa	57.9	39.7	151.3	103.8	3.9	2.7	308.8	211.8	729.9	500.7
Gujarat	868.2	14.4	1526.0	25.3	515.3	8.5	5076.8	84.1	18954.3	313.9
Madhya Pradesh	751.0	10.3	1037.7	14.3	452.8	6.2	3282.8	45.2	7008.1	96.5
Maharashtra	2425.2	21.6	2836.5	25.2	486.4	4.3	7814.0	69.5	18223.1	162.2
SUB TOTAL WEST	**4325.4**	**15.8**	**6005.0**	**22.0**	**1584.8**	**5.8**	**18175.9**	**66.6**	**48379.9**	**177.3**
Andhra Pradesh	923.0	18.7	844.9	17.1	183.2	3.7	3298.3	66.8	6179.2	125.1
Karnataka	1330.4	21.8	1664.0	27.2	379.2	6.2	5747.2	94.0	11051.0	180.8
Kerala	774.1	23.2	1129.7	33.8	97.1	2.9	2536.7	76.0	5551.3	166.3
Lakshadweep	0.3	4.0	0.0	0.0	0.8	12.1	13.8	214.2	15.0	232.7
Puducherry	38.8	31.2	113.1	90.9	3.3	2.6	330.4	265.5	520.8	418.5
Tamil Nadu	1818.6	25.2	2052.1	28.4	304.7	4.2	6311.8	87.5	12698.9	176.0
Telangana	762.5	21.6	915.4	25.9	133.5	3.8	3077.5	87.2	5705.2	161.7
SUB TOTAL SOUTH	**5647.6**	**22.4**	**6719.2**	**26.6**	**1101.7**	**4.4**	**21315.6**	**84.4**	**41721.2**	**165.1**
All India	**19134.2**	**15.8**	**21846.4**	**18.1**	**6826.3**	**5.6**	**74590.2**	**61.6**	**165612.8**	**136.8**

Source: Oil companies

Note:

1. Per capita sales figures are based on provisional sales figures for the April 2015 - March 2016
2. Population figures have been taken from Census of India, 2011

* Total (all product) sales include other petroleum products such as Naphtha, FO, ATF, Lubricants, Bitumen etc.

Table 6.4 : PDS SKO allocation / LPG coverage & per capita PDS SKO availability by State/ UT

State/UT	PDS SKO allocation (TMT) April 2015 - March 2016	Per capita allocation (Litres per annum per person)	Per capita SKO allocation (Litres per annum per person) without LPG
Chandigarh	2.3	2.8	28.3
Delhi	0.0	0.0	0.0
Haryana	68.8	3.5	34.8
Himachal Pradesh	18.8	3.5	35.2
Jammu and Kashmir	63.2	6.5	64.7
Punjab	66.4	3.1	30.8
Rajasthan	385.4	7.2	33.2
Uttar Pradesh	1212.1	7.8	30.8
Uttarakhand	27.4	3.5	34.8
SUB TOTAL NORTH	**1844.4**	**6.4**	**31.4**
Andaman & Nicobar Islands	4.5	15.2	151.9
Bihar	620.0	7.7	12.8
Jharkhand	204.3	8.0	12.8
Odisha	303.3	9.3	15.5
West Bengal	734.1	10.3	25.8
SUB TOTAL EAST	**1866.2**	**8.9**	**16.6**
Arunachal Pradesh	8.0	7.5	74.6
Assam	250.1	10.3	27.0
Manipur	18.2	8.6	40.1
Meghalaya	19.8	8.6	13.5
Mizoram	5.2	6.1	61.2
Nagaland	13.0	8.5	21.4
Sikkim	4.4	9.4	94.0
Tripura	29.9	10.5	26.1
SUB TOTAL NORTH EAST	**348.7**	**9.8**	**26.5**
Chhattisgarh	134.1	6.7	11.6
Dadra & Nagar Haveli	1.4	5.4	53.6
Daman & Diu	0.6	3.4	34.1
Goa	4.0	3.5	35.2
Gujarat	511.5	10.9	35.8
Madhya Pradesh	459.0	8.1	18.8
Maharashtra	487.4	5.6	55.7
SUB TOTAL WEST	**1598.0**	**7.5**	**27.0**
Andhra Pradesh	207.5	5.4	54.0
Karnataka	396.8	8.3	76.8
Kerala	91.7	3.5	35.3
Lakshadweep	0.8	15.3	25.7
Puducherry	3.3	3.4	34.2
Tamil Nadu	265.9	4.7	47.4
Telangana	135.8	4.9	49.4
SUB TOTAL SOUTH	**1101.7**	**5.6**	**54.8**
All India	**6759.1**	**7.2**	**25.6**

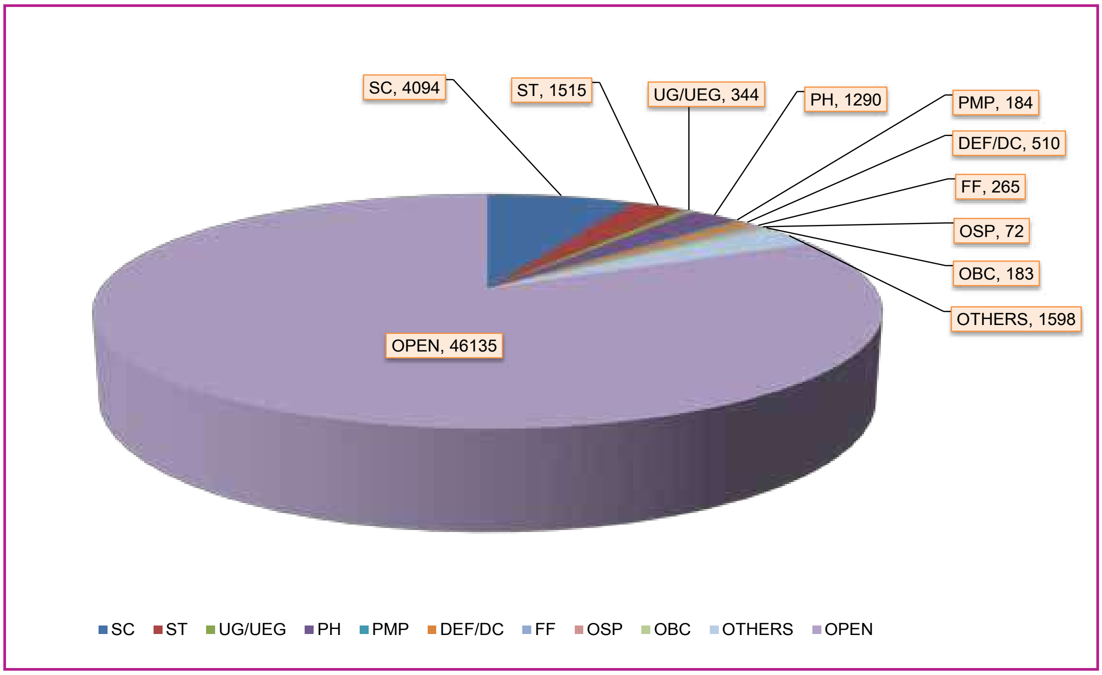
Note:
(1) In case LPG coverage of population is more than 100%, it is presumed that at least 10% of the population is consuming kerosene & excess coverage by LPG is due to multiple connections.
(2) Population and household data is as per Census of India 2011
(3) SKO PDS allocation is taken for the period April 2015 - March 2016
(4) Domestic LPG customer data taken is as on 31.03.2016

Table 6.5 : Oil industry Retail Outlets & SKO / LDO dealers as on 01.04.2016

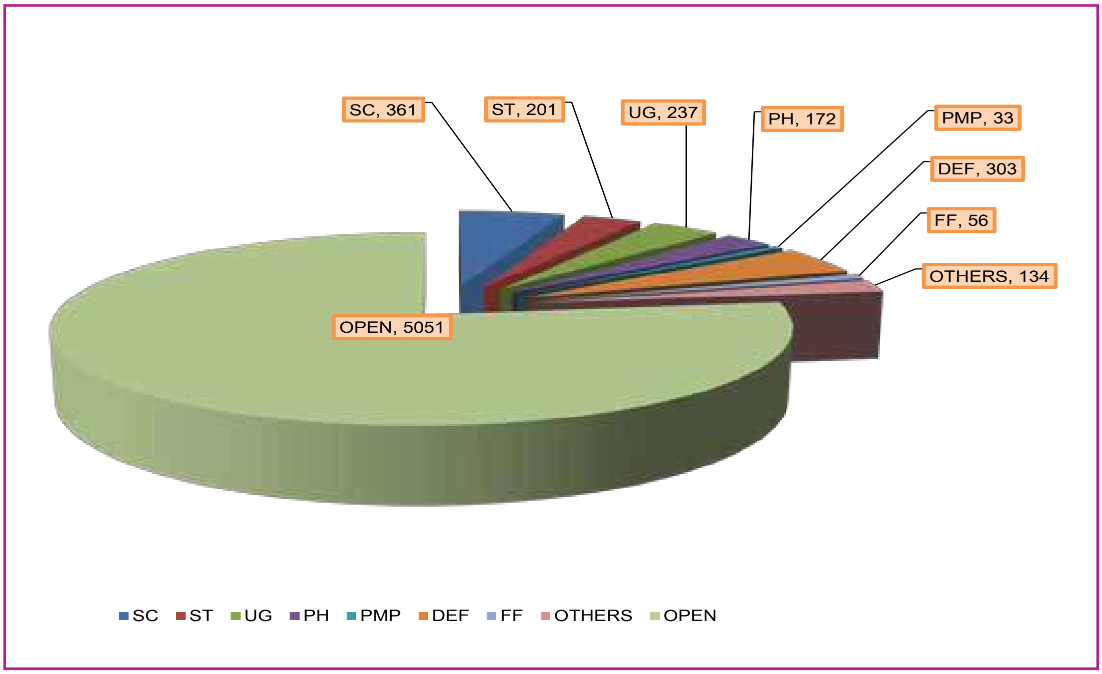
State/UT	No. of Retail Outlets					No. of SKO / LDO dealers				
	As on 01.04.2012	As on 01.04.2013	As on 01.04.2014	As on 01.04.2015	As on 01.04.2016 (P)	As on 01.04.2012	As on 01.04.2013	As on 01.04.2014	As on 01.04.2015	As on 01.04.2016 (P)
Chandigarh	41	41	41	41	41	12	12	12	12	12
Delhi	408	408	403	394	393	116	116	116	117	116
Haryana	1989	2151	2333	2419	2536	148	143	142	141	141
Himachal Pradesh	358	359	361	382	396	26	26	26	26	26
Jammu and Kashmir	422	453	469	475	485	47	47	47	47	47
Punjab	3058	3193	3229	3248	3316	244	242	241	241	239
Rajasthan	2932	3135	3327	3465	3736	253	251	250	252	250
Uttar Pradesh	5302	5680	6013	6247	6616	695	695	695	696	696
Uttarakhand	461	483	505	514	551	72	72	72	73	73
SUB TOTAL NORTH	**14971**	**15903**	**16681**	**17185**	**18070**	**1613**	**1604**	**1601**	**1605**	**1600**
Andaman & Nicobar Islands	9	9	9	9	10	2	2	2	2	2
Bihar	1942	2167	2316	2385	2511	373	373	372	372	372
Jharkhand	918	1027	1062	1082	1151	86	86	86	87	87
Odisha	1230	1369	1438	1464	1560	179	177	177	177	177
West Bengal	1999	2120	2183	2178	2244	469	469	469	458	458
SUB TOTAL EAST	**6098**	**6692**	**7008**	**7118**	**7476**	**1109**	**1107**	**1106**	**1096**	**1096**
Arunachal Pradesh	67	70	71	71	71	33	33	33	33	33
Assam	684	720	753	759	788	361	359	359	359	359
Manipur	67	73	80	83	85	36	36	36	36	36
Meghalaya	162	170	175	179	190	35	35	35	35	35
Mizoram	27	30	32	33	36	19	19	19	19	19
Nagaland	67	68	68	68	69	19	19	19	19	19
Sikkim	35	43	44	46	47	12	12	12	12	12
Tripura	49	56	63	64	67	40	40	40	40	40
SUB TOTAL NORTH EAST	**1158**	**1230**	**1286**	**1303**	**1353**	**555**	**553**	**553**	**553**	**553**
Chhattisgarh	752	886	998	1040	1108	109	109	109	108	108
Dadra & Nagar Haveli	21	21	27	31	31	2	2	2	2	2
Daman & Diu	24	25	31	31	31	5	5	5	5	5
Goa	105	104	109	111	114	21	21	21	22	22
Gujarat	2524	2770	2910	3050	3384	495	493	493	480	480
Madhya Pradesh	2349	2630	2873	3005	3269	279	279	279	285	284
Maharashtra	4160	4644	5025	5207	5419	776	775	774	769	767
SUB TOTAL WEST	**9935**	**11080**	**11973**	**12475**	**13356**	**1687**	**1684**	**1683**	**1671**	**1668**
Andhra Pradesh	4002	4502	4710	2811	3004	603	603	603	394	394
Karnataka	3068	3306	3621	3737	3836	325	325	322	325	324
Kerala	1844	1880	1900	1932	2009	242	242	242	237	237
Lakshadweep	0	0	0	0	0	0	0	0	0	0
Puducherry	139	144	150	153	156	8	8	8	8	8
Tamil Nadu	3889	4340	4541	4616	4702	465	465	465	468	466
Telangana	0	0	0	2088	2228	0	0	0	202	202
SUB TOTAL SOUTH	**12942**	**14172**	**14922**	**15337**	**15935**	**1643**	**1643**	**1640**	**1634**	**1631**
All India	**45104**	**49077**	**51870**	**53418**	**56190**	**6607**	**6591**	**6583**	**6559**	**6548**

Source: Oil companies (Includes dealers of private oil companies)

