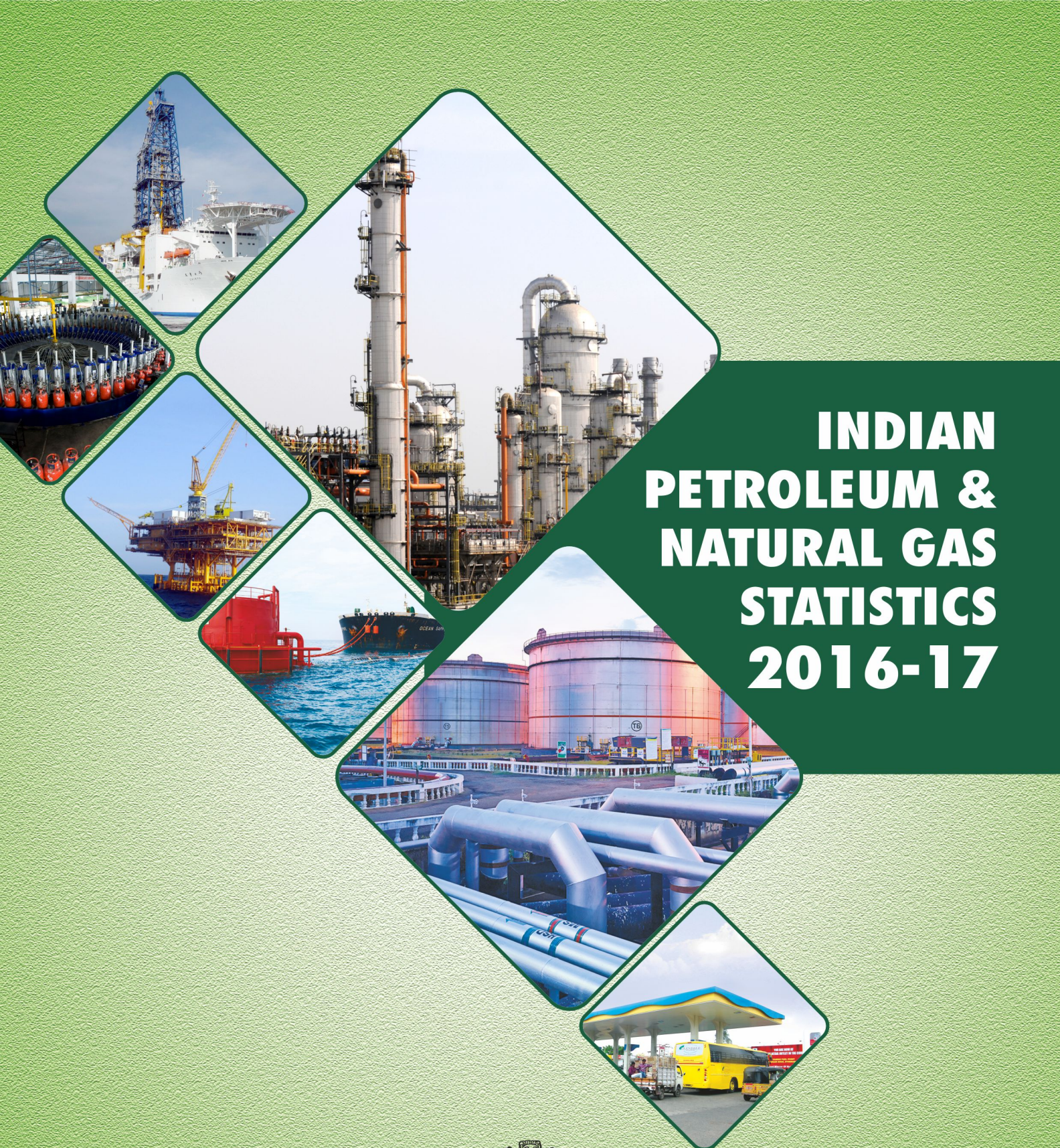




INDIAN PETROLEUM & NATURAL GAS STATISTICS 2016-17



Ministry of Petroleum and Natural Gas
Economic and Statistics Division



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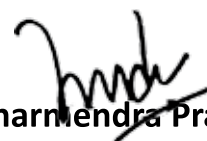
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New Delhi



MESSAGE

Oil and gas sector is critical to the functioning of the economy and is one of its driving forces. Government is committed to transform the Indian hydrocarbon sector and provide clean, reliable and affordable energy to its citizenry along with pursuing the green path to progress. The last year has not only witnessed significant policy reforms but has also been marked by achievement of some major milestones, including, inter-alia, surpassing the target of the Ministry's flagship scheme Pradhan Mantri Ujjwala Yojana, fast tracking of the Pradhan Mantri Urja Ganga and award of 31 contracts in Discovered Small Field, 2016.

For effective analysis and policy making, reliable and accurate oil and gas statistics is imperative. Towards this goal, I am happy to note that the Economic and Statistics Division has compiled the 51st edition of the Indian Petroleum and Natural Gas Statistics 2016-17. This document provides a single platform encompassing important developments in the Indian oil & gas sector till 2016-17, and contains latest and reliable statistics of the sector. I am confident that the document would continue to be a useful source of information for all its stakeholders and provide valuable and incisive insights into the oil & gas sector.


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FOREWORD

“Indian Petroleum and Natural Gas Statistics” publication, a comprehensive and up-to-date compilation of oil and gas sector statistics, is a valuable database, referred widely, both within and outside the country. It is a matter of immense satisfaction that the Economic and Statistics Division of this Ministry is bringing out the latest annual Publication for 2016-17, with minimum time lag. To contextualize the performance of various aspects of the petroleum and natural gas sector, introductory information in the form of chapter-wise highlights have been provided.

I have been informed that suggestions during the course of the year, which have been brought to the knowledge of the Economic and Statistics Division, have been suitably incorporated in this year’s edition.

I compliment the officers and staff, under the able leadership of Senior Advisor of this Ministry, in their sustained endeavor to bring out this 51st publication of the IPNG Statistics. I am sure that the useful publication would continue to be used exclusively by planners, policy makers, administrators, researchers and commentators, engaged in the Indian oil and gas sector.

K.D. Tripathi
(K.D. Tripathi)



उर्वशी साधवानी
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PREFACE

The objective of the annual publication titled “Indian Petroleum and Natural Gas Statistics 2016-17” of the Ministry of Petroleum and Natural Gas (MoPNG) is to provide credible, exhaustive and updated data base of oil & gas sector in India. In addition, this document also gives a glimpse of the global petroleum scenario through a dedicated chapter on the latest international petroleum statistics. This publication provides a brief analysis of the data on various parameters including inter-alia production, exploration, refining, transportation and marketing, imports and exports of crude oil and petroleum products along with taxes and duties realized, man power employed in oil & gas CPSEs, outlays and annual expenditure, dividends paid, equity capital and profit of the CPSEs, through user friendly graphics, charts and tables, spanning across its eleven chapters.

We are grateful to various Ministries/Departments, oil & gas CPSEs and attached offices of MoPNG, especially Petroleum Planning and Analysis Cell and the international organizations, for their utmost cooperation in sharing the required information/data in time, which was instrumental in completing the 51st edition of this publication in record time, the earliest ever in August 2017. The international petroleum statistics has been prepared using data from Organisation of Petroleum Exporting Countries, International Energy Agency and BP Statistical Review of World Energy.

I would like to place on record my deep appreciation for my team of officers and staff in Economic & Statistics Division for their efforts in bringing out this issue in the shortest possible time. Any suggestions/comments towards improving any aspect of the publication would be welcome and highly appreciated. This comprehensive annual publication would, I am sure, be useful for academicians, policy-makers and the entire research fraternity, in fact all users who need reliable data on the Indian oil & gas sector.

(Urvashi Sadhwani)

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SCOPE AND COVERAGE OF DATA PUBLISHED

1. **Scope:** The “Indian Petroleum & Natural Gas Statistics” presents updated comprehensive statistics on various aspects of Indian Petroleum & Natural Gas sector. The data on international developments in respect of the key parameters of Petroleum and Natural Gas sector have also been captured in the publication.
2. **Coverage:** The Statistics presented in the current publication cover the exploration, production, refining, marketing activities, etc. of Oil and Gas sector.
3. **Source:** The primary statistics in respect of petroleum and natural gas industries included in the publication are based on various returns, submitted by the Oil & Gas Central Public Sector Enterprises (CPSEs), Joint Venture companies and Private companies under the Ministry of Petroleum & Natural Gas.

The sources of all the secondary data, including international statistics, incorporated in the publication, have been indicated at the bottom of relevant tables.

4. **Limitations:** The data in respect of sales/consumption of petroleum products reflect dispatches of various petroleum products from the sales depots of different oil companies to the bulk consumers/retail outlets. The state-wise sales/consumption of such products show dispatches to direct consumers / retail outlets meant for consumption / sales in a particular state.
5. **Reference Period:** Key statistics for the domestic petroleum and natural gas industries have been presented on calendar (January-December) as well as on financial year (April-March) basis.
6. **Natural Gas:** The gross production of natural gas reflects gross withdrawals of natural gas from reservoir. On the other hand, the net production of natural gas show gross withdrawal of natural gas from reservoirs less gas used for reinjection into reservoirs for pressuring gas which is flared and / or vented.

The utilization data for natural gas includes gas marketed, gas used for LPG extraction and gas consumed for field operations by the companies engaged in hydrocarbons exploration / production activities.

7. **Petroleum Imports:** The crude oil and product import figures given in the publication includes crude oil / petroleum products imported by the oil PSUs, private and parallel marketers on behalf of Nepal for processing of crude oil in Indian refineries and arranging supplies of desired products to Nepal. Petroleum products actually brought into the country from processing of Indian and International crudes at foreign refineries for Indian oil companies have also been included under the product import figures.
8. **Value of Import/Export:** The value data in respect of exports of petroleum included in the publication show F.O.B. value of exports whereas similar value figures for imports reflect C.I.F. value of imports.
9. **Revision / Modification / Updation:** The statistics provided in this publication for the current year is provisional in view of the time lag involved in receipt of actual figures. In view of this, some information based on provisional data may undergo change as and when the actual data are available.

