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READY RECKONER

Oil Industry Information at a Glance

Petroleum Planning & Analysis Cell

(Ministry of Petroleum & Natural Gas)

June 2018



Suggestions & Feedback

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

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Disclaimer

While every care is taken to check the accuracy of data & information included in the Ready Reckoner, PPAC would not be held responsible for any loss, damage etc. due to action taken by any one based on information contained in this publication.

Preface

The oil and gas sector in India is a vital catalyst to the economic growth of the country. As the nodal office for collection and dissemination of data on the oil and gas sector, PPAC constantly endeavors to ensure that complete, timely and accurate data is made available to stakeholders in the oil and gas value chain planners, policy-makers, academicians, analysts, market researchers and the industry.

PPAC's biannual Ready Reckoner provides a comprehensive source of data on the oil and gas industry. This edition contains the latest data/information for the financial year 2017-18 and also historical time series presented under 9 broad chapters for stakeholders to access the same on a single platform. The Ready Reckoner is also published on PPAC's website (http://ppac.gov.in) and on our mobile app-PPACE. The coverage of data in the print version and the mobile app has been restricted to relatively shorter time periods while longer historical data series has been provided on our website.

Publication of the Ready Reckoner is a concerted effort by all Divisions of PPAC and I would like to place on record my sincere appreciation of the diligent efforts of the officers and staff who have contributed to bring out the current edition. Cooperation of the oil and gas industry and organization is acknowledged for their timely inputs.

I trust that users will find this Ready Reckoner helpful for research, reference and other purposes. Efforts are continuously made to include more statistical information to make it useful for the stakeholders. PPAC welcomes feedback and suggestions for broadening the coverage and contents of the data being disseminated thought this publication.

Atreyee Das

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June 13, 2018

Petroleum Planning & Analysis Cell

(Ministry of Petroleum & Natural Gas)

Analysis • Knowledge • Information

Vision&Mission

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.

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Chapter -1

General

Table 1.1 : Selected indicators of the Indian economy

General

Sl. no.	Particulars	Source	Unit/ Base	2013-14	2014-15	2015-16	2016-17	2017-18 (P)
1	Population (as on 1st March 2011)	Census of India	Billion	1.2	-	-	-	-
2	GDP At constant (2011-12 Prices)	MoC&I	(GR.%)	6.4	7.4	8.2	7.1	6.7 PE
3	Agricultural production (foodgrains)	MoA	Million tonne	265.0	252.0	251.6	275.1 FE	279.5 3rd AE
			(GR.%)	3.1	-4.9	-0.2	9.4	1.6
4	Index of Industrial Production (Base: 2011-12)	MoSPI	(GR.%)	3.3	4.0	3.3	4.6	4.3
5	Imports	MoC&I	$ Billion	450.2	448.0	381.0	384.4	459.7
6	Exports	MoC&I	$ Billion	314.4	310.3	262.3	275.9	302.8
7	Trade balance	MoC&I	$ Billion	-135.8	-137.7	-118.7	-108.5	-156.8
8	Wholesale Price Index (all commodities) (average)	MoC&I	2011-12 = 100	112.5	113.9	109.7	111.6	115.2
9	All India Consumer Price Index (average):							
	i) Industrial workers	Labour Bureau, Govt. of India	2001=100	236.0	250.8	265.0	275.9	284.4
	ii) Agricultural labourers		1986-87=100	749.8	799.5	834.9	869.8	888.9
	iii) Rural labourers		1986-87=100	750.5	802.2	839.4	875.0	895.1
10	Foreign exchange reserves- Total#	RBI	$ Billion	303.7	341.4	355.6	370.0	424.4
11	Outstanding external liabilities (as of end of financial year)	MOF	₹ Crore	1,84,581	1,97,514	2,10,262	2,28,259	2,43,409 (RE)
12	Outstanding internal debt (as of end of financial year)	MOF	₹ Crore	54,84,548	60,44,707	66,91,409	72,07,503	79,89,245 (RE)
13	Central plan outlay	MOF	₹ Crore	6,03,573	4,20,882	-	-	-
14	Centrally Sponsored Schemes & other transfers	MOF	₹ Crore	-	-	3,41,630	3,91,496	4,76,509 (RE)
15	Gross fiscal deficit	MOF	%	-4.5	-4.1	-3.9	-3.5	-3.5 (RE)

Note : (P): Provisional; #2013-14-as on March 28, 2014, 2014-15-as on March 27, 2015, 2015-16-as on March 25, 2016, 2016-17-as on March 31, 2017, 2017-18-as on March 30, 2018; MoA: Ministry of Agriculture; MoF: Ministry of Finance; MoC&I: Ministry of Commerce & Industry; MoSPI: Ministry of Statistics and Programme Implementation; RBI: Reserve Bank of India; AE: Advance Estimates; RE: Revised Estimates; PE: Provisional Estimates; FE: Final Estimates

Petroleum

Sl. no.	Particulars	Source	Unit/ Base	2013-14	2014-15	2015-16	2016-17	2017-18 (P)
1	Crude oil production in India	ONGC/OIL/DGH	MMT	37.8	37.5	36.9	36.0	35.7
2	Consumption of petroleum products in India	OMCs/PPAC	MMT	158.4	165.5	184.7	194.6	204.9
3	Petroleum products production in India	Oil Cos	MMT	220.7	221.1	231.9	243.5	254.4
4	Imports & exports							
	Crude oil imports	Oil Cos	$ Billion	143.0	112.7	64.0	70.2	87.8
	Petroleum products imports	Oil Cos & DGCIS	$ Billion	12.5	12.1	10.0	10.6	13.4
	Total petroleum imports (crude oil + petroleum products)	Oil Cos & DGCIS	$ Billion	155.4	124.9	73.9	80.8	101.2
	Petroleum products exports	Oil Cos	$ Billion	60.7	47.3	27.1	29.0	34.9
5	Gross petroleum imports as % of India's gross imports in value terms	MOC&I/PPAC	%	34.5	27.9	19.4	21.0	21.7
6	Gross petroleum exports as % of India's gross exports in value terms	MOC&I/PPAC	%	19.3	15.2	10.3	10.5	11.5
7	Import dependency (based on consumption)	PPAC	%	77.3	78.3	80.6	81.7	82.8

Note : (P): Provisional, OMCs: Oil Marketing Companies, PPAC: Petroleum Planning & Analysis Cell

Natural gas

Sl. no.	Particulars	Source	Unit/ Base	2013-14	2014-15	2015-16	2016-17	2017-18 (P)
1	Gross production	ONGC/OIL/DGH	MMSCMD	97.0	92.2	88.1	87.4	89.5
2	Net production (net of flare and loss)	ONGC/OIL/DGH	MMSCMD	94.7	89.6	85.1	84.5	86.9
3	LNG import	LNG importing Cos	MMSCMD	47.1	50.8	58.4	67.6	72.1
4	Total consumption including internal use (Net production+ LNG import)		MMSCMD	141.8	140.4	143.5	152.1	159.1
5	Import dependency (based on consumption)	PPAC	%	33.2	36.2	40.7	44.5	45.3

Note : MMSCMD : Million Standard Cubic Meter per Day

Table 1.2 : Global energy consumption, 2017

Sl.no.	Country	Oil (Mtoe)	Natural Gas (Mtoe)	Coal (Mtoe)	Nuclear Energy (Mtoe)	Hydro Electricity (Mtoe)	Renewables (Mtoe)	Total Energy (Mtoe)
	World	4621.9	3156.0	3731.5	596.4	918.6	486.8	13511.2
	% Share	34.2	23.4	27.6	4.4	6.8	3.6	100.0
	Per capita consumption (Toe)	0.62	0.42	0.50	0.08	0.12	0.07	1.82
1	**China**	608.4	206.7	1892.6	56.2	261.5	106.7	3132.2
	% Share	19.4	6.6	60.4	1.8	8.3	3.4	100.0
	Per capita consumption (Toe)	0.44	0.15	1.37	0.04	0.19	0.08	2.27
2	**USA**	913.3	635.8	332.1	191.7	67.1	94.8	2234.9
	% Share	40.9	28.4	14.9	8.6	3.0	4.2	100.0
	Per capita consumption (Toe)	2.83	1.97	1.03	0.59	0.21	0.29	6.92
3	**India**	**222.1**	**46.6**	**424.0**	**8.5**	**30.7**	**21.8**	**753.7**
	% Share	**29.5**	**6.2**	**56.3**	**1.1**	**4.1**	**2.9**	**100.0**
	Per capita consumption (Toe)	**0.17**	**0.04**	**0.32**	**0.01**	**0.02**	**0.02**	**0.57**
4	**Russian Federation**	153.0	365.2	92.3	46.0	41.5	0.3	698.3
	% Share	21.9	52.3	13.2	6.6	5.9	0.04	100.0
	Per capita consumption (Toe)	1.06	2.53	0.64	0.32	0.29	0.002	4.84
5	**Japan**	188.3	100.7	120.5	6.6	17.9	22.4	456.4
	% Share	41.3	22.1	26.4	1.4	3.9	4.9	100.0
	Per capita consumption (Toe)	1.48	0.79	0.95	0.05	0.14	0.18	3.59
6	**Canada**	108.6	99.5	18.6	21.9	89.8	10.3	348.7
	% Share	31.1	28.5	5.3	6.3	25.8	3.0	100.0
	Per capita consumption (Toe)	2.99	2.74	0.51	0.60	2.48	0.28	9.62
7	**Germany**	119.8	77.5	71.3	17.2	4.5	44.8	335.1
	% Share	35.8	23.1	21.3	5.1	1.3	13.4	100.0
	Per capita consumption (Toe)	1.45	0.94	0.86	0.21	0.05	0.54	4.06
8	**South Korea**	129.3	42.4	86.3	33.6	0.7	3.6	295.9
	% Share	43.7	14.3	29.2	11.3	0.2	1.2	100.0
	Per capita consumption (Toe)	2.52	0.83	1.68	0.66	0.01	0.07	5.78
9	**Brazil**	135.6	33.0	16.5	3.6	83.6	22.2	294.4
	% Share	46.1	11.2	5.6	1.2	28.4	7.5	100.0
	Per capita consumption (Toe)	0.65	0.16	0.08	0.02	0.40	0.11	1.42
10	**Iran**	84.6	184.4	0.9	1.6	3.7	0.1	275.4
	% Share	30.7	67.0	0.3	0.6	1.3	0.05	100.0
	Per capita consumption (Toe)	1.05	2.30	0.01	0.02	0.05	0.002	3.43
11	**Saudi Arabia**	172.4	95.8	0.1	0.0	0.0	0.03	268.3
	% Share	64.2	35.7	0.04	-	-	0.01	100.0
	Per capita consumption (Toe)	5.34	2.97	0.003	-	-	0.001	8.31
12	**France**	79.7	38.5	9.1	90.1	11.1	9.4	237.9
	% Share	33.5	16.2	3.8	37.9	4.7	3.9	100.0
	Per capita consumption (Toe)	1.19	0.58	0.14	1.35	0.17	0.14	3.56
13	**United Kingdom**	76.3	67.7	9.0	15.9	1.3	21.0	191.3
	% Share	39.9	35.4	4.7	8.3	0.7	11.0	100.0
	Per capita consumption (Toe)	1.16	1.03	0.14	0.24	0.02	0.32	2.92
14	**Mexico**	86.8	75.3	13.1	2.5	7.2	4.4	189.3
	% Share	45.8	39.8	6.9	1.3	3.8	2.3	100.0
	Per capita consumption (Toe)	0.68	0.59	0.10	0.02	0.06	0.03	1.48
15	**Indonesia**	77.3	33.7	57.2	0.0	4.2	2.9	175.2
	% Share	44.1	19.2	32.6	-	2.4	1.7	100.0
	Per capita consumption (Toe)	0.30	0.13	0.22	-	0.02	0.01	0.67

Source: BP Statistical Review of World Energy, June 2018
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 database for 2016.
Mtoe: Million tonnes of oil equavalent, **Toe:** Tonnes of oil equivalent

Chapter -2

Exploration & Crude Production

Table 2.1 : World top 30 crude oil proved reserves countries

Sl.no.	Country	At end 2017		
		Thousand million tonnes	Thousand million barrels	Reserves /Production ratio
1	Venezuela	47.3	303.2	393.6
2	Saudi Arabia	36.6	266.2	61.0
3	Canada	27.2	168.9	95.8
4	Iran	21.6	157.2	86.5
5	Iraq	20.1	148.8	90.2
6	Russian Federation	14.5	106.2	25.8
7	Kuwait	14.0	101.5	91.9
8	United Arab Emirates	13.0	97.8	68.1
9	Libya	6.3	48.4	153.3
10	USA	6.0	50.0	10.5
11	Nigeria	5.1	37.5	51.6
12	Kazakhstan	3.9	30.0	44.8
13	China	3.5	25.7	18.3
14	Qatar	2.6	25.2	36.1
15	Brazil	1.9	12.8	12.8
16	Algeria	1.5	12.2	21.7
17	Angola	1.3	9.5	15.6
18	Ecuador	1.2	8.3	42.7
19	Mexico	1.0	7.2	8.9
20	Norway	1.0	7.9	11.0
21	Azerbaijan	1.0	7.0	24.1
22	Oman	0.7	5.4	15.2
23	**India**	**0.6**	**4.5**	**14.4**
24	Vietnam	0.6	4.4	36.0
25	South Sudan	0.5	3.5	88.3
26	Malaysia	0.5	3.6	14.1
27	Australia	0.4	4.0	31.6
28	Indonesia	0.4	3.2	9.2
29	Egypt	0.4	3.3	13.8
30	Yemen	0.4	3.0	156.6
	Sub total	**235.2**	**1666.3**	
	Others	4.1	30.3	
	Total World	**239.3**	**1696.6**	**50.2**
	of which: OECD	36.3	242.6	27.8
	Non-OECD	203.0	1454.0	57.9
	OPEC	171.0	1218.8	84.7
	Non-OPEC	68.3	477.8	24.6
	European Union	0.6	4.8	9.0
	Canadian oil sands: Total	26.6	163.4	
	of which: Under active development	3.6	22.1	
	Venezuela: Orinoco Belt	35.9	224.0	

Source: BP Statistical review of World Energy, June 2018.

Note:

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.

Reserves include gas condensate and natural gas liquids (NGLs) as well as crude oil.

Table 2.2 : World top 30 crude oil producing countries, 2017

Sl.no.	Country	Production*	
		Million tonnes	Million barrels daily
1	USA	571.0	13.1
2	Saudi Arabia	561.7	12.0
3	Russian Federation	554.4	11.3
4	Canada	236.3	4.8
5	Iran	234.2	5.0
6	Iraq	221.5	4.5
7	China	191.5	3.8
8	United Arab Emirates	176.3	3.9
9	Kuwait	146.0	3.0
10	Brazil	142.7	2.7
11	Mexico	109.5	2.2
12	Venezuela	108.3	2.1
13	Nigeria	95.3	2.0
14	Norway	88.8	2.0
15	Kazakhstan	86.9	1.8
16	Angola	81.8	1.7
17	Qatar	79.9	1.9
18	Algeria	66.6	1.5
19	Oman	47.6	1.0
20	United Kingdom	46.6	1.0
21	Indonesia	46.4	0.9
22	Colombia	44.8	0.9
23	Libya	40.8	0.9
24	**India**	**40.4**	**0.9**
25	Azerbaijan	39.2	0.8
26	Egypt	32.2	0.7
27	Malaysia	32.2	0.7
28	Ecuador	28.5	0.5
29	Argentina	27.4	0.6
30	Thailand	16.8	0.5
	Sub total	**4195.4**	**88.6**
	Others	191.8	4.0
	Total World	**4387.1**	**92.6**
	of which: OECD	1090.3	23.9
	Non-OECD	3296.8	68.7
	OPEC	1860.3	39.4
	Non-OPEC	2526.9	53.2
	European Union	69.2	1.5

Source: BP Statistical Review of World Energy, June 2018.
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 : World top 30 crude oil consuming countries, 2017

Sl. no.	Country	Consumption *	
		Million tonnes	Million barrels daily
1	USA	870.1	19.9
2	China	595.5	12.8
3	**India**	**221.8**	**4.7**
4	Japan	181.3	4.0
5	Saudi Arabia	165.8	3.9
6	Russian Federation	147.8	3.2
7	Brazil	139.6	3.0
8	South Korea	122.6	2.8
9	Germany	114.7	2.4
10	Canada	103.6	2.4
11	Mexico	82.7	1.9
12	Iran	81.0	1.8
13	France	76.9	1.6
14	Singapore	74.8	1.4
15	Indonesia	73.7	1.7
16	United Kingdom	73.2	1.6
17	Spain	63.6	1.3
18	Thailand	60.6	1.4
19	Italy	58.6	1.2
20	Australia	50.2	1.1
21	Turkey	48.3	1.0
22	Taiwan	47.2	1.1
23	United Arab Emirates	43.1	1.0
24	Netherlands	39.6	0.8
25	Iraq	38.4	0.8
26	Egypt	38.4	0.8
27	Malaysia	35.1	0.8
28	Belgium	31.2	0.7
29	Argentina	30.9	0.7
30	Poland	30.4	0.7
	Sub total	**3740.3**	**82.6**
	Others	729.4	15.6
	Total World	**4469.7**	**98.2**
	of which: OECD	2114.9	47.0
	Non-OECD	2354.8	51.2
	European Union	624.1	13.2

Source: BP Statistical Review of World Energy, June 2018
Note:*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.
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.

Table 2.4 : World top 30 refining capacity* countries

(Thousand barrels daily)

Sl.no.	Country	2007	2017	Addition	% Change
1	USA	17594	18567	973	5.5
2	China	8737	14513	5776	66.1
3	Russian Federation	5471	6584	1113	20.3
4	**India**	**2983**	**4972**	**1988**	**66.6**
5	Japan	4650	3343	-1307	-28.1
6	South Korea	2679	3246	567	21.2
7	Saudi Arabia	2107	2821	714	33.9
8	Brazil	1964	2285	321	16.3
9	Iran	1772	2105	333	18.8
10	Germany	2390	2069	-322	-13.5
11	Canada	1907	1968	62	3.2
12	Italy	2377	1900	-477	-20.1
13	Spain	1362	1562	201	14.7
14	Mexico	1463	1546	83	5.6
15	Singapore	1427	1514	87	6.1
16	Venezuela	1303	1303	0	0.0
17	Netherlands	1236	1294	57	4.6
18	France	1962	1245	-717	-36.5
19	Thailand	1100	1235	135	12.3
20	United Kingdom	1819	1227	-592	-32.6
21	United Arab Emirates	625	1147	522	83.5
22	Indonesia	1094	1111	16	1.5
23	Taiwan	1197	1083	-114	-9.5
24	Iraq	738	919	181	24.5
25	Egypt	810	810	0	0.0
26	Belgium	781	776	-5	-0.6
27	Kuwait	936	736	-200	-21.4
28	Argentina	628	657	29	4.6
29	Algeria	443	651	208	47.0
30	Malaysia	534	625	91	17.0
	Sub total	**74090**	**83813**	**9723**	**13.1**
	Others	14573	14327	-246	-1.7
	Total World	**88663**	**98139**	**9476**	**10.7**
	of which: OECD	45524	43940	-1584	-3.5
	Non-OECD	43139	54199	11060	25.6
	European Union	15790	13970	-1820	-11.5

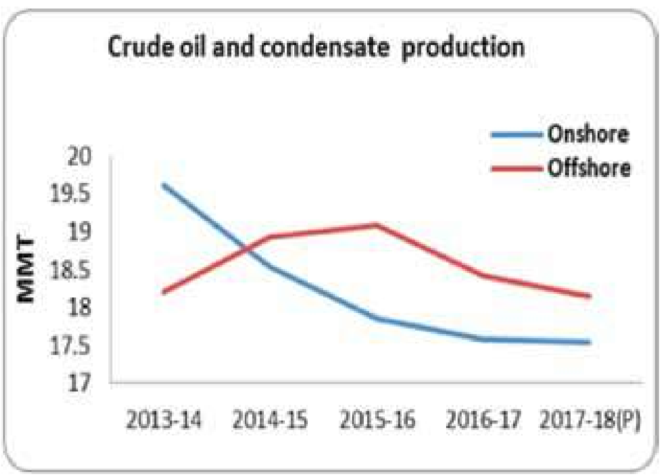
Source: BP Statistical Review of World Energy, June 2018 which includes data from ICIS.
Note: *Atmospheric distillation capacity at year end on a calender-day basis.

Table 2.5 : Indigenous crude oil production

(Million metric tonne)

Particulars	2013-14	2014-15	2015-16	2016-17	2017-18 (P)
PSU companies					
ONGC	20.4	20.8	21.1	20.9	20.8
OIL	3.5	3.4	3.2	3.3	3.4
PSU total	**23.9**	**24.2**	**24.3**	**24.1**	**24.2**
PSU total (crore barrels)	**17.5**	**17.8**	**17.8**	**17.7**	**17.7**
Under PSC contracts					
Panna / Mukta	1.0	0.9	0.9	0.8	0.7
PY-3	0.0	0.0	0.0	0.0	
Ravva	1.0	1.1	1.0	0.8	0.7
Kharsang	0.1	0.1	0.1	0.0	0.0
Gujarat- on shore	0.1	0.1	0.1	0.1	0.1
Gujarat- off shore	0.4	0.4	0.4	0.4	0.4
KG-DWN-98/3(M.A.Oil)	0.2	0.2	0.2	0.1	0.1
CY-ONN-2002/2			0.01	0.05	0.08
RJ-ON-90/1(Mangala)	9.1	8.8	8.5	8.0	7.7
PSC total	**12.0**	**11.7**	**11.2**	**10.4**	**9.9**
PSC total (crore barrels)	**8.8**	**8.5**	**8.2**	**7.6**	**7.2**
Total crude oil	**35.9**	**35.9**	**35.5**	**34.5**	**34.0**
Condensate	1.9	1.6	1.4	1.5	1.6
Total (crude oil + condensate)	**37.8**	**37.5**	**36.9**	**36.0**	**35.7**
Total (crude oil + condensate) (crore barrels)	**27.7**	**27.5**	**27.1**	**26.4**	**26.2**

Source: Oil Companies and DGH



- The percentage share of PSU fields has consistently increased from 68.1% to 71.8% with highest production coming from offshore Mumbai High fields which contributed an average 33.8% in total indigenous crude oil and condensate production during the last five years.
- Mangala field in Rajasthan was the highest producing field among PSC fields with an average contribution of 23.2% in total indigenous crude oil and condensate production during the last five years.
- OIL has started production of heavy oils from Rajasthan field during 2017-18.

Table 2.6 : Self sufficiency in petroleum products

(Million metric tonne)

Particulars	2013-14	2014-15	2015-16	2016-17	2017-18 (P)
i) Indigenous crude oil processing	**33.9**	**34.2**	**34.1**	**33.5**	**32.8**
a) Products from indigeneous crude	31.6	32.0	31.8	31.3	30.6
b) Products from fractionators (including LPG and Gas)	4.3	4.0	4.0	4.3	4.6
ii) Total production from indigenous crude, condensate (a+b)	**35.9**	**35.9**	**35.8**	**35.6**	**35.2**
iii) Total domestic consumption	**158.4**	**165.5**	**184.7**	**194.6**	**204.9**
Percentage of self sufficiency (ii/iii)	**22.7%**	**21.7%**	**19.4%**	**18.3%**	**17.2%**

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 : Status of blocks under NELP (as on 01.04.2018)

Round	Offered	Awarded				Relinquished				Operational			
		Deep water	Shallow water	Onland	Total	Deep water	Shallow water	Onland	Total	Deep water	Shallow water	Onland	Total
NELP-I	48	7	16	1	24	5	15	1	21	2	1	0	3
NELP-II	25	8	8	7	23	8	7	5	20	0	1	2	3
NELP-III	27	9	6	8	23	9	5	5	19	0	1	3	4
NELP-IV	24	10		10	20	10	0	6	16	0	0	4	4
NELP-V	20	6	2	12	20	6	1	8	15	0	1	4	5
NELP-VI	55	21	6	25	52	21	3	18	42	0	3	7	10
NELP-VII	57	11	7	23	41	11	4	14	29	0	3	9	12
NELP-VIII	70	8	11	13	32	8	6	8	22	0	5	5	10
NELP-IX	34	1	3	15	19	1	2	1	4	0	1	14	15
TOTAL	**360**	**81**	**59**	**114**	**254**	**79**	**43**	**66**	**188**	**2**	**16**	**48**	**66**

Source: DGH

Table 2.8 : Hydrocarbon reserves in India

(Million metric tonne)

Details of reserves in India as of 01.04.2017	Initial in place			Ultimate reserves		
	Oil	Gas	O+OEG	Oil	Gas	O+OEG
ONGC	5350	2527	7878	1520	1344	2864
OIL	807	374	1133	249	213	433
Pvt./JV	1008	1467	2476	228	819	1046
Total	**7165**	**4369**	**11486**	**1997**	**2375**	**4343**
	Accretion of initial in place			**Accretion ultimate reserves**		
ONGC	64	54	118	13	30	43
OIL	7	8	14	1	7	8
Pvt./JV	11	104	116	3	50	52
Total	**83**	**166**	**248**	**17**	**87**	**102**

Source: DGH
Note: O+OEG: Oil and Oil Equivalent of Gas

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

Year	2013-14	2014-15	2015-16	2016-17	2017-18 (P)
Total domestic production	73.2	71.1	69.2	67.9	68.3
Overseas production (MMTOE)	8.8	9.8	10.1	16.1	19.6
Overseas production as percentage of domestic production	12.1	13.8	14.6	23.8	28.7

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	26,000	Sq.KM
Blocks awarded*	33	Nos.
Commercial production of CBM Gas (April 2017 - March 2018)	2.01	MMSCMD

*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.
Source : DGH

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

Policy Guidelines for Exploration and exploitation of Shale gas and oil	Shale gas policy was announced in October 2013. ONGC and Oil India Limited (OIL) have been allotted 50 and 6 blocks respectively for carrying out Phase-I shale gas assessment studies.
Oil India Limited (OIL): Activities during 2017-18	OIL was granted permission for shale gas/oil exploration in six nominated blocks - one in Rajasthan, two in Arunachal Pradesh and three in Assam with an effective time period of 3 years under Phase-I. Activities carried out in each block during the year 2017-18 are as follows: **Jaisalmer PML, Rajasthan:** Evaluation of the conventional core recovered from well DND-28 within Baisakhi - Bedeshir shale formation has been completed. Evaluation results indicate poor shale prospectivity within Baisakhi - Bedeshir formation. Core evaluation report has been submitted to DGH. **Dibrugarh PML block, Assam:** Pilot hole/well Sologuri-02 in Dibrugarh Extn. PML adjacent to the Dibrugarh PML block boundary has been completed. About 111.5 m of conventional core was acquired from Kopili formation and Lakadong+Therria target shale section. Core preservation, log based cluster analysis, canister desorption, crushed gas analysis, grain density, rock evaluation, adsorption isotherm and geo-mechanical study has been completed. Evaluation of shale prospectively based on the study results is in progress. **Dumduma PML block, Assam:** Pilot hole South Tinali-05 has been completed. About 81.84 m of conventional core was acquired within Barail Coal Shale sequence. Core preservation, log based cluster analysis, canister desorption, crushed gas analysis, grain density, rock evaluation and core-stabbing were completed. Adsorption isotherm, Geo-mechanical study and evaluation of shale potentiality are in progress. **Chabua PML block, Assam:** Pilot hole Matimekhana-05 has been completed within Kopili target shale section. About 110.12 m of conventional core was acquired from Kopili target shale section. Core preservation and canister desorption has been completed. **Jairampur Extn. PEL and Deomali PEL, Arunachal Pradesh:** OIL has identified two locations in Deomali PEL for acquiring extensive amount of conventional core against the target shale of Upper Tikak Partbat and Disang shales respectively for shale gas/oil analysis.
Oil and Natural Gas Corporation Limited (ONGC): Activities during 2017-18	Environmental Clearance (EC) for shale exploratory drilling: EC for KG and Cambay basin was received from MOEF&CC in June 2017 and March 2018 respectively. Drilling: KG Basin: Exclusive shale well WGSGA in West Godavari Block, to test Bottom Transgressive Unit, was spudded and drilled down to 2925m. Two cores of 9m each have been taken in Raghavapuram shale. Hydro-fracturing: Hydro fracturing in two of the identified zones in Gandhar-708 (GNSGA) and GN-712 (GNSGB was carried out. During hydro-fracturing, proppant was successfully placed. Assessment Reports: Block wise status report for Cambay, KG, Cauvery and Assam-Arakan basin has been submitted to DGH and other agencies in July- September 2017. Contracts: 1. Coring contract for shale exploration for three years has been awarded . 2. Hiring of services for core handling, lab studies, integration and assessment of shale wells was awarded for three years.