Category wise Retail Outlets as on 01.04.2016 : Total nos. 56190



Category wise SKO/LDO dealers as on 01.04.2016 : Total nos. 6548



Source: Oil companies

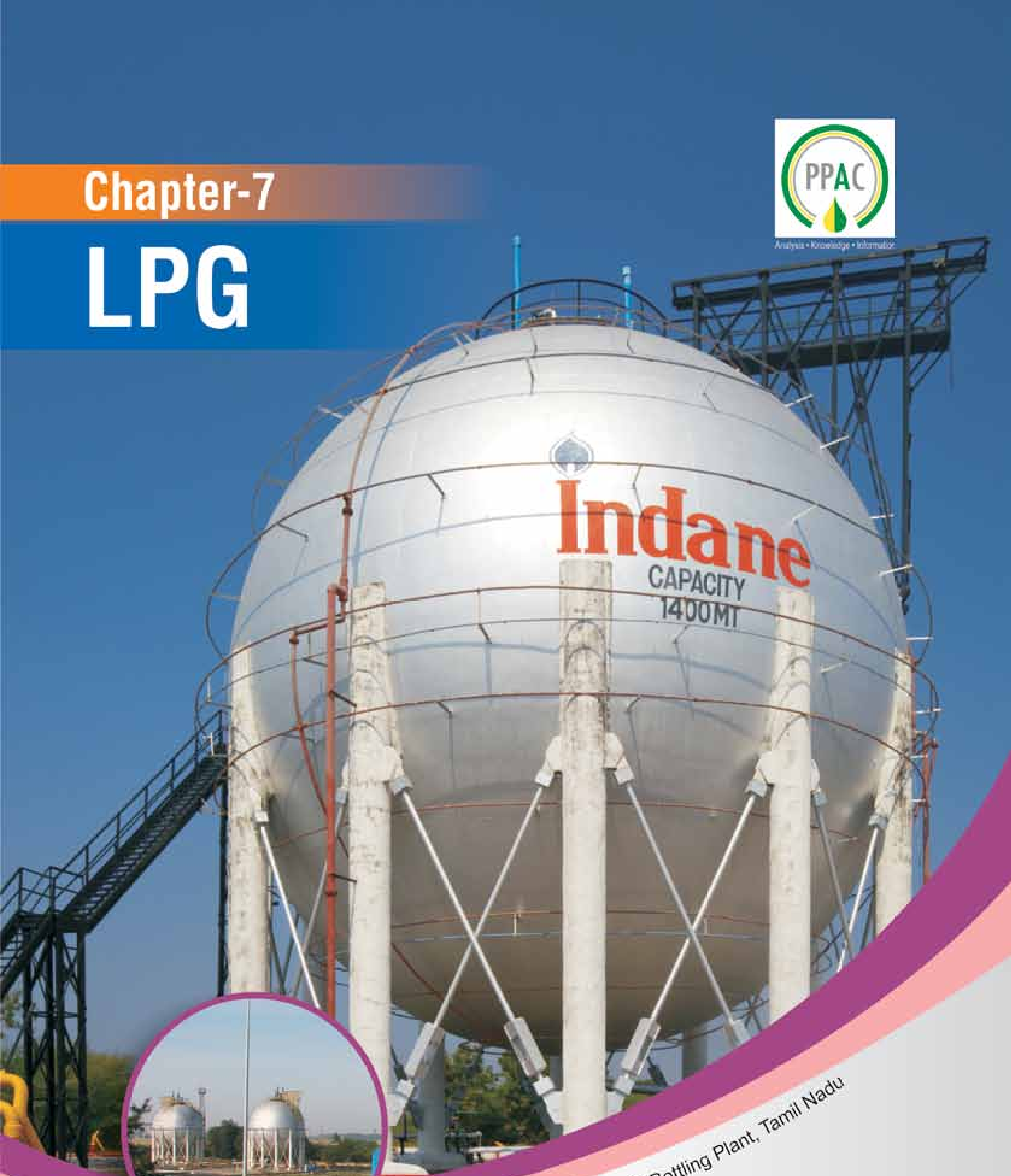
Note:

(1) SC: Scheduled Caste; ST: Scheduled Tribe; UG: Unemployed Graduate; UEG: Unemployed Engineering Graduate.; PH: Physically Handicapped; DEF: Defence Category; FF: Freedom Fighter; OSP: Outstanding Sports Persons,OBC: Other Backward Classes ; PMP: Para Military/Police/Govt. Personnel, Others: Includes Social Worker Category, Dealerships given on compassionate grounds/ under discretionary quota, 2/3 wheeler outlets and Company Owned and Operated outlets, Operation Vijay

(2) Open category also includes Private Retail Outlets for which category-wise breakup is not available

Chapter-7

LPG



LPG Bottling Plant, Tamil Nadu

Table 7.1 : LPG marketing at a glance

(Thousand metric tonne)

Particulars	2011-12	2012-13	2013-14	2014-15	2015-16 (P)
LPG production	**9554**	**9830**	**10032**	**9840**	**10600**
LPG consumption	**15350**	**15601**	**16294**	**18000**	**19551**
PSU sales	**14929**	**15202**	**15925**	**17571**	**19134**
Domestic	13296	13569	14412	16040	17182
Non-Domestic	1069	1166	1074	1051	1464
Bulk	342	253	246	316	317
Auto LPG	223	214	194	164	171
Imports					
PSU imports	5369	5902	6199	7884	8470
Private imports	421	398	369	429	417
					(Lakh)
	2011-12	**2012-13**	**2013-14**	**2014-15**	**2015-16 (P)**
Enrolment (domestic)	**122.7**	**131.6**	**159.1**	**163.4**	**204.5**
As on 1st of April	2012	2013	2014	2015	2016
LPG customers (registered)	1387.3	1522.8	1682.6	1840.1	2041.1
of which					
domestic customers	1371.2	1503.9	1662.6	1819.0	2017.9
non-domestic customers	16.2	18.9	20.1	21.1	23.3
DBC customers (registered)	**688.8**	**748.7**	**827.4**	**917.0**	**1019.0**
					(Nos.)
LPG distributors	**11489**	**12610**	**13896**	**15930**	**17916**
of which					
Urban	7041	7095	7172	7334	7492
Urban/Rural	1665	1731	1885	2263	2852
Rural	1612	1729	1803	1891	2086
RGGLVY*	1171	2055	3036	4442	5486
Auto LPG dispensing stations (ALDS)	**652**	**667**	**678**	**681**	**676**
LPG markets (excluding RGGLVY)	**4990**	**5105**	**5245**	**5485**	**5805**
					(Thousand metric tonne per annum)
Bottling capacity (rated)	**-**	**-**	**13515**	**14044**	**15172**
					(Thousand metric tonne)
Gross tankage	**711**	**771**	**777**	**781**	**869**

Source: Oil companies & Directorate General of Commercial Intelligence and Statistics (DGCIS)

Note:

1. Data in respect of customers, distributors, ALDS and rated bottling capacity pertains to PSU OMCs only.
2. Gross tankage includes LPG tankage at all refineries and fractionators, PSU OMCs bottling plants and LPG tankage available to PSU OMCs at import locations.

*RGGLVY: Distributors commissioned under Rajiv Gandhi Gramin LPG Vitaran Yojana

Table 7.2 : Number of LPG distributors of PSUs as on 31.03.2016 (P)

(Nos.)

State/UT	Urban	Urban/ Rural	Rural	RGGLVY*	Total
Chandigarh	27	0	0	0	27
Delhi	320	0	0	0	320
Haryana	221	70	24	101	416
Himachal Pradesh	69	8	56	27	160
Jammu & Kashmir	128	29	22	52	231
Punjab	329	164	94	144	731
Rajasthan	408	139	71	404	1022
Uttar Pradesh	942	555	231	1086	2814
Uttarakhand	106	89	18	30	243
Sub Total North	**2550**	**1054**	**516**	**1844**	**5964**
Arunachal Pradesh	5	5	24	23	57
Assam	122	105	85	111	423
Manipur	15	13	15	34	77
Meghalaya	21	8	9	10	48
Mizoram	11	6	12	25	54
Nagaland	15	11	11	19	56
Sikkim	8	1	3	3	15
Tripura	16	9	12	20	57
Sub Total North-East	**213**	**158**	**171**	**245**	**787**
Andaman & Nicobar Islands	0	2	3	0	5
Bihar	235	215	83	512	1045
Jharkhand	159	37	13	181	390
Odisha	165	82	36	280	563
West Bengal	385	112	115	314	926
Sub Total East	**944**	**448**	**250**	**1287**	**2929**
Chhattisgarh	101	73	17	172	363
Dadra & Nagar Haveli	2	0	0	0	2
Daman & Diu	3	0	0	0	3
Goa	44	2	5	0	51
Gujarat	414	99	99	132	744
Madhya Pradesh	457	210	37	506	1210
Maharashtra	943	142	188	424	1697
Sub Total West	**1964**	**526**	**346**	**1234**	**4070**
Andhra Pradesh	309	153	223	157	842
Karnataka	476	111	85	262	934
Kerala	221	109	189	53	572
Lakshadweep	1	0	0	0	1
Puducherry	15	5	2	1	23
Tamilnadu	535	215	128	252	1130
Telangana	264	73	176	151	664
Sub Total South	**1821**	**666**	**803**	**876**	**4166**
All India	**7492**	**2852**	**2086**	**5486**	**17916**

Source: PSU OMCs (IOCL,BPCL and HPCL)
RGGLVY: Distributors commissioned under "Rajiv Gandhi Gramin LPG Vitaran Yojana"

Table 7.3 : LPG domestic customer population (registered) of PSUs as on 31.03.2016 (P)

(Lakh)

State/UT	Total	DBC
Chandigarh	4.18	2.70
Delhi	63.34	41.29
Haryana	57.90	34.79
Himachal Pradesh	20.14	10.91
Jammu & Kashmir	23.31	14.60
Punjab	81.14	44.67
Rajasthan	99.47	61.96
Uttar Pradesh	248.39	106.18
Uttarakhand	26.17	12.23
Sub Total North	**624.05**	**329.32**
Arunachal Pradesh	2.63	1.89
Assam	39.36	16.09
Manipur	4.19	2.77
Meghalaya	1.99	1.19
Mizoram	3.08	2.09
Nagaland	2.44	1.97
Sikkim	1.69	0.85
Tripura	5.12	2.36
Sub Total North East	**60.50**	**29.21**
Andaman & Nicobar Islands	0.94	0.85
Bihar	75.82	34.71
Jharkhand	23.43	12.83
Odisha	39.16	16.74
West Bengal	121.67	54.41
Sub Total East	**261.03**	**119.54**
Chhattisgarh	23.64	13.77
Dadra & Nagar Haveli	0.76	0.51
Daman & Diu	0.72	0.39
Goa	5.72	4.35
Gujarat	85.75	60.35
Madhya Pradesh	85.78	41.97
Maharashtra	234.59	118.98
Sub Total West	**436.95**	**240.33**
Andhra Pradesh	134.47	41.31
Karnataka	121.09	70.40
Kerala	88.10	60.73
Lakshadweep	0.05	0.04
Puducherry	3.87	2.04
Tamilnadu	183.10	92.29
Telangana	104.68	33.74
Sub Total South	**635.36**	**300.56**
All India	**2017.89**	**1018.96**

Source: PSU OMCs (IOCL,BPCL and HPCL)
DBC: Double bottle connection

Chapter-8

Projections for 12th & 13th Plan

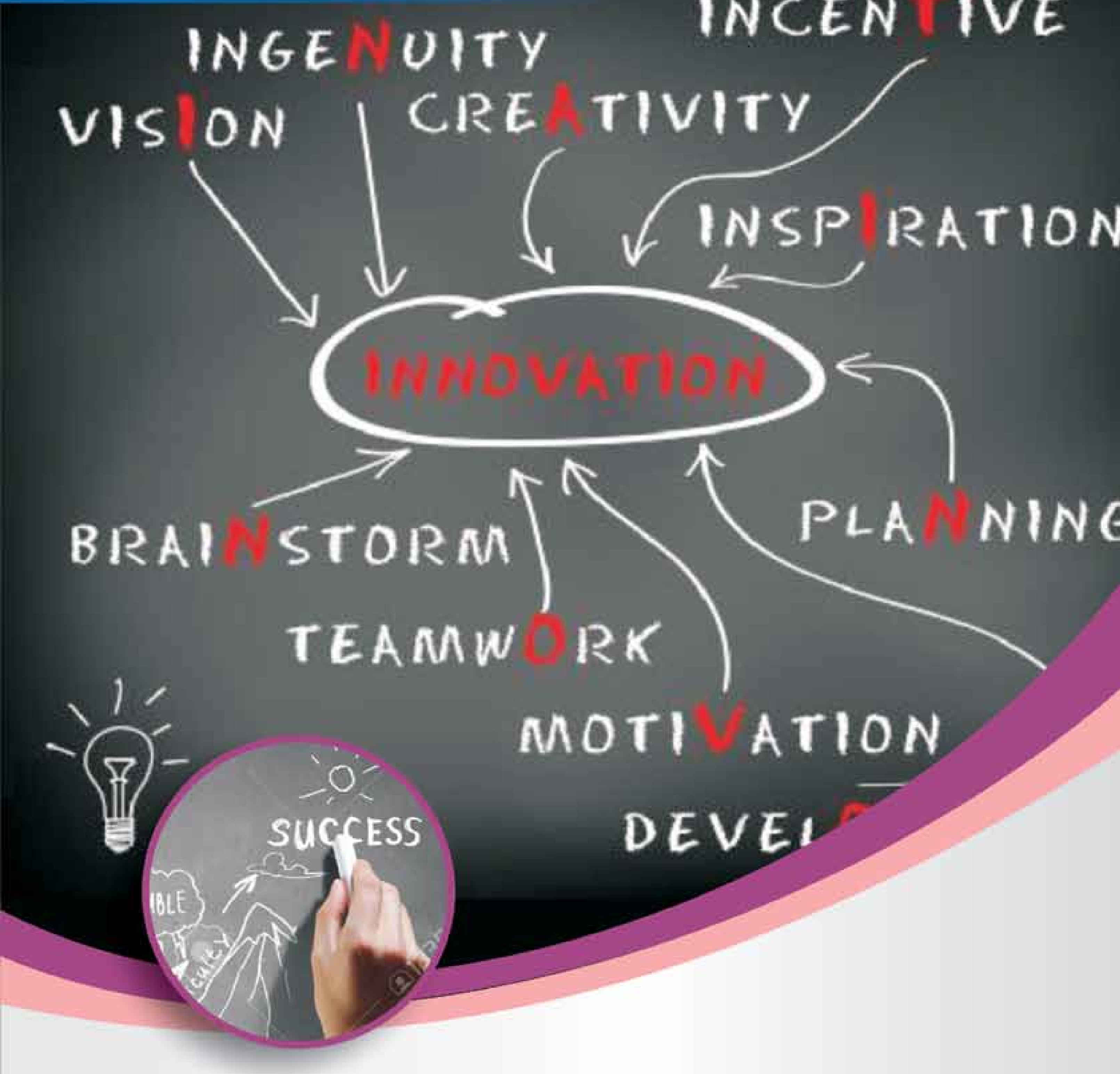


Table 8.1 : Projected crude oil production for 12th Five Year Plan

(Million tonnes)