Necessary revision / updation in the past data has been made in the light of latest available figures. To illustrate:

- Data on exploration and production (wells, reserves, meterage) may not be strictly comparable with earlier issues of publication prior to 2015-16 due to change in nomenclature, rationalization and classification of reporting.
- Data on international statistics of certain parameters like world crude oil exports taken from different sources viz. OPEC Bulletins and BP Statistical Review may not tally due to difference in coverage and methodology used.

- Dividend paid/payable by oil & gas sector CPSEs to the Government has been reconciled, which now includes dividend distribution tax also.
 - Oil Development Cess data reported in table VII.2 is on accrual basis.
 - Category-wise distribution total manpower employed in oil & gas CPSEs has been given in table VIII.3.
10. **Definitions:** Definitions of common Crude oil and Gas products and terminologies have been compiled based on 'Manual on Infrastructure Statistics' of Ministry of Statistics & Programme Implementation.
11. **Abbreviations:** Details of abbreviations used have been provided in Appendix.
12. **Conversion factor:** The conversion factors generally used in the Oil & Gas sector are also given in the Appendix.

Errors of Omissions and Commissions, if any, detected may kindly be brought to the notice of the Assistant Director, Economic & Statistics Division, Ministry of Petroleum & Natural Gas for rectification in the subsequent issue.

Chapter I

Performance of Petroleum & Natural Gas Sector Some Key Macro-Economic Trends

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Chapter I:

Performance of Petroleum & Natural Gas Sector-Some Key Macro-Economic Trends

Introduction:

The Indian economy demonstrated a robust growth of 7.5% in 2014-15, 8% in 2015-16 and a slight moderation to 7.1% in 2016-17. Real GDP, viz., GDP at constant (2011-12) prices for the year 2016-17 is estimated at Rs 121.90 lakh crore showing a growth rate of 7.1 percent over the year 2015-16 of Rs 113.81 lakh crore. The growth is against a backdrop of weak to moderate growth in respect of emerging and advanced economies respectively. The economy displayed resilience in the aftermath of demonetization along with a macro-economic environment of declining prices of a number of commodities including crude oil, sharp contraction in trade deficit and revival in exports. There has been a moderation in growth and demand for petroleum products tapered significantly from double digits in 2015-16 to a growth of 4.9% during 2016-17. Given the limited domestic availability of crude oil and natural gas, the country is compelled to import over 75% of its domestic requirement.

1.1 Crude Oil and Natural Gas Production:

The crude oil production during the year 2016-17 is at 36.009 Million Metric Tonnes (MMT) as against production of 36.942 MMT in 2015-16, showing a decrease of 2.53%. Shortfall in production by ONGC was mainly due to delay in deployment of MOPU-Sagar Samrat, delay in implementation of development of Western Periphery of MHS (ZC) project and natural decline in matured fields of Western Offshore. Production by OIL is mainly from matured fields where decline rate encountered was more than expected, contribution from work-over and new well drilling was not commensurate with fall in production as well as bandhs, blockades, miscreant activities contributed to direct loss of production. Shortfall in production under PSC Regime was mainly due to shutdown at Mangala Processing Terminal (MPT), Panna platform and poor reservoir performance of Bhagyam field. Underperformance of CY-ONN-2002/2 & CB-ONN-2004/2, natural decline in CB-OS/2 and closure of 1 well in MA field in KG-DWN-98/3 also affected the production.

Natural Gas production during the year 2016-17 is at 31.897 Billion Cubic Meters (BCM) which is 1.09% lower than production of 32.249 BCM in 2015-16. Shortfall in production by ONGC was mainly attributed to less than planned production from Daman & C-26 Cluster due to evacuation constraint (export lines to TCPP platform are not completed) and natural decline from Bassein field. Shortfall in production under PSC Regime was mainly due to underperformance of KG-OSN-2001/3, Sohagpur West fields, closure of 2 wells in D1D3 field in KG-DWN-98/3 and also due to delay in grant of Petroleum Mining Lease (PML) in AAP-ON-94/1.

Government has taken several policy initiatives and reforms in the hydrocarbon sector which include, inter alia, new Hydrocarbon Exploration and Licensing Policy (HELP), Discovered Small Field Policy, marketing and pricing freedom for new gas production from Deepwater, Ultra Deepwater and High Pressure-High Temperature areas, extension of Production Sharing Contracts for small and medium size fields, linking the transparent new gas pricing formula to the global market, early monetization of hydrocarbon discoveries, policy on testing requirements for discoveries in NELP block, reassessing the hydrocarbon potential in India's sedimentary basin, appraising about 1.5 million square kilometers unapprised basins and operationalization of National Data Repository.

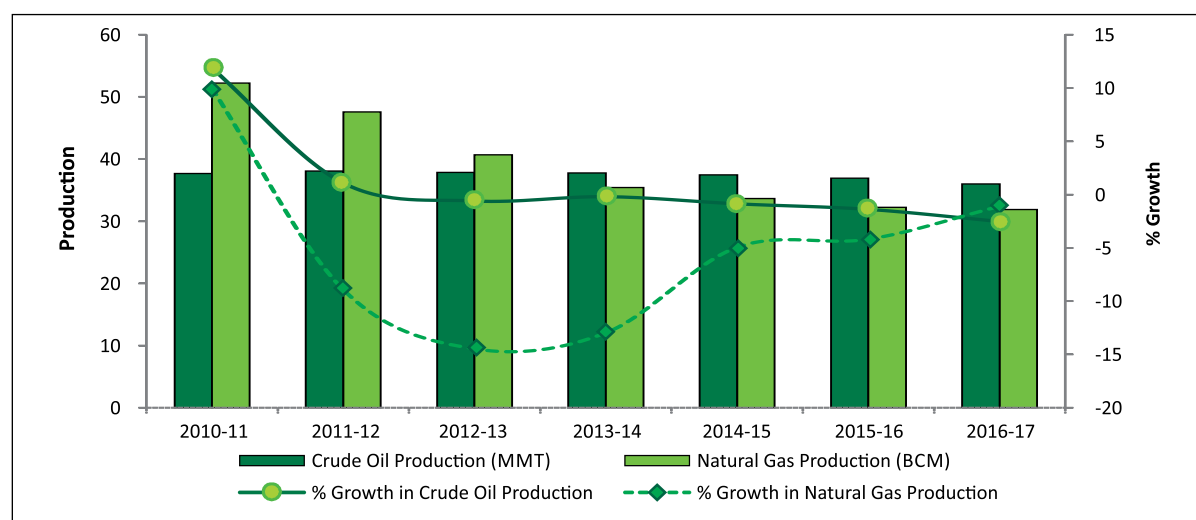
The trends in the production of crude oil and natural gas for the year 2010-11 to 2016-17 have been depicted below:

Table-I.1: Crude Oil and Natural Gas Production

Year	Crude Oil Production (MMT)	% Growth in Crude Oil Production	Natural Gas Production (BCM)	% Growth in Natural Gas Production
2010-11	37.684	11.85	52.219	9.94
2011-12	38.090	1.08	47.559	-8.92
2012-13	37.862	-0.60	40.679	-14.47
2013-14	37.788	-0.19	35.407	-12.96
2014-15	37.461	-0.87	33.657	-4.94
2015-16	36.942	-1.39	32.249	-4.18
2016-17 (P)	36.009	-2.53	31.897	-1.09

P: Provisional

Figure I.1: Crude Oil & Natural Gas Production



I.2 Refinery Capacity & Refinery Crude Throughput:

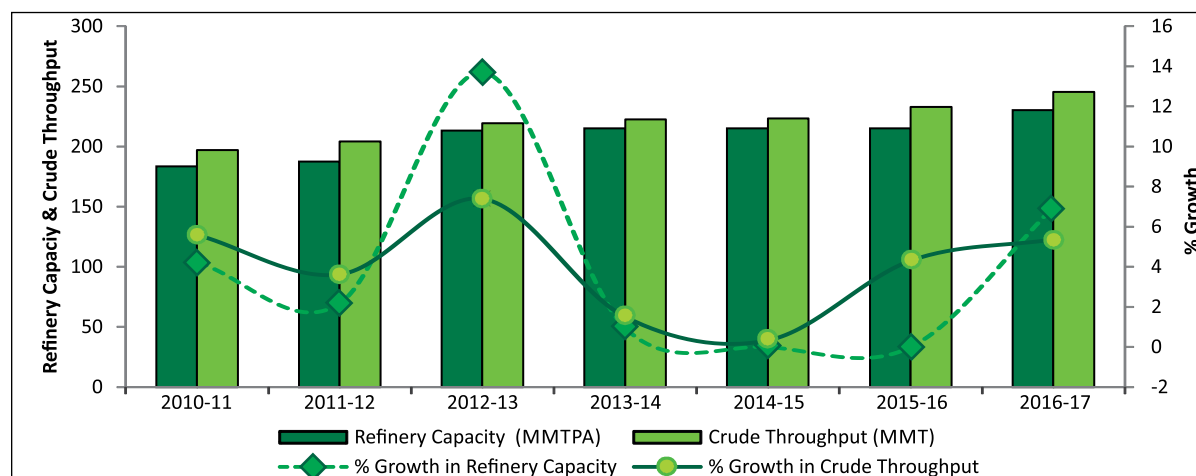
Indian refinery industry has done exceedingly well in establishing itself as a major player globally. India, which is second largest refiner in Asia after China, is emerging as a refinery hub with refining capacity exceeding demand. The country's refinery capacity has increased from 215.066 MMTPA to 233.966 MMTPA at present (as on 01.04.2017) due to addition of 2.9 MMTPA and 1 MMTPA capacity in BPCL, Kochi and HPCL, Mumbai refineries respectively. Refinery Crude Throughput (Crude Oil Processed) for the year 2016-17 is 245.362 MMT as against 232.865 MMT in 2015-16, showing an increase of about 5.37%. The trend in Refinery Capacity and Crude throughput during 2010-11 to 2016-17 are depicted in Table 1.2.