Source: DGH

Chapter -3

Natural Gas

Table 3.1 : World top 30 natural gas reserves countries

(Billion cubic metre)

Sl. no.	Country	2016	2017
1	Russian Federation	34833	34970
2	Iran	33215	33215
3	Qatar	24915	24915
4	Turkmenistan	19486	19486
5	USA	8737	8737
6	Saudi Arabia	8035	8035
7	Venezuela	6371	6371
8	United Arab Emirates	5939	5939
9	China	5479	5479
10	Nigeria	5201	5201
11	Algeria	4335	4335
12	Australia	3634	3634
13	Iraq	3509	3509
14	Indonesia	2909	2914
15	Malaysia	2737	2737
16	Canada	1996	1883
17	Egypt	1777	1777
18	Norway	1750	1716
19	Kuwait	1695	1695
20	Libya	1430	1430
21	Azerbaijan	1319	1319
22	**India**	**1181**	**1241**
23	Uzbekistan	1211	1211
24	Myanmar	1168	1168
25	Kazakhstan	1093	1144
26	Ukraine	1050	1050
27	Oman	664	664
27	Netherlands	654	654
29	Vietnam	646	646
30	Israel	166	456
	Sub total	**187136**	**187531**
	Others	5956	5920
	Total World	**193092**	**193452**
	of which: OECD	17663	17809
	Non-OECD	175428	175643
	European Union	1180	1181
	CIS	59027	59214

Source: BP Statistical Review of World Energy, June 2018

Table 3.2 : World top 30 natural gas producing countries

(Billion cubic metre)

Sl. no.	Country	2016	2017
1	USA	729.3	734.5
2	Russian Federation	589.3	635.6
3	Iran	203.2	223.9
4	Canada	171.6	176.3
5	Qatar	177.0	175.7
6	China	137.9	149.2
7	Norway	115.8	123.2
8	Australia	96.4	113.5
9	Saudi Arabia	105.3	111.4
10	Algeria	91.4	91.2
11	Malaysia	75.6	78.4
12	Indonesia	70.7	68.0
13	Turkmenistan	66.9	62.0
14	United Arab Emirates	59.6	60.4
15	Uzbekistan	53.1	53.4
16	Egypt	40.3	49.0
17	Nigeria	42.6	47.2
18	United Kingdom	41.8	41.9
19	Mexico	43.7	40.7
20	Thailand	40.4	38.7
21	Venezuela	38.0	37.4
22	Argentina	37.3	37.1
23	Netherlands	42.0	36.6
24	Pakistan	34.7	34.7
25	Trinidad & Tobago	33.5	33.8
26	Oman	31.4	32.3
27	**India**	**27.3**	**28.5**
28	Brazil	24.5	27.5
29	Kazakhstan	22.9	27.1
30	Bangladesh	26.5	26.6
	Sub total	**3270.1**	**3396.0**
	Others	279.8	284.4
	Total World	**3549.8**	**3680.4**
	of which: OECD	1286.6	1313.6
	Non-OECD	2263.2	2366.8
	European Union	121.8	117.8
	CIS	769.8	815.5

Source: BP Statistical Review of World Energy, June 2018

Table 3.3 : World top 30 natural gas consuming countries

(Billion cubic metre)

Sl. no.	Country	2016	2017
1	USA	750.3	739.5
2	Russian Federation	420.2	424.8
3	China	209.4	240.4
4	Iran	201.4	214.4
5	Japan	116.4	117.1
6	Canada	109.5	115.7
7	Saudi Arabia	105.3	111.4
8	Germany	84.9	90.2
9	Mexico	91.8	87.6
10	United Kingdom	81.0	78.8
11	United Arab Emirates	72.5	72.2
12	Italy	68.0	72.1
13	Egypt	49.4	56.0
14	**India**	**50.8**	**54.2**
15	Turkey	44.4	51.7
16	Thailand	50.6	50.1
17	South Korea	47.6	49.4
18	Argentina	48.3	48.5
19	Qatar	43.1	47.4
20	France	44.6	44.7
21	Malaysia	41.9	42.8
22	Australia	41.7	41.9
23	Uzbekistan	41.6	41.6
24	Pakistan	38.3	40.7
25	Indonesia	38.3	39.2
26	Algeria	38.6	38.9
27	Brazil	37.7	38.3
28	Venezuela	38.3	37.6
29	Netherlands	34.5	36.1
30	Spain	29.1	32.0
	Sub total	**3069.6**	**3155.2**
	Others	466.1	515.2
	Total World	**3535.7**	**3670.4**
	of which: OECD	1660.0	1677.6
	Non-OECD	1914.2	1992.8
	European Union	448.8	466.8
	CIS	572.9	574.6

Source: BP Statistical Review of World Energy, June 2018

Table 3.4 : Natural gas at a glance

(MMSCMD)

Particulars	2013-14	2014-15	2015-16	2016-17	2017-18 (P)
Gross production	97.0	92.2	88.1	87.4	89.5
Net availability (net of flare and loss)	94.7	89.6	85.1	84.5	86.9
LNG import	47.1	50.8	58.4	67.6	72.1
Total consumption including internal consumption (Net availability + LNG import)	141.8	140.4	143.5	152.1	159.1
Total consumption (in BCM)	51.8	51.2	52.5	55.5	58.2
Total consumption (in MMSCM)	51757	51238	52517	55534	58159

Table 3.5 : Natural gas production

(MMSCMD)

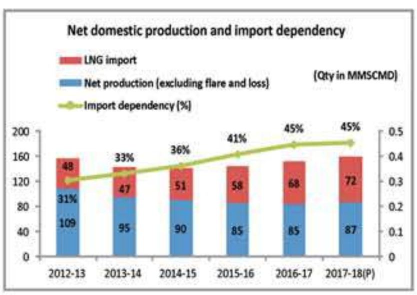
		2013-14	2014-15	2015-16	2016-17	2017-18 (P)
ONGC						
A)	**Gross production**	**63.8**	**60.3**	**57.9**	**60.5**	**64.19**
B)	Flared	1.4	1.7	1.8	1.5	1.23
C)	Internal Use*	12.2	12.6	12.2	12.3	12.13
D) =A-B-C	**Net production for sale**	**50.2**	**46.0**	**43.9**	**46.7**	**50.83**
Oil India Limited						
A)	**Gross production**	**7.2**	**7.5**	**7.8**	**8.0**	**7.89**
B)	Flared	0.4	0.4	0.3	0.3	0.31
C)	Internal use*	1.1	1.1	1.1	1.1	1.11
D) =A-B-C	**Net production for sale**	**5.7**	**6.0**	**6.3**	**6.6**	**6.48**
PSC/JVs fields						
A)	**Gross production**	**26.0**	**24.4**	**22.5**	**18.8**	**17.37**
B)	Flared	0.3	0.3	0.6	0.9	0.71
C)	Internal use	2.1	2.5	2.7	2.6	2.69
D)	Loss	0.2	0.3	0.3	0.2	0.24
E) =A-B-C-D	**Net production for sale**	**23.5**	**21.3**	**18.9**	**15.1**	**13.72**
Grand Total						
A)	**Gross production**	**97.0**	**92.2**	**88.1**	**87.4**	**89.45**
B)	Flared	2.1	2.4	2.8	2.7	2.26
C)	Internal use	15.3	16.2	15.9	16.1	15.92
D)	Loss	0.2	0.3	0.3	0.2	0.24
E) =A-B-C-D	**Net production for sale**	**79.4**	**73.4**	**69.1**	**68.5**	**71.03**

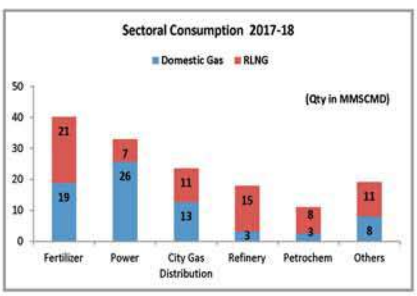
* Includes Loss

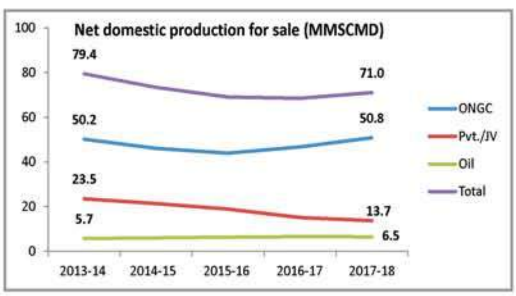
Source: Domestic Gas Producers / DGH / LNG Importing companies

Note: LNG import data in Million Metric Tonne (MMT), converted to MMSCM; 1MMT=1325 MMSCM

BCM: Billion Cubic Meter; MMSCMD: Million Standard Cubic Meter per Day





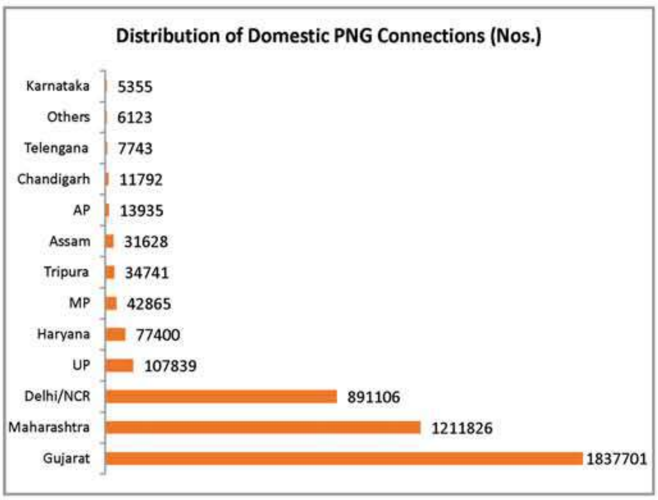


1. Net domestic production of natural gas declined 6.5% from 2012-13 to 2016-17 on a compounded basis while LNG imports have risen to fill the gap.
2. Total consumption of gas has risen steadily post 2014-15, after a steep fall was witnessed in production due to decline from KG D6 field.
3. As a result, import dependency on natural gas has risen from 33% in 2013-14 to 45% in 2017-18.

Table No. 3.6 : PNG data as on 01.04.2018

Sl. no.	State	Geographical area covered	Entity	PNG connections		
				Domestic	Commercial	Industrial
1	Haryana	Sonipat, Faridabad, Gurgaon, Panipat, Rewari	Gail Gas Limited, Adani Gas Limited, Haryana City Gas Distribution Ltd, Indraprastha Gas Limited, Indian Oil-Adani Gas Pvt. Ltd.	71991	236	345
2	Andhra Pradesh	Kakinada, Vijayawada, Kovvur & Nidadavole (West Godavari), Rajahmundry & Ravulapalem (East Godavari District)	Bhagyanagar Gas Limited, Godavari Gas Pvt.Ltd.	13935	53	1
3	Telangana	Hyderabad	Bhagyanagar Gas Limited	7743	9	5
4	Assam	Tinsukia, Dibrugarh, Sivasagar, Jorhat, Golaghat	Assam Gas Company Limited	31628	1061	405
5	Gujarat	Gandhinagar, Mehsana, Sabarkantha, Patan, Nadiad, Halol, Hazira, Rajkot, Khambhat, Palej, Valsad, Navsari, Surendernagar, Surat, Ankleshwar & Bhavnagar, Vadodara, Ahmedabad, Ahmedabad Urban, Anand, Palanpur	Sabarmati Gas Limited, Gujarat Gas Limited , Adani Gas Limited, Vadodara Gas Ltd, Hindustan Petroleum Corpn. Ltd., Charotar Gas Sahakari Mandali Ltd., IRM Energy	1837701	17835	4551
6	Madhya Pradesh	Dewas, Vijaipur, Gwalior, Indore including Ujjain, Pithampur	Gail Gas Limited, Aavantika Gas Limited	39539	94	126
7	Maharashtra	Pune City including Pimpri Chinchwad along with adjoining contiguous areas of Hinjewadi, Chakan & Talegaon GA, Mumbai , Greater Mumbai including Thane City, Mira Bhayender, Navi Mumbai, Ambernath, Bhiwandi, Kalyan, Dombivli, Badlapur, Ulhasnagar, Panvel, Kharghar & Taloja, Raigarh District, Thane	Maharashtra Natural Gas Limited, Mahanagar Gas Limited, Gujarat Gas Limited	1211826	3802	225
8	Delhi/NCR	National Capital Territory of Delhi (including Noida & Ghaziabad)	Indraprastha Gas Limited	891106	2173	1216
9	Rajasthan	Kota	Rajasthan State Gas Limited	307	4	15
10	Tripura	Agartala	Tripura Natural Gas Company Limited	34741	415	49
11	Karnataka	Bengaluru	Gail Gas Limited	5355	52	22
12	Uttar Pradesh	Meerut, Mathura, Agra, Kanpur, Bareilly, Lucknow, Moradabad, Firozabad (TTZ), Khurja, Dibiyapur, Allahabad	Gail Gas Limited, Sanwariya Gas, Green Gas Limited , Central U.P. Gas Limited, Green Gas Limited, Siti Energy Limited, Adani Gas Limited, Indian Oil-Adani Gas Pvt. Ltd.	101804	372	629
13	Chandigarh	Chandigarh	Indian Oil-Adani Gas Pvt. Ltd.	11792	0	0
14	Kerala	Ernakulam	Indian Oil-Adani Gas Pvt. Ltd.	3126	3	0
15	Dadra & Nagar Haveli	UT of Dadra & Nagar Haveli	Gujarat Gas Limited	463	9	8
16	Daman and Diu	Daman and Diu	Indian Oil-Adani Gas Pvt. Ltd.	2140	13	3
17	Odisha	Bhubaneshwar	GAIL (India) Ltd.	87	0	0
18	Punjab	Fatehgarh Sahib	IRM Energy Pvt. Ltd.	0	0	1
			Grand Total	**4265284**	**26131**	**7601**

Source : CGD companies



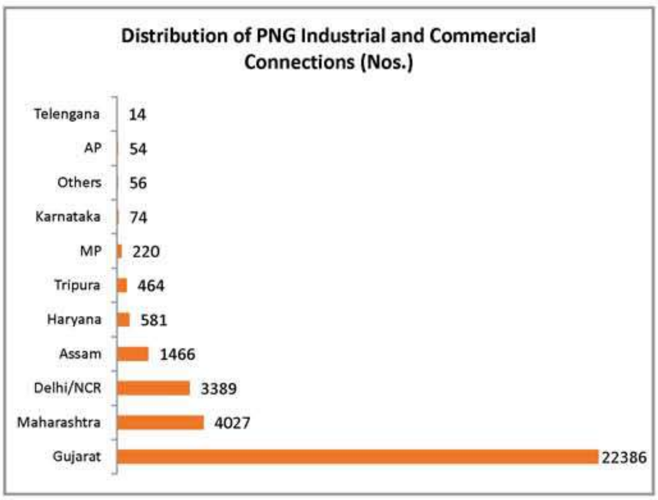
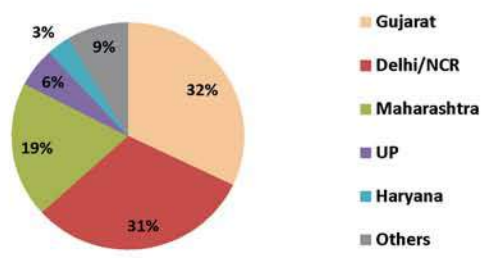


Table 3.7: CNG activities in India as on 01.04.2018

(Sales in TMT)

State	Company name	No. of companies	2013-14	2014-15	2015-16	2016-17	2017-18 (P)
Gujarat	Sabarmati Gas Ltd, Gujarat Gas Ltd, Adani Gas Ltd, Vadodara Gas Ltd, Hindustan Petroleum Corporation Ltd, Charotar Gas Sahakari Mandal Ltd, IRM Energy Ltd.	7	464	476	503	546	612
Delhi	Indraprastha Gas Ltd. (IGL), New Delhi	1	698	717	738	804	1016
Rajasthan	Rajasthan State Gas Limited	1	2	3	4	4	5
Maharashtra	Mahanagar Gas Ltd, Maharashtra Natural Gas Ltd, Gujarat Gas Limited	3	476	531	565	593	630
Andhra Pradesh / Telangana	Bhagyanagar Gas Ltd.(BGL), Godavari Gas Pvt. Ltd., Megha Engineering & Infrastructure Ltd	3	25	26	27	29	32
Uttar Pradesh	Green Gas Ltd., Lucknow, Central UP Gas Ltd., Kanpur, Siti Energy Ltd., GAIL Gas Ltd., Sanwariya Gas Ltd., Indraprastha Gas Ltd., Adani Gas Ltd., Indian Oil-Adani Gas Pvt. Ltd.	8	163	185	212	245	153
Tripura	Tripura Natural Gas Co. Ltd. (TNGCL), Agartala	1	7	10	11	12	13
Madhya Pradesh	Aavantika Gas Ltd. and GAIL Gas Ltd.	2	16	17	19	22	25
Haryana	Haryana City Gas Distribution Ltd, Adani Gas Limited, GAIL Gas Ltd., Indraprastha Gas Ltd.	4	78	72	75	109	144
West Bengal	Great Eastern Energy Corporation Limited	1	1	1	1	2	2
Karnataka	GAIL Gas Ltd.	1	0	0	0	0	0
Chandigarh	Indian Oil-Adani Gas Pvt. Ltd.	1	0	0	0	0	5
Kerala	Indian Oil-Adani Gas Pvt. Ltd.	1	0	0	0	0	0
Daman	Indian Oil-Adani Gas Pvt. Ltd.	1	0	0	0	0	1
Odisha	GAIL (India) Ltd.	1	0	0	0	0	0
Total		**25***	**1928**	**2037**	**2155**	**2365**	**2638**

Statewise Distribution of CNG Stations, 01.04.2018



Source : CGD companies

Note: Some entities are operating in more than one State. Hence, their number is taken once only.

Nearly 97% of India's CNG vehicles ply in the five states of Delhi (including Noida and Ghaziabad), Gujarat, Maharashtra, UP and Haryana. Around 88% of these are in the three states of Delhi, Gujarat and Maharashtra.

Table 3.8: CNG stations and vehicles as on 01.04.2018

State	Company name	No. of CNG stations	No. of CNG vehicles
Gujarat	Sabarmati Gas Ltd, Gujarat Gas Ltd, Adani Gas Ltd, Vadodara Gas Ltd, Hindustan Petroleum Corporation Ltd, Charotar Gas Sahakari Mandal Ltd, IRM Energy Ltd.	457	906133
Delhi / NCR	Indraprastha Gas Ltd. (IGL), New Delhi	444	1027307
Maharashtra	Mahanagar Gas Ltd, Maharashtra Natural Gas Ltd, Gujarat Gas Limited	275	794264
Andhra Pradesh / Telangana	Bhagyanagar Gas Ltd.(BGL), Hyderabad, Godavari Gas Pvt. Ltd. Hyderabad, Megha Engineering & Infrastructure Ltd	55	42519
Rajasthan	Rajasthan State Gas Limited	3	6927
Uttar Pradesh	Green Gas Ltd., Lucknow, Central UP Gas Ltd., Kanpur, Siti Energy Ltd., GAIL Gas Ltd., Sanwariya Gas Ltd., Indraprastha Gas Ltd., Adani Gas Ltd., Indian Oil-Adani Gas Pvt. Ltd.	79	137079
Tripura	Tripura Natural Gas Co. Ltd., Agartala	6	10620
Madhya Pradesh	Aavantika Gas Ltd., GAIL Gas Ltd.	31	30595
Haryana	Haryana City Gas Distribution Ltd, Adani Gas Limited, GAIL Gas Ltd., Indraprastha Gas Ltd.	47	125227
West Bengal	Great Eastern Energy Corporation Limited	7	3495
Karnataka	Gail Gas Ltd.	5	362
Chandigarh	Indian Oil-Adani Gas Pvt. Ltd.	4	4500
Daman	Indian Oil-Adani Gas Pvt. Ltd.	2	500
Kerala	Indian Oil-Adani Gas Pvt. Ltd.	4	20
Dadra & Nagar Haveli	Gujarat Gas Ltd.	3	0
Odisha	GAIL (India) Ltd.	2	591
All India		**1424**	**3090139**

Source : CGD companies, RTO

Table 3.9 : LNG terminals (Operational)

Sl. no.	Name of terminal	Promoters	Capacity (MMTPA)	Capacity Utilization (%) 2017-18(P)
1	Dahej (Gujarat)	Petronet LNG Ltd. (PLL)	15 MMTPA	105.3
2	Hazira (Gujarat)	Hazira LNG Pvt. Ltd. (HLPL)	5 MMTPA	58.9
3	Dabhol (Maharashtra)	Ratnagiri Gas and Power Pvt. Ltd. (RGPPL- JV of GAIL & NTPC)	1.69 MMTPA*	64.9
4	Kochi (Kerala)	Petronet LNG Ltd. (PLL)	5 MMTPA	12.2
	Total		**26.69 MMTPA**	

*To increase to 5 MMTPA with breakwater
Source: LNG operating companies

Table 3.10 : Domestic natural gas price and gas price ceiling

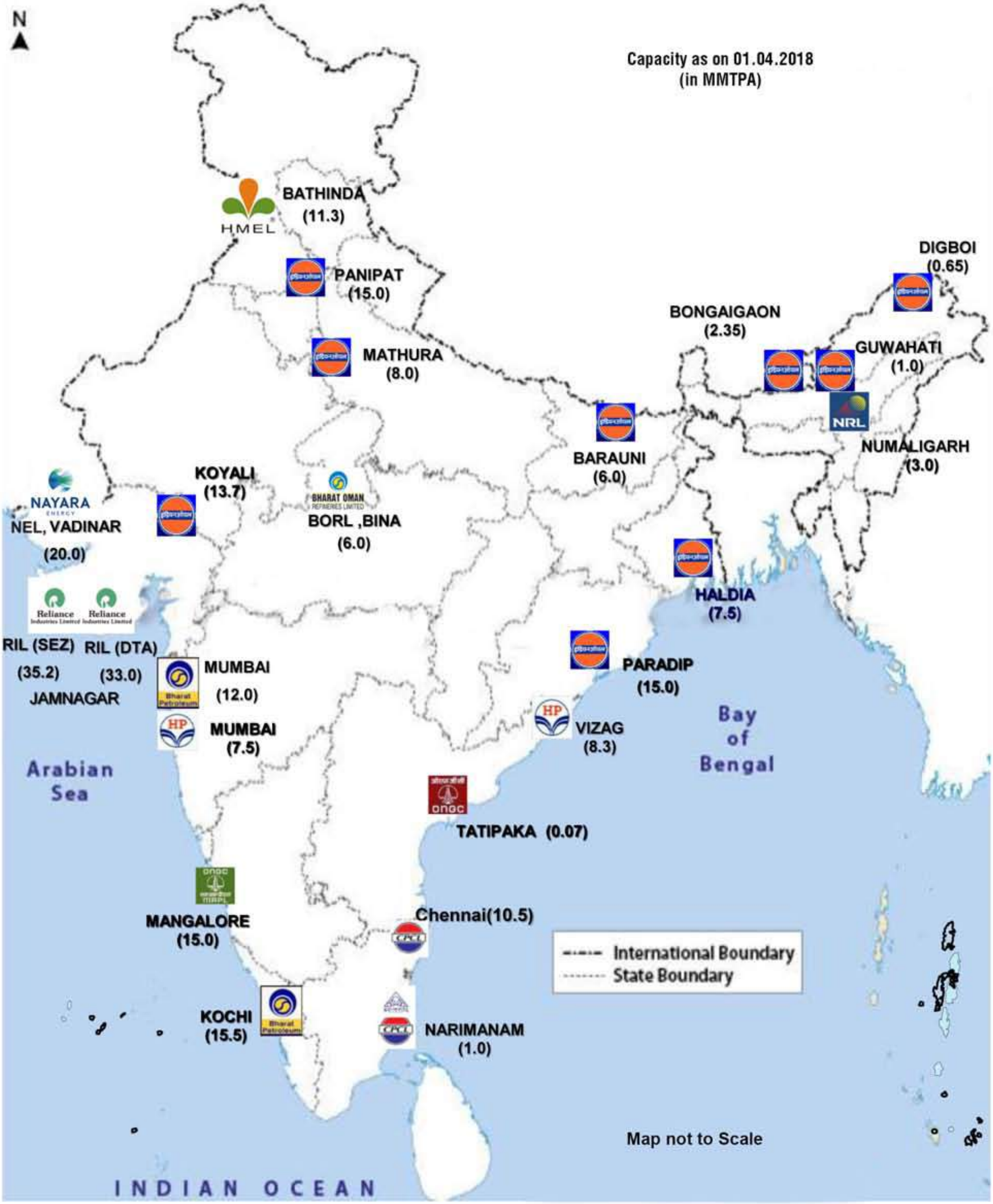
Period	Domestic natural gas price in US$/MMBTU (GCV basis)*	Gas price ceiling in US$/MMBTU (GCV basis)**
November 2014 - March 2015	5.05	-
April 2015 - September 2015	4.66	-
October 2015 - March 2016	3.82	-
April 2016 - September 2016	3.06	6.61
October 2016 - March 2017	2.5	5.30
April 2017-September 2017	2.48	5.56
October 2017 - March 2018	2.89	6.30
April 2018-September 2018	3.06	6.78

Note:
* As per the "New Domestic Natural Gas Pricing Guidelines, 2014" issued by Ministry of Petroleum & Natural Gas dated October 25, 2014
** As per the notification issued by Ministry of Petroleum and Natural Gas dated 21.03.2016 on marketing including pricing freedom for the gas to be produced from discoveries in Deepwater, Ultra Deepwater and High Pressure-High Temperature areas.