	2011-12 (11th Plan)*	2012-13	2013-14	2014-15	2015-16	2016-17
Onshore	**17.5**	**20.1**	**20.2**	**19.7**	**19.2**	**18.6**
Gujarat	5.8	5.6	5.6	5.5	5.4	5.3
Assam + Arunachal Pradesh	5.0	5.2	5.4	5.5	5.7	5.8
Tamil Nadu	0.2	0.2	0.2	0.2	0.2	0.2
Andhra Pradesh	0.3	0.3	0.3	0.2	0.1	0.1
Tripura	0.0	0.0	0.0	0.0	0.0	0.0
Rajasthan	6.2	8.8	8.8	8.2	7.8	7.3
Offshore	**19.2**	**19.7**	**22.8**	**22.4**	**20.4**	**19.8**
DGH offshore	4.1	4.3	4.3	4.2	4.1	4.0
ONGC offshore	15.1	15.4	18.5	18.2	16.3	15.8
Total (onshore + offshore)	**36.7**	**39.8**	**42.9**	**42.1**	**39.7**	**38.4**
Condensate (ONGC)	2.1	2.5	2.6	2.6	2.8	2.7
Total (crude oil + condensate) (onshore + offshore)	**38.8**	**42.3**	**45.5**	**44.7**	**42.5**	**41.1**

Source: Report of the working group on petroleum & natural gas sector for 12th Five Year Plan (2012-17)
* 11th plan projections by oil companies

Table 8.2 : Projected refining capacity in 12th Five Year Plan

(MMTPA)

	2011-12 (11th Plan)	12th Five Year Plan				
		2012-13	2013-14	2014-15	2015-16	2016-17
Public sector (PSU/JV)						
IOCL	69.2	69.2	69.2	69.2	69.7	74.0
BPCL (Mumbai)	12.0	12.0	12.0	12.0	13.5	13.5
Kochi	9.5	9.5	9.5	9.5	15.5	15.5
BORL - Bina	6.0	6.0	6.0	6.0	7.5	9.0
HPCL (MR +VR)	14.8	16.5	18.2	18.5	18.5	23.5
Maharashtra refinery	0.0	0.0	0.0	0.0	0.0	9.0
HMEL (GGSRL)	9.0	9.0	9.0	9.0	9.0	9.0
MRPL	11.8	14.5	15.5	16.0	16.5	18.0
ONGC (Tatipaka)	0.1	0.1	0.1	0.1	0.1	0.1
CPCL	11.5	11.5	12.1	12.1	12.1	18.3
NRL	3.0	3.0	3.0	3.0	3.0	8.0
Sub total PSU/JV	**146.9**	**151.3**	**154.6**	**155.4**	**165.4**	**197.9**
Private sector						
RIL-DTA & SEZ, Jamnagar	60.0	60.0	60.0	60.0	60.0	60.0
EOL, Jamnagar	19.0	19.0	20.0	20.0	30.8	38.0
NOCL, Cuddalore	0	2.0	6.0	6.0	6.1	15.0
Sub total Private	**79.0**	**81.0**	**86.0**	**86.0**	**96.9**	**113.0**
Total	**225.9**	**232.3**	**240.6**	**241.4**	**262.3**	**310.9**

Source: Report of the working group on petroleum & natural gas sector for 12th Five Year Plan (2012-17)

Table 8.3 : Projected refining capacity in 13th Five Year Plan

(MMTPA)

	13th Five Year Plan				
	2017-18	2018-19	2019-20	2020-21	2021-22
Public sector (PSU/JV)					
IOCL	77.0	80.0	85.0	105.0	105.0
BPCL (Mumbai)	13.5	13.5	13.5	13.5	13.5
Kochi	15.5	15.5	15.5	15.5	15.5
BORL - Bina	9.0	9.0	9.0	9.0	9.0
HPCL (MR +VR)	23.5	23.5	23.5	23.5	23.5
Maharashtra Refinery	9.0	9.0	9.0	9.0	9.0
HMEL (GGSRL)	9.0	9.0	9.0	9.0	9.0
MRPL	18.0	18.0	18.0	21.8	26.8
ONGC (Tatipaka)	0.1	0.1	0.1	0.1	0.1
CPCL	18.3	18.3	33.3	33.3	33.3
NRL	8.0	8.0	8.0	8.0	8.0
Sub total (PSU/JV)	**200.9**	**203.9**	**223.9**	**247.6**	**252.6**
Private sector					
RIL-DTA & SEZ, Jamnagar	60.0	60.0	60.0	60.0	60.0
EOL, Jamnagar	38.0	38.0	38.0	38.0	38.0
NOCL, Cuddalore	15.0	15.0	15.0	15.0	15.0
Sub total (Private)	**113.0**	**113.0**	**113.0**	**113.0**	**113.0**
Total	**313.9**	**316.9**	**336.9**	**360.6**	**365.6**

Source: Report of the working group on petroleum & natural gas sector for 12th Five Year Plan (2012-17)

Table 8.4 : Demand projections of petroleum products for 12th Five Year Plan

(Million metric tonne)

Product	2012-13	2013-14	2014-15	2015-16	2016-17	CAGR (%)
LPG	17.0	18.4	19.7	20.9	21.8	6.9
MS	16.1	17.5	19.1	20.8	22.6	8.5
Naphtha	12.4	11.4	11.4	11.0	11.0	-0.2
ATF	6.0	6.6	7.2	7.8	8.5	9.6
SKO	7.9	7.6	7.3	7.0	6.8	-4
HSD	65.0	68.7	72.6	76.9	81.6	5.2
LDO	0.4	0.4	0.4	0.4	0.4	-0.2
Lubes	2.7	2.8	2.9	2.9	3.0	3.7
FO/LSHS	8.0	7.9	7.9	7.9	7.9	-3.5
Bitumen	5.3	5.5	5.7	6.0	6.1	5.1
Pet coke	6.8	7.5	8.3	9.3	10.3	11.7
Others	5.4	6.1	6.1	6.1	6.2	2.4
Total POL	**152.9**	**160.4**	**168.6**	**177.0**	**186.2**	**4.8**

Source: Report of sub-group on demand estimates for petroleum products - 12th & 13th Plan

Table 8.5 : Demand projections of petroleum products for 13th Five Year Plan

(Million metric tonne)

Product	2017-18	2018-19	2019-20	2020-21	2021-22	CAGR (%)
LPG	22.6	23.3	23.9	24.3	24.8	2.6
MS	24.5	26.6	28.8	31.1	33.7	8.3
Naphtha	12.5	14.2	14.9	15.4	15.4	6.9
ATF	9.3	10.0	10.8	11.7	12.5	7.9
SKO	6.5	6.4	6.2	6.0	5.8	-3
HSD	86.8	92.1	97.9	104.1	110.8	6.3
LDO	0.4	0.4	0.4	0.4	0.4	0
Lubes	3.1	3.2	3.3	3.4	3.5	2.8
FO/LSHS	7.8	7.8	7.8	7.8	7.8	-0.1
BITUMEN	6.3	6.5	6.7	6.9	7.2	3.2
Bitumen	11.4	12.7	14.0	15.5	17.1	10.7
Others	**6.1**	**6.1**	**6.1**	**6.1**	**6.1**	**-0.3**
Total POL	**197.4**	**209.2**	**220.7**	**232.6**	**245.0**	**5.6**

Source: Report of sub-group on demand estimates for petroleum products - 12th & 13th Plan

Table 8.6 : Demand of natural gas during 12th Plan (At present level of prices including present supplies)

(Figures in MMSCMD)

	2012-13	2013-14	2014-15	2015-16	2016-17
Power	135	153	171	189	207
Fertilizer	62	110	113	113	113
City Gas	15	19	24	39	46
Industrial	20	20	22	25	27
Petrochemicals / Refineries / Internal Consumption	54	61	67	72	72
Sponge Iron / Steel	7	8	8	8	8
Grand Total Demand	**293**	**371**	**405**	**446**	**473**

Total projected natural gas availability during 12th Five Year Plan

(Figures in MMSCMD)

	2012-13	2013-14	2014-15	2015-16	2016-17
Domestic Availability	124	149	170	177	209
Imports - LNG	63	87	87	129	150
Total Availability	**187**	**236**	**257**	**306**	**359**

Table 8.7: Demand of natural gas during 13th Plan (At present level of prices including present supplies)

(Figures in MMSCMD)

	2017-18	2018-19	2019-20	2020-21	2021-22
Power	225	243	261	289	307
Fertilizer	113	113	113	113	113
City Gas	47	50	53	55	57
Industrial	28	32	35	37	37
Petrochemicals / Refineries / Internal Consumption	72	76	80	82	82
Sponge Iron / Steel	9	9	10	10	10
Grand Total Demand	**494**	**523**	**552**	**586**	**606**

Total Projected natural gas availability during 13th Five Year Plan

(Figures in MMSCMD)

	2017-18	2018-19	2019-20	2020-21	2021-22
Domestic Availability	216	222	229	236	243
Imports (LNG)	172	193	215	236	258
Import (Trans Border Pipelines)	30	30	30	30	30
Total Availability	**418**	**445**	**474**	**502**	**531**

Source: Report of the Working Group on Petroleum & Natural Gas Sector for the 12th Five Year Plan (2012-17)

Table 8.8: LNG terminals (Operational)

Sl. no.	Name of terminal	Promoters	Capacity (MMTPA)	Capacity utilization (%) in 2015-16
1	Dahej (Gujarat)	Petronet LNG Ltd. (PLL)	Existing 10 MMTPA to be increased to 15 MMTPA	110.00
2	Hazira (Gujarat)	Hazira LNG Pvt Ltd. (HLPL)	5 MMTPA	70.40
3	Dabhol (Maharashtra)	Ratnagiri Gas and Power Pvt. Ltd. (RGPPL-JV of GAIL - NTPC)	1.692 MMTPA presently without break water to be increased to 5 MMTPA	80.78
4	Kochi (Kerala)	Petronet LNG Ltd. (PLL)	5 MMTPA	5.60

Sources: LNG operating companies

Chapter-9

Prices and Taxes

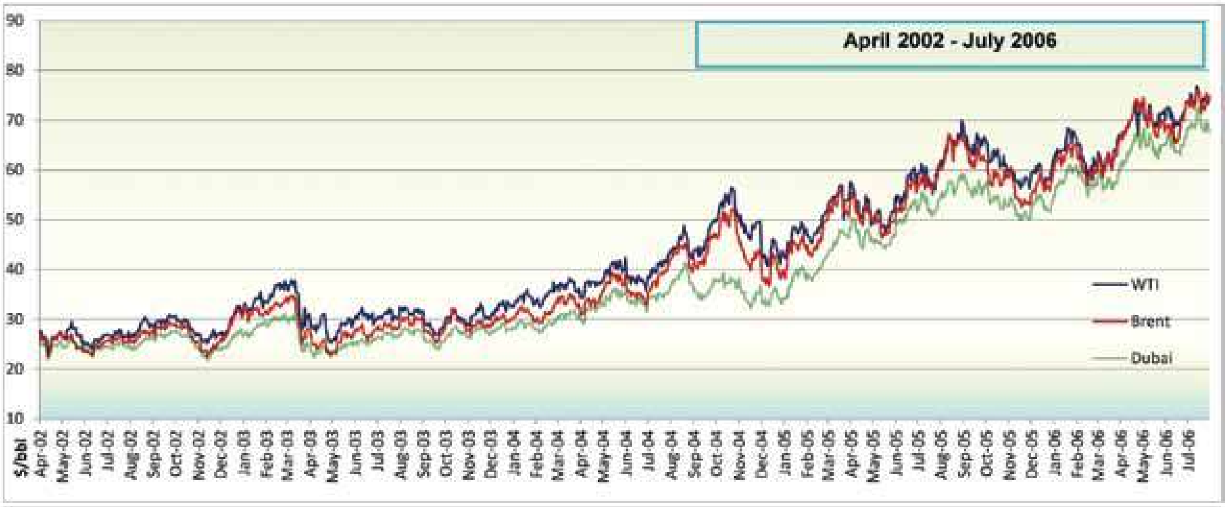
Table 9.1 : Price of crude oil in India

Year	Indian basket crude oil ($/bbl)
2002-03	26.60
2003-04	27.98
2004-05	39.21
2005-06	55.72
2006-07	62.46
2007-08	79.25
2008-09	83.57
2009-10	69.76
2010-11	85.09
2011-12	111.89
2012-13	107.97
2013-14	105.52
2014-15	84.16
2015-16	46.17
2016-17 (up to 31.05.2016)	42.35
2016 : Month wise	
Jan-16	28.08
Feb-16	30.53
Mar-16	36.42
Apr-16	39.85
May-16	44.97

Nore:

1. The Indian basket of crude oil (for 2015-16 & 2016-17) represents a derived basket comprising of sour grade (Oman & Dubai average) and sweet grade (Brent dated) of crude oil processed in Indian refineries in the ratio of 72.28:27.72 during 2014-15.

Trend in prices of International benchmark crude oils



Trend in price of indian basket crude oil and petroleum products in international markets

Table 9.2 : Price build-up of PDS kerosene at Mumbai

Sl. no.	Elements	Unit	Effective 3rd June 2016
1*	FOB Price at Arab Gulf of jet / kero (kerosene)	$/bbl	53.96
2*	Add: Ocean freight from AG to Indian ports	$/bbl	1.53
3	C&F (cost & freight) price	$/bbl	55.48
	or	Rs./litre	23.00
4*	Import charges (insurance/ocean loss/ LC charge/port dues)	Rs./litre	0.20
5*	**Customs duty**	**Rs./litre**	**-**
6*	**Import Parity Price (IPP) (at 29.5^0 C) (sum of 3 to 5)**	**Rs./litre**	**23.21**
7*	**Refinery Transfer Price (RTP) for PDS Kerosene**** (price paid by the oil marketing companies to refineries)	**Rs./litre**	**23.21**
8*	Add : Inland freight and delivery charges	Rs./litre	0.79
9*	Add : State Specific Costs (SSC)	Rs./litre	0.34
10*	Add : Marketing cost of OMCs	Rs./litre	0.35
11*	Add : Marketing margin of OMCs	Rs./litre	0.21
12	**Total cost price (sum of 7 to 11)** -Before excise duty, VAT and wholesale & retailer commission	**Rs./litre**	**24.89**
13*	Less: Under-recovery to OMCs	Rs./litre	11.73
14	**Price charged to dealers (depot price) (12-13)** - Excluding excise duty & VAT	**Rs./litre**	**13.16**
15*	Add : Excise duty	Rs./litre	-
16*	Add : Wholesaler & retailer commission and other charges fixed by state Government	Rs./litre	1.42
17*	Add : VAT (including VAT on wholesaler & retailer commission) applicable for Mumbai	Rs./litre	0.44
18	**Retail Selling Price (RSP) at Mumbai (sum of 14 to 17)**	**Rs./litre**	**15.02**

* The explanatory notes are given in the table 9.3.
**Monthly RTP is weighted average of all Indian pricing ports.