Table I.2: Refinery Capacity & Refinery Crude Throughput (in terms of Crude Oil Processed)

Year	Refinery Capacity @ (MMTPA)	% Growth in Refining Capacity	Crude Throughput (MMT)	% Growth in Crude Throughput	Refinery Capacity Utilization (%)
2010-11	183.386	4.22	196.989	5.59	107.42
2011-12	187.386	2.18	204.121	3.62	108.93
2012-13	213.066	13.70	219.212	7.39	102.88
2013-14	215.066	0.94	222.497	1.50	103.46
2014-15	215.066	0.00	223.242	0.33	103.80
2015-16	215.066	0.00	232.865	4.31	108.28
2016-17 (P)	230.066	6.97	245.362	5.37	106.65
2017-18 (P)	233.966	1.70	-	-	-

P: Provisional @: As on 1st April of Initial year.

Figure I.2: Refinery Capacity and Refinery Crude Throughput



I.3 Production and Consumption of Petroleum Products

The production of petroleum products is at 243.551 MMT in year 2016-17 as against 231.923 MMT achieved in 2015-16, showing an increase of about 5.01%. During the year 2016-17, the consumption of petroleum products in India was 193.745 MMT with a growth of 4.91% as compared to consumption of 184.674 MMT during 2015-16.

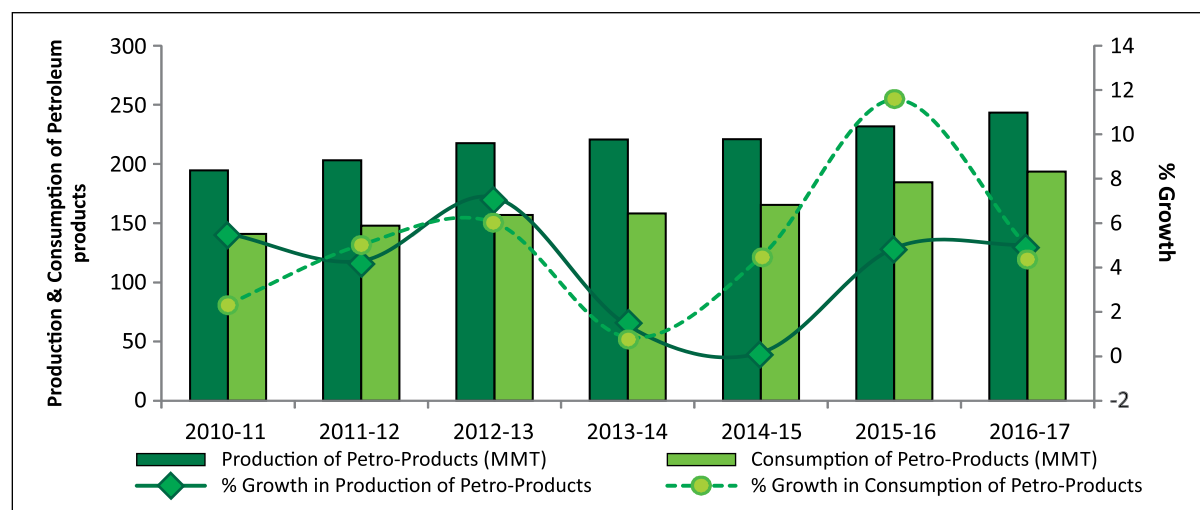
Year-wise production and consumption of petroleum products since 2010-11 to 2016-17 are depicted below:

Table I.3: Production and Consumption of Petroleum Products

Year	Production of Petro-Products (MMT)	% Growth in Production of Petro-Products	Consumption of Petro-Products (MMT)	% Growth in Consumption of Petro-Products
2010-11	194.821	5.53	141.040	2.35
2011-12	203.202	4.30	148.132	5.03
2012-13	217.736	7.15	157.057	6.02
2013-14	220.756	1.39	158.407	0.86
2014-15	221.136	0.17	165.520	4.49
2015-16	231.923	4.88	184.674	11.57
2016-17 (P)	243.551	5.01	193.745	4.91

P: Provisional

Figure I.3: Production and Consumption (indigenous sales) of Petroleum Products



I.4 Import of Crude Oil:

Import of crude oil during 2016-17 was 213.932 MMT valued at ₹470251 crore as against import of 202.850 MMT valued at ₹416579 crore in 2015-16 which marked an increase of 5.46% in quantity terms and 12.88% in value terms as compared to the import of crude oil during 2015-16.

The average international crude oil price (Indian Basket) was US\$ 47.58/bbl. during April-March, 2016-17 as compared to US\$ 46.17/bbl in the same period of 2015-16, i.e. registered an increase of 3.05% after a long declining era.

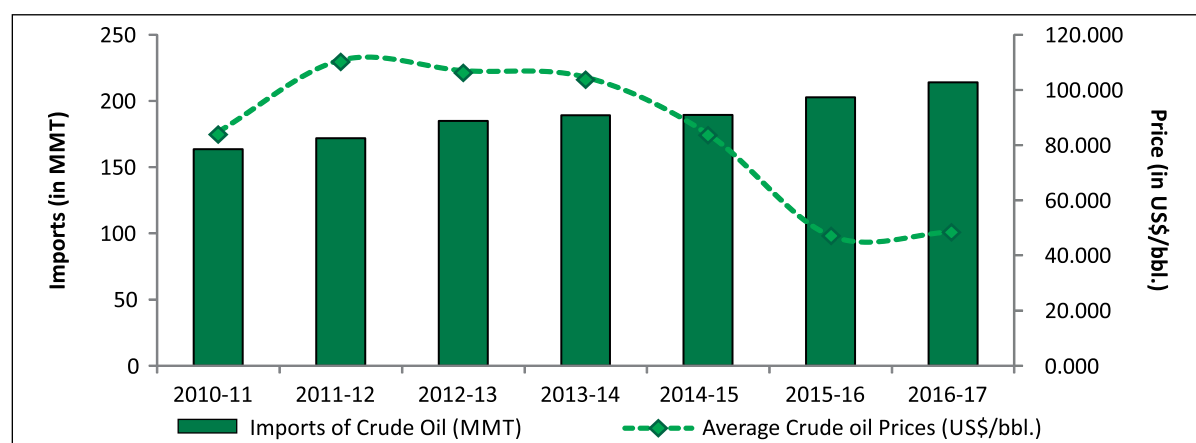
The trend in growth of crude oil imports and crude oil international (Indian Basket) prices is shown in Table-4 & Graph- 4.

Table I.4: Import of Crude Oil and average Crude Oil Prices

Year	Import of Crude Oil (MMT)	% Growth in Import of Crude Oil	Average Crude oil Prices (US\$/bbl.)	% Growth in Average Crude oil Prices
2010-11	163.595	2.72	85.090	21.98
2011-12	171.729	4.97	111.890	31.50
2012-13	184.795	7.61	107.970	-3.50
2013-14	189.238	2.40	105.520	-2.27
2014-15	189.435	0.10	84.200	-20.20
2015-16	202.850	7.08	46.170	-45.17
2016-17 (P)	213.932	5.46	47.580	3.05

P: Provisional

Figure I.4: Quantity of Crude Oil Imports and Average International Crude Oil Prices (Indian basket)



I.5 Imports & Exports of Petroleum Products:

During 2016-17 imports of petroleum products were at 35.413 MMT valued at ₹70727 crore which shows an increase of 20.22% in quantity terms and 8.21% increase in value terms against 29.456 MMT imports of petroleum products valued at ₹65361 crore during 2015-16.

During the year 2016-17 exports of petroleum products were 65.513 MMT valued at ₹194893 crore which shows an increase of 8.22% in quantity terms and 10.25% increase in value terms against the exports of 60.539 MMT valued at ₹176780 crore during 2015-16.

During 2016-17, import of LNG was 18.631 MMT valued at ₹40813 crore which registered an increase of 15.42% in quantity terms, however, in value terms saw a decline of 9.38% against imports of 16.142 MMT of LNG, valued at ₹45038 crore during 2015-16.

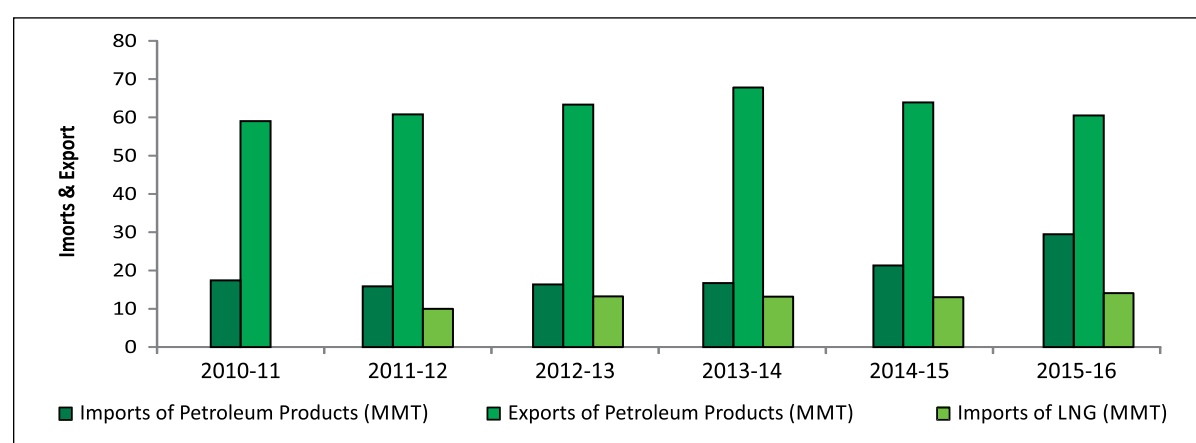
The trends in quantity of petroleum products and LNG imports & exports are depicted below in Table 1.5 & Figure 1.5.