Chapter -4

Refining & Production

Map of Refineries in India



Simplified block flow diagram of a typical refinery

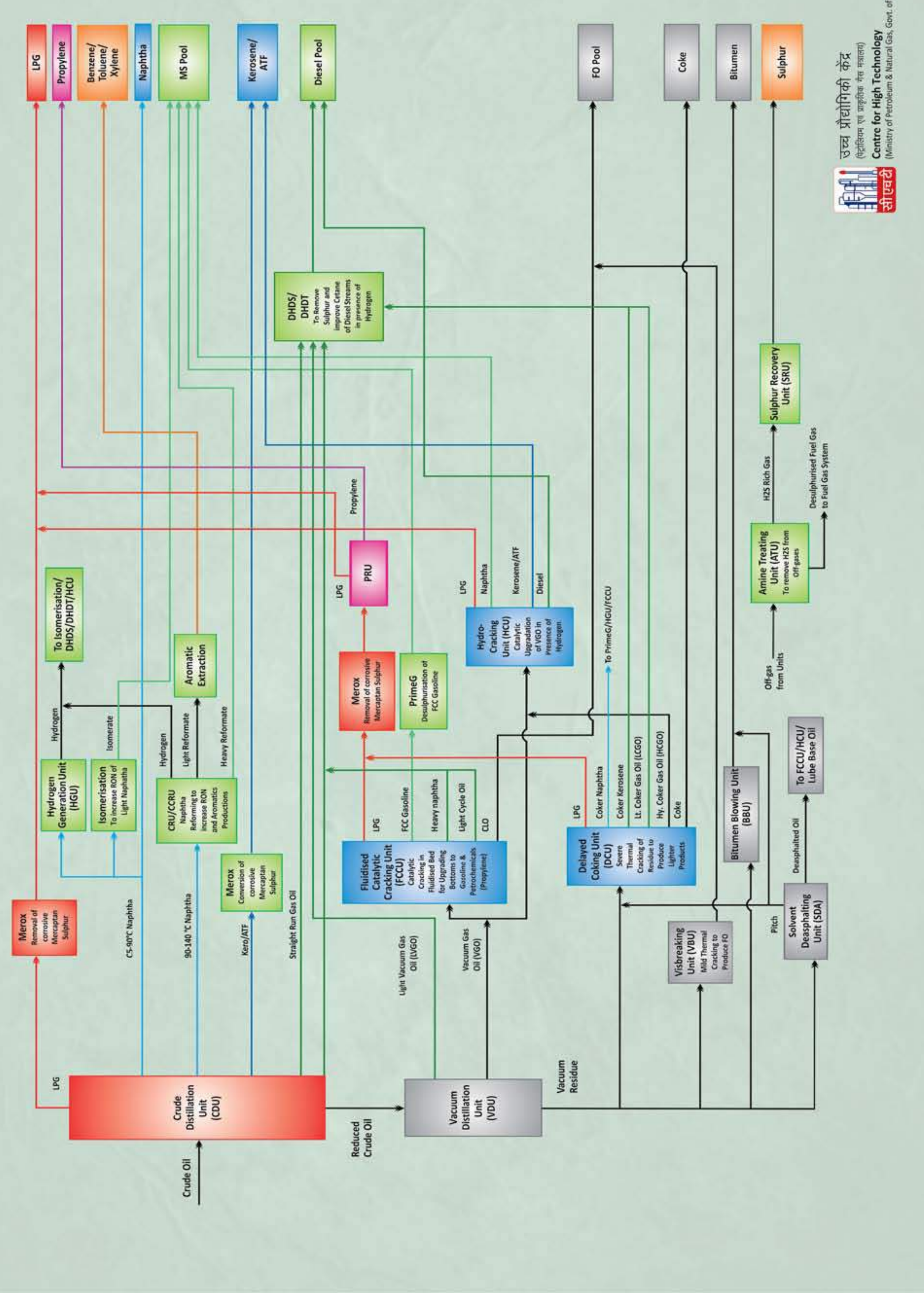


Table 4.1 : Refineries: Installed capacity and crude oil processing

Sl. no.	Refinery	Installed capacity (MMTPA)					Crude oil processing (MMT)				
		01.04.2014	01.04.2015	01.04.2016	01.04.2017	01.04.2018	2013-14	2014-15	2015-16	2016-17	2017-18 (P)
1	Barauni	6.0	6.0	6.0	6.0	6.0	6.5	5.9	6.5	6.5	5.8
2	Koyali	13.7	13.7	13.7	13.7	13.7	13.0	13.3	13.8	14.0	13.8
3	Haldia	7.5	7.5	7.5	7.5	7.5	8.0	7.7	7.8	7.7	7.7
4	Mathura	8.0	8.0	8.0	8.0	8.0	6.6	8.5	8.9	9.2	9.2
5	Panipat	15.0	15.0	15.0	15.0	15.0	15.1	14.2	15.3	15.6	15.7
6	Guwahati	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.9	0.9	1.0
7	Digboi	0.7	0.7	0.7	0.7	0.7	0.7	0.6	0.6	0.5	0.7
8	Bongaigaon	2.4	2.4	2.4	2.4	2.4	2.3	2.4	2.4	2.5	2.4
9	Paradip	-	-	15.0	15.0	15.0	-	-	1.8	8.2	12.7
	IOCL total	**54.2**	**54.2**	**69.2**	**69.2**	**69.2**	**53.1**	**53.6**	**58.0**	**65.2**	**69.0**
10	Mumbai	6.5	6.5	6.5	7.5	7.5	7.7	7.4	8.0	8.5	8.6
11	Visakh	8.3	8.3	8.3	8.3	8.3	7.8	8.8	9.2	9.3	9.6
12	HMEL-Bathinda	9.0	9.0	9.0	9.0	11.3	9.3	7.3	10.7	10.5	8.8
	HPCL total	**23.8**	**23.8**	**23.8**	**24.8**	**27.1**	**24.8**	**23.5**	**27.9**	**28.3**	**27.1**
13	Mumbai	12.0	12.0	12.0	12.0	12.0	12.7	12.8	13.4	13.5	14.1
14	Kochi	9.5	9.5	9.5	12.4	15.5	10.3	10.4	10.7	11.8	14.1
15	BORL-Bina	6.0	6.0	6.0	6.0	6.0	5.4	6.2	6.4	6.4	6.7
	BPCL total	**27.5**	**27.5**	**27.5**	**30.4**	**33.5**	**28.4**	**29.4**	**30.5**	**31.7**	**34.9**
16	Manali	10.5	10.5	10.5	10.5	10.5	10.1	10.2	9.1	9.8	10.3
17	CBR	1.0	1.0	1.0	1.0	1.0	0.6	0.5	0.5	0.5	0.5
	CPCL total	**11.5**	**11.5**	**11.5**	**11.5**	**11.5**	**10.6**	**10.8**	**9.6**	**10.3**	**10.8**
18	**Numaligarh**	**3.0**	**3.0**	**3.0**	**3.0**	**3.0**	**2.6**	**2.8**	**2.5**	**2.7**	**2.8**
19	Tatipaka	0.07	0.07	0.07	0.07	0.07	0.07	0.05	0.07	0.09	0.08
20	MRPL-Mangalore	15.0	15.0	15.0	15.0	15.0	14.6	14.6	15.5	16.0	16.1
	ONGC total	**15.1**	**15.1**	**15.1**	**15.1**	**15.1**	**14.7**	**14.7**	**15.6**	**16.1**	**16.2**
21	RIL-Jamnagar (DTA)	33.0	33.0	33.0	33.0	33.0	30.3	30.9	32.4	32.8	33.2
22	RIL-Jamnagar (SEZ)	27.0	27.0	27.0	27.0	35.2	37.7	37.2	37.1	37.4	37.3
23	NEL-Vadinar*	20.0	20.0	20.0	20.0	20.0	20.2	20.5	19.1	20.9	20.7
	All India	**215.1**	**215.1**	**230.1**	**234.0**	**247.6**	**222.5**	**223.3**	**232.9**	**245.4**	**251.9**

*Nayara Energy Limited (formerly Essar Oil Limited); MMTPA: Million Metric Tonne Per Annum, MMT: Million Metric Tonne
Source: Oil companies

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

(Million metric tonne)

Sl. no.	Type of crude	2013-14	2014-15	2015-16	2016-17	2017-18 (P)
1	HS crude	160.2	161.4	166.1	177.4	188.4
2	LS crude	62.2	61.9	66.7	67.9	63.6
	Total crude	**222.5**	**223.3**	**232.9**	**245.4**	**251.9**
	Percentage share of HS crude in total crude processing	72.0%	72.3%	71.3%	72.3%	74.8%

Source: Oil companies

Table 4.3 : Imported crude & indigenous crude oil processing

(Million metric tonne)

Sl. no.	Indigenous/ Imported crude	2013-14	2014-15	2015-16	2016-17	2017-18 (P)
1	Imported crude	188.6	189.0	198.7	211.8	219.1
2	Indigenous crude	33.9	34.2	34.1	33.5	32.8
	Total crude	**222.5**	**223.3**	**232.9**	**245.4**	**251.9**
	Share of imported crude in total crude processing	84.8%	84.7%	85.3%	86.3%	87.0%

Source: Oil companies

Table 4.4 : Production of petroleum products

(Million metric tonne)

	2013-14	2014-15	2015-16	2016-17	2017-18 (P)
A) From crude oil/ refineries					
Light ends	**62.6**	**64.6**	**70.6**	**75.0**	**83.7**
of which: LPG	7.9	7.7	8.6	9.2	10.2
MS	30.3	32.2	35.3	36.6	37.8
Naphtha	17.0	16.2	16.8	18.6	18.7
Others	7.4	8.5	9.9	10.7	17.0
Middle distillates	**117.3**	**117.5**	**122.9**	**127.9**	**131.2**
of which: SKO	7.4	7.6	7.4	5.9	4.3
ATF	11.2	11.1	11.8	13.8	14.6
HSD	93.8	94.3	98.6	102.1	107.9
LDO	0.4	0.4	0.4	0.6	0.6
Others	4.6	4.2	4.7	5.4	3.8
Heavy ends	**36.6**	**34.9**	**34.4**	**36.3**	**34.9**
of which: Furnace Oil	13.0	11.5	10.3	11.8	9.8
LSHS	0.5	0.7	0.4	0.3	0.5
Lube Oil	0.9	0.9	1.0	1.0	1.0
Bitumen	4.8	4.7	5.2	5.2	5.3
RPC/Petcoke	11.3	11.7	13.3	12.9	13.9
Others	6.1	5.5	4.2	5.2	4.4
Sub total (A)	**216.4**	**217.1**	**227.9**	**239.2**	**249.8**
B) From natural gas/fractionators					
Sub total (B)	**4.3**	**4.0**	**4.0**	**4.3**	**4.6**
of which: LPG	2.1	2.2	2.0	2.1	2.2
Naphtha	1.5	1.2	1.1	1.2	1.2
SKO	0.1	0.1	0.1	0.03	0.05
HSD	0.02	0.01	0.01	0.01	0.01
Others	0.6	0.5	0.8	1.0	1.1
Total production (A +B)	**220.7**	**221.1**	**231.9**	**243.5**	**254.4**

Source: Oil companies

Table 4.5 : Production of petroleum products : All sources

(Million metric tonne)

Major products	2013-14	2014-15	2015-16	2016-17	2017-18 (P)
HSD	93.8	94.3	98.6	102.1	107.9
MS	30.3	32.2	35.3	36.6	37.8
Naphtha	18.5	17.5	17.9	19.7	19.9
FO	13.0	11.5	10.3	11.8	9.8
ATF	11.2	11.1	11.8	13.8	14.7
LPG	10.0	9.8	10.6	11.3	12.4
SKO	7.4	7.6	7.5	6.0	4.3
Bitumen	4.8	4.7	5.2	5.2	5.3
LSHS	0.5	0.7	0.4	0.3	0.5
Lubes	0.9	0.9	1.0	1.0	1.0
LDO	0.4	0.4	0.4	0.6	0.6
RPC/Petcoke	11.3	11.7	13.3	12.9	13.9
Others#	18.6	18.7	19.6	22.3	26.3
Total	**220.7**	**221.1**	**231.9**	**243.5**	**254.4**

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

Table 4.6 : Production vis a vis 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	-22.2
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	123.3	11.6
2005-06	113.2	124.6	11.4
2006-07	120.7	140.6	19.9
2007-08	128.9	150.4	21.5
2008-09	133.6	157.9	24.3
2009-10	137.8	185.5	47.7
2010-11	141.0	196.2	55.2
2011-12	148.1	204.5	56.3
2012-13	157.1	218.2	61.2
2013-14	158.4	220.7	62.3
2014-15	165.5	221.1	55.6
2015-16	184.7	231.9	47.2
2016-17	194.6	243.5	48.9
2017-18(P)	204.9	254.4	49.5

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

Table 4.7 : Gross Refining Margins (GRM) of refineries

($/bbl)

Company	Refinery	2013-14	2014-15	2015-16	2016-17	2017-18
PSU refineries						
IOCL	Barauni	6.68	(1.20)	2.93	6.52	6.60
	Koyali	4.52	4.79	6.80	7.55	9.44
	Haldia	2.84	(1.51)	3.96	6.80	6.86
	Mathura	2.10	(2.19)	3.30	7.01	7.09
	Panipat	3.62	(1.97)	4.15	7.95	7.74
	Guwahati**	6.38	8.68	15.88	22.14	21.88
	Digboi**	15.41	13.73	16.17	24.49	24.86
	Bongaigaon**	6.71	(0.26)	11.09	20.15	20.62
	Paradip#	-	-	(0.65)	4.22	7.02
	Average	**4.24**	**0.27**	**5.06**	**7.77**	**8.49**
BPCL	Kochi	4.80	3.17	6.87	5.16	6.44
	Mumbai	3.95	3.97	6.37	5.36	7.26
	Average	**4.33**	**3.62**	**6.59**	**5.26**	**6.85**
HPCL	Mumbai	5.38	4.88	8.09	6.95	8.35
	Visakh	1.50	1.12	5.46	5.51	6.55
	Average	**3.43**	**2.84**	**6.68**	**6.20**	**7.40**
CPCL	Chennai	4.08	1.97	5.27	6.05	6.42
MRPL	Mangalore	2.67	(0.64)	5.20	7.75	7.54
NRL	Numaligarh**	12.09	16.67	23.68	28.56	31.92
JV refineries						
BORL	Bina	7.70	6.10	11.70	11.80	11.70
Private refineries						
RIL	Jamnagar	8.10	8.60	10.80	11.00	11.60
NEL@	Vadinar	7.98	8.37	10.81	9.14	*
Singapore		5.62	6.36	7.52	5.83	7.23

* Accounts not finalised till date;
** GRM of North Eastern refineries are including excise duty benefit. For GRM excluding excise duty benefit, refer table 4.8;
# Commissioned in February, 2016;
@Nayara Energy Limited (formerly Essar Oil Limited)

Source: Indian refineries - published results/Oil companies;
Singapore - Reuters

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

($/bbl)

Company	Refinery	2013-14	2014-15	2015-16	2016-17	2017-18
IOCL	Guwahati	0.88	0.96	1.26	1.12	3.70
	Digboi	8.50	5.42	4.16	7.73	8.27
	Bongaigaon	2.34	(6.51)	0.08	6.03	6.22
NRL	Numaligarh	6.98	9.46	8.06	8.50	11.43

Source: Oil companies

Table 4.9 : Distillate yield of PSU refineries

(Distillate %)

Company	Refinery	2013-14	2014-15	2015-16	2016-17	2017-18 (P)
IOCL	Barauni	87.9	87.3	88.7	85.3	89.0
	Koyali	78.4	80.1	83.1	81.0	82.5
	Haldia	68.5	69.0	69.6	66.7	66.9
	Mathura	68.9	71.9	74.7	73.6	75.4
	Panipat	82.0	82.4	83.8	84.1	84.9
	Guwahati	83.1	81.1	80.8	83.5	82.7
	Digboi	73.5	74.8	69.7	75.3	77.9
	Bongaigaon	85.9	84.0	84.5	83.8	84.3
	Paradip	-	-	-	75.3	79.6
CPCL	Manali	72.1	71.5	71.4	71.6	72.3
	CBR	85.1	71.6	79.3	78.2	79.1
HPCL	Mumbai	72.6	75.9	76.0	77.6	77.4
	Visakh	75.7	78.8	75.7	74.0	74.5
BPCL	Mumbai	81.0	81.8	84.3	86.1	84.3
	Kochi	81.9	84.7	85.7	85.2	83.9
NRL	Numaligarh	92.2	90.7	89.9	90.5	89.9
MRPL	Mangalore	74.6	72.3	76.9	77.4	76.5
PSU oil cos. average		**77.7**	**78.3**	**79.9**	**79.3**	**79.7**

Source: CHT

Table 4.10 : Fuel & Loss

(Million metric tonne)

Sl. no.	Company	Refinery	2013-14			2014-15			2015-16			2016-17			2017-18 (P)		
			Crude T'put + other inputs	Fuel & Loss Qty	Fuel & Loss %	Crude T'put + other inputs	Fuel & Loss Qty	Fuel & Loss %	Crude T'put + other inputs	Fuel & Loss Qty	Fuel & Loss %	Crude T'put + other inputs	Fuel & Loss Qty	Fuel & Loss %	Crude T'put + other inputs	Fuel & Loss Qty	Fuel & Loss %
1		Barauni	6.5	0.6	9.0	6.0	0.5	9.1	6.6	0.6	8.7	6.6	0.6	9.2	6.0	0.5	9.2
2		Koyali	13.5	1.3	9.3	13.8	1.3	9.2	14.4	1.3	8.8	14.6	1.3	9.0	14.5	1.3	8.6
3		Haldia	8.0	0.7	9.2	7.7	0.7	8.7	7.8	0.7	8.7	7.7	0.7	8.8	7.8	0.7	8.4
4		Mathura	7.0	0.6	8.5	8.9	0.7	7.8	9.3	0.7	7.7	9.7	0.7	7.5	9.8	0.7	7.0
5	IOCL	Panipat	16.3	1.5	9.3	15.7	1.4	9.2	16.8	1.5	8.8	17.2	1.5	8.4	17.3	1.4	8.1
6		Guwahati	1.2	0.1	9.9	1.2	0.1	10.2	1.2	0.1	9.6	1.2	0.1	9.4	1.3	0.1	10.2
7		Digboi	0.7	0.1	9.1	0.7	0.1	9.3	0.6	0.1	10.2	0.6	0.1	11.7	0.7	0.1	10.3
8		Bongaigaon	2.3	0.2	9.5	2.4	0.2	9.1	2.4	0.2	8.5	2.5	0.2	8.3	2.4	0.2	8.7
9		Paradip	-	-	-	-	-	-	1.9	0.5	24.2	8.3	1.3	15.9	12.7	1.4	11.1
		IOCL Total	**55.5**	**5.1**		**56.4**	**5.0**		**61.0**	**5.6**		**68.4**	**6.5**		**72.6**	**6.4**	
10		Mumbai	7.8	0.5	6.8	7.5	0.6	7.4	8.0	0.6	7.8	8.5	0.6	7.2	8.8	0.6	7.1
11	HPCL	Visakh	7.8	0.6	7.5	8.8	0.7	7.4	9.2	0.7	7.7	9.3	0.7	7.3	9.6	0.7	6.8
12		HMEL-Bathinda	9.3	0.6	6.4	7.4	0.5	6.5	10.8	0.7	6.3	10.6	0.7	6.3	8.9	0.6	6.2
		HPCL Total	**24.9**	**1.7**		**23.7**	**1.7**		**28.0**	**2.0**		**28.4**	**2.0**		**27.3**	**1.8**	
13		Mumbai	13.1	0.7	5.1	12.9	0.6	4.7	13.4	0.6	4.4	13.6	0.6	4.4	14.3	0.7	4.6
14		Kochi	10.3	0.6	6.3	10.4	0.7	6.3	10.8	0.6	5.9	12.0	0.7	6.0	14.5	1.1	7.7
15	BPCL	BORL-Bina	5.4	0.5	8.6	6.2	0.5	7.7	6.4	0.5	7.0	6.4	0.6	8.8	6.7	0.7	9.7
16		Numaligarh	2.8	0.3	9.5	3.0	0.3	9.4	2.8	0.3	9.2	3.0	0.3	9.8	3.1	0.3	10.1
		BPCL Total	**31.6**	**2.0**		**32.6**	**2.0**		**33.4**	**1.9**		**34.9**	**2.2**		**38.7**	**2.7**	
17		Manali	10.1	0.9	9.0	10.3	0.9	8.8	9.2	0.9	9.5	9.8	0.9	9.3	10.4	1.0	9.7
18	CPCL	CBR	0.6	0.03	4.5	0.6	0.02	4.1	0.6	0.03	4.4	0.6	0.03	4.6	0.5	0.03	4.9
		CPCL Total	**10.7**	**0.9**		**10.9**	**0.9**		**9.8**	**0.9**		**10.4**	**0.9**		**10.9**	**1.0**	
19		Tatipaka	0.1	0.001	1.3	0.1	0.001	1.4	0.1	0.001	1.7	0.1	0.003	3.7	0.1	0.004	5.0
20	ONGC	MRPL-Mangalore	14.6	1.1	7.9	14.7	1.5	10.1	15.7	1.5	9.7	16.3	1.6	10.1	16.4	1.7	10.2
		ONGC Total	**14.7**	**1.2**		**14.8**	**1.5**		**15.8**	**1.5**		**16.3**	**1.6**		**16.4**	**1.7**	
21	RIL	Jamnagar (DTA)	33.5	2.6	7.7	33.3	2.3	6.9	35.1	2.6	7.4	35.9	2.5	6.9	36.4	2.7	7.4
22		Jamnagar (SEZ)	43.1	3.3	7.7	42.8	3.2	7.5	44.2	3.4	7.8	44.8	3.3	7.5	47.8	3.7	7.8
23	NEL*	Vadinar	20.6	1.0	5.0	20.9	1.1	5.2	19.4	1.1	5.7	21.3	1.2	5.5	21.0	1.2	5.7
		Total	**234.5**	**17.9**		**235.4**	**17.8**		**246.8**	**19.1**		**260.4**	**20.2**		**271.2**	**21.3**	

*Nayara Energy Limited (formerly Essar Oil Limited)
Source: Oil companies

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

(MBTU/Bbl/NRGF)

Company	Refinery	2014-15 (New MBN)	2015-16 ** (New MBN)	2016-17 ** (New MBN)	2017-18 ** (New MBN)
	Barauni	84.4	81.0	80.7	77.7
	Koyali	76.1	75.8	75.2	72.4
	Haldia	79.0	79.8	83.0	80.8
	Mathura	78.2	73.4	72.2	68.3
IOCL	Panipat	71.7	70.1	64.9	63.2
	Guwahati	109.4	121.9	113.8	108.0
	Digboi	94.0	112.4	114.3	105.5
	Bongaigaon	98.7	91.3	90.2	91.7
	Paradip			117.8	72.8
CPCL	Manali	92.9	95.8	92.5	88.6
	CBR	118.6	113.1	117.8	123.7
HPCL	Mumbai	94.6	89.3	85.7	84.4
	Visakh	83.5	80.7	78.1	77.3
BPCL	Mumbai	77.3	74.7	70.6	66.7
	Kochi	78.5	77.6	85.8	79.2
NRL	Numaligarh	71.4	71.1	72.3	64.7
MRPL	Mangalore	86.3	80.3	79.6	77.1
PSU oil cos. average		**81.4**	**79.2*/79.3**	**81.2*/81.2/78.0#**	**75.0*/75.1**

** Normalised for power import and BS-IV/VI production; *excluding CBR; #excluding Paradip & CBR
Source: CHT

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

Import / export	Crude oil & petroleum products	2013-14			2014-15			2015-16			2016-17			2017-18 (P)		
		Quantity	Value		Quantity	Value		Quantity	Value		Quantity	Value		Quantity	Value	
		Million tonne	US$ (Billion)	₹ (Crores)	Million tonne	US$ (Billion)	₹ (Crores)	Million tonne	US$ (Billion)	₹ (Crores)	Million tonne	US$ (Billion)	₹ (Crores)	Million tonne	US$ (Billion)	₹ (Crores)
IMPORT*	**Crude oil**	**189.2**	**143.0**	**864875**	**189.4**	**112.7**	**687416**	**202.9**	**64.0**	**416579**	**213.9**	**70.2**	**470159**	**220.4**	**87.8**	**565951**
	of which, PSU/JVs	109.3	85.3	518086	107.9	65.5	399988	121.2	39.7	259464	128.3	44.0	294050	133.0	54.3	350112
	Private	80.0	57.7	346789	81.5	47.2	287428	81.6	24.3	157115	85.6	26.2	176109	87.4	33.5	215839
	Products															
	LPG	6.6	6.1	37213	8.3	6.0	36571	9.0	3.9	25778	11.1	4.8	32124	11.4	5.8	37861
	Petrol	0.2	0.2	1481	0.4	0.4	2301	1.0	0.6	4207	0.5	0.2	1617	0.2	0.1	581
	Naphtha	1.0	1.0	6044	1.0	0.7	4592	2.9	1.5	9581	2.8	1.2	8374	2.2	1.2	7797
	Aviation Turbine Fuel	0.0	0.0	0	0.1	0.1	706	0.3	0.1	889	0.3	0.2	1109	0.3	0.2	1103
	Kerosene	0.0	0.0	0	0.03	0.03	172	0.04	0.02	158	0.0	0.0	0	0.0	0.0	0
	Diesel	0.1	0.1	452	0.1	0.1	670	0.2	0.1	605	1.0	0.4	2959	1.4	0.7	4224
	Lubes	2.1	2.1	12985	2.1	2.1	12702	2.3	1.4	9478	2.1	1.3	8625	2.4	1.7	11051
	Fuel Oil/LSHS	1.3	0.9	5759	0.9	0.6	3659	1.2	0.4	2380	0.9	0.3	1848	1.3	0.5	3468
	Bitumen	0.2	0.1	801	0.5	0.3	1623	0.9	0.3	1832	1.0	0.2	1638	0.9	0.3	1672
	Petcoke	3.6	0.7	4082	6.2	0.9	5383	10.0	0.9	5633	14.4	1.2	7929	13.4	1.7	11135
	Others**	1.6	1.2	7080	1.6	1.0	6266	1.7	0.7	4821	2.2	0.8	5342	2.6	1.2	8053
	Total product import	**16.7**	**12.5**	**75896**	**21.3**	**12.1**	**74644**	**29.5**	**10.0**	**65361**	**36.3**	**10.6**	**71566**	**35.9**	**13.4**	**86946**
	of which, PSU/JVs	6.7	6.3	38002	8.6	6.3	38755	10.1	4.6	30367	12.5	5.5	36691	12.8	6.5	42268
	Private	10.0	6.2	37894	12.7	5.8	35888	19.4	5.3	34994	23.7	5.2	34875	23.1	6.9	44677
	Total import (crude oil + product)	**205.9**	**155.4**	**940771**	**210.7**	**124.9**	**762060**	**232.3**	**73.9**	**481940**	**250.2**	**80.8**	**541725**	**256.3**	**101.2**	**652896**
EXPORT	**Products**															
	LPG	0.2	0.3	1589	0.3	0.2	1455	0.2	0.1	785	0.3	0.2	1168	0.4	0.2	1501
	Petrol	15.2	15.4	92977	16.0	13.5	81971	16.8	9.1	59575	15.4	7.9	52920	14.0	8.5	54573
	Naphtha	8.3	7.6	46059	7.0	5.2	31619	7.1	3.1	20057	8.7	3.7	24616	9.0	4.5	29075
	Aviation Turbine Fuel	5.7	5.5	33246	5.5	4.2	25413	5.7	2.4	16007	7.3	3.3	22294	7.2	3.9	25348
	Kerosene	0.02	0.02	98	0.02	0.01	81	0.01	0.01	35	0.02	0.01	54	0.0	0.0	68
	Diesel	26.5	24.3	148138	25.6	18.9	115149	24.0	10.2	66492	27.3	11.9	79857	29.7	15.4	99292
	LDO	0.03	0.02	135	0.01	0.005	28	0.0	0.0	0.0	0.2	0.1	399	0.0	0.0	37
	Lubes	0.02	0.03	138	0.01	0.02	100	0.02	0.02	127	0.01	0.02	104	0.0	0.0	118
	Fuel Oil/LSHS	6.2	3.7	22407	4.8	2.3	14251	2.8	0.7	4471	2.2	0.6	3930	2.5	0.8	5211
	Bitumen	0.1	0.1	321	0.1	0.04	245	0.1	0.03	176	0.04	0.01	37	0.1	0.0	119
	Petcoke / CBFS	1.7	0.6	3980	0.6	0.30	1806	0.8	0.12	750	0.67	0.1	804	0.6	0.1	686
	Others***	3.8	3.2	19189	4.0	2.7	16462	2.9	1.3	8304	3.3	1.3	8710	3.4	1.4	9110
	Total product export	**67.9**	**60.7**	**368279**	**63.9**	**47.3**	**288580**	**60.5**	**27.1**	**176780**	**65.5**	**29.0**	**194893**	**66.8**	**34.9**	**225139**
	of which, PSU/JVs	16.3	13.2	80599	13.1	8.6	52564	10.5	4.1	27072	12.6	5.2	35102	14.9	7.4	47852
	Private	51.5	47.4	287680	50.9	38.7	236016	50.1	22.9	149708	53.0	23.8	159791	51.8	27.5	177287
Net import		**138.1**	**94.8**	**572492**	**146.8**	**77.6**	**473481**	**171.8**	**46.9**	**305160**	**184.7**	**51.8**	**346832**	**189.6**	**66.3**	**427757**
Net product export		**51.2**	**48.2**	**292383**	**42.6**	**35.1**	**213936**	**31.1**	**17.1**	**111419**	**29.2**	**18.4**	**123327**	**30.9**	**21.5**	**138194**

Source: Oil companies & DGCIS

Note:

1. *Import does not include LNG imports
2. **Other imports include Paraffin Wax, Petroleum Jelly, LSWR, Aviation Gas, MTBE, Reformate etc.
3. ***Other exports include VGO, Benzene, Hexane, MTO, Sulphur etc.
4. "Others" in exports include RIL-SEZ exports of "Others" with unspecified heavy ends

Analysis

i) Crude oil imports increased by 3.0% during the year 2017-18 as compared to 2016-17.

ii) Imports due to deficit in production viz. LPG and Lubes accounted for 38.5% share of total POL products import during 2017-18 as compared to 36.4% during 2016-17.

iii) Imports due to commercial and technical considerations viz. naphtha and fuel oil accounted for 9.5% share of total POL products import during 2017-18 as compared to 10.2% during 2016-17.

iv) HSD import (1.4 MMT) during 2017-18 was done to meet regional specific deficit during shutdown in refineries.

v) An increase of 1.9% was recorded in POL products export during 2017-18 as compared to 2016-17 mainly due to increase in HSD exports by 8.7% during 2017-18 as compared to 2016-17.