Table 9.3 : Element wise explanation of price build up of PDS kerosene

Sl. no.	Elements	Description
1	FOB price	FOB (free on board) daily quotes of jet/kerosene at Arab Gulf including premium / discount published by Platts and Argus publications are averaged for previous month.
2	Ocean freight	Ocean freight from Arab Gulf to destination Indian ports as per world scale freight rates adjusted for AFRA.
4	Import charges	Import charges comprises of insurance, ocean loss, LC charges & port dues applicable on import of product.
5	Customs duty	Customs duty on PDS kerosene is nil.
6	Import Parity Price (IPP)	IPP represents the price that importers would pay in case of actual import of kerosene at the respective Indian ports. Import parity principle is as per the 'PDS Kerosene and Domestic LPG Subsidy Scheme, 2002'.
7	Refinery Transfer Price (RTP)	RTP based on Import Parity Price, the price paid by OMCs to refineries.
8	Inland freight & delivery charges	It comprises of average freight from ports to inland locations and delivery charges.
9	State Specific Costs (SSC)	In order to neutralise the under-recoveries to the oil companies caused by various irrecoverable/ non-recoverable taxes and levies of state/union territories/municipal corporations, a state specific surcharge/cost is considered in the selling prices of petroleum products.
10 & 11	Marketing cost & margin	Marketing cost & margin are as fixed in the 'PDS Kerosene and Domestic LPG Subsidy Scheme, 2002'.
13	Under recovery to OMCs	Difference between desired price (based on import parity) and actual selling price (excluding excise duty, VAT, wholesale & retail dealer commission and other charges), represents under-recoveries to OMCs.
15	Excise Duty	Excise duty on PDS kerosene is nil.
16	Wholesale & retail dealer commission and other charges fixed by state Government	Commission fixed for wholesale & retail dealer and other charges like delivery charges by district authorities / state Government.
17	VAT (sales tax)	VAT at applicable rate in respective state. It varies from state to state. Currently in Mumbai, VAT on PDS kerosene is 3.00%.

Table 9.4 : Price build-up of domestic LPG at Delhi

Sl. no.	Elements	Unit	Effective 1st June 2016
1*	FOB Price at Arab Gulf (AG) of LPG	$/MT	355.10
2*	Add: Ocean freight from AG to Jamnagar	$/MT	26.83
3	C&F (Cost & Freight) price	$/MT	381.93
	OR	Rs./cylinder	362.46
4*	Import charges (insurance/ocean loss/ LC charge/port dues)	Rs./cylinder	4.10
5*	Customs Duty	Rs./cylinder	-
6*	**Import Parity Price (IPP) (sum of 3 to 5)**	**Rs./cylinder**	**366.57**
7*	**Refinery Transfer Price (RTP) for domestic LPG**** (price paid by the oil marketing companies to refineries)	**Rs./cylinder**	**366.57**
8*	Add: Storage / distribution cost & return on investment	Rs./cylinder	9.87
9*	Add: Bottling charges	Rs./cylinder	20.58
10*	Add: Charges for cylinder cost	Rs./cylinder	18.11
11*	Add: Inland freight	Rs./cylinder	33.24
12	**Bottling plant cost before stock loss and working capital** (sum of 7 to 11)	**Rs./cylinder**	**448.36**
13*	Add: Cost of working capital	Rs./cylinder	1.99
14	**Cost price at LPG bottling plant (sum of 12 to 13)**	**Rs./cylinder**	**450.35**
15*	Add: Delivery charges	Rs./cylinder	10.00
16*	Add: State Specific Costs (SSC)	Rs./cylinder	-
17*	Add : Uncompensated costs (import costs, recovery for non-revision, rounding-off & delivery charges)	Rs./cylinder	42.55
18	**Market determined price (sum of 14 to 17)**	**Rs./cylinder**	**502.91**
19*	Add : VAT (including VAT on distributor commission) applicable for Delhi	Rs./cylinder	-
20*	Add : Distributor commission	Rs./cylinder	46.01
21	**Retail Selling Price (RSP) (sum of 18 to 20)**	**Rs./cylinder**	**548.92**
22	**RSP at Delhi (Rounded)**	**Rs./cylinder**	**548.50**
23*	Less: Cash compensation on LPG by Government to consumers under DBTL	Rs./cylinder	86.77
24*	Less: Cash compensation on LPG by OMCs, towards 'Uncompensated Costs' charged in the current RSP, to consumers	Rs./cylinder	42.55
25	**Effective cost to consumer after subsidy (22-23-24)**	**Rs./cylinder**	**419.18**

* The explanatory notes are given in the table 9.5.
**Monthly RTP is weighted average of all Indian pricing ports.

Table 9.5 : Element wise explanation of price build up of domestic LPG

Sl. no.	Elements	Description
1	FOB price	FOB (free on board) of LPG is weighted average of Saudi Aramco Contract Price (CP) for butane (60%) & propane (40%) for previous month and also includes daily quotes of premium / discount (published by Platts Gaswire) averaged for previous month.
2	Ocean freight	Ocean freight from Arab Gulf to destination Indian port (i.e. Jamnagar) based on charter hire rates obtained from Clarkson Shipping Intelligence weekly.
4	Import charges	Import charges comprises of insurance, ocean loss, LC charges & port dues applicable on import of LPG.
5	Customs duty	Customs duty on domestic LPG is nil.
6	Import Parity Price (IPP)	IPP represents the price that importers would pay in case of actual import of product at the respective Indian ports. Import parity principle is as envisaged in the 'PAHAL (DBTL) Scheme, 2014'.
7	Refinery Transfer Price (RTP)	RTP is based on import parity price. This is the price paid by the oil marketing companies to domestic refineries for purchase of finished petroleum products at refinery gate.
8	Storage/distribution cost & return on investment	Storage/distribution cost & return on investment as fixed under notified 'PAHAL (DBTL) Scheme, 2014'.
9	Bottling charges	The cost incurred towards filling LPG in 14.2 Kg. cylinders as per notified 'PAHAL (DBTL) Scheme, 2014'.
10	Charges for cylinder cost	
11	Inland freight	It comprises of freight from port to inland locations i.e. bottling plant.
13	Cost of working capital	Interest on working capital for 18 days stock holding at SBI Prime Lending Rate (PLR) as fixed under notified 'PAHAL (DBTL) Scheme, 2014'.
15	Delivery charges	It comprises of freight from bottling plant to distributor.
16	State Specific Costs (SSC)	In order to neutralise the under-recoveries to the oil companies caused by various irrecoverable/non-recoverable taxes and levies of state/union territories/municipal corporations, a state specific surcharge/cost is considered in the selling prices of petroleum products. In case of Delhi it is nil.
17	Uncompensated costs (import costs, recovery for non-revision, rounding-off & delivery charges)	In the price buildup, oil marketing companies are charging the consumers on account of import costs, recovery for non-revision in prices, rounding-off & differential delivery charges of ₹ 7.60 /cyl. All these costs are not compensated to OMCs as per the PAHAL (DBTL) scheme.
19	VAT (sales Tax)	VAT at applicable rate in respective states. It varies from state to state (up to a maximum of 5% as domestic LPG is 'Declared Goods' under CST Act). Currently VAT at Delhi is nil.
20	Distributor commission	LPG distributor commission ₹ 46.01/Cylinder is as approved by MoP&NG.
23 & 24	Cash compensation to consumer under DBTL (including impact of uncompensated cost to OMCs)	Under DBTL Scheme, the difference between the price of domestic subsidized & non-subsidized LPG is being transferred to bank account of consumers by OMCs. This also includes the uncompensated amount which is borne by the OMCs.

Table 9.6 : Summarised buildup of Retail Selling Price (RSP) of petrol at Delhi

w.e.f. 1st June 2016

Particulars	₹/Litre*
Refinery Transfer Price (RTP) on landed cost basis for BS IV petrol (price paid by the Oil Marketing Companies (OMCs) to refineries)	25.31
Price charged to dealers (excluding excise duty and VAT)	27.87
Add : Excise duty @ ₹21.48/litre	21.48
Add : Dealer's commission	2.30
Add : VAT (including VAT on dealer's commission) applicable for Delhi @ 27%	13.95
RSP at Delhi (rounded)	**65.60**

*As per IOCL.

Table 9.7 : Summarised buildup of Retail Selling Price (RSP) of diesel at Delhi

w.e.f. 1st June 2016

Particulars	₹/Litre*
Refinery Transfer Price (RTP) on landed cost basis for BS IV diesel (price paid by the Oil Marketing Companies (OMCs) to refineries)	24.72
Price charged to dealers (excluding excise duty and VAT)	27.16
Add : Excise duty @ ₹17.33/litre	17.33
Add : Dealer's commission	1.45
Add : VAT (including VAT on dealer's commission) applicable for Delhi @ 16.75% & Air ambience charges (pollution cess) ₹250/KL	7.99
RSP at Delhi (rounded)	**53.93**

*As per IOCL.

Table 9.8 : Summarised buildup of Retail Selling Price (RSP) of PDS kerosene at Mumbai

w.e.f. 3rd June 2016

Particulars	₹/Litre
Refinery Transfer Price (RTP) for PDS kerosene (price paid by the Oil Marketing Companies (OMCs) to refineries)	23.21
Total cost price -before excise duty, VAT and dealer's commission	24.89
Less: Under-recovery to OMCs	11.73
Price charged to dealers (depot price) - excluding VAT and dealer's commission	13.16
Add : excise duty	0.00
Add : Wholesaler & retailer commission and other charges fixed by state Government	1.42
Add : VAT (including VAT on wholesaler & retailer commission) applicable for Mumbai	0.44
RSP at Mumbai (rounded)	**15.02**

Table 9.9 : Summarised buildup of Retail Selling Price (RSP) of domestic LPG at Delhi

w.e.f. 1st June 2016

Particulars	₹/14.2 KG Cylinder
Refinery Transfer Price (RTP) for domestic LPG (price paid by the Oil Marketing Companies (OMCs) to refineries)	366.57
Price charged to distributor & (market determined price)	502.91
Add : Distributor's commission	46.01
Add : VAT (including VAT on distributor's commission) applicable for Delhi	0.00
RSP at Delhi (rounded)	**548.50**
Less: Cash compensation by Government to consumers under DBTL	86.77
Less: Cash compensation by OMCs towards 'Uncompensated Costs' charged in the current RSP, to consumers	42.55
Effective cost to consumer after subsidy	**419.18**

Share of taxes in Retail Selling Price (RSP) of petroleum products

Table 9.10 : Share of taxes in RSP of petrol effective 1 June 2016 at Delhi

Particulars	₹/Litre	Share in RSP
Price excluding taxes and dealer's commission	27.36	41.7%
Customs duty	0.51	
Excise duty	21.48	
Total central taxes	**21.99**	**33.5%**
Price charged to dealers - depot price	49.35	
VAT (Including VAT on dealer's commission)	13.95	
Total state taxes	**13.95**	21.3%
Total taxes	**35.94**	54.8%
Dealer's commission	2.30	3.5%
RSP per litre (rounded)	**65.60**	100.0%

Table 9.11 : Share of taxes in RSP of diesel effective 1 June 2016 at Delhi

Particulars	₹/Litre	Share in RSP
Price excluding taxes and dealer's commission	26.66	49.4%
Customs duty	0.50	
Excise duty	17.33	
Total central taxes	**17.83**	**33.1%**
Price charged to dealers - depot price	44.49	
VAT (Including VAT on dealer's commission)	7.99	
Total state taxes	**7.99**	14.8%
Total taxes	**25.82**	47.9%
Dealer's commission	1.45	2.7%
RSP per litre (rounded)	**53.93**	100.0%

Table 9.12 : Break up of current excise duty on petrol & diesel (effective 31st January 2016)

(₹/Litre)

Particulars	Petrol	Diesel
Basic duty	9.48	11.33
Additional excise duty (road cess)	6.00	6.00
Special additional excise duty	6.00	0.00
Total excise duty	**21.48**	**17.33**

Note:
1. The prices of petrol and diesel are as per IOCL at Delhi.
2. Customs duty on petrol and diesel as per June 2016, 1st fortnight RTP.

Share of taxes in Retail Selling Price (RSP) of petroleum products

Table 9.13 : Share of taxes in RSP of PDS kerosene effective 3 June 2016 at Mumbai

Particulars	₹/Litre	Share in RSP
Total price before Government levies	24.89	
Less : Under-recovery to OMCs	11.73	
Price excluding taxes and dealer's commission	13.16	87.6%
Customs duty	0.00	
Excise duty	0.00	
Total central taxes	**0.00**	**0.0%**
VAT (Including VAT on wholesaler and retailer commission)	0.44	
Total state taxes	**0.44**	**2.9%**
Total taxes	**0.44**	**2.9%**
Wholesaler and retailer commission	1.42	9.5%
RSP per litre (rounded)	**15.02**	**100.0%**

Table 9.14 : Share of taxes in RSP of domestic LPG effective 1 June 2016 at Delhi

Particulars	₹/Cylinder	Share in RSP
Price excluding taxes and distributor's commission	502.91	91.7%
Customs duty	0.00	
Excise duty	0.00	
Total central taxes	**0.00**	**0.0%**
VAT (including VAT on distributor's commission)	0.00	
Total state taxes	**0.00**	**0.0%**
Total taxes	**0.00**	**0.0%**
Distributor's commission	46.01	8.4%
RSP per cylinder (rounded)	**548.50**	**100.0%**
Less: Cash compensation by Government to consumers under DBTL	86.77	
Less: Cash compensation by OMCs towards 'Uncompensated Costs' charged in the current RSP to consumer	42.55	
Effective cost to consumer after DBTL subsidy	**419.18**	

Table 9.15 : Weightage of petroleum products in Wholesale Price Index (WPI)

Product	Weight in %
High Speed Diesel (HSD)	4.67
Petrol	1.09
LPG	0.91
Naphtha	0.79
Kerosene	0.74
Furnace Oil (FO)	0.47
Aviation Turbine Fuel (ATF)	0.26
Lubricants	0.17
Bitumen	0.16
Light Diesel Oil (LDO)	0.12
Total	**9.36**

Source: Website of Office of the Economic Adviser, Ministry of Commerce & Industry

Table 9.16 : Estimated impact of increase in Retail Selling Price (RSP) of major petroleum products on inflation (WPI index)

Product	Increase in RSP	Increase in inflation (WPI index)
Petrol	₹ 1/ litre	0.02%
Diesel	₹ 1/ litre	0.09%
PDS kerosene	₹ 1/ litre	0.05%
Domestic LPG	₹ 10/ cylinder	0.02%

Note: Based on April 2016 WPI index.

Important terms in pricing of petroleum products

1. **Import Parity Price (IPP) -** IPP represents the price that importers would pay in case of actual import of product at the respective Indian ports. This includes the following elements:
   i. FOB Price
   ii. Ocean freight
   iii. Insurance
   iv. Customs duty
   v. Port dues etc.
2. **Export Parity Price (EPP) -** EPP represents the price which oil companies would realize on export of petroleum products. This includes the following elements:
   i. FOB Price
   ii. Advance License Benefit for duty free import of crude oil pursuant to export of refined products (currently nil)
3. **Trade Parity Price (TPP) -** TPP is weighted average price of IPP and EPP with the weights of 80 and 20 respectively.
4. **Refinery Gate Price / Refinery Transfer Price (RGP/RTP) -** This is the price paid by the Oil Marketing Companies (OMCS) to refineries for purchase of finished petroleum products at refinery gate.
5. **Retail Selling Price (RSP) -** This is the final price, inclusive of all duties and taxes, charged to the consumers.