Table I.5: Imports & Exports of Petroleum Products

Year	Imports of Petroleum Products (MMT)	% Growth in Imports of Petroleum Products	Exports of Petroleum Products (MMT)	% Growth in Export of Petroleum Products	Imports of LNG (MMT)	% Growth in Imports of LNG
2010-11	17.379	18.51	59.077	15.49	9.931	8.56
2011-12	15.849	-8.80	60.837	2.98	13.214	33.06
2012-13	16.354	3.18	63.408	4.23	13.136	-0.60
2013-14	16.697	2.10	67.864	7.03	12.995	-1.07
2014-15	21.301	27.57	63.932	-5.79	14.092	8.45
2015-16	29.456	38.28	60.539	-5.31	16.142	14.55
2016-17 (P)	35.413	20.22	65.513	8.22	18.631	15.42

P: Provisional

Figure I.5: Trend in Imports & Exports of Petroleum Products



I.6 Foreign Direct Investment Inflows:

In order to attract Foreign Direct Investment (FDI) in the sector, the FDI policy has been further liberalized. FDI for petroleum refining by CPSEs has been allowed with 49% foreign equity under the automatic route instead of approval through Foreign Investment Promotion Board. Year-wise FDI inflows under Petroleum & Gas sector is given in Table 1.6 below. It may be observed that inflow of FDI in petroleum and natural gas has varied considerably over the years that could at least be partly due to the bulkiness of investments in the sector. The highest FDI inflow was received in 2011-12 at ₹9955.2 crore contributing 6.03% of total FDI inflow in the economy. During the year 2016-17, FDI inflow received was ₹1197.1 crore contributing 0.41% of total FDI inflow in the economy.

Table I.5: Imports & Exports of Petroleum Products

Years	FDI inflows				Annual Growth (%)			
	All Sector		P&NG Sector		All Sector		P&NG Sector	
	₹. Million	US\$ Million	₹. Million	US\$ Million	₹. Million	US\$ Million	₹. Million	US\$ Million
2010-11	973204	21383	25431	556	-20.95	-17.23	96.09	109.55
2011-12	1651455	35121	99552	2030	69.69	64.25	291.45	264.82
2012-13	1219067	22424	11926	215	-26.18	-36.15	-88.02	-89.42
2013-14	1475178	24299	6784	112	21.01	8.37	-43.12	-47.75
2014-15	1891071	30931	64957	1079	28.19	27.29	857.51	861.44
2015-16	2623216	40001	6770	103	38.72	29.33	-89.58	-90.45
2016-17 (P)	2916963	43478	11971	180	11.20	8.69	76.81	75.11

P: Provisional

I.7 Plan Outlay for Ministry of Petroleum & Natural Gas:

The actual Plan expenditure in 2016-17 was ₹96935.29 crore against Budget Estimate (BE) of ₹79651.42 crore. This comprised ₹4633.00 crore as GBS and ₹92302.29 crore of Plan investment through I&EBR of oil & gas CPSEs in year 2016-17. Actual expenditure of the Ministry of Petroleum & Natural Gas in 2016-17 in detail is given in Table X.1.

I.7 Indian Economy-Selected Indicators							
Indicator	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17 (P)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1. Geographical Area (M.Sq.Km.)	3.29	3.29	3.29	3.29	3.29	3.29	3.29
2. Population (Million)	1186	1220	1235	1251	1267	1283	1299
3. Gross Domestic Product :							
(i) At current prices (₹. Crore)	-	8736039	9951344	11272764	12445128	13682035	15183709 *
(ii) At constant prices (₹. Crore)	-	8736039	9226879	98739434	10536984	11381002	12189854*
4. GVA at Basic Price							
(i) At current prices (₹. Crore)	-	8106656	9210023	10380813	11481794	12458642	13669914*
(ii) At constant prices (₹. Crore)	-	8106656	8546552	9084369	9719023	10490514	11185440*
5. Per Capita NNI (Population in Million) :							
(i) At current prices (₹.)	-	63460	71050	79412	86454	94130	103219*
(ii) At constant prices (₹.)	-	63460	65664	68867	72862	77803	82269*
6. Foreign Exchange Reserves :	13610	15061	15884	18284	21376	23787	23982
(i) Gold (₹. Billion)	1026	1383	1397	1296	1192	1334	1288
(ii) SDR (₹. Billion)	204	229	235	268	249	100	94
(iii) Foreign Currency Assets (₹. Billion)	12249	13305	14126	16609	19855	22191	22449
(iv) Reserve Tranch Position (₹. Billion)	132	145	125	110	81	163	151
7. Foreign Trade :							
(i) Import (₹. Billion)	16835	23455	26692	27154	27371	24903	25774
(ii) Export(₹. Billion)	11429	14660	16343	19050	18963	17164	18523
(iii) Balance of Trade (₹. Crore)	-5405	-8795	-10348	-8104	-8407	-7739	-7251
8. Index of Production :							
(i) Agricultural (2007-08=100)	121.0	124.3	124.0	129.8	124.0	118.8	126.1^
(ii) Industrial (2011-12=100)	-	-	103.3	106.8	111.1	114.9	120.6
9. Wholesale Price Index (2011-12=100)	-	-	106.9	112.5	113.9	109.7	111.6
10. Consumer Price Index:							
(i) Industrial Workers (2001=100)	165.6	194.8	215.2	236.0	250.8	265.0	275.9
(ii) Agricultural Labourers (1986-87=100)	516.9	610.7	671.9	749.8	799.5	834.9	869.8
(iii) Rural Labourers (1986-87=100)	516.5	611.0	673.3	750.5	802.2	839.4	875
11. Energy Generation (Gross) :							
Coal (MMT)	532.70	539.95	556.40	565.77	609.18	639.23	659.27
Lignite (MMT)	37.73	42.33	46.45	44.27	48.27	43.84	44.47
Natural Gas (BCM)	52.22	47.56	40.68	35.41	33.66	32.25	31.90
Crude Oil (MMT)	37.68	38.09	37.86	37.79	37.46	36.94	36.01
Petroleum Products	194.82	203.20	217.74	220.76	221.14	231.92	243.55
12. Electricity Generated (GWh)							
(i) Total Utilities	884226	974436	964489	1021167	1116850	1167584	1236060
Hydel	114416	130510	113720	134848	129244	121377	122313
Thermal	704300	759400	760454	792477	877941	943013	994215
Nuclear	26266	33300	32866	34228	36102	37414	37664
R.E.S.	39245	51226	57449	59615	73563	65781	81869
(ii) Non-utilities	120917	128200	144010	156843	162057	168372	197081
Total Electricity	1005143	1102636	1108499	1178010	1278907	1335956	1433141
13. POL Traffic by Rail (MMT)	39.29	39.77	40.61	41.16	41.10	43.24	42.36

Note: GDP & NNI at constant (2011-12) prices. Figures prior to 2011-12 are not available at 2011-12 prices.

P: Provisional

^: As per 3rd Advance Estimates *: Provisional Estimates

Source : Economic Survey, RBI, Ministry of Statistics & Programme Implementation, Ministry of Commerce & Industry, Ministry of Finance and Labour Bureau.

I.8 Trends in Indian Petroleum Industry at a Glance

Item	Unit	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17 (P)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. Production								
(i) Crude Oil	MMT	37.68	38.09	37.86	37.79	37.46	36.94	36.01
(ii) Natural Gas	BCM	52.22	47.56	40.68	35.41	33.66	32.25	31.90
(iii) Petroleum Products	MMT	194.82	203.20	217.74	220.76	221.14	231.92	243.55
2. Consumption								
(i) Crude Oil (in terms of refinery crude processed)	MMT	196.99	204.12	219.21	222.50	223.24	232.86	245.36
(ii) Natural Gas (including LNG)	BCM	52.02	60.68	53.91	48.99	46.95	47.85	50.78
(iii) Petroleum Products	MMT	141.04	148.13	157.06	158.41	165.52	184.67	193.75
3. Reserves (Balance Recoverable) as on 31st March								
(i) Crude Oil	MMT	660.04	652.16	651.55	647.38	635.59	621.28	604.10
(ii) Natural Gas	BCM	1141.59	1166.77	1171.69	1199.10	1251.89	1227.40	1289.81
4. Imports & Exports								
(i) Gross Imports :								
(a) Qty : Crude Oil	MMT	163.60	171.73	184.80	189.24	189.43	202.85	213.93
LNG	MMT	9.93	13.21	13.14	12.99	14.09	16.14	18.63
Pol. Products	MMT	17.38	15.85	16.35	16.70	21.30	29.46	35.41
Total (a)	MMT	190.91	200.79	214.28	218.93	224.83	248.45	267.98
(b) Value: Crude Oil	₹ Billion	4552.76	6722.20	7846.52	8648.75	6874.16	4165.79	4702.51
LNG	₹ Billion	143.62	317.18	419.02	531.23	573.84	450.38	408.13
Pol. Products	₹ Billion	559.98	680.91	688.52	758.96	746.44	653.61	707.27
Total (b)	₹ Billion	5256.37	7720.29	8954.06	9938.94	8194.45	5269.78	5817.91
(ii) Exports :								
(a) Qty : Pol. Products	MMT	59.08	60.84	63.41	67.86	63.93	60.54	65.51
(b) Value: Pol. Products	₹ Billion	1968.61	2846.44	3200.90	3682.79	2885.80	1767.80	1948.93
(iii) Net Imports :								
(a) Qty : Crude Oil	MMT	163.60	171.73	184.80	189.24	189.43	202.85	213.93
LNG	MMT	9.93	13.21	13.14	12.99	14.09	16.14	18.63
Pol. Products	MMT	-41.70	-44.99	-47.05	-51.17	-42.63	-31.08	-30.10
Total (a)	MMT	131.83	139.96	150.88	151.07	160.90	187.91	202.46
(b) Value: Crude Oil	₹ Billion	4552.76	6722.20	7846.52	8648.75	6874.16	4165.79	4702.51
LNG	₹ Billion	143.62	317.18	419.02	531.23	573.84	450.38	408.13
Pol. Products	₹ Billion	-1408.62	-2165.53	-2512.38	-2923.83	-2139.36	-1114.19	-1241.66
Total (b)	₹ Billion	3287.76	4873.84	5753.17	6256.15	5308.65	3501.98	3868.98
(iv) Unit Value of Crude oil imports(gross)								
	₹./MT	27829	39144	42461	45703	36288	20536	21981
5. India's Total Imports	₹ Billion	16835	23455	26692	27154	27371	24903	25774
6. India's Total Exports	₹ Billion	11429	14660	16343	19050	18963	17164	18523
7. Petroleum Imports as % of India's total Imports	%	31.22	32.92	33.55	36.60	29.94	21.16	22.57
8. Petroleum Exports as % of India's total Exports	%	17.22	19.42	19.59	19.33	15.22	10.30	10.52
9. Contribution of Oil Sector to Centre/State Resources								
(i) Royalty from crude oil	₹ Crore	8958	15921	18083	20113	18339	13915	18061
(ii) Royalty from gas	₹ Crore	2355	3294	3880	3483	3874	2858	2061
(iii) Oil Development Cess	₹ Crore	6783	8119	15784	16072	16149	15854	13831
(iv) Excise & Custom duties	₹ Crore	102828	95229	98603	104163	122926	213995	300296
(v) Sales Tax	₹ Crore	81173	101089	112342	128985	136895	149065	174731
(vi) Dividend	₹ Crore	13329	13014	14063	14994	14664	16506	30330

Note: Oil Development Cess figures have been taken from Table VII.2 which are on accrual basis.