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	67.09	87.71	73.61	0.62
2017-18	64.45	85.47	75.42	0.58
2018-19 (up to 31.05.2018)	66.66	91.71	80.21	0.61
2018 : Month wise				
January	63.64	87.65	77.45	0.57
February	64.37	90.08	79.56	0.60
March	65.02	90.84	80.25	0.61
April	65.64	92.57	80.66	0.61
May	67.54	90.97	79.82	0.62

Source: Reserve Bank of India (RBI) website.
Note : The rates are average for the period.

Chapter -5

Major Pipelines in India

Map of Pipeline Network in India

Table 5.1 : Gas pipeline network as on 01.04.2018

Network/Region	Entity	Length (Kms)	Design capacity (mmscmd)	Pipeline size	Average flow 2017-18 (P) (mmscmd)	% Capacity utilisation 2017-18 (P)
Hazira-Vijaipur-Jagdishpur pipeline/Gas rehabilitation and expansion project pipeline/ Dahej-Vijaipur pipeline & spur/ Vijaipur-Dadri Pipeline	GAIL	4554	53.0	36"	29.52	56%
DVPL-GREP upgradation (DVPL-II & VDPL)	GAIL	1385	54.0	48"	35.92	67%
*Chhainsa-Jhajjar-Hissar pipeline (CJPL) (Including spur lines) commisioned up to Sultanpur, Jhajjar-Hissar under hold (111 Km)	GAIL	310	5.0	36" /16"	1.01	20%
Dahej-Uran-Panvel pipeline (DUPL/ DPPL) including spur lines	GAIL	928	19.9	30"/18"	13.94	70%
*Dadri- Bawana-Nangal pipeline (DBPL), Dadri-Bawana: 106 Km, Bawana-Nangal: 501 KM, spur line of BNPL: 196 Km	GAIL	852	31.0	36"/30"/ 24"/18"	5.49	18%
Dabhol-Bengaluru pipeline (including spur) Phase -1- 997 km, Phase 2 - 114.6 km	GAIL	1116	16.0	36"/4"	1.27	8%
Kochi-Koottanad-Bengaluru-Mangalore (Phase-1)	GAIL	48	6.0	16"/4"	2.29	38%
Tripura (Agartala)	GAIL	60	2.3	12"	1.30	57%
Gujarat#	GAIL	685	8.3	24"/16"/12"	4.37	53%
Rajasthan (Focus Energy)	GAIL	151	2.4	12"	1.35	57%
Mumbai (Uran-Thal-Usar & Trombay-RCF)	GAIL	131	7.0	26"	6.43	91%
KG Basin (including RLNG+RIL)	GAIL	884	16.0	18"	5.40	34%
Cauvery Basin	GAIL	306	8.7	18"	3.25	38%
East- West pipeline (RGTIL)	Reliance	1480	80.0	48"	17.00	21%
Shahdol-Phulpur pipeline (RGPL)	Reliance	304	3.5	16"	0.53	15%
GSPL network including spur lines	GSPL	2618	43.0	Assorted	25.33	59%
Assam regional network	AGCL, DNPL	817	3.2	16" and others	2.25	69%
Dadri-Panipat	IOCL	140	9.5	30"/10"	4.34	46%
Total		**16770**	**369**			

Source : Pipeline operating companies
Note :
*CJPL and DBPL pipelines are the extension of DVPL-II / VDPL.
#GAIL's Ahmedabad, Bharuch, Vadodara (Undera) pipelines have been clubbed under Gujarat network
GAIL's Assam (Lakwa) pipeline network is in the process of being transferred to AGCL
ONGCL Uran-Trombay pipeline is for internal use

The existing trunk pipeline capacity in India is of the order of 350 MMSCMD with a total length of nearly 17000 Kms. With the ongoing pipeline projects in execution, this is expected to cross 28000 Kms in the next few years.

Table 5.2 : Gas pipeline under execution / construction (as on 01.04.2018)

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.	1056	16.0	24"/18"/12"	240
2	Dabhol -Bengaluru (DBPL) Spur Lines, Phase-2	GAIL(India) Ltd.	302	16.0	36"/30"/ 24"/18"	Only LMC pipelines are being constructed
3	Surat - Paradip	GAIL(India) Ltd.	2112	74.8	36"/24"/18"	Authorization of this pipeline has been cancelled
4	Jagdishpur- Haldia-Bokaro-Dhamra (JHBDPL) (Phase-I, 755 Km, 7.44 MMSCMD Capacity)	GAIL(India) Ltd.	2539	16.0	30"/24"/18"/ 12"/8"/4"	577
5	Mallavaram - Bhilwada*	GSPC India Transco Ltd.	2042	78.3	42"/36"/30"/ 24"/18"/12"	0
6	Mehsana - Bathinda *	GSPC India Gasnet Ltd.	2052	77.1	36"/24"/18"/12"	170
7	Bathinda -Jammu-Srinagar*	GSPC India Gasnet Ltd.	725	42.4	24"/18"/16"/ 12"/8"/6"	71
8	Kakinada - Vizag-Srikakulam *	AP Gas Distribution Corporation.	391	90.0	24"/18	0
9	Ennore- Nellore*	Gas Transmission India Pvt. Ltd.	250	36.0	24"/18"	0
10	Ennore-Thiruvallur-Bengaluru-Puducherry-Nagapattinam-Madurai-Tuticorin*	Indian Oil Corporation Ltd.	1385	84.7	28"/24"/16"/ 12"/10"	0
11	Jaigarh-Mangalore*	H-Energy Pvt. Ltd.	635	17.0	24"	0
	Total		**11377**			

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

Table 5.3 : Major crude oil pipelines in India

Onshore / Offshore Oil Pipelines

Pipeline	Owner	Length (KM)	Capacity (MMT)	Throughput (MMT)	% utilisation
		31.03.2018	31.03.2018	2017-18 (P)	2017-18 (P)
CTF (Central Tank Farm) Kalol to CTF Nawagam - New (New line commissioned in August 2010)	ONGC	62.5	3.1	0.959	30.6
Nawagam-Koyali (18" line) Old (1)		78.4	5.4	1.790	33.1
Nawagam-Koyali (18" line) New (2)		79.6	5.4	0.376	7.0
Nawagam-Koyali (14" line) (Old) (3)		78.4	3.3	1.325	40.2
MHN-NGM (Mehsana-Nawagam) trunk line - New (New crude oil trunk line commissioned. Under operation since December 2010)		77.0	2.3	2.061	91.0
CTF (Central Tank Farm), Ankleshwar to Koyali oil pipeline (AKCL- Ankleshwar Koyali Crude Line) (4)		94.8	2.2	0.920	41.8
CTF (Central Tank Farm), Ankleshwar to CPF (Central Processing Facility), Gandhar (3)		44.3	0.4	0.000	0.0
CPF (Central Processing Facility), Gandhar to Saraswani 'T' point		56.7	1.8	0.686	38.0
Akholjuni- Koyali oil pipe line (Commissioned in July 2010). Akholjuni to Laxmipura T' point		65.5	0.5	0.193	40.1
Lakwa-Moran oil line (New) (5)		17.5	1.5	0.107	7.1
Lakwa-Moran oil line (Old)		14.6	1.5	0.305	20.3
Geleki-Jorhat oil line		48.5	1.5	0.417	27.8
Borholla- Jorhat oil line		42.8	0.6	0.154	25.6
NRM (Narimanam) to CPCL (Chennai Petroleum Corporation Limited)		4.9	0.7	0.339	45.8
KSP-WGGS to TPK Refinery (Kesnapalli-West-Group Gathering Station to Tatipaka)		13.5	0.1	0.031	37.7
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	0.046	50.9
Mumbai High - Uran - Trunk (MUT) 30'' pipeline		204.0	15.6	10.021	64.1
Heera - Uran - Trunk (HUT) 24'' pipeline (6)		81.0	11.5	3.064	26.6
Bombay-Uran Trunk (BUT) 30'' pipeline (7)		203.0	6.4	0.000	0.0
Salaya-Mathura pipeline (SMPL) (1)	IOCL	2646.0	25.0	26.203	104.8
Paradip-Haldia-Barauni pipeline (PHBPL) (2)		1355.0	15.2	16.437	108.1
Mundra-Panipat pipeline		1194.0	8.4	8.437	100.4
Salaya Mathura Pipeline (Offshore segment)		14.0	-	-	
Paradip Haldia Barauni Pipeline (Offshore segment)		92.0	-	-	
Duliajan-Digboi-Bongaigaon-Barauni pipeline	OIL	1193.0	8.4	6.631	78.9
Mangla-Bhogat pipeline	CAIRN	660.0	8.7	7.798	89.5
Bhogat Marine		28.0	0.4	2.120	573.0
Mundra- Bathinda pipeline	HMPL	1017.0	9.0	8.907	99.0
Vadinar-Bina pipeline	BORL	937.0	6.0	6.718	112.0
		10406	**145.0**	**106.0**	**73.1**

Source: Oil companies (P): Provisional

Note:

ONGC:

(1) 78 km X 18" Nawagam-Koyali old line was used upto January 2018. Nawagam-Akhdol,42 km section was decommissioned and Akhdol-Koyali section is not in use since February 2018.
(2) 78 km X 18" Nawagam-Koyali new line was commissioned in 2017-18, section Nawagam to Akhdol in October 2017 and Akhdol to Koyali in January 2018. Throughput through new pipeline started from February 2018. Till January 2018, the old pipeline was used.
(3) 78 km X 14" Nawagam-Koyali line was given on lease to IOC in 2000 and was handed back to ONGC on 1st April 2010. The line was restored and re-commissioned in October 2012.
(4) 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.
(5) New 12" Lakwa-Moran Oil Line was commissioned on 22.08.2016.
(6) Derated MAOP (Max. allowable operating pressure) to 35 kg/cm2 as per FFP (fit for purpose) certification report of 2014-15.
(7) Derated MAOP (Max. allowable operating pressure) to 15 kg/cm2 as per FFP (fit for purpose) certification of 2013-14.

IOCL:

(1) 434 km was added in SMPL since 1st April 2016 by commissioning of SMPL- Surendranagar Viramgam loopline on 7.8.16, Viramgam - Sidhpur section on 14.8.2016, Abu road - Rajola section on 21.3.2017 and Sidhpur Abu road section on 29.4.2017 along with capacity augmention from 21 MMTPA to 25 MMTPA on 7.8.2016 .
(2) Capacity was augmented from 11 MMTPA to 15.2 MMTPA with commissioning of Balasore pump station on 29.3.2017 .

Table 5.4 : Major petroleum products pipelines in India

Pipeline	Owner	Length (KM)	Capacity (MMT)	Throughput (MMT)	% utilisation
		31.03.2018	31.03.2018	2017-18 (P)	2017-18 (P)
Petroleum products pipelines					
Barauni - Kanpur pipeline (1)	IOCL	856	3.500	2.257	64.5
Guwahati -Siliguri pipeline		435	1.400	1.832	130.9
Haldia-Barauni pipeline		526	1.250	1.485	118.8
Haldia-Mourigram-Rajbandh pipeline		277	1.350	1.824	135.1
Koyali-Ahmedabad pipeline (5)		79	1.100	0.153	13.9
Koyali-Sanganer pipeline KSPL (2)		1300	4.600	4.351	94.6
Koyali-Ratlam pipeline		265	2.000	1.452	72.6
Koyali-Dahej pipeline		197	2.600	0.938	36.1
Mathura-Tundla pipeline		56	1.200	0.426	49.3
Mathura-Bharatpur pipeline		21		0.165	
Mathura-Delhi pipeline		147	3.700	2.763	74.7
Panipat-Amabala-Jalandhar (Including Kurukshetra-Roorkee-Najibabad branch line)		434	3.500	3.060	87.4
Panipat-Delhi (Including Sonepat-Meerut branch line) pipeline		189	3.000	1.100	36.7
Panipat Bijwasan ATF pipeline (3)		111			
Panipat-Bathinda pipeline		219	1.500	1.546	103.1
Panipat-Rewari pipeline		155	2.100	1.690	80.5
Chennai-Trichy-Madurai pipeline		683	2.300	2.841	123.5
Chennai - Meenambakkam ATF pipeline		95	0.180	0.230	127.8
Chennai-Bengaluru pipeline		290	2.450	1.715	70.0
Digboi - Tinsukia pipeline		75	1.000	0.528	52.8
Devangonthi - Devanhalli pipeline		36	0.660	0.424	64.2
Paradip Raipur Ranchi pipeline(PRRPL) (4)		1073	5.000	3.169	63.4
Mumbai-Manmad-Bijwasan pipeline (MMBPL)	BPCL	1389	6.000	7.015	116.9
Bina-Kota pipeline (BKPL)		259	4.400	3.388	77.0
ATF P/L Mumbai Refinery (MR)-Santacruz airport		15	1.400	0.933	66.6
ATF P/L Kochi Refinery (KR)-Kochi airport		34	0.600	0.380	63.3
Kota - Jobner branch pipeline(1)		211	1.700	0.579	34.0
Mumbai Refinery- Wadi lube pipeline		12	1.300	0.262	20.2
Cochin-Coimbatore-Karur (CCK) pipeline	Petronet CCK	293	3.300	2.651	80.3
Mumbai-Pune-Solapur pipeline	HPCL	508	4.300	4.655	108.3
Vizag-Vijaywada-Secunderabad pipeline		572	5.380	5.752	106.9
Mundra-Delhi pipeline		1054	5.000	3.487	69.7
Ramanmandi-Bahadurgarh pipeline		243	4.710	4.340	92.1
Ramanmandi-Bathinda pipeline (1)		30	2.100	0.852	40.6
Awa-Salawas pipeline (2)		93	2.300	0.722	31.4
Bahadurgarh-Tikrikalan pipeline (2)		14	0.750	0.528	70.4
Rewari- Kanpur Pipeline (2)		443	7.980	2.672	33.5
'ATF piepline from Mumbai Refinery to Mumbai Airport		20	1.100	0.677	61.6
Black Oil Pipeline (BOPL) (4)		22	1.500	0.325	21.7
Lube Oil Pipeline : Trombay to Wadibundar (5)		17	1.000	0.440	44.0
Mangalore-Hassan-Bengaluru (MHB) pipeline (1)	Petronet MHB	363	2.143	3.500	163.3
Numaligarh-Siliguri pipeline	OIL	654	1.720	1.869	108.7
Total		**13764**	**103.1**	**79.0**	**76.6**
LPG Pipelines					
Panipat-Jalandhar pipeline	IOCL	274	0.700	0.599	85.6
Paradip Haldia Durgapur pipeline (6)		157	0.503	0.05	9.3
Mumbai-Uran pipeline	BPCL	28	0.800	0.337	42.1
Jamnagar-Loni pipeline	GAIL	1414	2.500	2.673	106.9
Vizag-Secunderabad pipeline		618	1.330	1.040	78.2
Mangalore-Hassan-Mysore-Solur LPG (3)	HPCL	356	1.940	0.783	40.4
Total		**2847**	**7.8**	**5.5**	**70.5**

Source: Oil companies (P): Provisional

Note:

IOCL

(1) Replacement of Barauni-Patna section of BKPL - length of 111 Km has been added in September 2017.
(2) Koyali-Sanganer pipeline (KSPL) length of 11.3 Km was added after Koyali-Viramgam section replacement on 1.8.2017.
(3) Bijwasan Panipat Naphtha pipeline has been converted into ATF service in June 2016 and renamed as Panipat-Bijwasan ATF pipeline.
(4) 752 Km was added in PRRPL since 1st April 2016 by commissioning of PRRPL - Jatni Sambalpur section on 9.1.17, Sambalpur-Jharsuguda on 16.1.17, Sambalpur-Saraipalli on 21.1.17, Saraipalli-Raipur on 24.1.17, Saraipalli-Korba section on 30.1.17 and Jharsuguda-Khunti section on 18.7.17 .
(5) With commissioning of connectivity to Navagam terminal from KAPL on 13.10.17, the length of the pipeline has been revised to 79 Km from previous 116 Km.
(6) Paradip Balasore section of PHDPL (LPG) was commissioned on 16.10.17.

BPCL

(1) Kota-Jobner pipeline is a branch pipeline of Mumbai-Manmad-Bijwasan pipeline with annual capacity of 1.7 MMTPA.Throughput of this pipeline is included in MMBPL & BKPL pipelines.

HPCL

(1) Ramanmandi-Bathinda pipeline was augmented in March 2018 to 2.1 MMTPA.
(2) Awa Salawas pipeline, Bahadurgarh Tikri Kalan pipeline & Rewari Kanpur pipelines are branchlines. Throughputs of the same are included in Mundra Delhi pipeline/ Ramanmandi-Bahadurgarh pipeline. Bahadurgarh-Tikri Kalan pipeline was converted to a branch line after commissioning of direct pumping facilities from RBPL in March 2018.
(3) Mangalore-Hassan-Mysore-Solur LPG pipeline was commissioned on 23.10.2016.
(4) Black oil pipeline (BOPL) was converted for white oil pumping since June 2017. BOPL throughput is included in throughput of Mumbai-Pune-Solapur pipeline.
(5) Lube oil pipeline and ATF pipeline from Mumbai refinery to Mazgaon terminal and Mumbai airport are speciality product pipelines.

Petronet MHB

(1) Petronet MHB JV- ONGC & HPCL 26% each, Petronet- 12%, Public- 36%.

Chapter -6

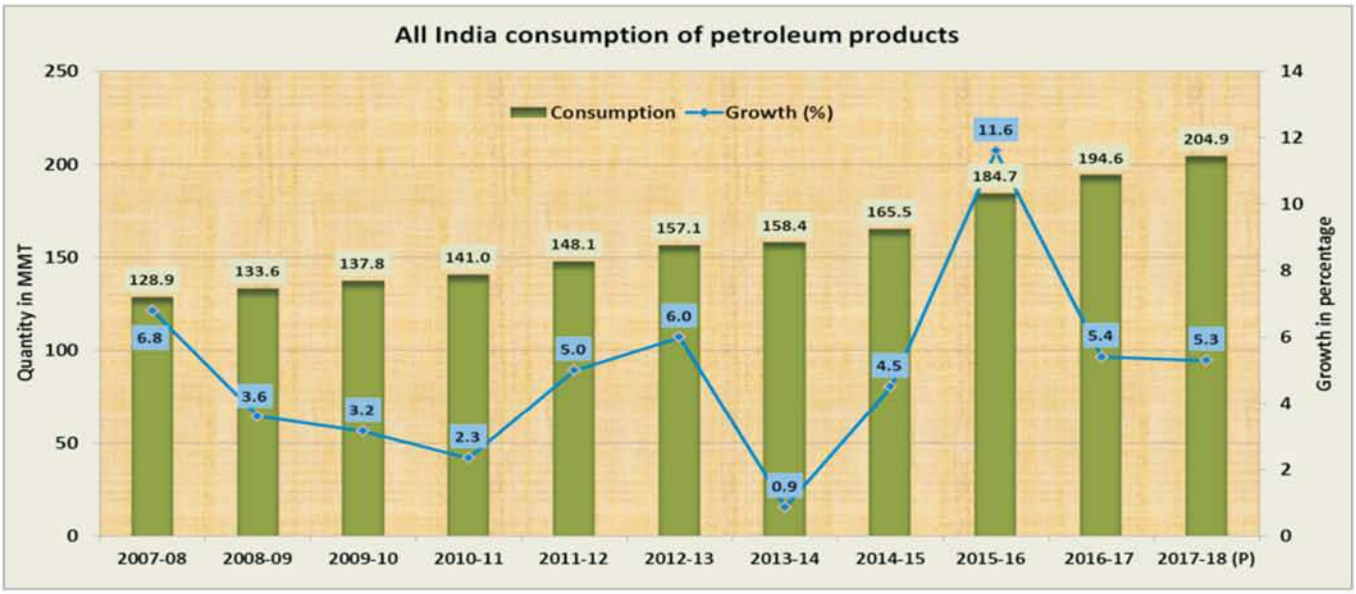
Sales

Table 6.1 : Consumption of petroleum products

(Million metric tonnes)

Products	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18 (P)
LPG	12.0	12.2	13.1	14.3	15.3	15.6	16.3	18.0	19.6	21.6	23.3
MS	10.3	11.3	12.8	14.2	15.0	15.7	17.1	19.1	21.8	23.8	26.2
Naphtha	13.3	13.9	10.1	10.7	11.2	12.3	11.3	11.1	13.3	13.2	12.5
ATF	4.5	4.4	4.6	5.1	5.5	5.3	5.5	5.7	6.3	7.0	7.6
SKO	9.4	9.3	9.3	8.9	8.2	7.5	7.2	7.1	6.8	5.4	3.8
HSD	47.7	51.7	56.2	60.1	64.8	69.1	68.4	69.4	74.6	76.0	81.1
LDO	0.7	0.6	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.5
Lubes	2.3	2.0	2.5	2.4	2.6	3.2	3.3	3.3	3.6	3.5	3.8
FO/LSHS	12.7	12.6	11.6	10.8	9.3	7.7	6.2	6.0	6.6	7.2	6.8
Bitumen	4.5	4.7	4.9	4.5	4.6	4.7	5.0	5.1	5.9	5.9	6.0
Petcoke	5.9	6.2	6.6	5.0	6.1	10.1	11.8	14.6	19.3	24.0	26.2
Others	5.6	4.7	5.4	4.6	4.9	5.5	6.0	5.9	6.4	6.6	7.1
All India	**128.9**	**133.6**	**137.8**	**141.0**	**148.1**	**157.1**	**158.4**	**165.5**	**184.7**	**194.6**	**204.9**
Growth (%)	**6.8**	**3.6**	**3.2**	**2.3**	**5.0**	**6.0**	**0.9**	**4.5**	**11.6**	**5.4**	**5.3**

Source: Oil Companies and Directorate General of Commercial Intelligence and Statistics (DGCIS)
(Oil company sales + Private imports = Consumption)



The consumption of petroleum products has gone up from 128.9 MMT in 2007-08 to 204.9 MMT in 2017-18. The compounded annual growth rate (CAGR) of consumption in the last decade has been 4.7%.

The CAGR has been highest for petcoke (16.0%), followed by petrol (9.8%), LPG (6.9%) and then diesel (5.5%).

The CAGR for some of the products like kerosene, naphtha, LDO and FO/LSHS has been negative indicating drop in their consumption over the decade.