Dealer's / distributor's commission on petroleum products

Table 9.17 : Dealer's commission on petrol & diesel

(Figures in ₹ /KL)

Effective date	Petrol	Diesel
As on 1-Apr-04	707.00	425.00
21-Jun-05	778.00	467.00
01-Aug-05	848.00	509.00
01-Mar-07	894.00	529.00
16-May-07	1024.00	600.00
23-May-08	1052.00	631.00
27-Oct-09	1125.00	673.00
07-Sep-10	1218.00	757.00
01-Jul-11	1499.00	912.00
27-Oct-12	1794.00	1089.00
21-Dec-13	₹ 1390.15/KL + 0.883% of product billable price	1186.00
23-Oct-14	₹ 1499.37/KL + 0.887% of product billable price	₹ 1116.09/KL + 0.290% of product billable price
01-Aug-15	₹ 1749.86/KL + 0.883% of product billable price	₹ 1301.70/KL + 0.286% of product billable price
16-Nov-15	₹ 1750.08/KL + 0.883% of product billable price	₹ 1301.88/KL + 0.286% of product billable price
01-Jun-16	₹ 1750.29/KL + 0.883% of product billable price*	₹ 1302.06/KL + 0.286% of product billable price*

*The current amount of dealer's commission on petrol is ₹ 2304.10/ KL and on diesel is ₹ 1451.51/KL effective 1.6.2016 at Delhi (as per HPCL).

Table 9.18 : Wholesale dealer's commission on PDS kerosene

(₹/KL)

Effective date	With form XV	Other than form XV
As on 01-April-04	204.00	161.00
01-Mar-07	243.00	200.00
24-May-08	255.00	212.00
07-Jul-09	263.00	220.00
07-Sep-10	275.00	232.00
28-Dec-12	438.24	377.73
21-Oct-14	536.09	475.58
05-Feb-16	714.18	649.16

Table 9.19: Distributor's commission on domestic LPG

(₹/ Cylinder)

Effective date	14.2 KG cyl.	Additional commission for sale at market determined price (₹/14.2 KG cyl.)	5 KG cyl.
As on 01-April-04	16.71	NA	8.60
01-Mar-07	19.05	NA	9.81
04-Jun-08	20.54	NA	10.58
30-Jun-09	21.94	NA	11.30
01-Jul-11	25.83	NA	13.30
07-Oct-12	37.25	0.75	18.63
11-Dec-13	40.71	0.75	20.36
23-Oct-14	44.06	0.82	22.03
09-Dec-15	45.83	0.26	22.67
01-Jan-16	45.83	0.33	22.67
01-Feb-16	45.83	0.22	22.67
01-Mar-16	45.83	0.13	22.67
01-May-16	45.83	0.15	22.67
01-Jun-16	45.83	0.18	22.67

Source: MoP&NG circulars/ OMCs

Table 9.20 : Revisions in RSP of petroleum products at Delhi since 01.04.2010

Date	Petrol	Diesel	PDS kerosene	Domestic LPG	Reason
	(₹/litre)			(₹/14.2 Kg cyl.)	
01.04.2010	47.93	38.10	9.32	310.35	Prices as on 1.4.2010
26.06.2010	51.43	40.10	12.32	345.35	Increase in prices
01.07.2010	51.45	40.12			Increase in siding & shunting charges
20.07.2010		37.62			VAT reduction in Delhi
08.09.2010	51.56	37.71	12.33		Revision in dealer's commission
21.09.2010	51.83				Increase in price
17.10.2010	52.55				Increase in price
02.11.2010	52.59	37.75	12.37		Increase in siding & shunting charges
09.11.2010	52.91				Increase in price
16.12.2010	55.87				Increase in price
15.01.2011	58.37				Increase in price
18.01.2011			12.73		Increase in transportation charges
15.05.2011	63.37				Increase in price
25.06.2011		41.12	14.83	395.35	Increase in prices
01.07.2011	63.70	41.29		399.00	Increase in siding & shunting charges/ dealer's commission
16.09.2011	66.84				Increase in price
01.10.2011		40.91			Rebate of ₹ 0.375 per litre in VAT on Diesel at Delhi
04.11.2011	68.64				Increase in price
16.11.2011	66.42				Reduction in price
01.12.2011	65.64				Reduction in price
24.05.2012	73.18				Increase in price
03.06.2012	71.16				Reduction in price
18.06.2012	70.24	41.29			Rebate on petrol / removal of rebate on diesel in Delhi
29.06.2012	67.78				Reduction in price
24.07.2012	68.48				Increase in price
01.08.2012	68.46	41.32			Revision in siding & shunting charges

Table 9.20 continued

Date	Petrol	Diesel	PDS kerosene	Domestic LPG		Reason
				Subsidized	Non-subsidized	
	(₹/litre)			(₹/14.2 Kg cyl.)		
14.09.2012		46.95				Increase in price
18.09.2012					756.50	Price notified for non-subsidized domestic LPG
01.10.2012					883.50	Increase in price
03.10.2012			14.79			Revision in siding & shunting charges
07.10.2012				410.50	895.50	Increase in domestic LPG distributor's commission
09.10.2012	67.90					Reduction in price
27.10.2012	68.19	47.15				Increase in dealer's commission
01.11.2012					922.50	Increase in price
02.11.2012					895.50	Reduction in price
16.11.2012	67.24					Reduction in price
16.01.2013	67.56					Removal of rebate in VAT at Delhi
18.01.2013	67.26	47.65			942.00	Increase (diesel & non-subsidized domestic LPG)/ reduction (petrol) in prices
28.01.2013			14.96			Increase in dealer's commission
16.02.2013	69.06	48.16				Increase in prices
01.03.2013					904.50	Reduction in price
02.03.2013	70.74					Increase in price
16.03.2013	68.34					Reduction in price
23.03.2013		48.67				Increase in price
01.04.2013	68.31	48.63			901.50	Revision in siding & shunting charges / reduction in price of non-subsidized domestic LPG
02.04.2013	67.29					Reduction in price
16.04.2013	66.09	48.67				Reduction in petrol price/ Increase in delivery charges of diesel
01.05.2013	63.09				847.00	Reduction in prices
11.05.2013		49.69				Increase in price
01.06.2013	63.99	50.25			802.00	Increase (petrol and diesel) / reduction (non-subsidized domestic LPG) in prices
16.06.2013	66.39					Increase in price
29.06.2013	68.58					Increase in price & delivery charges of petrol
01.07.2013		50.26			832.00	Increase in delivery charges of diesel/ increase in price of non-subsidized domestic LPG
02.07.2013		50.84				Increase in price
15.07.2013	70.44					Increase in price
01.08.2013	71.28	51.40			875.00	Increase in prices
01.09.2013	74.10	51.97			932.50	Increase in prices
14.09.2013	76.06					Increase in price
01.10.2013	72.40	52.54			1004.00	Increase (diesel & non-subsidized domestic LPG)/ reduction (petrol) in price

Table 9.20 continued

Date	Petrol	Diesel	PDS kerosene	Domestic LPG		Reason
				Subsidized	Non-subsidized	
	(₹/litre)			(₹/14.2 Kg cyl.)		
01.11.2013	71.02	53.10			954.50	Increase (diesel)/ reduction (petrol & non-subsidized domestic LPG) in price
01.12.2013		53.67			1017.50	Increase in prices
11.12.2013				414.00	1021.00	Increase in distributor's commission on domestic LPG
21.12.2013	71.52	53.78				Increase in price of petrol & increase in dealer's commission on petrol and diesel
04.01.2014	72.43	54.34			1241.00	Increase in prices
01.02.2014		54.91			1134.00	Increase (diesel)/ reduction (non-subsidized domestic LPG) in price
01.03.2014	73.16	55.48			1080.50	Increase (petrol & diesel)/ reduction (non-subsidized domestic LPG) in price
01.04.2014	72.26	55.49			980.50	Reduction in prices (petrol & non-subsidized domestic LPG)/ increase in delivery charges of diesel
16.04.2014	71.41					Reduction in price
01.05.2014					928.50	Reduction in price
16.05.2014		56.71				Increase in price
01.06.2014		57.28			905.00	Increase (diesel)/ reduction (non-subsidized domestic LPG) in price
07.06.2014	71.51					Increase in price
25.06.2014	71.56				906.00	Increase in rail freight
01.07.2014	73.60	57.84			922.50	Increase in prices
01.08.2014	72.51	58.40			920.00	Increase (diesel)/ reduction (petrol & non-subsidized domestic LPG) in price
16.08.2014	70.33					Reduction in price
31.08.2014	68.51	58.97				Increase (diesel)/ reduction (petrol) in price
01.09.2014					901.00	Reduction in price
01.10.2014	67.86				880.00	Reduction in price
15.10.2014	66.65					Reduction in price
19.10.2014		55.60				Reduction in price
23.10.2014				417.00	883.50	Increase in domestic LPG distributor's commission
01.11.2014	64.24	53.35	15.14*		865.00	Reduction in price/ price of PDS kerosene at Mumbai
01.12.2014	63.33	52.51			752.00	Reduction in prices
16.12.2014	61.33	50.51				Reduction in prices
01.01.2015					708.50	Reduction in price
17.01.2015	58.91	48.26				Reduction in prices
01.02.2015					605.00	Reduction in price
04.02.2015	56.49	46.01				Reduction in prices
16.02.2015	57.31	46.62	15.24			Increase in price of petrol & diesel / increase in dealer's commission on PDS kerosene
01.03.2015	60.49	49.71			610.00	Increase in prices

Table 9.20 continued

Date	Petrol	Diesel	PDS kerosene	Domestic LPG		Reason
	(₹/litre)			RSP	Effective cost after DBTL subsidy#	
				(₹/14.2 KG cylinder)		
01.04.2015	60.00	48.50		621.00	417.82	Increase (non-subsidized domestic LPG)/ reduction (petrol and diesel) in prices
16.04.2015	59.20	47.20				Reduction in prices
01.05.2015	63.16	49.57		616.00		Increase (petrol and diesel) / reduction (domestic LPG) in prices
16.05.2015	66.29	52.28				Increase in prices
01.06.2015				626.50		Increase in price
16.06.2015	66.93	50.93				Increase (petrol) / reduction (diesel) in price
01.07.2015	66.62	50.22		608.50		Reduction in prices
16.07.2015	66.90	49.72				Reduction in price & increase in VAT rates at Delhi
01.08.2015	64.47	46.12		585.00		Reduction in prices
15.08.2015	63.20	44.95				Reduction in prices
01.09.2015	61.20	44.45		559.50		Reduction in prices
01.10.2015		44.95		517.50		Increase (diesel)/ reduction (domestic LPG) in price
16.10.2015		45.90				Increase in price
01.11.2015	60.70	45.93		545.00		Decrease (petrol) / Increase (domestic LPG) in price / Increase in delivery charges of petrol & diesel
16.11.2015	61.06	46.80				Increase in prices
01.12.2015	60.48	46.55		606.50		Increase (domestic LPG)/ reduction (petrol and diesel) in price
09.12.2015				608.00	419.26	Increase in distributor's commission on domestic LPG
16.12.2015	59.98	46.09				Reduction in prices
01.01.2016	59.35	45.03		657.50	419.33	Increase (domestic LPG)/ reduction (petrol and diesel) in price / increase in additional distributor's commission on domestic LPG
02.01.2016	59.35	45.03				Increase in excise duty on petrol and diesel without increase in RSPs
16.01.2016	59.03	44.18				Reduction in price along with increase in excise duty
19.01.2016	59.99	44.71				Increase in VAT rates at Delhi
31.01.2016	59.99	44.71				Increase in excise duty on petrol and diesel without increase in RSP
01.02.2016	59.95	44.68		575.00	419.22	Reduction in delivery charges of petrol and diesel/ reduction in price and additional distributor's commission of domestic LPG
18.02.2016	59.63	44.96				Reduction in price of petrol and increase in price of diesel
01.03.2016	56.61	46.43		513.50	419.13	Reduction in price of petrol/ increase in price of diesel/ reduction in additional distributor's commission of domes-tic LPG
04.03.2016			15.42			Increase in dealer's commission
17.03.2016	59.68	48.33				Increase in prices
01.04.2016				509.50		Reduction in price
05.04.2016	61.87	49.31				Increase in prices
16.04.2016	61.13	48.01				Reduction in prices

Table 9.20 continued

Date	Petrol	Diesel	PDS kerosene	Domestic LPG		Reason
				RSP	Effective cost after DBTL subsidy#	
	(₹/litre)			(₹/14.2 KG cylinder		
25.04.2016			15.36			Reduction in SSC on PDS kerosene in Mumbai
01.05.2016	62.19	50.95		527.50	419.15	Increase in prices of petrol, diesel & non-subsidized domestic LPG/ increase in additional distributor's commission on domestic LPG
17.05.2016	63.02	51.67				Increase in prices
01.06.2016	65.60	53.93		548.50	419.18	Increase in prices of petrol, diesel & non-subsidized domestic LPG/ increase in additional distributor's commission on domestic LPG
03.06.2016			15.02			Reduction in SSC on PDS kerosene in Mumbai
	65.60	**53.93**	**15.02**	**548.50**	**419.18**	**Current RSP**

Notes:
1. Prices of Petrol since 26.6.2010, Non Subsidized Domestic LPG since 13.9.2012 and Diesel since 19.10.2014 are as per IOCL.
* Since there is nil allocation of PDS Kerosene in Delhi currently, RSP of PDS Kerosene from 1.11.2014 onwards is at Mumbai.
# effective 1st January 2015, Modified DBTL scheme has been implemented in the entire country. The effective cost to consumer is after DBTL subsidy.