I.9 International Petroleum Statistics								
Item/Year	Unit	2010	2011	2012	2013	2014	2015	2016 (P)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. World reserves of oil & gas at year end								
(i) Crude Oil	Thousand Million Barrel	1642	1681	16w95	1702	1707	1691	1707
of which OPEC		1163	1198	1205	1209	1211	1210	1220
(ii) Natural Gas	TCM	176	185	184	186	187	185	187
of which OPEC		94	95	95	95	95	95	95
2. World production of oil & gas								
(i) Crude Oil	MMT	3977	4008	4116	4125	4226	4359	4382
of which OPEC		1668	1708	1780	1732	1730	1803	1864
(ii) Natural Gas Net	MMTOE	2879	2967	3025	3073	3133	3195	3213
of which OPEC		541	561	593	608	631	656	678
3. World Oil Refinery								
(i) Refinery capacity at year end	Thousand barrels daily	92586	93596	94176	95210	96990	96992	97508
(ii) Crude throughput		75257	75586	76653	77086	78083	79905	80550
4. World Oil Consumption								
(i) World Total	Thousand barrels daily	88722	89729	90675	92114	93025	95003	96558
(ii) Main consuming areas ¹		52313	52958	53744	54900	55903	57210	58166
(iii) Consumption in main areas as % of world	%	59.0	59.0	59.3	59.6	60.1	60.2	60.2
5. World Imports								
(i) Crude Oil	MMT	2065	2052	2077	2024	2007	2076	2200
(ii) Pol. Products		1139	1187	1181	1224	1242	1333	1363
Total		3204	3239	3259	3247	3250	3409	3563
6. Export of Crude Oil & POL from OPEC								
(i) Crude Oil	MMT	1151	1182	1260	1188	1152	1170	1246
(ii) Pol. Products		167	210	189	189	184	201	242
Total		1318	1392	1448	1377	1336	1370	1488
7. World Primary Energy Consumption								
(i) Oil	MTOE	4085	4126	4176	4221	4255	4341	4418
(ii) Natural Gas		2874	2926	3011	3054	3073	3147	3204
(iii) Coal		3636	3807	3817	3887	3889	3785	3732
(iv) Hydro-Electric		779	792	832	859	879	883	910
(v) Nuclear Energy		626	600	559	564	575	583	592
(vi) Renewables		170	204	239	281	317	367	420
Total		12170	12455	12634	12866	12989	13105	13276

1: Includes USA, Canada, Brazil, Germany, Japan, China, Russia, Saudi Arabia, India and South Korea.

TMT: Thousand Million Tonnes, TCM: Trillion Cubic Meters, MMT: Million Metric Tonnes, MTOE: Million Tonnes Oil Equivalent

Source : (i) BP Statistical Review of World Energy , June-2017 (ii) OPEC Annual Statistical Bulletins, 2015, 2016 & 2017

I. 10(a) Petroleum Energy in India (Calendar Year-wise)

Products	2010	2011	2012	2013	2014	2015	2016 (P)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Availability							
In Original Units (Million Tonnes)							
Kerosene	9.20	8.61	7.98	7.37	7.62	7.46	6.53
ATF	4.95	5.45	5.37	5.48	5.63	6.10	6.77
Diesel	60.66	63.10	69.27	67.53	69.38	73.71	76.32
Fuel Oils	14.70	12.41	10.32	8.83	7.63	8.07	9.00
Others ¹	37.66	43.06	45.69	45.72	51.49	56.48	59.79
Total	127.16	132.64	138.63	134.93	141.76	151.83	158.41
In Million Tonnes of Coal Equivalent Unit²							
Kerosene	18.40	17.22	15.96	14.74	15.24	14.92	13.06
ATF	9.90	10.90	10.74	10.96	11.26	12.20	13.54
Diesel	121.32	126.20	138.54	135.06	138.76	147.42	152.64
Fuel Oils	29.40	24.82	20.64	17.66	15.26	16.14	18.00
Others ¹	75.32	86.12	91.38	91.44	102.98	112.96	119.58
Total	254.34	265.26	277.26	269.86	283.50	303.64	316.82
In Million Tonnes of Coal Replacement Unit²							
Kerosene	73.60	68.88	63.84	58.96	60.96	59.68	52.24
ATF	37.13	40.88	40.28	41.10	42.23	45.75	50.78
Diesel	545.94	567.90	623.43	607.77	624.42	663.39	686.88
Fuel Oils	29.40	24.82	20.64	17.66	15.26	16.14	18.00
Others ¹	124.74	124.74	126.37	126.37	126.37	126.37	126.37
Total	810.81	827.22	874.56	851.86	869.24	911.33	934.27
Consumption³							
In Original Units (Million Tonnes)							
Kerosene	9.00	8.43	7.65	7.25	7.13	6.89	5.93
ATF	4.82	5.32	5.14	5.26	5.68	6.10	6.81
Diesel	58.05	63.50	68.58	68.88	69.38	73.07	77.19
Fuel Oils	9.81	8.47	7.00	5.34	5.88	6.23	7.51
Others ¹	42.96	46.28	48.70	49.56	53.59	58.48	65.03
Total	124.64	132.01	137.07	136.28	141.65	150.76	162.47
In Million Tonnes of Coal Equivalent Unit²							
Kerosene	18.00	16.87	15.31	14.50	14.25	13.77	11.86
ATF	9.64	10.65	10.27	10.52	11.36	12.19	13.61
Diesel	116.09	127.01	137.16	137.76	138.75	146.14	154.37
Fuel Oils	19.62	16.95	14.00	10.67	11.76	12.45	15.02
Others ¹	85.92	92.55	97.40	99.11	107.18	116.96	130.07
Total	249.27	264.02	274.15	272.56	283.30	301.51	324.94
In Million Tonnes of Coal Replacement Unit²							
Kerosene	72.00	67.47	61.24	58.00	57.02	55.10	47.45
ATF	36.16	39.93	38.51	39.44	42.59	45.71	51.05
Diesel	522.42	571.54	617.23	619.93	624.38	657.61	694.67
Fuel Oils	19.62	16.95	14.00	10.67	11.76	12.45	15.02
Others ¹	128.94	128.94	128.94	128.94	128.94	128.94	128.94
Total	779.14	824.83	859.93	856.98	864.68	899.82	937.13

Note:

P: Provisional

- Others excludes Naphtha, Lube, Bitumen, Petroleum coke, Paraffin wax & other petroleum products and includes LPG Gasoline, Refinery Boiler Fuel.
- Based on conversion factors adopted by FPC, 1974
- Includes Petroleum Products used for power generation.

I.10 (b) Petroleum Energy in India (Financial Year-wise)

Products	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17 (P)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Availability							
In Original Units (Million Tonnes)							
Kerosene	9.05	8.39	7.74	7.40	7.57	7.53	6.03
ATF	5.09	5.50	5.42	5.48	5.58	6.10	6.90
Diesel	47.29	63.95	69.66	67.77	69.35	75.16	76.66
Fuel Oils	14.71	11.74	10.20	8.53	8.06	8.09	8.67
Others ¹	42.02	45.77	47.87	49.54	52.22	57.62	63.76
Total	118.17	135.36	140.89	138.72	142.78	154.51	162.01
In Million Tonnes of Coal Equivalent Unit²							
Kerosene	18.10	16.78	15.48	14.80	15.14	15.06	12.06
ATF	10.18	11.00	10.84	10.96	11.16	12.20	13.80
Diesel	94.58	127.90	139.32	135.54	138.70	150.32	153.32
Fuel Oils	29.42	23.48	20.40	17.06	16.12	16.18	17.34
Others ¹	84.04	91.54	95.74	99.08	104.44	115.24	127.52
Total	236.32	270.70	281.78	277.44	285.56	309.00	324.04
In Million Tonnes of Coal Replacement Unit²							
Kerosene	72.40	67.12	61.92	59.20	60.56	60.24	48.24
ATF	38.18	41.25	40.65	41.10	41.85	45.75	51.75
Diesel	425.61	575.55	626.94	609.93	624.15	676.44	689.94
Fuel Oils	29.42	23.48	20.40	17.06	16.12	16.18	17.34
Others ¹	124.74	124.74	124.74	124.74	124.74	124.74	124.74
Total	690.35	832.14	874.65	852.03	867.42	923.35	932.01
Consumption³							
In Original Units (Million Tonnes)							
Kerosene	8.93	8.23	7.50	7.16	7.09	6.83	5.40
ATF	5.08	5.54	5.27	5.50	5.72	6.26	7.00
Diesel	60.53	64.75	69.48	68.75	69.42	75.05	76.46
Fuel Oils	10.79	9.31	7.66	6.24	5.96	6.63	7.18
Others ¹	44.40	47.64	49.69	51.29	54.74	60.24	65.37
Total	129.72	135.46	139.60	138.94	142.93	155.02	161.41
In Million Tonnes of Coal Equivalent Unit²							
Kerosene	17.86	16.46	15.00	14.33	14.17	13.65	10.79
ATF	10.16	11.07	10.54	11.01	11.45	12.52	14.00
Diesel	121.05	129.50	138.96	137.50	138.83	150.11	152.93
Fuel Oils	21.58	18.61	15.31	12.47	11.92	13.26	14.36
Others ¹	88.79	95.27	99.38	102.58	109.49	120.49	130.74
Total	259.44	270.92	279.20	277.89	285.86	310.03	322.83
In Million Tonnes of Coal Replacement Unit²							
Kerosene	71.42	65.83	60.01	57.32	56.69	54.61	43.18
ATF	38.09	41.52	39.53	41.28	42.92	46.97	52.49
Diesel	544.73	582.75	625.31	618.75	624.74	675.49	688.18
Fuel Oils	21.58	18.61	15.31	12.47	11.92	13.26	14.36
Others ¹	132.95	132.95	132.95	132.95	132.95	132.95	132.95
Total	808.77	841.66	873.11	862.77	869.23	923.27	931.15

Note:

P: Provisional

- Others excludes Naphtha, Lube, Bitumen, Petroleum coke, Paraffin wax & other petroleum products and includes LPG, Gasoline, Refinery Boiler Fuel.
- Based on conversion factors adopted by FPC, 1974
- Includes Petroleum Products used for power generation.