Table 6.2 : State-wise sales of selected petroleum products : 2017-18 (P)

(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	55	52.2	104.6	99.1	0.2	0.2	130.1	123.4	426.6	404.5
Delhi	808	48.2	926.7	55.3	0.8	0.04	1193.7	71.2	4998.8	298.4
Haryana	740	29.2	937.9	37.0	2.4	0.1	5146.7	203.0	10973.8	432.8
Himachal Pradesh	153	22.3	207.9	30.3	14.6	2.1	616.3	89.9	1578.1	230.2
Jammu and Kashmir	189	15.0	249.3	19.9	126.9	10.1	684.5	54.5	1444.1	115.1
Punjab	874	31.5	847.4	30.6	1.9	0.1	3362.6	121.4	6787.8	245.0
Rajasthan	1194	17.4	1440.3	21.0	87.8	1.3	5479.1	79.8	11269.1	164.2
Uttar Pradesh	2924	14.6	2759.5	13.8	707.4	3.5	8608.3	43.1	16891.3	84.6
Uttarakhand	268	26.5	286.9	28.4	13.8	1.4	713.1	70.5	1525.7	150.8
SUB TOTAL NORTH	**7204.6**	**19.5**	**7760.4**	**21.1**	**955.7**	**2.6**	**25934.4**	**70.4**	**55895.1**	**151.6**
Andaman & Nicobar Islands	10	26.9	16.9	44.3	3.2	8.4	140.0	368.4	201.7	530.9
Bihar	1128	10.9	697.0	6.7	381.7	3.7	2278.6	22.0	4972.1	47.9
Jharkhand	294	8.9	425.2	12.9	137.2	4.2	1766.0	53.6	3184.2	96.6
Odisha	534	12.7	703.8	16.8	190.2	4.5	2506.1	59.7	5673.2	135.2
West Bengal	1597	17.5	812.1	8.9	511.4	5.6	3390.5	37.1	8251.6	90.3
SUB TOTAL EAST	**3563**	**13.2**	**2654.9**	**9.8**	**1223.7**	**4.5**	**10081.3**	**37.3**	**22282.7**	**82.4**
Arunachal Pradesh	20	14.4	39.9	28.8	11.7	8.5	146.4	105.9	242.5	175.4
Assam	373	12.0	356.8	11.4	192.0	6.2	925.2	29.7	2512.2	80.6
Manipur	28	10.4	54.0	19.9	14.6	5.3	102.3	37.6	207.3	76.2
Meghalaya	21	7.2	85.5	28.8	15.2	5.1	326.1	110.0	484.3	163.4
Mizoram	22	19.9	25.4	23.2	3.7	3.4	67.6	62.0	124.5	114.1
Nagaland	22	11.2	37.3	18.9	7.5	3.8	69.8	35.2	143.1	72.2
Sikkim	14	23.0	17.5	28.8	10.5	17.3	69.0	113.6	117.1	192.7
Tripura	44	12.0	47.6	13.0	22.9	6.2	99.6	27.1	234.8	64.0
SUB TOTAL NORTH EAST	**544**	**11.9**	**663.9**	**14.6**	**278.1**	**6.1**	**1806.0**	**39.6**	**4065.7**	**89.2**
Chhattisgarh	257	10.1	517.8	20.3	72.3	2.8	1649.5	64.6	3586.7	140.4
Dadra & Nagar Haveli	18	53.3	21.6	62.9	0.2	0.6	198.9	580.2	401.0	1169.7
Daman & Diu	11	44.8	21.3	87.7	0.2	0.7	113.3	466.4	235.7	970.4
Goa	66	45.3	174.6	119.7	1.1	0.8	328.9	225.6	779.1	534.5
Gujarat	1041	17.2	1817.2	30.1	266.8	4.4	5281.1	87.5	19135.4	316.9
Madhya Pradesh	914	12.6	1257.4	17.3	262.5	3.6	3563.0	49.1	7398.7	101.9
Maharashtra	2799	24.9	3225.6	28.7	305.0	2.7	8672.7	77.2	20614.7	183.4
SUB TOTAL WEST	**5107**	**18.7**	**7035.4**	**25.8**	**908.1**	**3.3**	**19807.4**	**72.6**	**52151.4**	**191.1**
Andhra Pradesh	1099	22.2	1061.8	21.5	23.4	0.5	3660.8	74.1	6929.7	140.3
Karnataka	1574	25.7	1974.3	32.3	104.3	1.7	6610.8	108.1	12548.6	205.3
Kerala	932	27.9	1380.9	41.4	66.7	2.0	2608.6	78.1	6144.9	184.0
Lakshadweep	0.4	5.4	0.0	0.0	0.6	9.3	13.5	208.8	14.5	225.7
Puducherry	43	34.5	129.9	104.4	0.5	0.4	332.7	267.3	554.1	445.2
Tamil Nadu	2019	28.0	2421.4	33.6	204.7	2.8	6450.2	89.4	13921.6	193.0
Telangana	892	25.3	1092.3	31.0	79.3	2.2	3685.1	104.4	6562.3	186.0
SUB TOTAL SOUTH	**6558**	**26.0**	**6558.2**	**26.0**	**479.5**	**1.9**	**23361.6**	**92.5**	**46675.6**	**184.8**
All India	**22976**	**19.0**	**22976.4**	**19.0**	**3845.1**	**3.2**	**80990.8**	**66.9**	**181070.5**	**149.6**

* Total (all product) sales includes other petroleum products such as naphtha, FO, ATF, lubricants, bitumen, etc.

Region wise highest/lowest per capita Highest Lowest

State wise highest/lowest per capita Highest Lowest

Source: Oil companies

Note:

1-Per capita sales figures are based on provisional sales figures for the period April 2017-March 2018

2-Population figures have been taken from Census of India, 2011

3-SKO includes both PDS & non PDS sales

Table 6.3 : PDS SKO allocation

(Figures in thousand kilo litres)

State/UT	2013-14		2014-15		2015-16		2016-17		2017-18	
	Allocatⁿ	Sales	Allocatⁿ	Sales	Allocatⁿ	Sales	Allocatⁿ	Sales	Allocatⁿ	Sales (P)
Chandigarh	3.5	3.5	3.3	2.4	3.0	0.9	0.0	0.0	0.0	0.0
Delhi	21.6	10.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Haryana	91.3	88.9	90.1	89.2	88.3	70.6	66.3	35.9	0.0	0.0
Himachal Pradesh	24.7	24.6	24.6	24.6	24.1	24.1	18.1	17.9	14.5	14.4
Jammu & Kashmir	94.7	94.0	90.2	86.4	81.2	80.1	73.1	67.9	58.5	57.6
Punjab	90.1	86.1	89.7	88.7	85.4	83.2	74.3	62.3	0.0	0.0
Rajasthan	508.8	500.2	505.3	497.1	495.2	481.5	371.4	355.8	260.0	110.5
Uttar Pradesh	1590.0	1588.3	1589.4	1585.5	1557.6	1556.7	1168.2	1167.6	911.2	901.3
Uttarakhand	36.2	35.8	35.9	35.7	35.2	35.0	31.7	31.2	25.3	13.3
SUB TOTAL NORTH	**2460.8**	**2432.0**	**2428.6**	**2409.5**	**2370.0**	**2332.1**	**1803.1**	**1738.5**	**1269.5**	**1097.0**
Andaman a& Nicobar Islands	6.9	5.7	6.4	5.6	5.8	5.8	5.2	4.9	4.1	4.0
Bihar	814.1	805.2	813.0	804.3	796.7	794.7	710.7	705.3	495.4	490.3
Jharkhand	268.7	266.8	267.9	267.3	262.6	260.5	219.7	219.0	186.8	176.3
Odisha	399.0	397.5	397.7	396.1	389.7	385.1	292.3	283.0	248.4	244.3
West Bengal	963.5	961.8	962.6	960.9	943.3	942.1	788.9	788.3	704.0	653.6
SUB TOTAL EAST	**2452.2**	**2437.0**	**2447.6**	**2434.2**	**2398.1**	**2388.1**	**2016.8**	**2000.4**	**1638.8**	**1568.5**
Arunachal Pradesh	11.5	11.4	11.5	11.4	10.3	10.3	9.3	9.1	7.9	7.7
Assam	328.0	327.9	327.9	327.8	321.4	321.0	289.2	287.8	245.9	245.0
Manipur	25.0	25.0	25.0	24.8	23.4	23.3	21.1	15.2	17.9	18.2
Meghalaya	25.9	25.9	25.9	25.9	25.4	25.4	22.9	22.7	19.4	19.4
Mizoram	7.8	7.8	7.4	7.4	6.7	6.6	6.0	6.0	4.8	4.8
Nagaland	17.1	17.1	17.1	17.1	16.8	16.8	15.1	9.0	12.2	9.5
Sikkim	6.3	6.3	6.3	6.3	5.7	5.7	4.3	4.3	3.5	3.4
Tripura	39.2	39.2	39.2	39.2	38.4	38.4	34.6	34.5	29.4	29.4
SUB TOTAL NORTH EAST	**460.8**	**460.6**	**460.3**	**460.1**	**448.0**	**447.5**	**402.4**	**388.7**	**340.9**	**337.4**
Chhattisgarh	180.1	174.2	175.8	167.5	172.3	159.1	135.4	121.7	115.1	92.7
Dadra & Nagar Haveli	2.3	2.3	2.0	2.0	1.8	1.8	1.7	1.7	0.3	0.3
Daman & Diu	0.9	0.8	0.9	0.9	0.8	0.8	0.8	0.5	0.1	0.0
Goa	5.2	5.2	5.2	5.2	5.1	5.0	4.6	2.6	2.3	1.4
Gujarat	673.4	673.1	670.8	670.5	657.3	657.0	493.0	492.7	344.5	338.2
Madhya Pradesh	625.7	617.9	625.6	587.2	589.8	580.1	442.4	427.2	345.0	336.9
Maharashtra	730.5	730.1	695.8	695.6	626.3	614.0	563.6	518.0	384.7	377.8
SUB TOTAL WEST	**2218.0**	**2203.7**	**2176.1**	**2128.8**	**2053.5**	**2018.0**	**1641.4**	**1564.3**	**1192.0**	**1147.2**
Andhra Pradesh	466.0	466.1	320.6	284.9	266.7	232.0	225.7	191.5	56.4	26.6
Karnataka	522.9	522.4	522.8	504.3	509.8	484.2	287.5	260.3	156.0	126.5
Kerala	120.2	120.2	120.2	120.2	117.8	117.7	88.3	88.3	58.7	58.7
Lakshadweep	1.0	1.0	1.0	1.0	1.0	1.0	0.9	0.9	0.8	0.8
Puducherry	4.4	4.4	4.3	4.2	4.3	4.2	3.8	3.8	0.8	0.7
Tamil Nadu	348.7	348.7	348.7	348.7	341.7	341.7	307.6	307.6	204.5	204.9
Telengana	-	-	145.4	182.4	174.5	170.1	155.4	133.9	103.4	100.8
SUB TOTAL SOUTH	**1463.2**	**1462.8**	**1463.0**	**1445.8**	**1415.7**	**1351.0**	**1069.3**	**986.4**	**580.6**	**519.0**
All India	**9055.1**	**8996.3**	**8975.5**	**8878.4**	**8685.4**	**8536.8**	**6933.0**	**6678.4**	**5021.8**	**4669.2**

Allocatⁿ= Allocation

Note: Delhi and Chandigarh have been declared kerosene-free from Q3, 2013-14 and Q1, 2016-17 respectively. Punjab and Haryana have been declared kerosene-free from Q1, 2017-18. Allocation for Dadra & Nagar Haveli and Daman & Diu have been reduced to "Zero" from Q2, 2017-18. SKO allocation of Puducherry and Andhra Pradesh have been reduced to "Zero" wef 1.09.2017 and 1.10.2017 respectively.

On an all India basis, the drop in allocation in the last five years has been -44.5%. The allocation drop has been steepest in the Southern region (-60.3%) followed by Northern region (-48.4%), Western region (-46.3%), Eastern region (-33.1%) and North Eastern region (-26.0%).

Table 6.4 : Oil industry Retail Outlets & SKO / LDO agencies

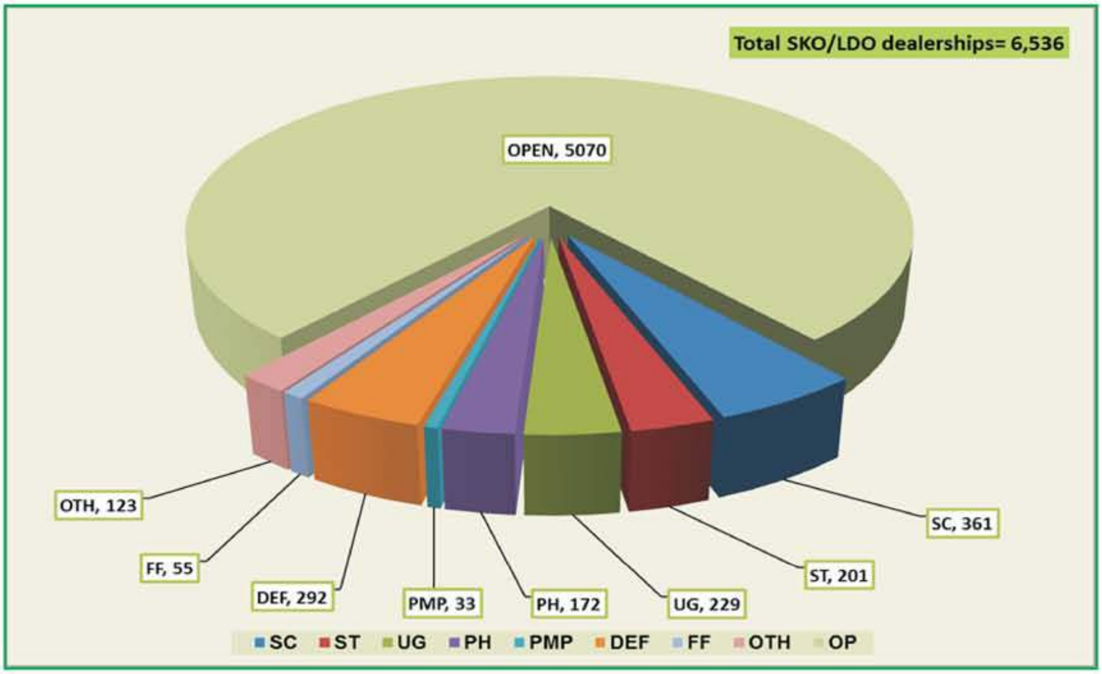
State/UT	Number of Retail Outlets (As on)					Number of SKO/LDO agencies (As on)				
	01.04.2014	01.04.2015	01.04.2016	01.04.2017	01.04.2018 (P)	01.04.2014	01.04.2015	01.04.2016	01.04.2017	01.04.2018 (P)
Chandigarh	41	41	41	41	41	12	12	12	12	12
Delhi	403	394	395	396	397	116	117	116	116	116
Haryana	2333	2419	2534	2726	2862	142	141	141	141	141
Himachal Pradesh	361	382	396	414	432	26	26	26	26	26
Jammu and Kashmir	469	475	485	494	503	47	47	47	47	47
Punjab	3229	3248	3316	3380	3427	241	241	239	237	237
Rajasthan	3327	3465	3736	4116	4476	250	252	250	250	250
Uttar Pradesh	6013	6247	6616	7069	7473	695	696	696	696	696
Uttarakhand	505	514	551	570	590	72	73	73	73	73
SUB TOTAL NORTH	**16681**	**17185**	**18070**	**19206**	**20201**	**1601**	**1605**	**1600**	**1598**	**1598**
Andaman & Nicobar Islands	9	9	10	12	14	2	2	2	2	2
Bihar	2316	2385	2511	2604	2695	372	372	372	372	372
Jharkhand	1062	1082	1151	1189	1207	86	87	87	87	87
Odisha	1438	1464	1560	1639	1681	177	177	177	177	177
West Bengal	2183	2178	2244	2299	2333	469	458	458	458	458
SUB TOTAL EAST	**7008**	**7118**	**7476**	**7743**	**7930**	**1106**	**1096**	**1096**	**1096**	**1096**
Arunachal Pradesh	71	71	71	74	85	33	33	33	33	33
Assam	753	759	788	828	871	359	359	359	359	359
Manipur	80	83	85	85	97	36	36	36	36	36
Meghalaya	175	179	190	198	203	35	35	35	35	35
Mizoram	32	33	36	37	41	19	19	19	19	19
Nagaland	68	68	69	70	73	19	19	19	19	19
Sikkim	44	46	47	50	51	12	12	12	12	12
Tripura	63	64	67	68	71	40	40	40	40	40
SUB TOTAL NORTH EAST	**1286**	**1303**	**1353**	**1410**	**1492**	**553**	**553**	**553**	**553**	**553**
Chhattisgarh	998	1040	1108	1176	1249	109	108	108	108	108
Dadra & Nagar Haveli	27	31	31	31	31	2	2	2	2	2
Daman & Diu	31	31	31	32	32	5	5	5	5	5
Goa	109	111	114	115	116	21	22	22	22	22
Gujarat	2910	3050	3384	3765	4025	493	480	480	478	476
Madhya Pradesh	2873	3005	3269	3528	3711	279	285	284	284	284
Maharashtra	5025	5207	5419	5684	5970	774	769	767	767	767
SUB TOTAL WEST	**11973**	**12475**	**13356**	**14331**	**15134**	**1683**	**1671**	**1668**	**1666**	**1664**
Andhra Pradesh	4710	2811	3004	3197	3336	603	394	394	394	394
Karnataka	3621	3737	3836	4027	4214	322	325	324	323	318
Kerala	1900	1932	2009	2048	2100	242	237	237	237	237
Lakshadweep	0	0	0	0	0	0	0	0	0	0
Puducherry	150	153	156	160	164	8	8	8	8	8
Tamil Nadu	4541	4616	4702	5039	5388	465	468	466	466	466
Telangana	0	2088	2228	2434	2626	0	202	202	202	202
SUB TOTAL SOUTH	**14922**	**15337**	**15935**	**16905**	**17828**	**1640**	**1634**	**1631**	**1630**	**1625**
All India	**51870**	**53418**	**56190**	**59595**	**62585**	**6583**	**6559**	**6548**	**6543**	**6536**

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

On an all India basis the percentage growth in the number of retail outlets in last five years has been 20.7%. The region wise growth is highest for the Western region (26.4%), followed by Northern region (21.1%), Southern region (19.5%), North Eastern region (16.0%) and Eastern region (13.2%).

As many states have become kerosene free in the last five years and due to voluntary surrender of PDS kerosene quota by some others there has been a in decline in the number of kerosene dealers in the country.

Category wise SKO/LDO dealers as on 01.04.2018



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 oil company retail outlets for which category-wise breakup is not available.

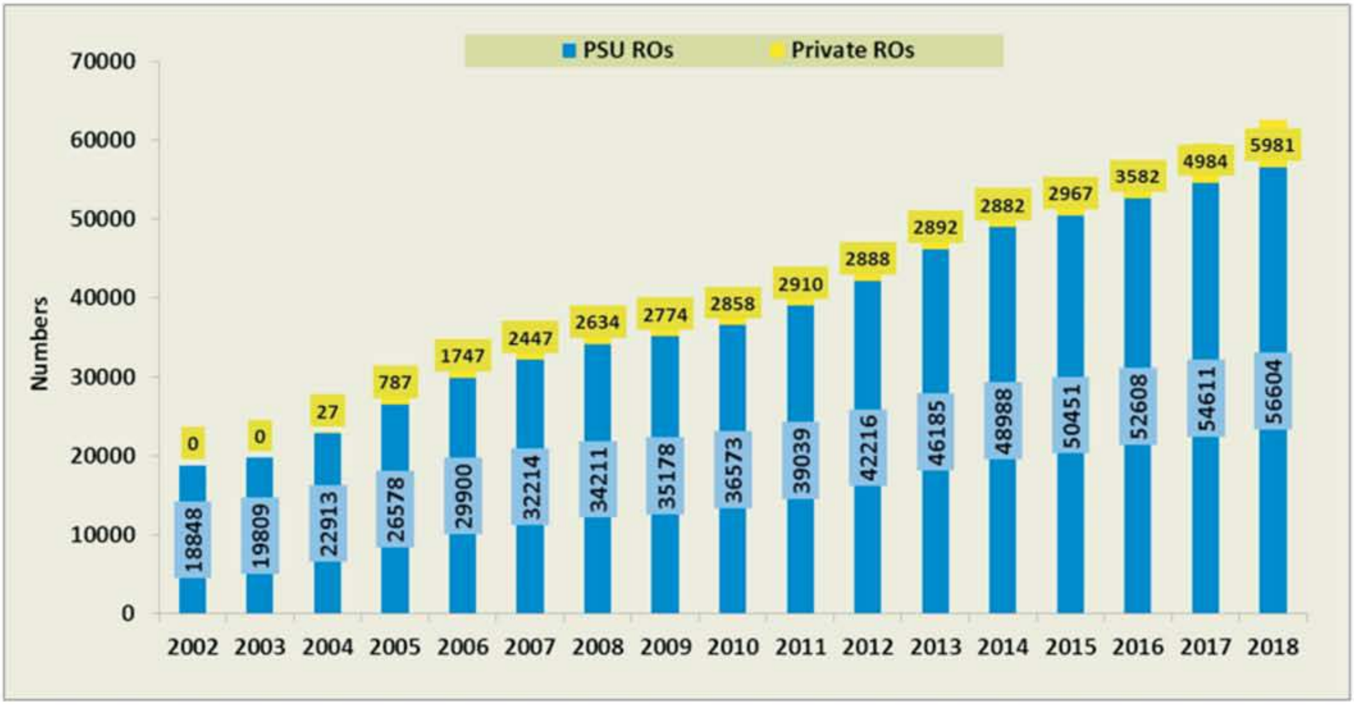
Table 6.5 : Industry marketing infrastructure as on 01.04.2018 (P)

Particulars	IOCL	BPCL	HPCL	RIL	NEL[$]	Shell	Others	Total
POL terminal/depots (Nos.)	125	78	82	18	2		6*	**311**
Aviation fuel stations (Nos.)	107	51	41	28			1[@]	**228**
Retail Outlets (total) (Nos.)	27,089	14,447	15,062	1,400	4,473	108	6^	**62,585**
Out of which, Rural ROs (Nos.)	7,529	2,621	3,310	127	1,570	14		**15,171**
SKO/LDO agencies (Nos.)	3,897	1,001	1,638					**6,536**
LPG distributors (total) (Nos.) (PSUs only)	10,213	5,084	4,849					**20,146**
LPG bottling plants (Nos.) (PSUs only)	91	50	48				1**	**190**
LPG bottling capacity (TMTPA) (PSUs only)	9,385	3,933	4,047				30[#]	**17,395**
LPG active domestic consumers (Nos. crore) (PSUs only)	10.6	5.8	6.1					**22.5**

* MRPL-4 and NRL-2; [@] Shell MRPL -1; ^ MRPL-6; **NRL; [#] NRL; [$]Nayara Energy Limit (formerly Essar Oil Limited)

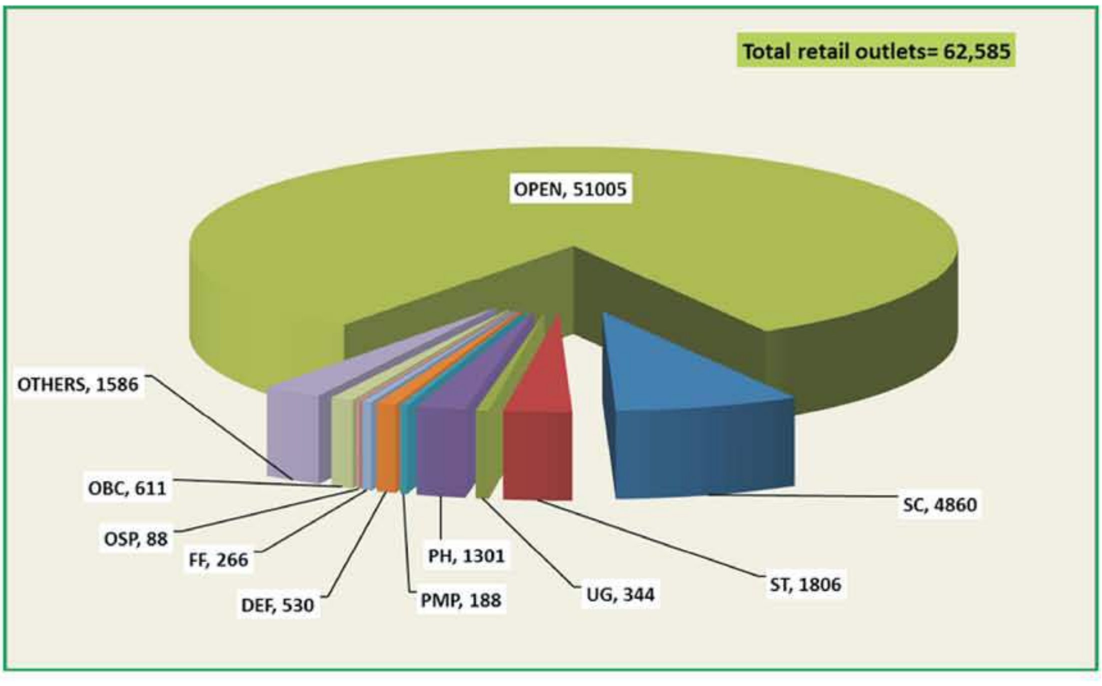
Source: Oil companies

All India number of retail outlets in PSU and private category (as on 1st April)



On 1.04.2018 the number of public sector oil company owned retail outlets was 56,604 out of a total of 62,585 outlets on all India basis, whereas the number of retail outlets owned by private oil companies was 5,981.Participation by private sector in retail outlet business started in FY 2004 with 24 retail outlets. In 2017-18 it accounted for 9.6% of the total share.

Category wise retail outlets as on 01.04.2018



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.

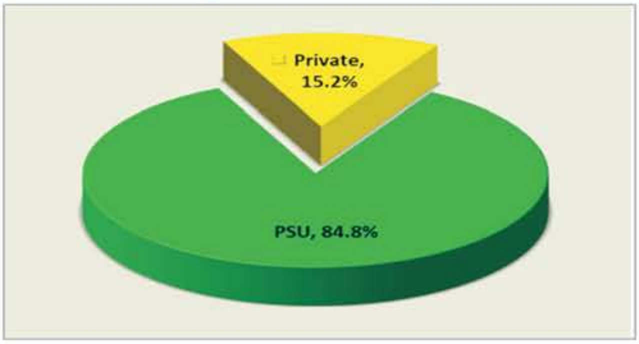
(2) Open category also includes private oil company retail outlets for which category-wise breakup is not available.

Table 6.6 : Break-up of consumption data (PSU and Private)

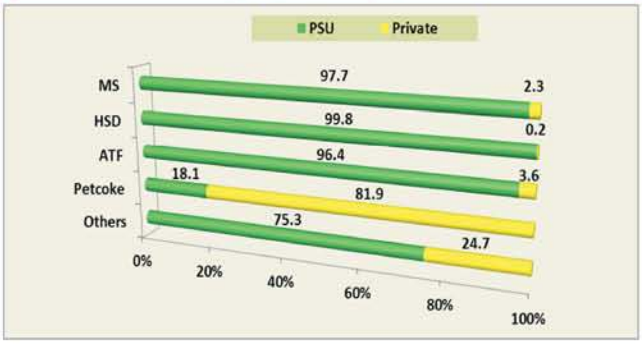
(Thousand metric tonne)

Product	2013-14			2014-15			2015-16			2016-17			2017-18 (P)		
	PSU	Private	Total	PSU	Private	Total	PSU	Private	Total	PSU	Private	Total	PSU	Private	Total
LPG	15925	369	**16294**	17571	429	**18000**	19134	489	**19623**	21179	429	**21608**	22976	367	**23343**
MS	16727	401	**17128**	18588	487	**19075**	21079	768	**21847**	22518	1247	**23765**	24330	1846	**26175**
Naphtha	5414	5891	**11305**	4814	6268	**11082**	4790	8481	**13271**	4905	8335	**13241**	5199	7350	**12549**
ATF	5304	201	**5505**	5319	404	**5723**	5629	632	**6262**	6186	812	**6998**	6988	635	**7623**
SKO	7165	0	**7165**	7087	0	**7087**	6826	0	**6826**	5397	0	**5397**	3845	0	**3845**
HSD	68200	164	**68364**	68701	715	**69416**	72092	2555	**74647**	71450	4577	**76027**	74380	6693	**81073**
LDO	386	0	**386**	365	0	**365**	407	0	**407**	449	0	**449**	519	4	**524**
Lubes	1218	2087	**3305**	1162	2148	**3310**	1312	2259	**3571**	1339	2131	**3470**	1345	2434	**3779**
FO/ LSHS	5168	1067	**6236**	5167	794	**5961**	5665	968	**6632**	6009	1142	**7150**	5644	1116	**6761**
Bitumen	4500	506	**5007**	4366	707	**5073**	4819	1118	**5938**	4721	1214	**5936**	4883	1121	**6004**
PetCoke	2133	9622	**11756**	2391	12167	**14557**	3483	15815	**19297**	3952	20012	**23964**	5174	21019	**26192**
Others	2136	3820	**5956**	2085	3785	**5870**	2299	4053	**6352**	2799	3795	**6593**	3388	3665	**7053**
Total	**134277**	**24130**	**158407**	**137616**	**27904**	**165520**	**147535**	**37139**	**184674**	**150904**	**43693**	**194597**	**158671**	**46250**	**204922**

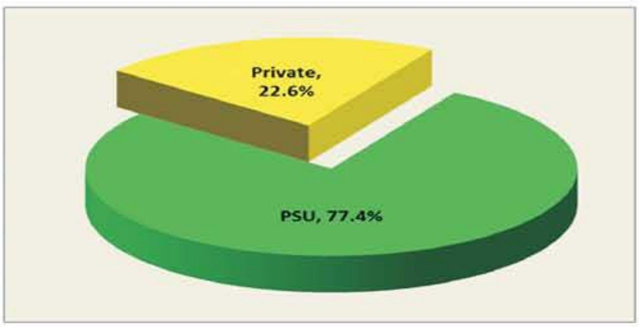
PSU/Private share in POL consumption (2013-14=158.4 MMT)



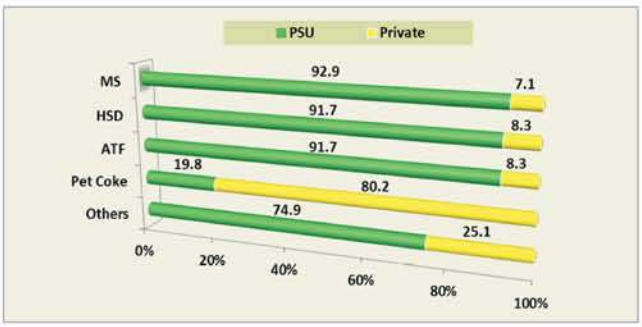
PSU/Private product wise share, 2013-14 (in percentage)



PSU/Private share in POL consumption (2017-18 = 204.9 MMT) (P)



PSU/Private product wise share, 2017-18 (P) (in percentage)



Source: Oil companies

Note: Private consumption includes direct imports as well as marketing by private oil companies.