Table 9.21 : Selling price of diesel for bulk consumers in major cities

(₹/Litre)

Date	Delhi	Kolkata	Mumbai	Chennai
18-Jan-13	56.88	61.30	64.11	60.85
01-Feb-13	56.95	61.37	64.19	60.92
16-Feb-13	58.57	63.06	65.98	62.68
01-Mar-13	59.73	64.27	67.25	63.93
16-Mar-13	56.79	61.20	64.01	60.75
01-Apr-13	54.84	59.51	61.95	58.69
16-Apr-13	54.77	59.46	61.88	58.62
01-May-13	51.81	56.37	58.61	55.42
16-May-13	52.76	57.36	59.66	56.44
23-May-13	52.76	57.36	60.79	56.44
01-Jun-13	54.61	59.28	62.83	58.44
16-Jun-13	56.17	60.91	64.55	60.12
01-Jul-13	58.78	63.63	66.62	62.95
02-Jul-13	58.79	63.62	66.61	62.94
16-Jul-13	60.40	65.30	68.39	64.68
01-Aug-13	60.72	65.63	68.75	65.03
16-Aug-13	61.74	66.69	69.86	66.13
01-Sep-13	64.45	69.50	72.85	69.05
16-Sep-13	67.45	72.63	76.17	72.30
01-Oct-13	63.50	68.50	71.78	68.05
16-Oct-13	63.25	68.24	71.50	67.78
01-Nov-13	62.97	67.95	71.19	67.48
16-Nov-13	63.06	68.04	71.29	67.57
01-Dec-13	63.86	68.88	72.18	68.44
01-Jan-14	63.51	68.51	71.79	68.06
05-Jan-14	63.51	68.66	72.97	68.08
01-Feb-14	61.95	67.03	71.25	66.39
16-Feb-14	62.97	68.09	72.37	67.49
01-Mar-14	63.63	68.78	73.10	68.20
16-Mar-14	62.33	67.43	71.67	66.80
01-Apr-14	60.89	65.93	70.08	65.25
16-Apr-14	60.41	65.44	69.56	64.73
01-May-14	61.83	66.91	71.12	66.26
16-May-14	60.38	65.41	69.52	64.70
01-Jun-14	59.18	64.16	68.20	63.40
16-Jun-14	57.87	62.80	66.75	61.99
01-Jul-14	60.41	65.52	69.10	64.70
16-Jul-14	59.32	64.39	67.90	63.53
01-Aug-14	58.60	63.64	67.10	62.75
16-Aug-14	59.12	64.18	67.68	63.31
01-Sep-14	57.80	62.81	66.23	61.89
16-Sep-14	57.37	62.36	65.75	61.42
19-Oct-14	54.00	58.85	62.03	57.78

(₹/Litre)

Date	Delhi	Kolkata	Mumbai	Chennai
01-Nov-14	51.94	56.70	59.74	55.56
01-Dec-14	51.10	55.83	58.83	54.66
16-Dec-14	49.13	53.78	56.65	52.53
17-Jan-15	46.88	51.77	54.17	50.10
04-Feb-15	44.64	49.77	51.69	47.68
16-Feb-15	45.25	50.32	52.37	48.34
01-Mar-15	48.31	53.03	55.73	51.63
02-Apr-15	47.13	52.01	54.44	50.36
16-Apr-15	45.83	50.86	53.01	48.97
01-May-15	48.20	52.94	55.61	51.52
16-May-15	50.90	55.62	58.59	54.43
16-Jun-15	49.55	54.22	57.11	52.98
01-Jul-15	48.84	53.52	56.32	52.21
16-Jul-15	48.29	51.53	53.84	49.78
01-Aug-15	44.50	48.26	49.80	45.82
15-Aug-15	43.33	47.26	48.56	44.61
01-Sep-15	42.83	46.84	48.03	44.09
01-Oct-15	43.33	47.26	50.56	44.61
16-Oct-15	44.27	48.07	51.57	45.59
01-Nov-15	44.30	48.10	51.60	45.62
16-Nov-15	45.17	48.85	52.52	46.53
01-Dec-15	44.92	48.65	52.26	46.29
16-Dec-15	44.46	48.26	51.77	45.82
01-Jan-16	43.41	47.35	50.64	44.72
16-Jan-16	42.56	46.63	49.74	43.83
19-Jan-16	43.07	46.63	49.74	43.83
01-Feb-16	43.04	46.60	49.71	43.80
18-Feb-16	43.32	46.83	50.00	44.09
01-Mar-16	44.78	48.07	51.54	45.59
17-Mar-16	46.68	49.25	53.53	47.54
05-Apr-16	47.65	50.08	54.56	48.55
16-Apr-16	46.36	48.98	51.97	47.21
01-May-16	49.29	51.46	55.05	50.23
07-May-16	48.77	51.46	55.05	50.23
17-May-16	50.02	52.54	55.25	51.54
01-Jun-16	52.28	54.60	57.65	53.88

Source: HPCL

Table 9.22 : Retail Selling Price (RSP) of major petroleum products in India & neighbouring countries

Indian rupees (₹)/ litre/ cyl.

Country	Petrol	Diesel	Kerosene	Domestic LPG
India	65.60	53.93	15.02	419.18*
Pakistan	39.91	46.84	27.94	1,146.52
Bangladesh	74.70	56.46	56.46	690.75
Sri Lanka	54.81	44.51	22.96	716.36
Nepal	62.79	47.57	47.57	887.94

Sources: website of following companies: Pakistan - Pakistan State Oil (www.psopk.com), Bangladesh - Bangladesh Petroleum Corporation (www.bpc.gov.bd), Nepal - Nepal Oil Corporation (www.nepaloil.com.np), Sri Lanka - Petrol, diesel & kerosene : Ceylon Petroleum Corporation (www.ceypetco.gov.in); LPG : Litro Gas Lanka (www.litrogas.com), Exchange rates - www.oanda.com

*Effective cost after DBTL subsidy

Retail Selling Price (RSP) & % of taxes in RSP of petrol and diesel in developed countries vis-a-vis India

Table 9.23 : Price and tax in Indian rupees (₹) / litre

Country	Petrol				Diesel			
	RSP	Ex-tax price	Taxes	% of taxes	RSP	Ex-tax price	Taxes	% of taxes
India	65.60	29.66	35.94	54.8%	53.93	28.11	25.82	47.9%
France	98.07	32.87	65.20	66.5%	79.98	28.12	51.86	64.8%
Germany	97.77	32.79	64.98	66.5%	78.70	30.68	48.02	61.0%
Italy	107.27	33.02	74.25	69.2%	93.24	29.93	63.32	67.9%
Spain	86.01	36.26	49.75	57.8%	73.27	32.79	40.48	55.2%
UK	100.83	28.82	72.01	71.4%	101.40	29.30	72.10	71.1%
Japan	70.44	31.10	39.34	55.9%	60.07	36.07	24.00	40.0%
Canada	52.69	32.72	19.96	37.9%	47.03	31.74	15.30	32.5%
USA	37.09	29.18	7.91	21.3%	37.82	28.72	9.11	24.1%

Table 9.24 : Price and tax in US dollars ($) / litre

Country	Petrol				Diesel			
	RSP	Ex-tax price	taxes	% of taxes	RSP	Ex-tax price	Taxes	% of taxes
India	0.98	0.44	0.54	54.8%	0.81	0.42	0.39	47.9%
France	1.48	0.49	0.98	66.5%	1.20	0.42	0.78	64.8%
Germany	1.47	0.49	0.98	66.5%	1.18	0.46	0.72	61.0%
Italy	1.61	0.50	1.12	69.2%	1.40	0.45	0.95	67.9%
Spain	1.29	0.55	0.75	57.8%	1.10	0.49	0.61	55.2%
UK	1.52	0.43	1.08	71.4%	1.53	0.44	1.08	71.1%
Japan	1.06	0.47	0.59	55.9%	0.90	0.54	0.36	40.0%
Canada	0.79	0.49	0.30	37.9%	0.71	0.48	0.23	32.5%
USA	0.56	0.44	0.12	21.3%	0.57	0.43	0.14	24.1%

Notes:

1. Prices of petrol and diesel in France, Germany, Italy, Spain, UK, Japan, Canada & USA as per the IEA report for April 2016 and average exchange rate of April 2016 considered for conversion: ₹ 66.47/USD. (VAT excluded from prices for automotive diesel for France, Italy, Spain and UK as it is refunded to industry.)

2. Prices in India as of 1.6.2016 as per IOCL. Average exchange rate of May 2016 (up to 31 May 2016) considered for conversion ₹ 66.91/$.

Table 9.25 : Retail Selling Price (RSP) of petroleum products at state/UT capitals as on 1.6.2016

State/Union Territory	City	Petrol	Diesel	Domestic LPG
		(₹/litre)		(₹/14.2 KG cylinder)
Andhra Pradesh	Visakhapatnam*	71.08	59.81	582.00
Arunachal Pradesh	Itanagar	61.57	51.65	642.50
Assam	Guwahati	64.64	54.53	626.50
Bihar	Patna	67.46	57.01	648.50
Chhattisgarh	Raipur	66.65	59.11	619.00
Goa	Panjim	62.25	56.42	560.00
Gujarat	Gandhinagar	67.52	60.02	594.50
Haryana	Ambala	65.10	53.72	570.00
Himachal Pradesh	Shimla	66.62	54.32	608.00
Jammu & Kashmir	Srinagar	70.44	57.31	659.50
Jharkhand	Ranchi	67.69	57.25	630.50
Karnataka	Bengaluru	70.40	57.74	557.00
Kerala	Thiruvananthapuram	69.64	58.99	576.50
Madhya Pradesh	Bhopal	**71.62**	**60.95**	598.00
Maharashtra	Mumbai	70.18	59.21	547.00
Manipur	Imphal	63.59	52.34	722.00
Meghalaya	Shillong	64.35	53.45	619.00
Mizoram	Aizawl	61.31	51.35	699.50
Nagaland	Kohima	63.86	52.48	606.00
Odisha	Bhubaneswar	65.68	58.72	582.50
Punjab	Jullunder	70.73	54.18	600.00
Rajasthan	Jaipur	68.02	57.90	**537.50**
Sikkim	Gangtok	68.82	57.54	**736.00**
Tamil Nadu	Chennai	65.04	55.44	560.00
Telangana	Hyderabad	69.91	58.72	615.50
Tripura	Agartala	60.91	51.78	695.50
Uttarakhand	Dehradun	70.14	56.31	590.50
Uttar Pradesh	Lucknow	68.67	55.49	586.50
West Bengal	Kolkata	68.46	56.13	576.50
Andaman & Nicobar Islands	Port Blair	**56.52**	**50.41**	632.50
Chandigarh	Chandigarh	66.05	54.82	570.50
Daman & Diu	Daman*	63.86	54.57	566.00
Dadra & Nagar Haveli	Silvasa*	63.91	54.62	573.00
Delhi	New Delhi	65.60	53.93	548.50
Puducherry	Puducherry	61.60	54.41	561.00

Source: IOCL (*as per HPCL)

Highest	Lowest

Table 9.26 : Retail Selling Price (RSP) of PDS kerosene at major cities as on 1.6.2016

State	City	(₹/litre)
Maharashtra	Mumbai	15.02*
Tamil Nadu	Chennai	13.70
West Bengal	Kolkata	16.00

*effective 3.6.2016
Source: OMCs
Note: The allocation of PDS kerosene in Delhi is nil presently.

Table 9.27 : Customs and excise duty rates on petroleum products effective 1st March 2016

Particulars		Customs duty			Central excise duty		
		Basic customs duty	Additional customs duty (CVD)	Additional customs duty	Basic cenvat duty	Special additional excise duty	Additional excise duty
Crude Oil		Nil + ₹ 50/MT NCCD	-	-	Nil+ 20% Cess + ₹50/ MT NCCD	-	-
Petrol		2.5%	₹9.48/ltr. + ₹6.00/ltr. SAD	₹6.00/ltr.	₹9.48/ltr.	₹6.00/ltr.	₹6.00/ltr.
Petrol (branded)		-	-	-	₹10.66/ltr.	₹6.00/ltr.	₹6.00/ltr.
High speed diesel		2.5%	₹11.33/ltr.	₹6.00/ltr.	₹11.33/ltr.	-	₹6.00/ltr.
High speed diesel (branded)		-	-	-	₹13.69/ltr.	-	₹6.00/ltr.
LPG	Domestic	-	-	-	-	-	-
	Non-domestic	5.0%	8.0%	-	8.0%	-	-
Kerosene	PDS	-	-	-	-	-	-
	Non-PDS	5.0%	14.0%	-	14.0%	-	-
Aviation Turbine Fuel (ATF)		-	14.0%*	-	14.0%*	-	-
Naphtha	Fertilizer	-	-	-	-	-	-
	Non-fertilizer	5.0%	14.0%	-	14.0%	-	-
Butane / propane	Domestic	-	-	-	-	-	-
	Non-domestic	2.5%	8.0%	-	8.0%	-	-
Bitumen & asphalt		5.0%	14.0%	-	14.0%	-	-
Furnace Oil (FO)	Fertilizer	-	-	-	-	-	-
	Non-fertilizer	5.0%	14.0%	-	14.0%	-	-
Light Diesel Oil (LDO)		5.0%	14% + ₹ 2.50/ltr.	-	14% + ₹ 2.50/ltr.	-	-
Liquefied Natural Gas (LNG)		5.0%	-	-	-	-	-
Low Sulphur Heavy Stock (LSHS)/ HPS & other residuals	Fertilizer	5.0%	-	-	-	-	-
	Non-fertilizer	5.0%	14.0%	-	14.0%	-	-
Lube oil/greases		5.0%	14.0%	-	14.0%	-	-
Natural gas[gaseous state]		5.0%	-	-	-	-	-
Natural gas[compressed]		5.0%	14.0%	-	14.0%	-	-
Petroleum coke		2.5%	14.0%	-	14.0%	-	-
Petroleum jelly		5.0%	14.0%	-	14.0%	-	-
Transformer oil		5.0%	14.0%	-	14.0%	-	-
Waxes all types		5.0%	14.0%	-	14.0%	-	-

Notes:

- Additional Duty of Customs @4% would be levied in lieu of sales tax / VAT except petrol, diesel, SKO(PDS), LPG(domestic), coal, coke and petroleum gases and fuels of Chapter 27 on direct imports for consumption.
- In addition to above, education cess @2% on aggregate duties is charged w.e.f. 9.7.2004 and additional 1% is charged w.e.f. 1.3.2007. However, education cess has been removed on Excise duty effective 1st March 2015.

*8% for supply to Schedule Commuter Airlines (SCA) from the Regional Connectivity Scheme (RCS) airports.