I.11 Oil and Gas Production Abroad

Name of Project	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17 (P)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Oil Production (MMT)							
1. GNOP, Sudan	1.801	1.324	0.596	0.741	0.705	0.627	0.481
2. MECL, Colombia	0.468	0.561	0.552	0.597	0.618	0.614	0.543
3. Sancristobal, Venezuela	0.757	0.894	0.800	0.767	0.645	0.585	0.427
4. IEC, Russia	0.770	0.771	0.560	0.387	0.265	0.305	0.271
5. Sakhalin I, Russia	1.474	1.498	1.370	1.488	1.536	1.742	1.809
6. Block 5A, Sudan	0.226	0.174	0.000	0.034	0.000	0.000	0.000
7. GPOC, South Sudan	-	-	0.000	0.218	0.000	0.000	0.000
8. Vietnam 06.1	0.038	0.036	0.037	0.032	0.030	0.029	0.024
9. AFPC, Syria	0.662	0.503	0.126	0.000	0.000	0.000	0.000
10. BC-10, Brazil	0.573	0.450	0.291	0.318	0.812	0.649	0.604
11. Block 24, Syria	0.002	0.010	0.001	0.000	0.000	0.000	0.000
12. Carabobo-1, Venezuela	-	-	0.001	0.021	0.063	0.112	0.140
13. ACG, Azerbaijan	-	-	0.009	0.883	0.859	0.847	0.818
14. Vankor, Russia	-	-	-	-	-	-	3.317
Total-Oil Production	6.771	6.221	4.343	5.486	5.533	5.510	8.434
Gas Production (BCM)							
1. Sakhalin I, Russia	0.415	0.494	0.650	0.576	0.618	0.588	0.555
2. Vietnam 06.1	2.249	2.023	2.104	1.851	1.774	1.659	1.478
3. A1, A3, Myanmar	0.000	0.000	0.000	0.201	0.662	0.891	0.843
4. AFPC, Syria	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5. BC-10, Brazil	0.032	0.015	0.012	0.013	0.042	0.040	0.039
6. IEC, Russia	-	-	0.071	0.036	0.024	0.030	0.027
7. MECL, Colombia	-	-	0.007	0.007	0.008	0.009	0.012
8. Sancristobal, Venezuela	-	-	0.072	0.087	0.074	0.064	0.048
9. Carabobo-1, Venezuela	-	-	-	0.001	0.003	0.007	0.011
10. ACG, Azerbaijan	-	-	0.001	0.099	0.136	0.118	0.128
11. Vankor, Russia	-	-	-	-	-	-	1.228
Total-Gas Production	2.696	2.532	2.917	2.871	3.341	3.406	4.369
Total Oil & Gas Production	9.467	8.753	7.260	8.357	8.874	8.916	12.803

Note: For calculating OEG, 1 BCM of gas has been taken to be equal to 1 MMT of crude oil. P: Provisional

Source: Oil & Natural Gas Corporation Videsh Limited.

Chapter II

Exploration

CHAPTER I

CHAPTER II

CHAPTER III

CHAPTER IV

CHAPTER V

CHAPTER VI

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APPENDIX



Chapter Highlights

- With a view to explore oil and gas finds, over 4.91 lakh geological surveys have been conducted in India and 540 wells (of which 74% are development wells) with 12.45 lakh meterage area drilled by Oil Companies up to 31.03.2017.
- Balance recoverable reserves of crude oil as on 01.04.2017 are at 604.10 MMT, out of which 279.86 MMT (46%) are in offshore. ONGC (nomination) has the largest share of 72% in reserves of crude oil with OIL (nomination) and PSC regime contributing 13% and 15% respectively.
- Balance recoverable reserves of natural gas as on 01.04.2017 were 1289.81 BCM, out of which 810.10 BCM (62%) are in offshore. PSC regime has the largest share of 49% in natural gas reserves with ONGC (nomination) and OIL (nomination) at 41% and 10% respectively.
- Out of total crude oil & condensate production of 31.01 MMT in 2016-17, 62% (22.218 MMT) is from ONGC (nomination), 9% (3.258 MMT) from OIL (nomination) and 29% (10.532 MMT) from PSC regime
- Out of total natural gas production of 31.897 BCM in 2016-17, 69% (22.088 BCM) is from ONGC (nomination), 9% (2.937 BCM) from OIL (nomination) and 22% (6.872 BCM)) from PSC regime.
- Maximum production of crude Oil (9.678 MMT) occurred in Mumbai High asset of ONGC and maximum production of natural gas (10.131 BCM) occurred in Bassein & Satellite fields of ONGC in 2016-17.
- Total consumption of natural gas in 2016-17 stands at 50.777 BCM as against 47.849 BCM in 2015-16. Out of 50.777 BCM, 29.534 BCM (58%) is consumed for energy purpose as fuel and the balance 42% is used for non-energy purpose as feedstock for various industries.
- In 2016-17 highest consumption of natural gas under energy purpose was in power sector at 11.616 BCM (39%) followed by City or Local Natural Gas Distribution Network at 7.350 BCM (25%). Under non-energy purpose, maximum consumption was seen in fertilizer industry at 15.428 BCM (73%) followed by petrochemical sector at 4.170 BCM (20%).

II.1 Area-wise Development of Deep Drilling Rigs, Wells & Metreage Drilled									
Year	Onshore			Offshore			Total		
	Rigs	Wells	Metreage	Rigs	Wells	Metreage	Rigs	Wells	Metreage
	(Numbers)	(Numbers)	('000')	(Numbers)	(Numbers)	('000')	(Numbers)	(Numbers)	('000')
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(A) Oil & Natural Gas Corporation Ltd. (Nomination)									
2010-11	88	300	632	36	64	180	124	364	812
2011-12	84	323	655	31	62	175	115	385	829
2012-13	81	304	638	40	93	269	121	397	907
2013-14	73	273	587	39	82	222	112	355	809
2014-15	69	259	495	36	84	215	105	343	710
2015-16	71	271	556	34	54	134	105	325	689
2016-17 (P)	69	319	636	36	117	316	105	436	951
(B) Oil India Limited (Nomination)									
2010-11	20	35	114	-	-	-	20	35	114
2011-12	16	34	117	-	-	-	16	34	117
2012-13	17	37	128	-	-	-	17	37	128
2013-14	15	34	105	-	-	-	15	34	105
2014-15	17	36	131	-	-	-	17	36	131
2015-16	20	44	143	-	-	-	20	44	143
2016-17 (P)	19	56	169	-	-	-	19	56	169
(C) PSC Regime									
2010-11	15	166	276	7	35	111	22	201	387
2011-12	19	116	215	7	34	111	26	150	326
2012-13	13	69	140	10	31	116	23	100	256
2013-14	34	210	344	20	45	156	54	255	500
2014-15	36	201	370	20	34	109	56	235	478
2015-16	27	110	209	12	27	78	39	137	286
2016-17 (P)	23	39	100	9	9	25	32	48	125
Total (A+B+C)									
2010-11	123	501	1022	43	99	291	166	600	1313
2011-12	119	473	987	38	96	285	157	569	1272
2012-13	111	410	906	50	124	385	161	534	1291
2013-14	122	517	1037	59	127	378	181	644	1415
2014-15	122	496	995	56	118	324	178	614	1319
2015-16	118	425	907	46	81	211	164	506	1118
2016-17 (P)	111	414	904	45	126	341	156	540	1245

Note:

P: Provisional

1. Number of rigs of ONGC and OIL may overlap in nomination and PSC regime blocks
2. Total may not tally due to rounding off

Source: Oil & Natural Gas Corporation Ltd., Oil India Ltd & DGH

Figure II.1(a): Share of wells drilled during 2016-17 (%)

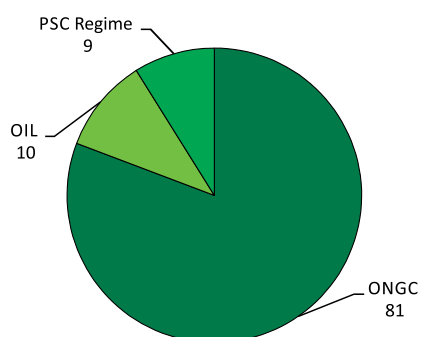
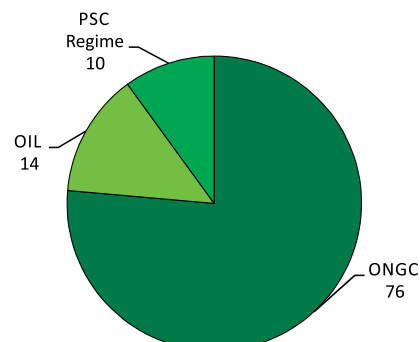


Figure II.1(b): Share in metreage drilled during 2016-17 (%)