1. The share of the private sector is increasing in marketing of total POL products being consumed in the country. It has grown by 7.4% in the last five years.
2. The growth has been highest in diesel 8.1% , petrol 4.8% and ATF 4.7%.
3. In respect of all other products including lubes, bitumen, FO/ LSHS , LDO and naphtha, the private sector share has marginally increased by 0.4%.
4. Petcoke is directly imported by many end users.

Chapter -7

LPG

Table 7.1 : LPG marketing at a glance

					(Thousand metric tonne)
Particulars	**2013-14**	**2014-15**	**2015-16**	**2016-17**	**2017-18 (P)**
LPG production	**10032**	**9840**	**10568**	**11253**	**12365**
LPG consumption	**16294**	**18000**	**19623**	**21608**	**23343**
PSU sales	**15925**	**17571**	**19134**	**21179**	**22976**
Domestic	14412	16040	17182	18871	20352
Non-Domestic	1074	1051	1464	1776	2086
Bulk	246	316	317	364	354
Auto LPG	194	164	171	167	184
Imports					
PSU Imports	6199	7884	8470	10668	11015
Private Imports	369	429	489	429	367
					(Lakh)
Enrolment (domestic)	**159.1**	**163.4**	**204.5**	**331.7**	**284.7**
As on	1.4.2014	1.4.2015	1.4.2016	1.4.2017	1.4.2018
LPG active domestic customers	-	1485.6	1662.5	1987.6	2242.7
Non-domestic customers	20.1	21.1	23.3	25.3	27.9
PMUY beneficiaries	-	-	-	**200.3**	**356.0**
					(Percent)
LPG coverage (Estimated)	-	**56.2**	**61.9**	**72.8**	**80.9**
LPG distributors	**13896**	**15930**	**17916**	**18786**	**20146**
of which					
Shehri Vitrak	7172	7334	7492	7677	7821
Rurban Vitrak	1885	2263	2852	3152	3463
Gramin & Durgam Kshetriya Vitrak	4839	6333	7572	7957	8862
Auto LPG dispensing stations (ALDS)	**678**	**681**	**676**	**675**	**672**
					(Thousand metric tonne per annum)
Bottling capacity (rated)	**13515**	**14044**	**15172**	**16264**	**17395**
					(Thousand metric tonne)
Gross tankage	**777**	**781**	**869**	**878**	**912**

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

Note:
1. Data in respect of enrolment, 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.
3. MOPNG vide letter no. P-20019/2/2016-LPG dated 23 June 2016 had issued unified guidelines for selection of LPG distributors. In the said guidelines, LPG distributor categories have been redefined. The historical data on LPG distributors has been rearranged in line with the new classification for comparison.

Figure 7.1.1 Growth trend in active LPG domestic customers (in crore)

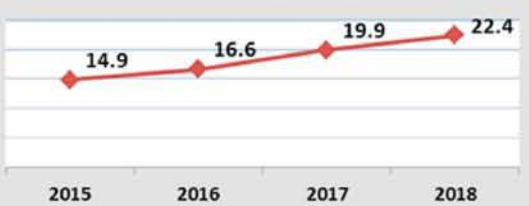


Figure 7.1.2 Growth trend in LPG coverage (in percentage)

Table 7.2: LPG coverage (estimated) as on 01.04.2018 (P)

(Number in lakhs)

State/UT	No. of households Census 2011	Estimated households as on 01.04.2018	Active connections as on 01.04.2018	LPG coverage (%)
Chandigarh	2.35	2.64	2.73	103.5%
Delhi	33.41	38.42	48.25	125.6%
Haryana	47.18	53.83	59.52	110.6%
Himachal Pradesh	14.77	16.12	15.27	94.8%
Jammu & Kashmir	20.15	23.52	22.66	96.3%
Punjab	54.10	59.42	73.54	123.8%
Rajasthan	125.81	144.80	122.86	84.8%
Uttar Pradesh	329.24	376.35	302.12	80.3%
Uttarakhand	19.97	22.63	22.40	99.0%
Sub Total North	**646.98**	**737.72**	**669.34**	**90.7%**
Arunachal Pradesh	2.62	3.10	2.12	68.6%
Assam	63.67	71.39	46.27	64.8%
Manipur	5.07	5.74	4.00	69.7%
Meghalaya	5.38	6.45	1.89	29.3%
Mizoram	2.21	2.58	2.50	96.9%
Nagaland	4.00	3.98	1.97	49.4%
Sikkim	1.28	1.40	1.23	87.9%
Tripura	8.43	9.31	5.05	54.3%
Sub Total North East	**92.66**	**103.94**	**65.04**	**62.6%**
Andaman & Nicobar Island	0.93	0.98	0.78	79.6%
Bihar	189.41	223.48	129.59	58.0%
Jharkhand	61.82	71.62	33.65	47.0%
Odisha	96.61	106.19	59.28	55.8%
West Bengal	200.67	220.29	176.27	80.0%
Sub Total East	**549.44**	**622.57**	**399.58**	**64.2%**
Chhattisgarh	56.23	65.23	40.18	61.6%
Dadra & Nagar Haveli	0.73	1.02	0.82	80.6%
Daman & Diu	0.60	0.83	0.59	70.3%
Goa	3.23	3.41	4.70	137.6%
Gujarat	121.82	138.47	85.88	62.0%
Madhya Pradesh	149.68	171.20	107.93	63.0%
Maharashtra	238.31	265.31	241.03	90.8%
Sub Total West	**570.59**	**645.48**	**481.11**	**74.5%**
Andhra Pradesh	126.04	135.86	131.65	96.9%
Karnataka	131.80	146.36	130.81	89.4%
Kerala	77.16	79.84	82.88	103.8%
Lakshadweep	0.11	0.11	0.05	48.2%
Puducherry	3.01	3.61	3.55	98.3%
Tamil Nadu	184.93	205.36	184.29	89.7%
Telangana	84.21	90.77	94.36	104.0%
Sub Total South	**607.26**	**661.92**	**627.59**	**94.8%**
All India	**2466.93**	**2771.63**	**2242.66**	**80.9%**

Source: PSU OMCs (IOCL,BPCL and HPCL)

Figure 7.2.1 : Increase in LPG coverage

Table 7.3: BPL households covered under PMUY scheme as on 1.4.2018 (P)

(Number in lakhs)

State/UT	Number of BPL Households
Chandigarh	0.00
Delhi	0.01
Haryana	3.57
Himachal Pradesh	0.30
Jammu & Kashmir	3.73
Punjab	3.82
Rajasthan	26.26
Uttar Pradesh	64.86
Uttarakhand	1.37
Sub Total North	**103.92**
Arunachal Pradesh	0.06
Assam	11.28
Manipur	0.33
Meghalaya	0.37
Mizoram	0.01
Nagaland	0.09
Sikkim	0.01
Tripura	0.46
Sub Total North East	**12.61**
Andaman & Nicobar Island	0.02
Bihar	49.13
Jharkhand	12.04
Odisha	23.00
West Bengal	50.57
Sub Total East	**134.76**
Chhattisgarh	19.52
Dadra & Nagar Haveli	0.11
Daman & Diu	0.00
Goa	0.01
Gujarat	12.69
Madhya Pradesh	33.15
Maharashtra	18.77
Sub Total West	**84.26**
Andhra Pradesh	0.80
Karnataka	9.09
Kerala	0.38
Lakshadweep	0.00
Puducherry	0.03
Tamil Nadu	10.18
Telangana	0.00
Sub Total South	**20.48**
All India	**356.03**

Source: PSU OMCs (IOCL,BPCL and HPCL)

Figure 7.3.1: Region-wise percentage of BPL customers covered under PMUY as on 1.4.2018

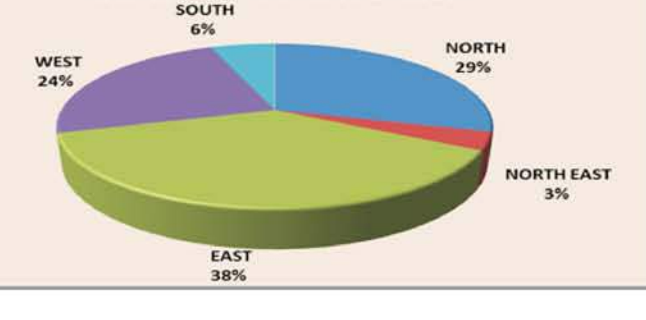


Table 7.4 : LPG domestic customers enrolment (14.2 kg/5 kg) by PSU OMCs

(Number in lakhs)

State/UT	2017-18 (P)		
	14.2 Kg	5 Kg	Total
Chandigarh	0.10	0.0000	0.10
Delhi	1.80	0.0002	1.80
Haryana	5.79	0.0001	5.79
Himachal Pradesh	1.05	0.0000	1.05
Jammu & Kashmir	2.73	0.0010	2.73
Punjab	5.08	0.0002	5.08
Rajasthan	13.72	0.0002	13.72
Uttar Pradesh	33.71	0.0093	33.72
Uttarakhand	1.71	0.0000	1.71
Sub Total North	**65.70**	**0.0111**	**65.71**
Arunachal Pradesh	0.24	0.0000	0.24
Assam	14.50	0.0002	14.50
Manipur	0.65	0.0000	0.65
Meghalaya	0.49	0.0000	0.49
Mizoram	0.11	0.0000	0.11
Nagaland	0.23	0.0000	0.23
Sikkim	0.10	0.0000	0.10
Tripura	0.80	0.0000	0.80
Sub Total North East	**17.11**	**0.0002**	**17.11**
Andaman & Nicobar Island	0.06	0.0000	0.06
Bihar	32.18	0.0051	32.19
Jharkhand	8.28	0.0003	8.28
Odisha	15.10	0.0022	15.11
West Bengal	33.10	0.0001	33.10
Sub Total East	**88.73**	**0.0077**	**88.74**
Chhattisgarh	9.57	0.0006	9.57
Dadra & Nagar Haveli	0.12	0.0000	0.12
Daman & Diu	0.03	0.0000	0.03
Goa	0.17	0.0000	0.17
Gujarat	9.21	0.0000	9.21
Madhya Pradesh	14.88	0.0050	14.88
Maharashtra	22.83	0.0005	22.83
Sub Total West	**56.81**	**0.0062**	**56.81**
Andhra Pradesh	15.63	0.6448	16.27
Karnataka	16.34	0.0041	16.35
Kerala	3.20	0.0001	3.20
Lakshadweep	0.01	0.0000	0.01
Puducherry	0.13	0.0000	0.13
Tamil Nadu	14.36	0.0001	14.36
Telangana	5.98	0.0001	5.98
Sub Total South	**55.65**	**0.6491**	**56.30**
All India	**283.99**	**0.6743**	**284.67**

Source: PSU OMCs (IOCL, BPCL and HPCL)

Figure 7.4.1 : Region-wise percentage of new enrolments during 2017-18

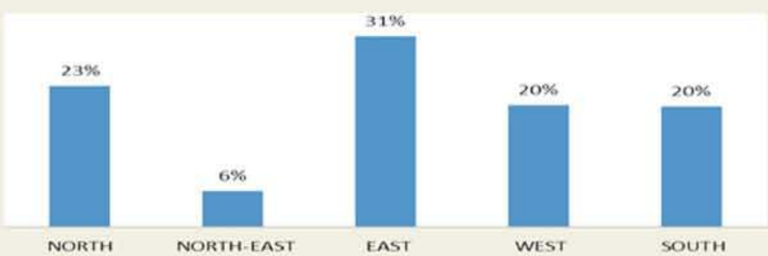


Table 7.5 : Number of LPG distributors as on 1.4.2018 (P) (New Scheme)

(Nos.)

State/UT	Sheheri Vitrak	Rurban Vitrak	Gramin Vitrak	Durgam Kshetriya Vitrak	Total
Chandigarh	27	0	0	0	27
Delhi	321	0	0	0	321
Haryana	265	94	120	61	540
Himachal Pradesh	69	13	73	13	168
Jammu & Kashmir	129	41	48	35	253
Punjab	335	227	176	70	808
Rajasthan	428	157	339	175	1099
Uttar Pradesh	994	676	1187	538	3395
Uttarakhand	110	106	30	22	268
Sub Total North	**2678**	**1314**	**1973**	**914**	**6879**
Arunachal Pradesh	5	5	24	32	66
Assam	133	106	153	76	468
Manipur	15	13	20	36	84
Meghalaya	22	9	9	11	51
Mizoram	11	6	12	25	54
Nagaland	15	11	11	24	61
Sikkim	9	1	5	1	16
Tripura	17	9	30	7	63
Sub Total North-East	**227**	**160**	**264**	**212**	**863**
Andaman & Nicobar Island	0	2	3	0	5
Bihar	238	238	367	266	1109
Jharkhand	162	39	80	120	401
Odisha	171	91	267	224	753
West Bengal	402	144	311	220	1077
Sub Total East	**973**	**514**	**1028**	**830**	**3345**
Chhattisgarh	104	73	85	181	443
Dadra & Nagar Haveli	2	1	0	0	3
Daman & Diu	3	0	0	0	3
Goa	44	3	5	0	52
Gujarat	418	111	137	108	774
Madhya Pradesh	465	212	162	429	1268
Maharashtra	990	184	382	271	1827
Sub Total West	**2026**	**584**	**771**	**989**	**4370**
Andhra Pradesh	315	204	309	112	940
Karnataka	522	133	219	169	1043
Kerala	226	121	229	34	610
Lakshadweep	1	0	0	0	1
Puducherry	15	9	2	1	27
Tamil Nadu	563	329	322	139	1353
Telangana	275	95	256	89	715
Sub Total South	**1917**	**891**	**1337**	**544**	**4689**
All India	**7821**	**3463**	**5373**	**3489**	**20146**

Source: PSU OMCs (IOCL, BPCL and HPCL)

Note: MOPNG vide letter no. P-20019/2/2016-LPG dated 23 June 2016 has issued unified guidelines for selection of LPG distributors. In the said guidelines, LPG distributor categories have been redefined as above.

Figure 7.5.1: Region-wise distribution of distributors as on 1.4.2018

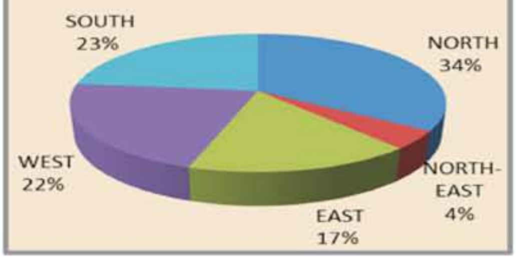
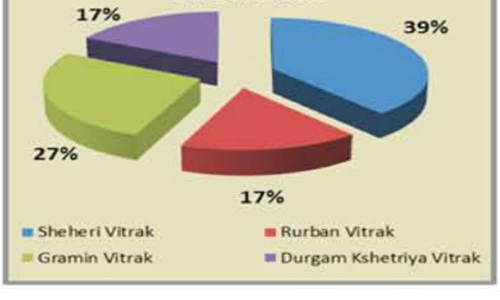


Figure 7.5.2: Category wise distribution of distributors as on 1.4.2018



Chapter -8

Prices and Taxes

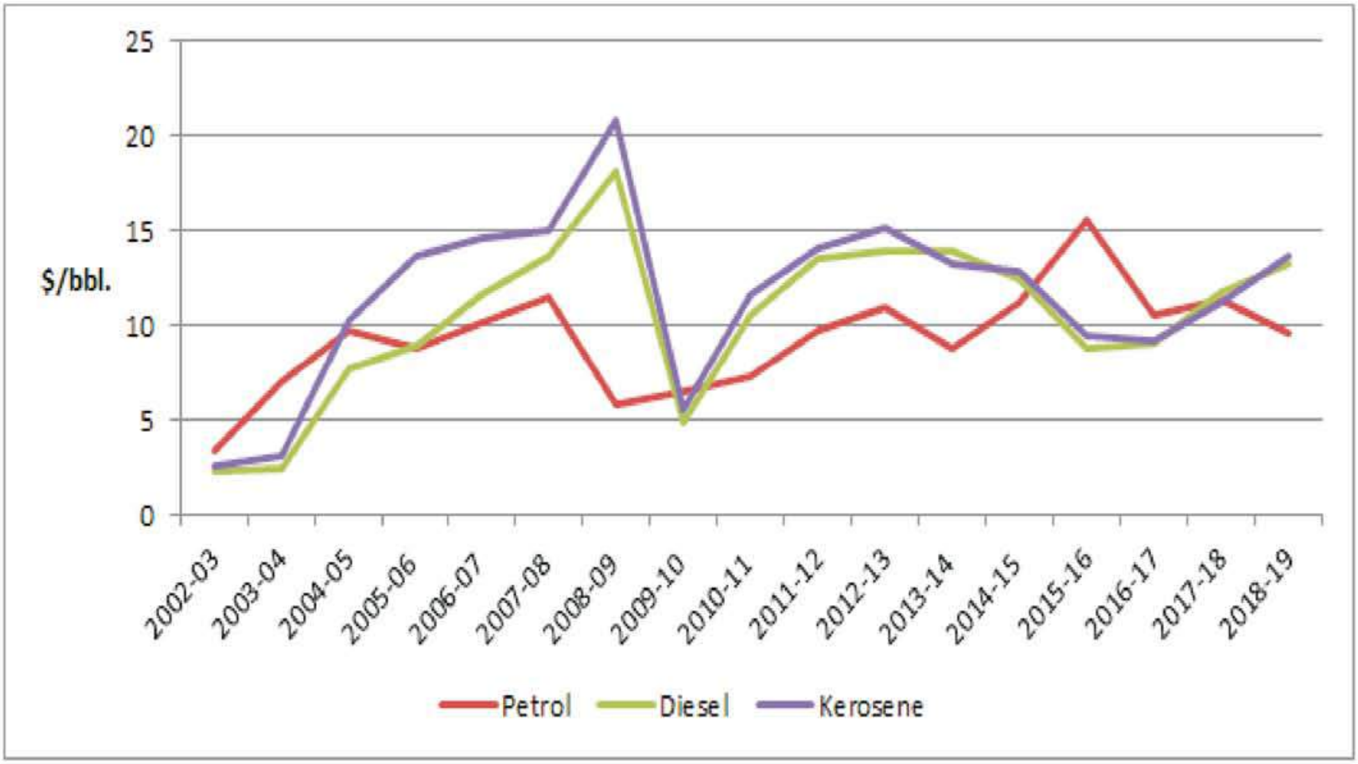
Table 8.1 : FOB price of Indian basket of crude oil

Year	Indian basket
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	47.56
2017-18	56.43
2018-19 (up to 31.05.2018)	72.23
2018 : Month wise	
January	67.06
February	63.54
March	63.80
April	69.30
May	75.31

Note:

1. The Indian basket of crude oil (for 2017-18 & 2018-19) 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 72.38:27.62 during 2016-17.

Trend in spreads of petroleum products vs Indian basket of crude oil



Trend in spreads of international benchmark crude oils

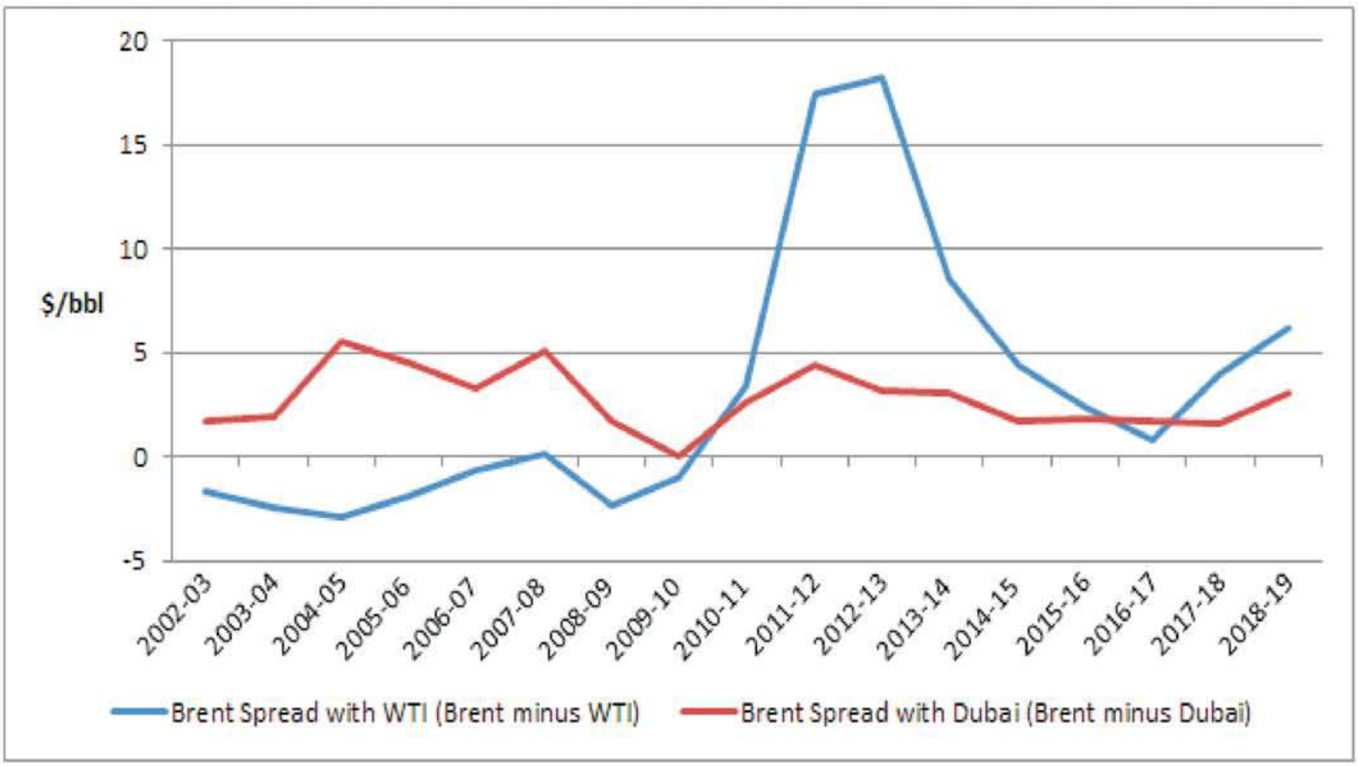


Table 8.2 : Price build-up of PDS kerosene at Mumbai

Sl. no.	Elements	Unit	Effective 01.06.2018
1	FOB price at Arab Gulf (AG) of jet/ kerosene	$/bbl	89.38
2	Add: Ocean freight from AG to Indian ports	$/bbl	1.72
3	C&F (cost & freight) price	$/bbl	91.10
	or	₹/litre	38.15
4	Import charges (insurance/ocean loss/ LC charge/port dues)	₹/litre	0.27
5	**Customs duty**	**₹/litre**	**NIL**
6	**Import Parity Price (IPP) (at 29.5º C) (sum of 3 to 5)**	**₹/litre**	**38.43**
7	**Refinery Transfer Price (RTP) for PDS kerosene (price paid by the oil marketing companies to refineries)**	**₹/litre**	**38.43**
8	Add : Inland freight and delivery charges	₹/litre	0.78
9	Add : Marketing cost of OMCs	₹/litre	0.39
10	Add : Marketing margin of OMCs	₹/litre	0.26
11	**Total cost price (sum of 7 to 10) (before GST and wholesale & retail dealer commission)**	**₹/litre**	**39.85**
12	Less: Under-recovery to OMCs	₹/litre	18.05
13	**Price charged to dealers (depot price) (11-12) (excluding GST)**	**₹/litre**	21.80
14	Add : Wholesale & retail dealer commission and other charges fixed by State Government.	₹/litre	2.04
15	Add : GST (including GST on wholesale & retail dealer commission)	₹/litre	1.19
16	**Retail Selling Price (RSP) at Mumbai (sum of 13 to 15)**	**₹/litre**	**25.03**

Note: The explanatory notes are given in Table 8.3.

Table 8.3 : Element wise explanation of price build-up of PDS kerosene

Sl. no.	Elements	Description
1	FOB price	Daily FOB (free on board) quotes of jet/kerosene at Arab Gulf including premium / discount published by Platts and Argus publications are averaged for the previous month.
2	Ocean freight	Weighted average ocean freight from Arab Gulf to destination Indian ports as per World Scale freight rates adjusted for average freight rate assessments (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.
7	Refinery Transfer Price (RTP)	RTP based on Import Parity Price is 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 & 10	Marketing cost & margin	Marketing cost & margin are as fixed in the 'PDS Kerosene and LPG (Domestic) Subsidy Scheme, 2002'.
12	Under recovery to OMCs	Difference between total cost price (based on Import Parity) and actual selling price (excluding GST , wholesale & retailer commission and other charges), represents under-recoveries to OMCs
14	Wholesale & retail dealer commission and other charges fixed by State Government	Commission for wholesale & retail dealers and other charges like delivery charges are fixed by State Government.
15	Goods and Services Tax (GST)	GST rate as applicable on PDS kerosene is 5%.

Table 8.4 : Price build-up of domestic LPG at Delhi

Sl. no.	Elements	Unit	Effective 01.06.2018
1	FOB price at Arab Gulf (AG) of LPG	$/MT	497.18
2	Add: Ocean freight from AG to Jamnagar	$/MT	20.16
3	C&F (cost & freight) price	$/MT	517.33
	or	₹/cylinder	495.89
4	Import charges (insurance/ocean loss/ LC charge/port dues)	₹/cylinder	4.64
5	Customs duty	₹/cylinder	NIL
6	**Import Parity Price (IPP) (sum of 3 to 5)**	**₹/cylinder**	**500.53**
7	**Refinery Transfer Price (RTP) for domestic LPG (price paid by the oil marketing companies to refineries)**	**₹/cylinder**	**500.53**
8	Add: Storage / distribution cost & return on investment	₹/cylinder	9.57
9	Add: Bottling charges	₹/cylinder	20.58
10	Add: Charges for cylinder cost	₹/cylinder	18.11
11	Add: Inland freight	₹/cylinder	30.22
12	**Bottling plant cost before working capital (sum of 7 to 11)**	**₹/cylinder**	**579.00**
13	Add: Cost of working capital	₹/cylinder	2.33
14	**Cost price at LPG bottling plant (sum of 12 to 13)**	**₹/cylinder**	**581.32**
15	Add: Delivery charges	₹/cylinder	10.00
16	Add : Uncompensated costs	₹/cylinder	24.92
17	**Market determined price (sum of 14 to 16)**	**₹/cylinder**	**616.24**
18	Add : GST(including GST on distributor commission)	₹/cylinder	33.27
19	Add : Distributor commission	₹/cylinder	49.18
20	**Retail Selling Price (RSP) (sum of 17 to 19)**	**₹/cylinder**	**698.69**
21	**RSP at Delhi (rounded)**	**₹/cylinder**	**698.50**
22	Less: Cash compensation on LPG to consumers under DBTL	₹/cylinder	204.95
23	**Effective cost to consumer after subsidy (21-22)**	**₹/cylinder**	**493.55**

Note: The explanatory notes are given in table 8.5. The above price build-up is for 14.2 kg cylinder.