Table 9.28 : Effective rates of sales tax/VAT levied by various states/UTs as on 1st June 2016

State/Union Territory	Petrol	Diesel	PDS kerosene	Domestic LPG
	% of capital city rate before VAT			
States				
Andhra Pradesh	39.10	31.25	5.00	5.00
Arunachal Pradesh	20.00	12.50	4.00	4.00
Assam	27.50	16.50	2.00	1.49
Bihar	24.50	18.00	5.00	1.00
Chhattisgarh	29.99	27.20	4.00	Nil
Goa	20.00	22.00	5.00	0.50
Gujarat	28.96	28.96	Nil	5.00
Haryana	26.25	17.22	Nil	Nil
Himachal Pradesh	27.00	16.00	Nil	4.00
Jammu & Kashmir	29.72	18.11	5.00	Nil
Jharkhand	32.47	24.73	2.00	3.42
Karnataka	36.50	24.95	5.50	1.00
Kerala	34.13	27.00	5.00	3.77
Madhya Pradesh	38.37	31.61	5.00	Basic VAT - 5.00 Entry tax - 2.00 7.10
Maharashtra – Mumbai, Thane & Navi Mumbai	34.95	28.45	3.00	3.00
Maharashtra (rest of state)	34.08	25.46	3.00	3.00
Manipur	25.00	14.50	Nil	5.00
Meghalaya	22.24	13.77	Nil	Nil
Mizoram	20.00	12.00	Nil	1.79
Nagaland	24.68	14.18	5.25	5.00
Odisha	27.26	27.26	1.00	1.00
Punjab	36.07	17.31	6.05	4.40
Rajasthan	33.04	25.91	Nil	Nil
Sikkim	33.12	23.12	4.50	4.50
Tamil Nadu	27.00	21.43	5.00	Nil
Telangana	35.20	27.00	5.00	5.00
Tripura	20.00	13.50	Nil	1.50
Uttarakhand	34.20	22.35	Nil	5.00
Uttar Pradesh	33.77	21.06	4.04	Nil
West Bengal	27.20	18.54	Nil	Nil
Union territories				
Andaman & Nicobar Islands	Nil	Nil	Nil	Nil
Chandigarh	24.77	16.43	5.00	Nil
Dadra & Nagar Haveli	20.00	15.00	5.00	5.00
Daman & Diu	20.00	15.00	5.00	5.00
Delhi	27.00	17.41	5.00	Nil
Lakshadweep	Nil	Nil	Nil	Nil
Puducherry	15.00	14.00	Nil	0.50

(As per details provided by HPCL/IOCL)

Notes: 1. Effective rate Includes VAT, cess, entry tax, additional tax & surcharge recoverable in price.

2. In Dadra & Nagar Haveli, Daman & Diu, Chandigarh, Puducherry, Meghalaya and Nagaland (for LPG), there is no depot/plant of OMCs and products are brought in from other states, hence CST @ 2% is also applicable (except for LPG in Puducherry).

3. For petrol & diesel, VAT at applicable rates is also levied on dealer's commission in Delhi, Gujarat, Haryana, Madhya Pradesh, Punjab, Dadra & Nagar Haveli, Daman & Diu, Chandigarh, Puducherry and Meghalaya.

4. For domestic LPG, VAT at applicable rates is also levied on distributor's commission by all states and UTs except Assam.

5. Himachal Pradesh has granted rebate on VAT whereby VAT is payable on selling price as reduced by GOI subsidy.

6 As per Kerala state Government notification dated 20.1.2014, "for the sale of domestic LPG by Indian oil corporation Limited, Hindustan Petroleum Corporation Limited, Bharat Petroleum Corporation Limited and their agencies, no tax shall be levied on the amount of subsidy granted by the central Government to such corporations and passed on to the consumers during the sale of the same by the said corporations and their agencies". Thus, rate of LPG domestic for supplies as per DBTL scheme exempted to the extent of Subsidy granted by GOI

7 In Jharkhand, VAT rate of domestic LPG remains same but for charging VAT, sale price of subsidized domestic LPG under DBTL scheme will be same as sale price of subsidized domestic LPG which does not come under DBTL scheme.

Table 9.29 : Actual Rate of Sales tax/ VAT and other taxes levied by State/UT Governments on major petroleum products as on 01 June 2016

Sl. no.	State/ Union Territory	Petrol	Diesel	PDS kerosene	Domestic LPG
States					
1	Andhra Pradesh	31% VAT + ₹ 4/litre VAT	22.25% VAT + ₹ 4/litre VAT	5% VAT	5% VAT
2	Arunachal Pradesh	20% VAT	12.50% VAT	4% VAT	4% VAT
3	Assam	27.50% VAT	16.50% VAT	2% VAT	4% VAT - ₹ 14/cylinder VAT rebate
4	Bihar	24.50% VAT	18% VAT	5% VAT	1% VAT
5	Chhattisgarh	1% entry tax + 25% VAT + ₹ 2/litre VAT	1% entry tax + 25% VAT + ₹ 1/litre VAT	4% VAT	Nil
6	Gujarat	24% VAT+ 4% Cess on town Rate & VAT	24% VAT + 4 % Cess on town Rate & VAT	Nil	5% VAT
7	Goa	20% VAT	22% VAT	5% VAT	Nil
8	Himachal Pradesh	27% VAT	16% VAT	Nil	4% VAT (refer note 1)
9	Haryana	25% VAT+5% additional tax on VAT	16.40% VAT+5% additional tax on VAT	Nil	Nil
10	Jharkhand	22% or ₹ 15/litre whichever is higher as VAT + ₹ 1000/KL cess	22% or ₹ 8.37/litre whichever is higher as VAT + ₹ 1000/KL cess	2% VAT	5% VAT (refer note 2)
11	Jammu & Kashmir	24% MST+ ₹ 3000/KL employment cess	16% MST+ ₹1000/KL employment cess	5% VAT	Nil
12	Kerala	31.80% sales tax+ ₹ 1/litre additional sales tax + 1% cess	24.52% sales tax+ ₹ 1/litre additional sales tax + 1% cess	5% VAT	5% VAT (refer note 3)
13	Karnataka	5% Entry tax+ 30% sales tax	5% Entry Tax+19% sales tax	5.50% VAT	1% VAT
14	Madhya Pradesh	1% entry tax + 31 % VAT + ₹3/litre VAT	1% entry Tax + 27% VAT + ₹ 1.50/litre VAT	5% VAT	2% entry tax+5 % VAT
15	Maharashtra	25% VAT+ ₹ 4500/KL additional tax	21% VAT + ₹ 2000/KL additional tax	3% VAT	3% VAT
16	Manipur	25% VAT	14.50% VAT	Nil	5 % VAT
17	Meghalaya	22% VAT + 2% surcharge	13.5% VAT +2% surcharge	Nil	Nil
18	Mizoram	20% VAT	12% VAT	Nil	1.79% VAT
19	Nagaland	23.5% VAT +5% surcharge	13.5% VAT+ 5% surcharge	5% VAT+5% surcharge	5% VAT+5% surcharge
20	Odisha	1% entry Tax + 26% VAT	1% entry Tax+ 26% VAT	1% entry Tax	1% entry Tax
21	Punjab	₹2000/KL cess +28% VAT+10% additional tax on VAT	₹1000/KL cess +13.40% VAT+10% additional tax on VAT	5.5% VAT+10% additional tax on VAT	4% VAT+10% additional tax on VAT
22	Rajasthan	30% VAT+₹ 1500/KL road development cess	22% VAT+ ₹ 1750/KL road development cess	Nil	Nil
23	Sikkim	27% VAT+ ₹ 3000/KL cess + ₹ 100/KL Sikkim consumer welfare fund	17.5% VAT + ₹ 2500/KL cess + ₹ 100/KL Sikkim consumer welfare fund	4.50% VAT	4.50% VAT
24	Tamil Nadu	27% VAT	21.43% VAT	5% VAT	Nil
25	Telangana	35.20% VAT	27% VAT	5% VAT	5% VAT
26	Tripura	20% VAT	13.50% VAT	Nil	1.50% VAT
27	West Bengal	25% or ₹ 13.12/litre whichever is higher as sales tax+ ₹ 1000/KL cess	17% or ₹ 7.70/litre whichever is higher as sales tax + ₹ 1000/KL cess - ₹ 290/KL sales tax rebate	Nil	Nil
28	Uttar Pradesh	26.80% or ₹ 16.74 per litre whichever is higher as VAT	17.48% or ₹ 9.41 per litre whichever is higher as VAT	4% VAT +1% additional tax on VAT	Nil
29	Uttarakhand	25% or ₹ 17/litre whichever is higher as VAT+ ₹ 250/KL cess	21% VAT or ₹ 9/litre whichever is higher as VAT + ₹ 500/KL cess	Nil	5% VAT (refer note 4)
Union territories					
30	Andaman & Nicobar Islands	Nil	Nil	Nil	Nil
31	Chandigarh	₹ 10/KL cess +24.74% VAT	₹ 10/KL cess + 16.40% VAT	5% VAT	Nil
32	Dadra & Nagar Haveli	20% VAT	15% VAT	5% VAT	5% VAT
33	Daman & Diu	20% VAT	15% VAT	5% VAT	5% VAT
34	Delhi	27% VAT	₹ 250/KL air ambience charges + 16.75% VAT	5% VAT	Nil
35	Lakshadweep	Nil	Nil	Nil	Nil
36	Puducherry	15% VAT	14% VAT	Nil	0.50% VAT for DBTL / 1 % VAT for Non-DBTL

Source: OMCs

Notes:

1. Himachal Pradesh has granted rebate on VAT whereby VAT is payable on selling price as reduced by GOI subsidy (DBTL).
2. VAT rate of domestic LPG remains same but for charging VAT, sale price of subsidized DOM LPG under DBTL scheme will be same as sale price of subsidized domestic LPG which does not come under DBTL scheme.
3. Rate of LPG Domestic for supplies as per DBTL scheme exempted to the extent of Subsidy granted by GOI.
4. VAT rebate on amount of subsidy granted by GOI, to seller of LPG for domestic use at every point of sale provided rebate is passed on to purchaser

Table 9.30 : Contribution of petroleum sector to exchequer

(₹ crore)

Particulars		2011-12	2012-13	2013-14	2014-15	2015-16
1. Contribution to Central exchequer						
A.	**Tax/ duties on crude oil & petroleum products**					
	Cess on crude oil	9046	16285	16183	15934	15470
	Royalty on crude oil / gas	4319	4366	4551	3858	4885
	Customs duty	10808	4540	5042	4767	7446
	Excise duty	68911	73310	77982	99184	178591
	Service tax	1080	1591	2092	2181	2837
	Others	225	247	241	295	307
	Sub total (A)	**94390**	**100339**	**106090**	**126219**	**209536**
B.	**Dividend to Government/ income tax etc.**					
	Corporate/ income tax	24634	21385	23326	23727	24642
	Dividend income to Central Government	10055	9266	9164	9197	10217
	Dividend distribution tax	2703	2269	2951	3500	4590
	Profit petroleum on exploration of oil/ gas	7384	9367	11369	9423	9457
	Sub total (B)	**44776**	**42287**	**46810**	**45847**	**48907**
Total contribution to Central exchequer (A+B)		**139165**	**142626**	**152900**	**172066**	**258443**
2.	**Contribution to State exchequer**					
	C. Tax/ duties on crude oil & petroleum products					
	Royalty on crude oil / gas	10990	13306	14493	14159	7932
	Sales tax/ VAT	100415	115036	129045	137157	142848
	Octroi/ duties (incl. electricity duty)	2986	3391	4156	3838	2712
	Entry tax / others	5567	4288	4748	5372	6622
	Sub total (C)	**119957**	**136021**	**152442**	**160526**	**160114**
	D. Dividend to Government/ direct tax etc.					
	Dividend income to state Government	20	14	18	28	95
	Sub total (D)	**20**	**14**	**18**	**28**	**95**
Total contribution to State exchequer (C+D)		**119977**	**136035**	**152460**	**160554**	**160209**
Total contribution of petroleum sector to exchequer (1+2)		**259143**	**278660**	**305360**	**332620**	**418652**

Notes:
1. Information as per details provided by oil companies.
2. Profit petroleum on exploration of oil/ gas as provided by MOPNG.

Table 9.31 : Contribution of taxes and duties on petroleum products to Central exchequer vis-à-vis payout by Government

(₹ crore)

Particulars	2011-12	2012-13	2013-14	2014-15	2015-16
Tax/ duties on petroleum products to Central exchequer (a)	94390	100339	106090	126219	209536
Payout by Government to OMCs					
Cash assistance by Government towards OMCs' under recoveries	83500	100000	70772	27308	10245
Subsidy on PDS kerosene and domestic LPG^	3000	2730	2580	0	0
Freight subsidy on PDS kerosne and domestic LPG^	23	23	21	23	0
Gas subsidy for North East^	458	627	625	661	660
Total DBTL subsidy claims (including permanent advance and project management expenditure)	0	0	3912	3971	22043
Total payout by Government (b)	**86981**	**103380**	**77910**	**31963**	**32948**
Net contribution to central exchequer (a-b)	**7409**	**-3041**	**28180**	**94256**	**176587**

^ Cash payout under the subsidy schemes is on payment basis.

Table 9.32 : State wise collection of sales tax/ VAT by petroleum sector

(₹ Crore)

Sl. no.	State/ Union Territory	2011-12	2012-13	2013-14	2014-15	2015-16
States						
1	Andhra Pradesh	10201	11282	12604	8777	7806
2	Arunachal Pradesh	42	39	54	56	54
3	Assam	1871	1948	2160	2268	2163
4	Bihar	2468	2790	2931	2885	3638
5	Chhattisgarh	1707	1987	2397	2645	2617
6	Goa	573	379	388	478	534
7	Gujarat	11896	13572	14610	15879	14701
8	Haryana	3489	3964	4591	5112	5976
9	Himachal Pradesh	163	182	204	234	263
10	Jammu & Kashmir	742	844	941	951	1004
11	Jharkhand	1240	1478	1825	2076	2476
12	Karnataka	6205	7215	7800	8668	8652
13	Kerala	4110	4515	5173	5378	6121
14	Madhya Pradesh	4545	5417	6232	6832	7631
15	Maharashtra	15092	17359	19141	19795	19417
16	Manipur	76	82	102	116	114
17	Meghalaya	4	2	3	2	1
18	Mizoram	44	60	44	58	53
19	Nagaland	55	60	64	83	80
20	Odisha	1888	2098	2520	2865	3027
21	Punjab	2705	3386	3853	4179	4907
22	Rajasthan	5268	6045	7396	8373	9211
23	Sikkim	43	48	66	74	98
24	Tamil Nadu	9312	11379	12297	12316	11004
25	Telangana	0	0	0	4527	6391
26	Tripura	137	159	160	180	197
27	Uttar Pradesh	8979	10344	11607	12579	14175
28	Uttarakhand	733	825	1049	1157	1221
29	West Bengal	4253	4818	5510	5563	5869
Union territories						
30	Andaman & Nicobar Islands	0	0	0	0	41
31	Chandigarh	69	71	74	84	75
32/ 33	Dadra and Nagar Haveli / Daman & Diu	64	84	115	149	152
34	Delhi	2420	2575	3108	2798	3158
35	Lakshadweep	0	0	0	0	0
36	Puducherry	19	27	29	22	18
	Total	**100415**	**115036**	**129045**	**137157**	**142848**

Source: Oil companies

Table 9.33 : Profit After Tax (PAT) of oil companies

(₹ Crore)

Companies	2011-12	2012-13	2013-14	2014-15	2015-16
PSU upstream companies					
ONGC	25123	20926	22095	17733	16004
OIL	3447	3589	2981	2510	2330
GAIL	3654	4022	4375	3039	2299
Total	**32224**	**28537**	**29451**	**23282**	**20633**
PSU downstream Oil Marketing Companies (OMCs)					
IOCL	3954	5005	7019	5273	10399
BPCL	1311	2643	4061	5085	7432
HPCL	911	905	1734	2733	3863
Total	**6176**	**8553**	**12814**	**13091**	**21694**
PSU stand alone refineries					
MRPL	909	(757)	601	(1712)	1148
CPCL	62	(1767)	(304)	(39)	771
NRL	184	144	371	718	1222
Total	**1154**	**(2380)**	**668**	**(1033)**	**3141**
PSU consultancy companies					
EIL	636	629	480	308	258
Total	**636**	**629**	**480**	**308**	**258**
Private sector companies					
RIL	20040	21003	21984	23566	27630
EOL	(1285)	(1180)	126	1522	*
Total	**18755**	**19823**	**22110**	**25088**	**27630**

Source: Published results/ information provided by oil companies.
*Not yet declared.