II.2 Exploratory & Development Drilling by Oil Companies

Year	Exploratory		Development		Total	
	Wells	Metreage	Wells	Metreage	Wells	Metreage
	(Nos.)	('000')	(Nos.)	('000')	(Nos.)	('000')
(1)	(2)	(3)	(4)	(5)	(6)	(7)
(A) Onshore						
2010-11	127	357	374	665	501	1022
2011-12	140	354	333	633	473	987
2012-13	109	315	301	591	410	906
2013-14	128	349	389	687	517	1037
2014-15	130	344	366	652	496	995
2015-16	105	320	320	587	425	907
2016-17 (P)	102	277	312	628	414	904
(B) Offshore						
2010-11	60	198	39	92	99	291
2011-12	44	152	52	134	96	285
2012-13	42	145	82	240	124	385
2013-14	44	155	83	223	127	378
2014-15	52	158	66	166	118	324
2015-16	40	105	41	107	81	211
2016-17 (P)	40	119	86	222	126	341
Total (A+B)						
2010-11	187	555	413	757	600	1313
2011-12	184	506	385	766	569	1272
2012-13	151	460	383	831	534	1291
2013-14	172	505	472	910	644	1415
2014-15	182	502	432	817	614	1319
2015-16	145	425	361	694	506	1118
2016-17 (P)	142	396	398	849	540	1245

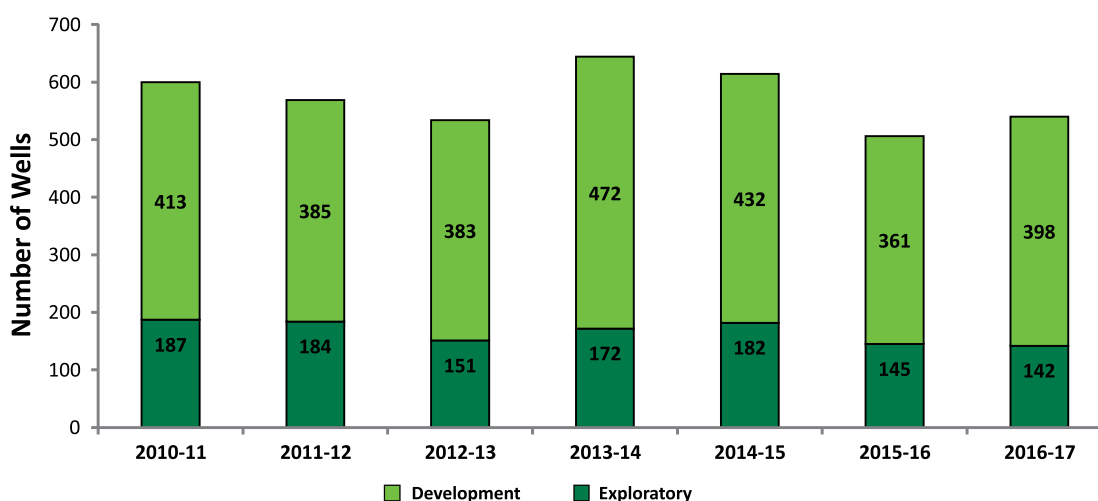
Note:

P: Provisional

- Figures not strictly comparable with earlier issues of publication prior to 2015-16 due to change in nomenclature, rationalisation and classification of reporting.
- Includes Water Disposal Wells and Non-Associated Gas Wells
- Total may not tally due to rounding off

Source: Oil & Natural Gas Corporation Ltd., Oil India Ltd & DGH

Figure II.2: Trends in drilling Exploratory and Development wells



II.3 Status of Wells							
(in Numbers)							
Category /Year #	Oil	Gas	Dry	Under Test	Injector	Others	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(A) Oil India Ltd. (Nomination)							
2010	459	90	431	78	106	1112	2276
2011	469	102	438	76	105	1121	2311
2012	473	104	432	88	108	1140	2345
2013	473	121	440	96	106	1147	2383
2014	422	116	441	98	105	1236	2418
2015	368	94	450	77	86	1379	2454
2016	378	107	449	78	128	1358	2498
2017	386	107	436	18	48	1559	2554
(B) Oil & Natural Gas Corporation Ltd. (Nomination)							
2010	4520	601	2635	50	1024	2713	11543
2011	4762	640	2683	66	1031	2725	11907
2012	5007	684	2735	63	1040	2763	12292
2013	5292	707	2764	84	1049	2793	12689
2014	5547	735	2788	88	1053	2833	13044
2015	5780	770	2808	80	1059	2890	13387
2016	5989	790	2829	105	1081	2918	13712
2017	6282	844	2870	136	1091	2925	14148
(C) PSC Regime							
2010	354	136	459	1	13	21	984
2011	440	157	502	2	62	22	1185
2012	487	190	547	3	84	24	1335
2013	516	212	589	3	88	27	1435
2014	633	240	636	6	148	27	1690
2015	696	267	675	24	225	37	1924
2016	732	284	712	30	266	37	2061
2017	739	292	738	37	266	37	2109
Total (A+B+C)							
2010	5333	827	3525	129	1143	3846	14803
2011	5671	899	3623	144	1198	3868	15403
2012	5967	978	3714	154	1232	3927	15972
2013	6281	1040	3793	183	1243	3967	16507
2014	6602	1091	3865	192	1306	4096	17152
2015	6844	1131	3933	181	1370	4306	17765
2016	7099	1181	3990	213	1475	4313	18271
2017	7407	1243	4044	191	1405	4521	18811

Note:

#: As on 1st April of each year

Figures not strictly comparable with earlier issues of publication prior to 2015-16 due to change in nomenclature, rationalisation and classification of reporting.

Source: ONGC, OIL and DGH.

II. 4 State-wise Geological Surveys Achievements upto 31.03.2017			
States	ONGC	OIL	Total Geological Surveys
(1)	(2)	(3)	(4)
Andhra Pradesh	53427	-	53427
A.N. Islands	6860	-	6860
Arunachal Pradesh	3692	8	3700
Assam	48073	6	48079
Bihar (incl. Jharkhand)	4035	-	4035
Gujarat (Gulf Of Cambay)	60625	-	60625
Himachal Pradesh	9948	-	9948
Jammu & Kashmir	31970	-	31970
Kerala-Karnataka (incl. Goa)	4000	-	4000
Madhya Pradesh	117920	-	117920
Chhattisgarh	5920	-	5920
Manipur	2781	-	2781
Meghalaya	1911	1	1912
Mizoram	6194	8	6202
Nagaland	6971	-	6971
Orissa	0	-	0
Rajasthan	46501	-	46501
Sikkim	720	-	720
Tamil Nadu (Incl. Puducherry)	20003	-	20003
Tripura	21263	-	21263
Uttar Pradesh (incl. Uttarakhand)	29797	-	29797
West Bengal	8808	-	8808
Maharashtra	0	-	0
Eastern offshore	0	-	0
Western offshore	0	-	0
Total	491419	23	491442

Source: Oil and Natural Gas Corporation Limited & Oil India Limited

II. 5 State-wise Achievements of Geophysical Field Parties in India since Inception upto 31.03.2017						
Area/ State	ONGC (Nomination)		OIL (Nomination)		PSC Regime	
	2D (LKM)	3D (SKM)	2D (LKM)	3D (SKM)	2D (LKM)	3D (SKM)
(1)	(2)	(3)	(4)	(6)	(7)	(8)
(A) Onshore						
Andhra Pradesh	39166	9299	-	-	1860	1752
Arunachal Pradesh	0	0	3662	268	52	114
Assam ¹	31337	4305	24347	7546	3312	1707
Bihar ²	6566	0	-	-	2423	947
Chhattisgarh	202	0	-	-	-	-
Gujarat	104712	10712	-	-	7729	7734
Himachal Pradesh	3785	0	-	-	810	-
Haryana	1038	0	-	-	-	-
Jammu & Kashmir	2563	0	-	-	-	-
Madhya Pradesh	10021	844	-	-	2339	304
Maharashtra	0	0	-	-	476	-
Manipur	0	0	-	-	210	-
Meghalaya	205	0	-	-	-	-
Mizoram	35	0	-	-	1526	613
Nagaland	602	6	-	-	-	-
Orissa	313	0	4278	-	470	-
Punjab	4078	0	-	-	-	-
Rajasthan	20571	1318	22570	500	17324	17916
Tamil Nadu	41031	8269	-	-	1710	3263
Telangana	-	-	-	-	129	-
Tripura	6237	893	-	-	1688	14
Uttar Pradesh	26798	0	6223	-	2860	211
Uttarakhand	1522	0	-	-	-	-
West Bengal	29227	596	-	-	7516	6656
Total(A)	330007	36243	61079	8314	52433	41232
(B) Offshore						
Andaman	-	-	14043	-	-	-
Saurashtra	-	-	8767	332	-	-
Eastern offshore	117515	7951	-	-	229125	194431
Western offshore	434940	76540	-	-	120171	62190
Total(B)	552454	84491	22810	332	349295	256622
Total	882462	120734	83889	8646	401728	297854

Note:

SKM: Square Kilometre.

LK: Line Kilometre.