Table 8.5 : 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 the 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	Uncompensated costs	In the price buildup, oil marketing companies are charging the consumers on account of import costs, rounding-off & differential delivery charges. All these costs are not compensated to OMCs as per the PAHAL (DBTL) scheme.
18	Goods and Services Tax (GST)	GST rate as applicable on domestic LPG is 5%
19	Distributor commission	LPG distributor commission is Rs.49.18/cylinder (including additional distributor commission).
22	Cash compensation to consumer under DBTL	Under DBTL scheme, the difference between the price of domestic subsidized & non-subsidized LPG is being transferred to the bank account of consumers by OMCs. This also includes the uncompensated costs which are borne by the OMCs .

Table 8.6 : Price build-up of petrol at Delhi

w.e.f. 01.06.2018		
Particulars	**Unit**	**Value**
C&F (cost & freight) price (moving average basis)	$/bbl	89.02
Average exchange rate	₹/$	67.93
Price charged to dealers (excluding excise duty and VAT)	₹/Ltr	38.53
Add : Excise duty	₹/Ltr	19.48
Add : Dealer's commission (average)	₹/Ltr	3.64
Add : VAT (including VAT on dealer's commission)	₹/Ltr	16.64
Retail selling price at Delhi (rounded)	**₹/Ltr**	**78.29**

-As per IOCL.

Table 8.7 : Price build-up of diesel at Delhi

w.e.f. 01.06.2018		
Particulars	**Unit**	**Value**
C&F (cost & freight) price (moving average basis)	$/bbl	92.81
Average exchange rate	₹/$	67.93
Price charged to dealers (excluding excise duty and VAT)	₹/Ltr	41.16
Add : Excise duty	₹/Ltr	15.33
Add : Dealer's commission (average)	₹/Ltr	2.53
Add : VAT (including VAT on dealer's commission)	**₹/Ltr**	**10.18**
Retail selling price at Delhi (rounded)	**₹/Ltr**	**69.20**

-As per IOCL.

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

Table 8.8 : Share of taxes in RSP of petrol effective 01.06.2018 at Delhi

Particulars	₹/Litre	Share in RSP
Price excluding taxes and dealers' commission	37.76	48.2%
Customs duty	0.77	
Excise duty	19.48	
Total central taxes	**20.25**	**25.9%**
Price charged to dealers - depot price	58.01	
VAT (including VAT on dealer's commission)	16.64	
Total state taxes	**16.64**	**21.3%**
Total taxes	**36.89**	**47.1%**
Dealer's commission	3.64	4.6%
RSP	**78.29**	**100.0%**

Table 8.9 : Share of taxes in RSP of diesel effective 01.06.2018 at Delhi

Particulars	₹/Litre	Share in RSP
Price excluding taxes and dealer's commission	40.36	58.3%
Customs duty	0.80	
Excise duty	15.33	
Total central taxes	**16.13**	**23.3%**
Price charged to dealers - depot price	56.49	
VAT (including VAT on dealer's commission) & air ambience charges	10.18	
Total state taxes	**10.18**	**14.7%**
Total taxes	**26.31**	**38.0%**
Dealer's commission	2.53	3.7%
RSP	**69.20**	**100.0%**

Table 8.10 : Break up of Central excise duty on petrol & diesel (effective 02.02.2018)

(₹/Litre)

Particular	Petrol	Diesel
Basic duty	4.48	6.33
Additional excise duty (Road & Infrastructure Cess)	8.00	8.00
Special additional excise duty	7.00	1.00
Total excise duty	**19.48**	**15.33**

Note : The prices of petrol and diesel are as per IOCL at Delhi.

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

Table 8.11 : Share of taxes in RSP of PDS kerosene effective 01.06.2018 at Mumbai

Particulars	₹/Litre	Share in RSP
Total price before Government levies	39.85	
Less : Under-recovery to OMCs	18.05	
Price excluding taxes and dealers' commission	**21.80**	**87.1%**
Customs duty	NIL	
GST (including GST on wholesaler and retailer commission)	1.19	
Total taxes	**1.19**	**4.8%**
Wholesaler and retailer commission	2.04	8.1%
RSP	**25.03**	**100.0%**

Table 8.12 : Share of taxes in RSP of domestic LPG effective 01.06.2018 at Delhi

Particulars	₹/14.2 kg cylinder	Share in RSP
RSP excluding taxes and distributors' commission	616.05	88.2%
Customs duty	NIL	
GST (including GST on distributors' commission)	33.27	4.8%
Total taxes	**649.32**	**93.0%**
Distributor's commission	49.18	7.0%
RSP	**698.50**	**100.0%**
Less: Cash compensation on LPG to consumers under DBTL	204.95	
Effective cost to consumer after DBTL subsidy	**493.55**	

Table 8.13 : Weightage of crude oil, natural gas and petroleum products in Wholesale Price Index (WPI)

Product	Weight in %
Crude Petroleum	1.95
Natural Gas	0.46
High Speed Diesel (HSD)	3.10
Petrol	1.60
Naphtha	0.87
Furnace Oil (FO)	0.67
LPG	0.64
Aviation Turbine Fuel (ATF)	0.32
Lube Oils	0.29
Bitumen	0.23
Kerosene	0.19
Petroleum Coke	0.05
Total	**10.37**

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

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. It 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. It includes the following elements:

i. FOB price

ii. Advance licence benefit for duty free import of crude oil pursuant to export of refined products (currently nil)

3. **Refinery Transfer Price (RTP):** This is the price paid by the Oil Marketing Companies to refineries for purchase of finished petroleum products at refinery gate.

4. **Retail Selling Price (RSP):** This is the final price, inclusive of all duties and taxes, charged to the consumer.

Dealer's / Distributor's commission on petroleum products

Table 8.14 : 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**
05-Oct-16	₹ 1868.14/KL + 0.875% of product billable price**	₹ 1389.35/KL + 0.280% of product billable price**
16-Nov-16	₹ 2006.33/KL + 0.875% of product billable price**	₹ 1491.72/KL + 0.280% of product billable price**
01-Apr-17	₹ 2020.38/KL + 0.859% of product billable price**	₹ 1502.13/KL + 0.267% of product billable price**
01-Jul-17	₹ 2025.97/KL + 0.859% of product billable price**	₹ 1506.81/KL + 0.267% of product billable price**
1-Aug-17*	₹ 2674.74/KL + 0.859% of product billable price**	₹ 2031.38/KL + 0.257% of product billable price**

Note: *In addition to above, effective 1st August 2017, slab based incentive is also given to eligible dealers through credit notes.

Table 8.15 : 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
28-Oct-16	787.82	723.87
05-Sep-17	1008.83	928.10

Table 8.16: 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
01-Jul-16	45.83	0.16	22.67
01-Aug-16	45.83	0.09	22.67
01-Sep-16	45.83	0.06	22.67
01-Oct-16	45.83	0.09	22.67
28-Oct-16	47.48	0.09	23.74
01-Nov-16	47.48	0.14	23.74
01-Dec-16	47.48	0.21	23.74
01-Feb-17	47.48	0.30	23.74
01-Mar-17	47.48	0.43	23.74
01-Apr-17	47.48	0.40	23.74
01-May-17	47.48	0.27	23.74
01-Jun-17	47.48	0.15	23.74
01-Jul-17	47.48	0.13	23.74
01-Aug-17	47.48	0.06	23.74
01-Sep-17	47.48	0.16	23.74
30-Sep-17	48.89	0.16	24.20
01-Oct-17	48.89	0.23	24.20
01-Nov-17	48.89	0.36	24.20
01-Jan-18	48.89	0.35	24.20
01-Feb-18	48.89	0.34	24.20
01-Mar-18	48.89	0.28	24.20
01-Apr-18	48.89	0.23	24.20
01-Jun-18	48.89	0.29	24.20

Source: MoP&NG circulars & OMCs

Table 8.17 : Revisions in RSP of petroleum products at Delhi since 01.04.2010

Date	Petrol	Diesel	PDS kerosene	Domestic LPG		Reasons (other than increase/decrease in basic price)
				Subsidized	Non-subsidized	
	(₹/litre)			(₹/14.2 Kg cyl.)		
01.04.2010	47.93	38.10	9.32	310.35		
26.06.2010	51.43	40.10	12.32	345.35		
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			Increase in dealers commission
21.09.2010	51.83					
17.10.2010	52.55					
02.11.2010	52.59	37.75	12.37			Increase in siding & shunting charges
09.11.2010	52.91					
16.12.2010	55.87					
15.01.2011	58.37					
18.01.2011			12.73			Increase in transportation charges
15.05.2011	63.37					
25.06.2011		41.12	14.83	395.35		Decrease in excise duty on diesel
01.07.2011	63.70	41.29		399.00		Increase in siding & shunting charges for petrol and diesel / dealer commission on petrol, diesel and LPG
16.09.2011	66.84					
01.10.2011		40.91				Rebate of Rs.0.375 per litre in VAT on diesel in Delhi.
04.11.2011	68.64					
16.11.2011	66.42					
01.12.2011	65.64					
24.05.2012	73.18					
03.06.2012	71.16					
18.06.2012	70.24	41.29				Rebate on petrol/ removal of rebate on diesel in Delhi
29.06.2012	67.78					
24.07.2012	68.48					
01.08.2012	68.46	41.32				Decrease in siding/ shunting charges for petrol & diesel. Increase in delivery charges for diesel.
14.09.2012		46.95				Decrease in excise duty on petrol and increase in excise duty on diesel.
18.09.2012					756.50	Price notified for non-subsidized domestic LPG
01.10.2012					883.50	
03.10.2012			14.79			Decrease in siding charges
07.10.2012				410.50	895.50	Increase in domestic LPG distributor commission
09.10.2012	67.90					
27.10.2012	68.19	47.15				Increase in dealer commission
01.11.2012					922.50	
02.11.2012					895.50	
16.11.2012	67.24					
16.01.2013	67.56					Removal of rebate in VAT for petrol in Delhi
18.01.2013	67.26	47.65			942.00	
28.01.2013			14.96			Increase in dealer's commission
16.02.2013	69.06	48.16				
01.03.2013					904.50	

Table 8.17 : Continued

Date	Petrol	Diesel	PDS kerosene	Domestic LPG		Reasons (other than increase/decrease in basic price)
				Subsidized	Non-subsidized	
	(₹/litre)			(₹/14.2 Kg cyl.)		
02.03.2013	70.74					
16.03.2013	68.34					
23.03.2013		48.67				
01.04.2013	68.31	48.63			901.50	Decrease in siding charges on petrol and diesel
02.04.2013	67.29					
16.04.2013	66.09	48.67				
01.05.2013	63.09				847.00	
11.05.2013		49.69				
01.06.2013	63.99	50.25			802.00	
16.06.2013	66.39					
29.06.2013	68.58					
01.07.2013		50.26			832.00	
02.07.2013		50.84				
15.07.2013	70.44					
01.08.2013	71.28	51.40			875.00	
01.09.2013	74.10	51.97			932.50	
14.09.2013	76.06					
01.10.2013	72.40	52.54			1,004.00	
01.11.2013	71.02	53.10			954.50	
01.12.2013		53.67			1,017.50	
11.12.2013				414.00	1,021.00	Increase in distributor's commission on domestic LPG
21.12.2013	71.52	53.78				Increase in basic price of petrol & increase in dealer's commission on petrol and diesel
04.01.2014	72.43	54.34			1,241.00	
01.02.2014		54.91			1,134.00	
01.03.2014	73.16	55.48			1,080.50	
01.04.2014	72.26	55.49			980.50	
16.04.2014	71.41					
01.05.2014					928.50	
16.05.2014		56.71				
01.06.2014		57.28			905.00	
07.06.2014	71.51					
25.06.2014	71.56				906.00	Increase in rail freight
01.07.2014	73.60	57.84			922.50	
01.08.2014	72.51	58.40			920.00	
16.08.2014	70.33					
31.08.2014	68.51	58.97				
01.09.2014					901.00	
01.10.2014	67.86				880.00	
15.10.2014	66.65					
19.10.2014		55.60				
23.10.2014				417.00	883.50	Increase in domestic LPG distributor's commission

Table 8.17 : Continued

Date	Petrol	Diesel	PDS kerosene (at Mumbai)	Domestic LPG		Reasons (other than increase/decrease in basic price)
				Subsidized	Non-subsidized	
	(₹/litre)			(₹/14.2 Kg cyl.)		
01.11.2014	64.24	53.35	15.14		865.00	**Price of PDS kerosene as per Mumbai**
01.12.2014	63.33	52.51			752.00	
16.12.2014	61.33	50.51				
01.01.2015					708.50	
17.01.2015	58.91	48.26				Increase in excise duty on petrol and diesel
01.02.2015					605.00	
04.02.2015	56.49	46.01				
16.02.2015	57.31	46.62	15.24			Increase in dealer's commission on PDS kerosene
01.03.2015	60.49	49.71			610.00	
01.04.2015				417.82	621.00	Price of subsidized domestic LPG is effictive cost to consumer as per DBTL scheme
02.04.2015	60.00	48.50				
16.04.2015	59.20	47.20				
01.05.2015	63.16	49.57			616.00	
16.05.2015	66.29	52.28				
01.06.2015					626.50	
16.06.2015	66.93	50.93				
01.07.2015	66.62	50.22			608.50	
16.07.2015	66.90	49.72				Increase in VAT rates at Delhi
01.08.2015	64.47	46.12			585.00	
15.08.2015	63.20	44.95				
01.09.2015	61.20	44.45			559.50	
01.10.2015		44.95			517.50	
16.10.2015		45.90				
01.11.2015	60.70	45.93			545.00	
16.11.2015	61.06	46.80				
01.12.2015	60.48	46.55			606.50	
09.12.2015				419.26	608.00	Increase in distributor's commission on domestic LPG
16.12.2015	59.98	46.09				
01.01.2016	59.35	45.03		419.33	657.50	Increase in LPG additional distributor's commission by Rs.0.07/Cyl
02.01.2016						Increase in basic excise duty rates for petrol/diesel without increase in RSPs
16.01.2016	59.03	44.18				Increase in excise duty
19.01.2016	59.99	44.71				Increase in VAT rates at Delhi
31.01.2016						Increase in basic excise duty rates for petrol/diesel without increase in RSPs
01.02.2016	59.95	44.68		419.22	575.00	Decrease in LPG additional distributor's commission by Rs.0.11/Cyl
18.02.2016	59.63	44.96				
01.03.2016	56.61	46.43		419.13	513.50	Decrease in LPG additional distributor's commission by Rs.0.09/Cyl
04.03.2016			15.42			Increase in dealer's commission
17.03.2016	59.68	48.33				
01.04.2016					509.50	
05.04.2016	61.87	49.31				
16.04.2016	61.13	48.01				
25.04.2016			15.36			Reduction in SSC on PDS kerosene in Mumbai

Table 8.17 : Continued

Date	Petrol	Diesel	PDS kerosene (at Mumbai)	Domestic LPG		Reasons (other than increase/decrease in basic price)
				Subsidized	Non-subsidized	
	(₹/litre)			(₹/14.2 Kg cyl.)		
01.05.2016	62.19	50.95		419.15	527.50	Increase in additional distributor's commission of domestic LPG by Rs.0.02/Cyl
07.05.2016		50.41				Decrease in VAT rates of diesel in Delhi
17.05.2016	63.02	51.67				
01.06.2016	65.60	53.93		419.18	548.50	Increase in additional distributor's commission of domestic LPG by Rs.0.03/Cyl
03.06.2016			15.02			Reduction in SSC on PDS kerosene in Mumbai
16.06.2016	65.65	55.19				
01.07.2016	64.76	54.70		421.16	537.50	Decrease in additional distributor's commission of domestic LPG by Rs.0.02/Cyl
07.07.2016			15.27			
16.07.2016	62.51	54.28				
01.08.2016	61.09	52.27	15.53	423.09	487.00	Decrease in additional distributor's commission of domestic LPG by Rs.0.07/Cyl
16.08.2016	60.09	50.27	15.68			Increase in SSC on PDS kerosene at Mumbai
01.09.2016	63.47	52.94	15.94	425.06	466.50	Decrease in additional distributor's commission of domestic LPG by Rs.0.03/Cyl
16.09.2016	64.21	52.59	16.19			
21.09.2016			16.40			Increase in kerosene retailer's commission at Mumbai
01.10.2016	64.58	52.51	16.66	427.09	490.00	Increase in additional distributor's commission of domestic LPG by Rs.0.03/Cyl
05.10.2016	64.72	52.61				Increase in dealer's commission on petrol and diesel
16.10.2016	66.45	55.38	16.92			
28.10.2016				428.59	492.00	Increase in distributor's commission
01.11.2016			17.17	430.64	529.50	Increase in additional distributor's commission of domestic LPG by Rs.0.05/Cyl
06.11.2016	67.62	56.41				
16.11.2016	65.93	54.71	17.51			Increase in dealers' commission of petrol and diesel
01.12.2016	66.10	54.57	17.76	432.71	584.00	Increase in additional distributor's commission of domestic LPG by Rs.0.07/Cyl
16.12.2016			18.02			
17.12.2016	68.94	56.68				
01.01.2017			18.28	434.71	585.00	
02.01.2017	70.60	57.82				
16.01.2017	71.14	59.02	18.54			
01.02.2017			18.77	434.80	651.50	Increase in additional distributor's commission of domestic LPG by Rs.0.09/Cyl
01.03.2017				434.93	737.50	Increase in additional distributor's commission of domestic LPG by Rs.0.13/Cyl
01.04.2017	66.29	55.61		440.90	723.00	Decrease in additional distributor's commission of domestic LPG by Rs.0.03/Cyl and increase in dealer commission on petrol and diesel
07.04.2017			19.03			
16.04.2017	68.07	56.83	19.29			
01.05.2017	68.09	57.35	19.65	442.77	631.00	Decrease in additional distributor's commission of domestic LPG by Rs.0.13/Cyl
16.05.2017	65.32	54.90	19.91			

Table 8.17 : Continued

Date	Petrol	Diesel	PDS kerosene (at Mumbai)	Domestic LPG		Reasons (other than increase/decrease in basic price)
				Subsidized	Non-subsidized	
	(₹/litre)			(₹/14.2 Kg cyl.)		
01.06.2017	66.91	55.94	20.17	446.65	552.50	Decrease in additional distributor's commission of domestic LPG by Rs.0.12/Cyl
16.06.2017	65.48	54.49	20.43			
01.07.2017	63.09	53.33	21.09	477.46	564.00	GST implementation on PDS kerosene and domestic LPG. Decrease in additional distributor's commission of domestic LPG by Rs.0.02/Cyl
11.07.2017	63.93	54.74	21.22			Revision in SSC on PDS kerosene in Mumbai
16.07.2017	64.11	54.93	21.48			
01.08.2017	65.40	55.58	21.74	479.77	524.00	Decrease in additional distributor's commission of domestic LPG by Rs.0.07/Cyl
16.08.2017	68.14	57.36	22.00			
01.09.2017	69.26	57.13	22.27	487.18	597.50	Increase in additional distributor's commission of domestic LPG by Rs.0.10/Cyl
16.09.2017	70.48	58.84	22.53			
20.09.2017	70.52	58.79	22.76			Increase in wholesale dealer's commission in Mumbai for PDS kerosene
30.09.2017	70.66	58.86		488.68	599.00	Increase in distributor's commission on domestic LPG
01.10.2017	70.76	58.92		491.13	649.00	Increase in additional distributor's commission of domestic LPG by Rs.0.07/Cyl
01.11.2017	69.14	57.73		495.69	742.00	Increase in additional distributor's commission of domestic LPG by Rs.0.13/Cyl
15.11.2017	69.68	58.32	22.12			Removal of SSC on PDS kerosene in Mumbai
01.12.2017	69.22	58.40		495.69	747.00	
01.01.2018	69.97	59.70	22.39	495.64	741.00	Decrease in additional distributor's commission of domestic LPG by Rs.0.01/Cyl
16.01.2018	71.27	61.88	22.65			
01.02.2018	73.05	64.11	22.91	495.63	736.00	Decrease in additional distributor's commission of domestic LPG by Rs.0.01/Cyl
16.02.2018	72.52	63.02	23.17			
01.03.2018	71.57	62.25	23.44	493.09	689.00	Decrease in additional distributor's commission of domestic LPG by Rs.0.06/Cyl
16.03.2018	72.37	62.81	23.70			
01.04.2018	73.73	64.58	23.98	491.35	653.50	Decrease in additional distributor's commission of domestic LPG by Rs.0.05/Cyl
16.04.2018	74.02	65.18	24.24			
01.05.2018	74.63	65.93	24.51	491.21	650.50	
16.05.2018	75.10	66.57	24.77			
01.06.2018	78.29	69.20	25.03	493.55	698.50	Increase in additional distributor's commission of domestic LPG by Rs.0.06/Cyl

Note :

1. Prices of petrol since 26th June, 2010, non-subsidized domestic LPG since 13th September, 2012, diesel since 19th October, 2014 are as per IOCL.
2. Effective 16.6.2017, the petrol/diesel pricing is revised on daily basis, therefore the changes in petrol/diesel pricing is shown only on the dates when kerosene/ LPG pricing has been changed.

Table 8.18 : Retail Selling Price (RSP) of major products in India & neighbouring countries

Indian rupees (₹)/ litre/ 14.2 Kg cyl.

Country	Petrol	Diesel	Kerosene	Domestic LPG
India (Delhi)	78.29^	69.20^	25.03#	493.55*
Pakistan	49.90	57.84	46.78	1039.52
Bangladesh	69.63	52.62	52.62	643.79
Sri Lanka	58.67	46.68	43.25	815.30
Nepal (Kathmandu)	69.37	58.02	58.02	867.11

^ as per IOCL as on 1.6.2018, # at Mumbai effective 1.6.2018 for PDS Kerosene, *Effective cost after DBTL subsidy effective 1.6.2018.

Note: Prices for neighboring countries as on 1.6.2018.
Source: 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 rate - www.oanda.com

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

Table 8.19 : 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	78.29	41.40	36.89	47%	69.20	42.89	26.31	38%
France	119.69	44.06	75.63	63%	112.60	44.78	67.82	60%
Germany	111.07	40.68	70.40	63%	97.06	43.74	53.32	55%
Italy	126.05	44.70	81.35	65%	116.15	45.51	70.64	61%
Spain	101.57	46.80	54.77	54%	93.75	47.92	45.83	49%
UK	111.65	39.46	72.18	65%	114.97	42.33	72.64	63%
Japan	87.56	46.68	40.88	47%	74.50	49.30	25.20	34%
Canada	69.65	48.98	20.67	30%	65.32	49.23	16.08	25%
USA	47.79	39.71	8.07	17%	53.69	44.37	9.32	17%

Table 8.20 : 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	1.16	0.61	0.55	47%	1.02	0.63	0.39	38%
France	1.82	0.67	1.15	63%	1.72	0.68	1.03	60%
Germany	1.69	0.62	1.07	63%	1.48	0.67	0.81	55%
Italy	1.92	0.68	1.24	65%	1.77	0.69	1.08	61%
Spain	1.55	0.71	0.83	54%	1.43	0.73	0.70	49%
UK	1.70	0.60	1.10	65%	1.75	0.64	1.11	63%
Japan	1.33	0.71	0.62	47%	1.14	0.75	0.38	34%
Canada	1.06	0.75	0.31	30%	1.00	0.75	0.25	25%
USA	0.73	0.61	0.12	17%	0.82	0.68	0.14	17%

Note :
1. Prices of petrol and diesel in France, Germany, Italy, Spain, UK, Japan, Canada & USA as per the IEA report for April 2018 and average exchange rate of April 2018 considered for conversion: ₹ 65.64/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 1.6.2018 as per IOCL. Average exchange rate of May 2018 considered for conversion ₹ 67.54/$.

Table 8.21 : Retail Selling Price (RSP) of petroleum products at State capitals/UTs as on 01.06.2018

State/Union Territory	City	Petrol	Diesel	Domestic LPG
		(₹/litre)		(₹/14.2 KG cylinder)
States				
Andhra Pradesh	Vizag	83.61	**75.62**	702.00
Arunachal Pradesh	Itanagar	74.08	66.43	761.00
Assam	Guwahati	80.51	72.25	745.50
Bihar	Patna	83.76	73.90	786.00
Chhattisgarh	Raipur	78.66	74.70	770.50
Goa	Panjim	72.15	70.43	712.50
Gujarat	Gandhinagar	77.58	74.37	725.00
Haryana	Ambala	78.39	69.72	719.50
Himachal Pradesh	Shimla	78.44	68.82	739.50
Jammu & Kashmir	Srinagar	82.66	72.58	820.00
Jharkhand	Ranchi	77.87	73.05	751.50
Karnataka	Bengaluru	79.57	70.39	699.00
Kerala	Thiruvananthapuram	81.44	74.05	697.50
Madhya Pradesh	Bhopal	83.92	72.84	707.50
Maharashtra	Mumbai	**86.10**	73.67	**671.50**
Manipur	Imphal	76.34	67.24	831.00
Meghalaya	Shillong	77.63	68.99	762.50
Mizoram	Aizawl	74.06	66.44	831.00
Nagaland	Kohima	76.71	67.53	715.00
Odisha	Bhubaneswar	77.09	74.19	724.50
Punjab	Jalandhar	83.55	69.09	727.00
Rajasthan	Jaipur	81.07	73.68	687.00
Sikkim	Gangtok	81.30	70.90	**849.50**
Tamil Nadu	Chennai	81.28	73.06	712.50
Telangana	Hyderabad	82.94	75.22	753.00
Tripura	Agartala	73.94	67.26	841.00
Uttarakhand	Dehradun	79.23	69.54	713.00
Uttar Pradesh	Lucknow	78.71	69.36	735.00
West Bengal	Kolkata	80.92	71.75	724.00
Union territory				
Andaman & Nicobar Islands	Port Blair	**67.44**	**64.83**	760.00
Chandigarh	Chandigarh	75.29	67.20	712.00
Daman & Diu	Daman	76.06	69.95	682.00
Dadra & Nagar Haveli	Silvasa	76.14	70.02	690.00
Delhi	New Delhi	78.29	69.20	698.50
Puducherry	Puducherry	77.03	71.48	708.00

Source: IOCL

Highest	Lowest

Table 8.22 : Retail Selling Price (RSP) of PDS kerosene at major cities as on 01.06.2018

State	City	(₹/litre)
Maharashtra	Mumbai	25.03
Tamil Nadu	Chennai	13.60
West Bengal	Kolkata	27.38

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

Table 8.23 : Customs and excise duty rates on petroleum products as on 01.06.2018

Customs duty and excise duty as on 1st June 2018 on non GST products

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 (Road and Infrastructure Cess)
Crude oil	NIL + ₹ 50/MT as NCCD	Nil	-	Nil+ Cess @ 20% + ₹ 50/ MT as NCCD	-	-
Petrol	2.5%	₹ 4.48/ltr. + ₹ 7.00/ ltr SAD	₹ 8.00/ltr.	₹ 4.48/ltr	₹ 7.00/ltr	₹ 8.00/ltr.
Petrol (branded)	2.5%	₹ 5.66/ltr. + ₹ 7.00/ ltr SAD	₹ 8.00/ltr.	₹ 5.66/ltr	₹ 7.00/ltr	₹ 8.00/ltr.
High speed diesel	2.5%	₹ 6.33/ltr+ ₹ 1.00/ ltr	₹ 8.00/ltr.	₹ 6.33/ltr	₹ 1.00/ltr	₹ 8.00/ltr.
High speed diesel (branded)	2.5%	₹ 8.69/ltr+ ₹ 1.00/ ltr	₹ 8.00/ltr.	₹ 8.69/Ltr	₹ 1.00/ltr	₹ 8.00/ltr.
Aviation Turbine Fuel (ATF)[2]	Nil	14.0%	-	14.0%	-	-
Liquefied Natural Gas (LNG)	2.5%	Nil	-	Nil	-	-
Natural gas [gaseous state]	5.0%	Nil	-	Nil	-	-
Natural gas [compressed]	5.0%	14.0%	-	14.0%	-	-

Customs duty and GST rates as on 1st June 2018 on GST products

Particulars		Customs duty	
		Basic custom duty	CVD (in lieu of IGST)
LPG	Domestic[3]	Nil	5.00%
	Non - Domestic	5.00%	18.00%
Kerosene	PDS	Nil	5.00%
	Non PDS	5.00%	18.00%
Naphtha	Fertilizer	Nil	18.00%
	Non- Fertilizer	5.00%	18.00%
Butane / Propane	Domestic	Nil	5.00%
	Non - Domestic	2.50%	18.00%
Bitumen & Asphalt		5.00%	18.00%
Furnace Oil	Fertilizer	Nil	18.00%
	Non- Fertilizer	5.00%	18.00%
Light Diesel Oil		5.00%	18.00%
Low Sulphur Heavy Stock/ HPS & other Res.	Fertilizer	Nil	18.00%
	Non- Fertilizer	5.00%	18.00%
Lube oil/greases		5.00%	18.00%
Petroleum Coke		10.00%	18.00%
Petroleum Jelly		5.00%	18.00%
Transformer Oil		5.00%	18.00%
Waxes all types		5.00%	18.00%

Note:

1. In addition to the above, 10% Social Welfare Surcharge (3% in case of petrol and diesel) is also applicable on the total duties of Customs (excluding CVD in lieu of IGST).
2. In case of ATF, Basic Excise Duty /Additional Customs Duty (CVD) is 2% in place of 14%, for supply to scheduled commuter airlines (SCA) from the regional connectivity scheme (RCS) airports.
3. Basic Customs duty is Nil for import of domestic LPG sold to household consumers (including non domestic eexempted category) by PSU OMCs. Basic Customs duty rate is 5% for other importers of domestic LPG.