Table 9.34 : Financial details of oil companies

2014-15

	IOCL	BPCL	HPCL	ONGC	OIL	GAIL	MRPL	CPCL	NRL
									(₹ Crore)
Net sales / income from operation	436390	237905	206380	82126	9247	56569	57457	41847	9858
Profit Before Interest and Tax (PBIT)	11431	7999	4861	26558	4069	4646	(1749)	(339)	1171
Interest	3435	583	707	3	341	361	407	404	36
Tax	2722	2331	1421	8822	1219	1245	(444)	(703)	416
Profit After Tax (PAT)	5273	5085	2733	17733	2510	3039	(1712)	(39)	718
Net worth	67970	22467	16022	143623	21498	28888	5305	1655	3355
Borrowings (loan fund)	55248	13098	20335	1393	8341	9556	7865	5399	693
Ratios									
PAT as % of turnover (net sales)	1.2%	2.1%	1.3%	21.6%	27.1%	5.4%	-3.0%	-0.1%	7.3%
Debt (loan fund) to equity ratio	0.81	0.58	1.27	0.01	0.39	0.33	1.48	3.26	0.21
Earning Per Share (EPS)	28.91	70.32	80.72	20.73	41.76	23.96	(9.78)	(2.62)	9.76

2015-16

	IOCL	BPCL	HPCL	ONGC	OIL	GAIL	MRPL	CPCL	NRL
									(₹ Crore)
Net sales / income from operation	349321	189098	179281	77796	9265	51614	39632	25980	10029
Profit Before Interest and Tax (PBIT)	18840	11214	6378	23402	3810	3813	1751	1097	1905
Interest	3000	563	640	11	346	640	578	309	22
Tax	5440	3219	1875	7387	1133	874	25	17	661
Profit After Tax (PAT)	10399	7432	3863	16004	2330	2299	1148	771	1222
Net worth	73657	27159	18356	151023	22302	30314	6420	3297	3958
Borrowings (loan fund)	52469	15976	21337	0	9199	8118	6820	3560	498
Ratios									
PAT as % of turnover (net sales)	3.0%	3.9%	2.2%	20.6%	25.1%	4.5%	2.9%	3.0%	12.2%
Debt (loan fund) to equity ratio	0.71	0.59	1.16	0.00	0.41	0.27	1.06	1.08	0.13
Earning Per Share (EPS)	42.83	102.78	114.08	18.70	38.76	18.12	6.55	48.98	16.62

Source: Published results/ information provided by oil companies

Table 9.35 : Total subsidy on petroleum products & natural gas

(₹ crore)

Particulars	2011-12	2012-13	2013-14	2014-15	2015-16
Petrol	0	0	0	0	0
Diesel	81192	92061	62837	10935	0
PDS kerosene	27352	29410	30574	24799	11496
Domestic LPG	29997	39558	46458	36580	18
Total under-recoveries (A)	**138541**	**161029**	**139869**	**72314**	**11515**
PDS Kerosene and Domestic LPG Subsidy Scheme, 2002*	3000	2730	2580	0	0
Freight Subsidy (For Far-Flung Areas) Scheme, 2002*	23	23	21	23	0
Natural gas subsidy for North East*	458	627	625	661	660
Total fiscal subsidies (B)	**3481**	**3380**	**3226**	**684**	**660**
Total DBTL subsidy (claims)	0	0	3869	3971	16056
Permanent Advance (PA) / one time incentive*	0	0	0	0	5755
Project Management Expenditure (PME)*	0	0	43	0	233
Total DBTL related subsidies (C)	**0**	**0**	**3912**	**3971**	**22043**
Total subsidy/ under-recovery on petroleum products & natural gas (A+B+C)	**142022**	**164409**	**147007**	**76969**	**34218**

*on payment basis.

Table 9.36 : Under-recoveries and burden sharing

(₹ Crore)

Sl no.	Particulars	2011-12	2012-13	2013-14	2014-15	2015-16
A	**Under-recovery - product wise**	**138541**	**161029**	**139869**	**72314**	**11515**
	Petrol	0	0	0	0	0
	Disel	81192	92061	62837	10935	0
	Domestic LPG	29997	39558	46458	36580	18
	PDS Kerosene	27352	29410	30574	24799	11496
B	**Under-recovery - company wise**	**138541**	**161029**	**139869**	**72314**	**11515**
	IOCL	75469	85793	72938	39758	7757
	BPCL	32638	38990	34463	16141	1798
	HPCL	30434	36246	32468	16416	1960
C	**Government - cash assisstance -company wise**	**83500**	**100000**	**70772**	**27308**	**10245**
	(% of under-recovery)	60.3%	62.1%	50.6%	37.8%	89.0%
	IOCL	45486	53278	37182	14960	6885
	BPCL	19671	21897	18374	7290	1598
	HPCL	18343	24825	15215	5058	1761
D	**Upstream oil companies - discount on crude oil & product**	**55000**	**60000**	**67021**	**42822**	**1251**
	(% of under-recovery)	39.7%	37.3%	47.9%	59.2%	10.9%
	ONGC	(44466)	(49421)	(56384)	(36300)	(1096)
	OIL	(7352)	(7892)	(8737)	(5523)	(155)
	GAIL	(3183)	(2687)	(1900)	(1000)	0
	Total - discount given	**(55000)**	**(60000)**	**(67021)**	**(42822)**	**(1251)**
	IOCL	29961	31967	34674	23597	863
	BPCL	12957	16844	15577	8363	198
	HPCL	12082	11189	16771	10862	190
	Total - discount received	**55000**	**60000**	**67021**	**42822**	**1251**
E	**Borne by OMCs**	**41**	**1029**	**2076**	**2184**	**18**
	(% of under-recovery)	0.03%	0.6%	1.5%	3.0%	0.2%
	IOCL	22	548	1083	1201	9
	BPCL	10	249	512	487	1
	HPCL	9	232	482	496	8

Chapter-10

Miscellaneous

Table 10.1 : Average international Calorific Values of different fuels

A.	**Oil products**	**M Cals/tonne or K Cal/Kg**
	NGL	12135
	Kerosene	10638
	Motor Gasoline	11135
	Fuel Oil	10440
B.	**Natural gas production (average) - India**	**8000-9480 K cal/SCM**
C.	**India**	**M Cals/tonne or K Cal/Kg**
	Charcoal	6900
	Hard coal	5000
	Firewood	4750
	Lignite-Brown coal	2310

Source: Indian Petroleum & Natural Gas Statistics, MOP&NG
Conversion factor: 1 K Cal = 4.19 K Joules

Conversion factors

Table 10.2 : Weight to volume conversion

Product	Weight (MT)	Volume (KL)	BBL	To convert volume at 29.5° C to volume at 15°C multiply by
Petrol	1	1.4110	8.88	0.9830
Diesel	1	1.2100	7.61	0.9879
Kerosene	1	1.2850	8.08	0.9864
ATF	1	1.2880	8.10	0.9862
Light Diesel Oil	1	1.1720	7.37	0.9877
Furnace Oil	1	1.0710	6.74	0.9899
Crude Oil	1	1.1700	7.33	

Source: Indian Petroleum & Natural Gas Statistics / Petrol and Diesel are as per BS-IV norms

Table 10.3 : Volume conversion

1 US Bbl.	159 Litres
1 US Gallon	3.78 Litres
1 Kilo Litre (KL)	6.29 Bbl.
1 US Bbl.	42 Gallons
1 MBD (million barrels per day)	50 MMTPA

Table 10.4 : Contents of LPG & Natural Gas

Natural Gas	Contains 60-95 % Methane
LPG	Contains Propane (40%) & Butane (60%)

Table 10.5 : Natural gas conversions

1 SCM (Standard Cubic Meter)	= 1 cubic metre @ 1 atmosphere pressure and 15.56 ^{0}C	
1 Cubic Metre	= 35.31 Cubic feet	
1 BCM(Billion Cubic Metre) / Year of gas (consumption or production)	= 2.74 MMSCMD	365 Days a Year
1 TCF (Trillion Cubic Feet) of Gas Reserve	= 3.88 MMSCMD	100% Recoverable for 20 years @ 365 days / Annum)
1 MMTPA of LNG	=3.60 MMSCMD	Mol. Weight of 18 @ 365 days/Annum)
1 MT of LNG	=1314 SCM	Mol.Weight of 18
Gross Calorific Value (GCV)	10000 Kcal/ SCM	
Net Calorific Value (NCV)	90% of GCV	
1 Million BTU (MMBTU)	= 25.2 SCM	@10000 Kcal/SCM; 1 MMBTU= 252,000 Kcal)
Specific Gravity of Gas	=0.62	Molecular Weight of Dry Air=28.964 gm/mole)
Density of Gas	=0.76 Kg/SCM	Mol. Weight of Gas 18 gm/mol
Gas required for 1 MW of Power generation	=4541 SCM per Day	Station Heat Rate (SHR);~1720 Kcal/Kwh-NCV (50% Thermal Efficiency); N.Gas GCV-@10000Kcal/SCM
Power Generation from 1 MMSC-MD Gas	=220 MWH	Station Heat Rate (SHR);~1720 Kcal/Kwh-NCV (50% Thermal Efficiency); N.Gas GCV-@10000Kcal/SCM

Source: GAIL (India) Ltd.

Table 10.6 : Major end use of petroleum products

Product	Major end use
LPG	Domestic and auto fuel. Also for industrial application where technically essential.
Naphtha	Feedstock/ fuel for fertiliser units, feedstock for petrochemical sector and fuel for power plants.
MS	Fuel for passenger cars, taxies, two & three wheelers.
ATF	Fuel for aircrafts.
SKO	Fuel for cooking & lighting.
HSD	Fuel for transport sector (railways/ road), agriculture (tractors, pumpsets, threshers etc.) and captive power generation.
LDO	Fuel for agricultural pumpsets, small industrial units, start up fuel for power generation.
FO/LSHS	Secondary fuel for thermal power plants, fuel/ feedstock for fertiliser plants, industrial units.
Bitumen	Surfacing of roads.
Lubes	Lubrication for automotive and industrial applications.
Other products (Benzene, Toluene, MTO, LABFS, CBFS, Paraffin wax etc.)	Feedstock for value added products.

Information about key officers of MoP&NG

Department	Name (S/Shri)	Designation	Telephone No.	Fax No.
Secretary	**Kapil Dev Tripathi**	**Secretary**	**23383501**	**23070723**
			23383562	
	K P Muralidharan	Sr. PPS to Secretary	23383501/23383562	
Additional Secretary	**Ajay Prakash Sawhney**	**Additional Secretary**	**23381052**	**23386090**
	Manjit Singh	PPS to Additional Secretary	23381052	
Finance	**Anant Kumar Singh**	**Additional Secretary & FA**	**23381704**	**23074226**
	Ms Prasanna Rajan	PPS to AS & FA	23381704	
	Alok Chandra	**Advisor (FIN)**	23073165	23389804
	Ms Shikha Khurana	PS to Adv (FIN)	23073165	
	Ms Kiran Vasudeva	**DS (Fin)**	**23387467**	
E&S	**Ms Urvashi Sadhwani**	**Sr. Advisor**	23385823	23383752
	K S N Rao	PPS to Sr. Advisor	23385823	
	Ms Indrani Kaushal	**Economic Advisor**	**23383753**	
Exploration	**Amar Nath**	**Jt. Secretary (E)**	23381832	23070562
	V.K. Suman	PPS to JS (E)	23381832	
	Prashant Lokhande	**Dir (E.I/III)**	23073069	23070688
	Nalin Srivastava	**Dir (E.II)**	23386526	23074409
Refinery and Admn. Divn.	**Sandeep Poundrik**	**Joint Secretary (Refineries)**	**23386935**	**23382673**
	T Satish Kumar	PS to JS (R)	23386935	
	Ms Anuradha Chagti	**Director (Supply & Pricing)**	23383678	
	Ms Perin Devi	**Director (AV&CA)**	23386965	23383100
	Ajit Kumar	**DS (R)**	23387936	23383585
Marketing	**Ashutosh Jindal**	**Joint Secretary (M & GP)**	23382418	23384401/ 23383752
	Sampooran Singh	PPS to JS(M)	23382418	23384401/ 23383753
	Vijay Gopal Mangal	**DS(D & MC)**	23381029	
	K M Mahesh	**DS (LPG)**	23387404	23383100
	Diwakar Nath Misra	**Dir (GP)**	23388764	23383100
International Cooperation	**Sunjay Sudhir**	**Joint Secretary (IC)**	**23382583**	**23384401/23073475**
	Ms Suman Mahi	PPS to JS (IC)	23382418	23384401
	Praphullachandra Sharma	**DS (I/C)**	23383508	23383100
General	**Ms Sushma Rath**	**Joint Secretary (General)**	**23386407**	**23383585**
	Narender S Negi	PPS to JS (G)	23386407	

Information about key officers of PPAC

Department	Name (S/Shri)	Designation	Telephone No.	Fax No.
Director General's office	**Ms Atreyee Das**	**Director General**	**24361616**	**24361253**
	P R Nair	PS to Director General	24361081	24361253
Finance	**Rajiv Bakhshi**	**Director (Finance)**	**24360356/24306121**	**24364227**
	Ms Satbir Hira	PS to Director (F)	24360356/24306122	24364227
Demand & Economic Studies	**Rohit Dawar**	**Addl. Director (D&ES)**	**24306181**	**24361253**
Supply	**Ms B M Sujatha**	**Addl. Director I/C (S)**	**24360352 / 24306141**	**24361253**
Administration	**Sunil Kumar**	**Jt. Director I/C (HR&C)**	**24361717 / 24306111**	**24361253**
IT	**Ms Shalini Mehra**	**Jt. Director I/C (IT)**	**24306151**	**24361253**
Marketing	**R K Gupta**	**Jt. Director I/C (Mktg.)**	**24360489 / 24306171**	**24361253**
Gas	**R K Jaipuriyar**	**Jt. Director (Gas)**	**24306143**	**24361253**
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Guwahati Refinery

PPAC

Analysis • Knowledge • Information

Petroleum Planning & Analysis Cell

(Ministry of Petroleum & Natural Gas)

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