Table 8.24 : Actual rate of Sales Tax/ VAT/GST and other taxes levied by State/UT Governments on major petroleum products as on 01.06.2018

Sl. no.	State/ Union Territory		Petrol	Diesel	PDS kerosene	Domestic LPG
	State		**Sales Tax /VAT**		**GST**	
1	Andhra Pradesh		31% VAT + ₹ 4/litre VAT	22.25% VAT + ₹ 4/litre VAT		
2	Arunachal Pradesh		20% VAT	12.50% VAT		
3	Assam		32.66% or ₹ 14 per litre, whichever is higher as VAT	23.66% or ₹ 8.75 per litre, whichever is higher as VAT		
4	Bihar		26% VAT (30% surcharge on VAT as irrecoverable tax)	19% VAT (30% surcharge on VAT as irrecoverable tax)		
5	Chhattisgarh		25% VAT + ₹ 2/litre VAT	25% VAT + ₹ 1/litre VAT		
6	Gujarat		20% VAT+ 4% cess on town rate & VAT	20% VAT + 4 % cess on town rate & VAT		
7	Goa		17% VAT + 0.5% Green cess	19% VAT + 0.5% Green cess		
8	Himachal Pradesh		26% VAT	15% VAT		
9	Haryana		25% VAT+5% additional tax on VAT	16.40% VAT+5% additional tax on VAT		
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		
11	Jammu & Kashmir		24% MST+ ₹ 3000/KL employment cess	16% MST+ ₹ 1000/KL employment cess		
12	Kerala		30.08% sales tax+ ₹ 1/litre additional sales tax + 1% cess	22.76% sales tax+ ₹ 1/litre additional sales tax + 1% cess		
13	Karnataka		30% sales tax	19% sales tax		
14	Madhya Pradesh		28 % VAT + ₹ 4/litre VAT+1%Cess	22% VAT +1%Cess		
15	Maharashtra	Mumbai, Thane & Navi Mumbai	26% VAT+ ₹ 9/Litre additional tax	24% VAT + ₹ 1/KL additional tax	5%	5%
		(Rest of State)	25% VAT+ ₹ 9/Litre additional tax	21% VAT + ₹ 1/KL additional tax		
16	Manipur		25% VAT	14.50% VAT		
17	Meghalaya		22% VAT + 2% surcharge	13.5% VAT +2% surcharge		
18	Mizoram		20% VAT	12% VAT		
19	Nagaland		23.5% VAT +5% surcharge	13.5% VAT+ 5% surcharge		
20	Odisha		26% VAT	26% VAT		
21	Punjab		₹ 2050/KL (cess) +28% VAT+10% additional tax on VAT	₹ 1050/KL (cess) 13.40% VAT+10% additional tax on VAT		
22	Rajasthan		30% VAT+Rs 1500/KL road development cess	22% VAT+ ₹ 1750/KL road development cess		
23	Sikkim		25% VAT+ ₹ 3000/KL cess + ₹ 100/KL Sikkim consumer welfare fund	17.5% VAT + ₹ 2500/KL cess + ₹ 100/KL Sikkim consumer welfare fund		
24	Tamil Nadu		34% VAT	25% VAT		
25	Telangana		35.20% VAT	27% VAT		
26	Tripura		20% VAT	13.50% VAT		
27	West Bengal		25% or ₹ 13.12/litre whichever is higher as sales tax+ ₹ 1000/KL cess (20% additional tax on VAT as irrecoverable tax)	17% or ₹ 7.70/litre whichever is higher as sales tax + ₹ 1000/KL cess minus ₹ 290/KL sales tax rebate (20% additional tax on VAT as irrecoverable tax)		
28	Uttar Pradesh		26.80% or ₹ 16.74 per litre whichever in higher as VAT	17.48% or ₹ 9.41 per litre whichever in higher as VAT		
29	Uttarakhand		25% or ₹ 17/litre whichever is higher as VAT	17.48% VAT or ₹ 9.41/litre whichever is higher as VAT		
Union territories						
30	Andaman & Nicobar Islands		6%	6%		
31	Chandigarh		₹ 10/KL cess +19.74% VAT	₹ 10/KL cess + 11.40% VAT		
32	Dadra & Nagar Haveli		20% VAT	15% VAT		
33	Daman & Diu		20% VAT	15% VAT	5%	5%
34	Delhi		27% VAT	₹ 250/KL air ambience charges + 16.75% VAT		
35	Lakshadweep		NIL	NIL		
36	Puducherry		21.15% VAT	17.15% VAT		

Note:
1. As per details provided by IOCL/HPCL
2. For petrol & diesel, VAT/Sales tax at applicable rates is also levied on dealer's commission in Arunachal Pradesh, Delhi, Gujarat, Haryana, Madhya Pradesh, Punjab, Chandigarh, Puducherry, Andaman & Nicobar Islands, Meghalaya, Dadra & Nagar Haveli and Daman & Diu.

Table 8.25 : Contribution of petroleum sector to exchequer

(₹ crore)

Particulars			2013-14	2014-15	2015-16	2016-17	2017-18 (P)
1. Contribution to Central exchequer							
A.	**Tax/ duties on crude oil & petroleum products**						
	Cess on crude oil		16,183	15,934	15,470	13,285	14,571
	Royalty on crude oil / natural gas		4,550	3,858	4,885	4,650	4,747
	Customs duty		5,042	4,767	7,446	9,521	11,966
	Excise duty		77,982	99,184	1,78,591	2,42,691	2,29,019
	Service tax		2,092	2,181	2,837	2,956	1,228
	IGST						16,385
	CGST						6,401
	Others		101	101	125	122	125
	Sub total	**(A)**	**1,05,950**	**1,26,025**	**2,09,354**	**2,73,225**	**2,84,442**
B.	**Dividend to Government/ income tax etc.**						
	Corporate/ income tax		23,466	23,921	24,824	31,870	33,021
	Dividend income to Central Government		9,164	9,197	10,217	17,501	14,575
	Dividend distribution tax		2,951	3,500	4,590	6,196	5,981
	Profit petroleum on exploration of oil/ gas*		11,369	9,422	4,630	5,742	5,839
	Sub total	**(B)**	**46,950**	**46,040**	**44,261**	**61,309**	**59,416**
	Total contribution to Central exchequer	**(A+B)**	**1,52,900**	**1,72,065**	**2,53,615**	**3,34,534**	**3,43,858**
2. Contribution to State exchequer							
C.	**Tax/ duties on crude oil & petroleum products**						
	Royalty on crude oil / natural gas		14,493	14,159	7,932	11,943	9,370
	Sales tax/ VAT		1,29,045	1,37,157	1,42,848	1,66,378	1,84,091
	SGST/UTGST						6,721
	Octroi/ duties (incl. electricity duty)		4,156	3,838	2,712	3,524	1,663
	Entry tax / others		4,748	5,372	6,622	7,742	7,048
	Sub total	**(C)**	**1,52,442**	**1,60,526**	**1,60,114**	**1,89,587**	**2,08,893**
D.	**Dividend to Government/ direct tax etc.**						
	Dividend income to State Government		18	28	95	183	262
	Sub total	**(D)**	**18**	**28**	**95**	**183**	**262**
Total contribution to State exchequer		**(C+D)**	**1,52,460**	**1,60,554**	**1,60,209**	**1,89,770**	**2,09,155**
Total contribution of petroleum sector to exchequer (1+2)			**3,05,360**	**3,32,619**	**4,13,824**	**5,24,304**	**5,53,013**

* as provided by MOP&NG, (P)- Provisional
Note: Based on data provided by 16 oil & gas companies.

Table 8.26 : State/UT wise collection of Sales tax/ VAT by petroleum sector

(₹ Crore)

Sl. no.	State/Union territory	Sales tax/VAT				
		2013-14	2014-15	2015-16	2016-17	2017-18 (P)
States						
1	Andhra Pradesh	12,604	8,777	7,806	8,908	9,694
2	Arunachal Pradesh	54	56	54	26	67
3	Assam	2,160	2,268	2,163	2,571	3,109
4	Bihar	2,931	2,885	3,638	4,501	5,482
5	Chhattisgarh	2,397	2,645	2,617	3,200	3,684
6	Goa	388	478	534	650	649
7	Gujarat	14,610	15,879	14,701	15,958	14,852
8	Haryana	4,591	5,112	5,977	7,000	7,655
9	Himachal Pradesh	204	234	263	317	344
10	Jammu & Kashmir	941	951	1,004	1,110	1,329
11	Jharkhand	1,825	2,076	2,476	2,967	3,109
12	Karnataka	7,800	8,668	8,652	11,103	13,307
13	Kerala	5,172	5,378	6,121	6,899	7,266
14	Madhya Pradesh	6,232	6,832	7,631	9,160	9,380
15	Maharashtra	19,141	19,795	19,417	23,160	25,611
16	Manipur	102	116	115	117	162
17	Meghalaya	3	2	1	1	-
18	Mizoram	44	58	53	48	55
19	Nagaland	64	83	80	78	86
20	Odisha	2,519	2,865	3,027	4,283	6,871
21	Punjab	3,852	4,179	4,907	5,833	5,658
22	Rajasthan	7,396	8,373	9,211	10,590	11,529
23	Sikkim	66	74	98	105	96
24	Tamil Nadu	12,297	12,316	11,004	12,563	15,507
25	Telangana	-	4,527	6,391	7,552	8,777
26	Tripura	160	180	197	168	205
27	Uttar Pradesh	11,607	12,578	14,175	15,849	17,420
28	Uttarakhand	1,049	1,157	1,221	1,414	1,314
29	West Bengal	5,510	5,563	5,870	6,426	6,779
Union territories						
30	Andaman & Nicobar Islands	-	-	41	-	51
31	Chandigarh	74	84	75	54	54
32 & 33	Dadra and Nagar Haveli and Daman & Diu	115	149	152	156	43
34	Delhi	3,108	2,797	3,158	3,589	3,930
35	Lakshadweep	-	-	-	-	-
36	Puducherry	29	22	18	22	16
	TOTAL	**1,29,045**	**1,37,157**	**1,42,848**	**1,66,378**	**1,84,091**

Source: Oil companies
(P)-Provisional

Table 8.27 : State/UT wise collection of SGST/UTGST by petroleum sector

(₹ Crore)

Sl. no.	State/Union territory/others	2017-18 (P)
States		
1	Andhra Pradesh	195
2	Arunachal Pradesh	1
3	Assam	118
4	Bihar	93
5	Chhattisgarh	45
6	Goa	8
7	Gujarat	1,791
8	Haryana	427
9	Himachal Pradesh	29
10	Jammu & Kashmir	38
11	Jharkhand	57
12	Karnataka	389
13	Kerala	178
14	Madhya Pradesh	98
15	Maharashtra	1,082
16	Manipur	2
17	Meghalaya	0
18	Mizoram	1
19	Nagaland	1
20	Odisha	59
21	Punjab	190
22	Rajasthan	122
23	Sikkim	3
24	Tamil Nadu	617
25	Telangana	175
26	Tripura	6
27	Uttar Pradesh	424
28	Uttarakhand	39
29	West Bengal	290
Union territories		
30	Andaman & Nicobar Islands	1
31	Chandigarh	1
32 & 33	Dadra and Nagar Haveli and Daman & Diu	88
34	Delhi	128
35	Lakshadweep	0
36	Puducherry	17
Others		
1	Offshore	8
	TOTAL	**6,721**

Source: Oil companies
(P)-Provisional

Table 8.28 : Profit After Tax (PAT) of oil companies

(₹ Crore)

Companies	2013-14	2014-15	2015-16	2016-17	2017-18
PSU upstream/midstream companies					
ONGC	22,095	17,733	16,140	17,900	19,945
OIL	2,981	2,510	2,302	1,549	2,668
GAIL	4,375	3,039	2,226	3,503	4,618
Total	**29,451**	**23,282**	**20,668**	**22,952**	**27,231**
PSU downstream Oil Marketing Companies (OMCs)					
IOCL	7,019	5,273	11,242	19,106	21,346
BPCL	4,061	5,085	7,056	8,039	7,919
HPCL	1,734	2,733	3,725	6,209	6,357
Total	**12,814**	**13,091**	**22,023**	**33,354**	**35,622**
PSU stand alone refineries					
MRPL	601	(1,712)	1,146	3,642	2,224
CPCL	(304)	(39)	742	1,030	913
NRL	371	718	1,210	2,101	2,044
Total	**668**	**(1,033)**	**3,098**	**6,773**	**5,181**
PSU consultancy company					
EIL	480	308	264	325	378
Total	**480**	**308**	**264**	**325**	**378**
Private sector companies					
RIL	22,493	23,566	27,426	31,425	33,612
NEL[#]	126	1,522	1,289	(1,121)	*
Total	**22,619**	**25,088**	**28,715**	**30,304**	**33,612**

* Accounts not finalised till date; [#]Nayara Energy Limited (formerly Essar Oil Limited)
Source: Published results/ information provided by oil companies.
Note: Figures as per IND AS from Financial Year 2015-16 onwards

Table 8.29 : Financial details of oil companies

2016-17

Particulars	IOCL	BPCL	HPCL	ONGC	OIL	GAIL	MRPL	CPCL	NRL
									(₹ Crore)
Net sales / income from operations	4,38,692	2,41,859	2,13,489	77,489	9,188	48,789	59,415	40,586	13,947
Profit Before Interest and Tax (PBIT)	29,767	11,539	9,556	26,437	2,543	5,890	6,049	1,638	3,170
Interest	3,445	496	536	1,222	397	479	519	273	22
Tax	7,215	3,003	2,812	7,316	598	1,908	1,888	335	1,047
Profit After Tax (PAT)	19,106	8,039	6,209	17,900	1,549	3,503	3,642	1,030	2,101
Net worth	99,729	29,668	20,347	1,85,538	22,647	32,349	10,070	3,314	5,181
Borrowings (loan fund)	54,820	23,159	21,250	-	8,948	5,062	6,609	5,498	505
Ratios									
PAT as % of turnover (net sales)	4.36%	3.32%	2.91%	23.10%	16.86%	7.18%	6.13%	2.54%	15.06%
Debt (loan fund) to equity ratio	0.55	0.78	1.04	0.00	0.40	0.16	0.66	1.66	0.10
Earnings Per Share (EPS)	20.16	40.87	40.74	13.95	13.13	15.53	20.79	69.15	28.55

2017-18

Particulars	IOCL	BPCL	HPCL	ONGC	OIL	GAIL	MRPL	CPCL	NRL
									(₹ Crore)
Net sales / income from operations	4,97,401	2,76,401	2,43,227	84,580	10,368	53,525	63,067	44,134	13,228
Profit Before Interest and Tax (PBIT)	36,013	12,031	9,769	30,401	4,125	7,233	3,791	1,779	3,158
Interest	3,449	833	567	1,508	416	275	440	321	16
Tax	11,218	3,279	2,845	8,947	1,042	2,340	1,127	545	1,097
Profit After Tax (PAT)	21,346	7,919	6,357	19,945	2,668	4,618	2,224	913	2,044
Net worth	1,10,171	34,152	23,948	1,93,385	22,745	35,142	11,033	3,856	5,044
Borrowings (loan fund)	58,030	23,351	20,991	25,592	9,004	2,080	4,794	4,389	325
Ratios									
PAT as % of turnover (net sales)	4.29%	2.87%	2.61%	23.58%	25.73%	8.63%	3.53%	2.07%	15.46%
Debt (loan fund) to equity ratio	0.53	0.68	0.88	0.13	0.40	0.06	0.43	1.14	0.06
Earnings Per Share (EPS)	22.52	40.26	41.72	15.54	23.32	20.48	12.69	61.31	27.79

Source: Published results/information provided by oil companies

Table 8.30 : Total subsidy on petroleum products & natural gas

(₹ Crore)

Particulars	2013-14	2014-15	2015-16	2016-17	2017-18
Petrol	0	0	0	0	0
Diesel	62,837	10,935	0	0	0
PDS kerosene	30,574	24,799	11,496	7,595	4,672
Domestic LPG	46,458	36,580	18	0	0
Total under-recoveries (A)	**1,39,869**	**72,314**	**11,514**	**7,595**	**4,672**
Direct Benefit Transfer for LPG (DBTL) subsidy	3,869	3,971	21,811	12,905	20,880
Project Management Expenditure (PME)*	43	0	200	0	25
Total DBTL related subsidies (B)	**3,912**	**3,971**	**22,011**	**12,905**	**20,905**
Pradhan Mantri Ujjwala Yojana (PMUY)	0	0	0	2,999	2,496
Project Managemet Expenditure (PME) & Information Education and Communication (IEC) expenditure under PMUY^	0	0	0	0	63
Total PMUY related subsidy (C)	**0**	**0**	**0**	**2,999**	**2,559**
Direct Benefit Transfer of Kerosene (DBTK) subsidy (D)	**0**	**0**	**0**	**11**	**113**
PDS Kerosene and Domestic LPG subsidy scheme, 2002*	2,580	0	0	3,293^	0
Freight subsidy (For Far-Flung Areas) Scheme, 2002*	21	23	0	0	0
Natural gas subsidy for North East	**643**	**765**	**781**	**498**	**435**
Other subsidies (E)	**3,244**	**788**	**781**	**3,791**	**435**
Total subsidy/ under-recovery on petroleum products & natural gas (A+B+C+D+E)	**1,47,025**	**77,073**	**34,306**	**27,301**	**28,684**

*on payment basis.
^ The payment relates to the year 2014-15, however received in the year 2016-17.
Note: DBTK subsidy excludes cash incentive/assistance for establishment of institutional mechanism for direct transfer of subsidy paid to States/UTs.

Table 8.31 : Under-recoveries and burden sharing

(₹ Crore)

Sl. no.	Particulars	2013-14	2014-15	2015-16	2016-17	2017-18
A	**Under-recovery - product wise**	**1,39,869**	**72,314**	**11,514**	**7,595**	**4,672**
	MS	0	0	0	0	0
	HSD	62,837	10,935	0	0	0
	Domestic LPG	46,458	36,580	18	0	0
	PDS Kerosene	30,574	24,799	11,496	7,595	4,672
B	**Under-recovery - company wise**	**1,39,869**	**72,314**	**11,514**	**7,595**	**4,672**
	IOCL	72,938	39,758	7,757	5,149	3,196
	BPCL	34,463	16,141	1,797	1,173	756
	HPCL	32,468	16,416	1,960	1,273	719
C	**Government - cash assisstance -company wise**	**70,772**	**27,308**	**10,244**	**7,595**	**4,672**
	(% of under-recovery)	50.6%	37.8%	89.0%	100.0%	100.0%
	IOCL	37,182	14,960	6,885	5,149	3,196
	BPCL	18,374	7,290	1,598	1,173	756
	HPCL	15,215	5,058	1,761	1,273	719
D	**Upstream/midstream oil companies - discount on crude oil & product**	**67,021**	**42,822**	**1,251**	**0**	**0**
	(% of under-recovery)	47.9%	59.2%	10.9%	0.0%	0.0%
	ONGC	(56,384)	(36,300)	(1,096)	0	0
	OIL	(8,737)	(5,523)	(155)	0	0
	GAIL	(1,900)	(1,000)	0	0	0
	Total - discount given	**(67,021)**	**(42,822)**	**(1,251)**	**0**	**0**
	IOCL	34,674	23,597	863	0	0
	BPCL	15,577	8,363	198	0	0
	HPCL	16,771	10,862	190	0	0
	Total - discount received	**67,021**	**42,822**	**1,251**	**0**	**0**
E	**Borne by OMCs**	**2,076**	**2,184**	**19**	**0**	**0**
	(% of under-recovery)	1.5%	3.0%	0.2%	0.0%	0.0%
	IOCL	1,083	1,201	9	0	0
	BPCL	512	487	1	0	0
	HPCL	482	496	8	0	0

Table 8.32 : Quantity and value of Indian crude oil imports

Year	Quantity (MMT)	$ Million	₹ Crore
2017-18 (Provisional)	220.43	87,776	5,65,951
2018-19 (Estimated)	227.00	1,08,793	7,08,136

Note: Imports are estimated considering average crude oil price $ 65/bbl and exchange rate ₹ 65/$ for 2018-19.

Estimated impact of variation in crude oil price & exchange rate on value of crude oil imports for 2018-19
If crude prices changes by one $/bbl - Crude oil import bill changes by ₹ 10,880 crores
If exchange rate of ₹/$ changes by ₹ one /$ - Crude oil import bill changes by ₹ 10,880 crores

Chapter -9

Miscellaneous

Table 9.1 : 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 9.2 : 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	

Note: Petrol and Diesel are as per BS-IV norms

Table 9.3 : 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 9.4 : Contents of LPG & Natural Gas

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

Table 9.5 : Natural gas conversions

1 SCM (Standard Cubic Meter)	= 1 cubic metre @ 1 atmosphere pressure and 15.56 °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	Molecular Weight of 18 @ 365 days/Annum)
1 MT of LNG	= 1314 SCM	Molecular 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	Molecular 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); Natural Gas GCV-@10000Kcal/SCM
Power Generation from 1 MMSCMD Gas	= 220 MWH	Station Heat Rate (SHR);~1720 Kcal/Kwh-NCV (50% Thermal Efficiency); Natural Gas GCV-@10000Kcal/SCM

Source : GAIL (India) Ltd.

Table 9.6 : 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	K D Tripathi	Secretary	23383501/ 23383562	23070723
	Manish Makhija	PS to Secretary	23383501/23383562	
	Dr. M M Kutty	OSD	23381052	
	Narender S Negi	PPS to OSD	23381052	
Economic & Statistics	Ms Urvashi Sadhwani	Principal Adviser	23385823	23383752
	K S N Rao	PPS to Principal Adviser	23385823	
	Ms Indrani Kaushal	Economic Adviser	23383753	23383752
	B Vijaya	PA to Economic Adviser	23383753	
		Additional Secretary	23381052	23386090
		PPS to Additional Secretary	23381052	
Finance	Rajiv Bansal	Additional Secretary & Financial Adviser	23381704	23074226
	Narender S Negi	PPS to Additional Secretary & Financial Adviser	23381704	
	Sukh Ram Meena	Deputy Director General (IFD)	23389459	23383585
	Ms Perin Devi	Director (IFD)	23386965	23386965
Refinery	Sandeep Poundrik	Joint Secretary (Refineries) & CVO	23386935	23382673
	Anil Kumar	PS to Joint Secretary (R)	23386935	
	Vijay Sharma	Director (S & CC/Vig/FP/R)	23073069	23383100
Exploration	Amar Nath	Joint Secretary (E)	23381832	23070562
	Satyavrat Padhy	PPS to Joint Secretary (E)	23381832	
	Sanjay Kumar Jain	Director (Exploration - II)	23386526	23303100
Marketing and Administration	Ashutosh Jindal	Joint Secretary (M)	23382418	23384401
	Sampooran Singh	PPS to Joint Secretary (M)	23382418	
	K M Mahesh	Director (LPG, D & MC & Parliament)	23387404	23383100
	Ms Anuradha S. Chagti	Joint Secretary (Admin / SCT / Cash)	23383678	23383100
	K Madhavi	PS to Joint Secretary (Admin / SCT / Cash)	23383678	
Gas Projects	Ashish Chatterjee	Joint Secretary (GP)	23073165	23398804
	Ms Shikha Khurana	PS to Joint Secretary (GP)	23073165	
	Ms Kiran Vasudeva	Deputy Secretary (GP)	23387467	23383100
International Cooperation	Sunjay Sudhir	Joint Secretary (IC)	23382583	23073475
	Ms Savita Sen	PPS to Joint Secretary (IC)	23382583	
	Praphullachandra Sharma	Deputy Secretary (IC)	23383508	23383100
Exploration-I & III	Diwakar Nath Misra	Joint Secretary (Exploration-I & III)	23388764	23388764
	Yogesh Virmani	PS to Joint Secretary (Exploration-I & III)	23388764	
General	Ms Sushma Rath	Joint Secretary (General & CA)	23386407	23383100
	Madhu Kumar	PA to Joint Secretary (G & CA)	23386407	
	Vijay Gopal Mangal	Deputy Secretary (Gen)	23381029	23383100

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 / 24361081	24361253
	P R Nair	PS to Director General	24361616 / 24361081	
Finance	Vikram Gulati	Director (Finance)	24360356 / 27306121	24364227
	Ms. Satbir Hira	PS to Director (F)	24360356 / 27306122	
Demand & Economic Studies	Rohit Dawar	Addl. Director I/C (D & ES)	24362486 / 24306181	24361253
Supply	Ms. B M Sujatha	Addl. Director I/C (S)	24360352 / 24306141	24361253
Administration	Sunil Kumar	Addl. Director (HR & C)	24361717 / 24306111	24364225
IT	Ms. Maninder Kaur Narula	Addl. Director I/c (IT)	24306151	24361253
Marketing	Rajesh Kumar Gupta	Addl. Director I/c (Mktg.)	24360489 / 24306171	24361253
Gas	Devender Nahar	Addl. Director I/c (Gas)	24306161	24361253
EPABX NOs. 24306191 / 24306192, Reception - 24361314				

Petroleum Planning & Analysis Cell

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