1. Includes 387.81 LK in Pre-NELP acreage in ONGC's 2D LKM.

2. Geophysical fields of Pvt./JVs in State of Bihar includes Jharkhand

Source: Oil & Natural Gas Corporation Ltd., Oil India Ltd. and DGH

II.6 Basin-wise / State-wise Achievements of Drilling since Inception upto 31.03.2017

Basin	State / Region	Wells	Metreage
		Numbers	('000')
(1)	(2)	(3)	(4)
(A) Onshore		15000	31745
Cambay	Gujarat	7956	13748
Kutch	Gujarat	5	3662
Rajasthan	Rajasthan	1070	1869
Vindhyan	Rajasthan	5	14
	Madhya Pradesh	1	3
	Total WRBC	9037	15645
	Nagaland	36	127
Upper Assam	Assam	4166	10956
	Meghalaya	3	6
	Odisha	4	11
Fold Belt	Mizoram under ERBC	6	21
	Arunachal Pradesh	58	190
Assam-Arakan	Tripura	228	663
	Total ERBC	4501	11974
Foot hills & Ganga Valley	West Bengal	36	146
Ganga Valley	Bihar	9	39
	West Bengal	3	7
Satpura-South Rewa-Damodar	Madhya Pradesh	2	6
	Total CRBC	50	198
Himalayan Foot-hills,	Himachal Pradesh	16	60
Ganga Valley &	Punjab	4	16
Vindhyan/Gondwana	Uttar Pradesh	10	35
	Madhya Pradesh	17	52
	Jammu & Kashmir	4	12
	Total NRBC	51	175
Krishna-Godavari	Andhra Pradesh	646	1914
Pranhita-Godavari	Andhra Pradesh	1	3
Cauvery	Tamil Nadu	714	1836
	Total SRBC	1361	3754
(B) Offshore		3756	9859
East Coast(SW+DW)	East Coast including KG, Cauvery	600	1996
West Coast(SW+DW)	West Coast including drilling in Orissa, Andaman & Saurashtra	3139	7797
	Others	17	66
		0	0
Total (A+B)		18756	41604

Note: All figures are provisional

WRBC: Western Region Basin Coast, CRBC: Central Region Basin Coast, SRBC: Southern Region Basin Coast, NRBC: Northern Region Basin Coast, ERBC: Eastern Region Basin Coast

Source: ONGC, OIL and DGH.

II.7 State-wise/Basin -wise Oil Fields in India As on 31.03.2017					
				(in Number)	
Company / State	Basin	Oil Fields	Gas Fields	Oil and Gas Fields	Total Fields
(1)	(2)	(3)	(4)	(5)	(6)
A. Oil & Natural Gas Corporation Ltd. (Nomination)					
Gujarat	Cambay	45	5	35	85
Assam	Upper Assam	26	1	11	38
Assam	A&AA	2	5	-	7
Rajasthan	Jodhpur	-	8	-	8
Andhra Pradesh	K.G. Basin	8	46	10	64
Tamil Nadu	Cauvery	7	9	13	29
Tripura	A&AA	-	10	-	10
Nagaland	A&AA	1	-	1	2
Madhya Pradesh	Vindhyan Basin	-	1	-	1
Total Onshore		89	85	70	244
East Coast	Cauvery Offshore	-	1	-	1
East Coast	KG	3	8	5	16
	Offshore(Shallow)				
East Coast	KG Offshore(Deep)	2	3	2	7
West Coast	Cambay	-	-	2	2
West Coast	Mumbai Offshore	27	19	38	84
West Coast	Kutch	1	2	1	4
Total Offshore		33	33	48	114
Total (A)		122	118	118	358
B. Oil India Ltd. (Nomination)					
Assam	Upper Assam	0	0	14	14
Arunachal Pradesh	Upper Assam	0	0	1	1
Rajasthan	Jaisalmer	0	0	3	3
	Bikaner Nagpur	0	0	1	1
Total (B)		0	0	19	19
C. PSC Regime					
Gujarat	Cambay	35	3	0	38
Arunachal Pradesh	Assam-Arakan	1	0	0	1
Assam	Assam-Arakan	1	1	0	2
Madhya Pradesh*	Sohagpur	0	2	0	2
Jharkhand*	Jharia	0	1	0	1
Jharkhand*	Bokaro	0	1	0	1
Rajasthan	Rajasthan	8	2	0	10
Tamil Nadu	Cauvery	0	1	0	1
West Bengal*	Raniganj	0	2	0	2
Total Onshore+CBM		45	13	0	58
East Coast	Cauvery	1	1	0	2
East Coast	Krishna Godavari	1	3	1	5
West Coast	Mumbai	0	1	2	3
West Coast	Cambay	1	1	1	3
Total Offshore		3	6	4	13
C. Total		48	19	4	71
Grand Total (A+B+C)		170	137	141	448

A&AA : Assam & Assam Arakan.

*: CBM Fields

Note: Figures not strictly comparable with earlier issues of publication prior to 2015-16 due to change in nomenclature, rationalisation and classification of reporting.

Source: ONGC, OIL and DGH.

II.8 Exploration contracts awarded in different rounds under NELP & DSF												
Parameter		New Exploration Licensing Policy (NELP)										
		I (2) 1999	II (3) 2000	III (4) 2002	IV (5) 2003	V (6) 2005	VI (7) 2006	VII (8) 2007	VIII (9) 2009	IX (10) 2010		
Year of Launch												
No. of Blocks Offered		48	25	27		24	20	55	57	70	34	
No. of Blocks Bid For		28	23	24		21	20	52	45	36	33	
No. of Bids Received		45	44	52		44	69	165	181	76	74	
No. of blocks awarded		25	23	23		21	20	52	44	34	19	
No. of PSC signed		24	23	23		20	20	52	41	32	19	
Area Awarded (Sq. Km)		228472	263050	204588	192810	113687	306331	112988	52603	26428		
CONTRACT AREAS AWARDED UNDER DISCOVERED SMALL FIELD ROUND-2016												
Consortium (Participating Interest in%)		State			Basin		Contract Area Name			Awarded Area	Present Area	
										(in sq.km)		
SHALLOW WATER												
1. Sun Petrochemical (100) (Op.)			Mumbai Offshore		Mumbai		MB/OSDSF/B37/2016			124	124	
2. Adani Welspun Exploration Ltd. (100)			Mumbai Offshore				MB/OSDSF/B9/2016			183	183	
3. BPRL (100)			Mumbai Offshore				MB/OSDSF/B15/2016			41	41	
4. BPRL (100)			Mumbai Offshore				MB/OSDSF/B127E/2016			39.3	39.3	
5. HOEC(50), AEPL (50)			Mumbai Offshore				MB/OSDSF/B80/2016			56.02	56.02	
6. IOCL (100)			Kutch Offshore		Gujarat Kutch		GK/OSDSF/KD/2016			46	46	
7. KEI-RSOS Petroleum & Energy Pvt Ltd (100)			KG-Offshore		Krishna Godavari		KG/OSDSF/GSKV1/2016			24.2	24.2	
		Sub Total								513.52	513.52	
ONLAND												
8. PPCL (100)			Assam		Assam Arakan		AA/ONDSF/HILARA/2016			9.6	9.6	
9. MEIL (100)			Assam				AA/ONDSF/LAXMIAN/2016			8.9	8.9	
10.VBIPL (100)			Assam				AA/ONDSF/PATHARIA/2016			19.15	19.15	
11. RIPL (29), BDNEPL (29), DFPL (23), MIPL (19)			Assam				AA/ONDSF/BARSILLA/2016			6.22	6.22	
12. OILMAX (100)			Assam				AA/ONDSF/CHARAIDEO/2016			11.5	11.5	
13. RIPL (29), BDNEPL (29), DFPL (23), MIPL (19)			Assam				AA/ONDSF/DIPLING/2016			28.17	28.17	
14. OILMAX (100)			Assam				AA/ONDSF/DUARMARA/2016			8.91	8.91	
15. IOCL (100)			Assam				AA/ONDSF/JERAIPATHAR/2016			10.1	10.1	
16. HOEC (40), OIL (40), PPCL (20)			Arunachal Pradesh				AA/ONDSF/KHEREM/2016			16.45	16.45	
17. PFHOGPL (100)			Gujarat		Cambay		CB/ONDSF/ELAO/2016			9.98	9.98	
18. SACEZE (100)			Gujarat				CB/ONDSF/SOUTH PATAN/2016			9.88	9.88	
19. MEIL (100)			Gujarat				CB/ONDSF/KHAMBEL/2016			9.78	9.78	
20. Nippon Power Ltd. (100)			Gujarat				CB/ONDSF/KAMBOI/2016			2.35	2.35	
21. Nippon Power Ltd. (100)			Gujarat				CB/ONDSF/WEST BECHRAJI/2016			9.15	9.15	
22. GEMPLPL (100)			Tamil Nadu		Cauvery		CY/ONDSF/NEDUVASAL/2016			10.01	10.01	
23. BPRL (100)			Tamil Nadu				CY/ONDSF/KARAIKAL/2016			10.4	10.4	
24. PFHOGPL (100)			Andhra Pradesh		Krishna Godavari		KG/ONDSF/ACHANTA/2016			9.63	9.63	
25. PFHOGPL (100)			Andhra Pradesh				KG/ONDSF/BHIMANAPALLI/2016			15.1	15.1	
26. KEI-RSOS Petroleum & Energy Pvt Ltd (100)			Andhra Pradesh				KG/ONDSF/KORAVAKA/2016			9.9	9.9	
27. PPCL (100)			Andhra Pradesh				KG/ONDSF/SANARUDRAVARAM/2016			9.35	9.35	
28. BPRL (100)			Rajasthan		Rajasthan		RJ/ONDSF/BAKHRI TIBBA/2016			13.4	13.4	
29. BPRL (100)			Rajasthan				RJ/ONDSF/SADEWALA/2016			10.3	10.3	
30. IOCL (100)			Madhya Pradesh		Vindhyan		VN/ONDSF/NOHTA/2016			15	15	
		Sub Total					Sub Total			263.23	263.23	
		Total Area					Total Area			776.75	776.75	

Note: Total 31 contract areas were awarded under DSF of which one awardee reportedly did not sign the contract

Source: DGH

II. 9 State-wise/Area-wise Balance Recoverable reserves of Crude Oil and Natural Gas

Area/State	Crude Oil (MMT)								Natural Gas (BCM)							
	2010 (2)	2011 (3)	2012 (4)	2013 (5)	2014 (6)	2015 (7)	2016 (8)	2017 (9)	2010 (10)	2011 (11)	2012 (12)	2013 (13)	2014 (14)	2015 (15)	2016 (16)	2017 (17)
Western Offshore	273.38	256.97	256.69	265.33	255.70	255.27	247.13	239.20	316.70	318.07	317.25	319.42	319.72	325.01	293.96	302.35
Eastern Offshore	22.33	20.43	18.31	16.79	34.75	34.19	36.39	40.67	390.71	405.10	426.14	416.98	449.47	467.65	451.46	507.76
A. Total Offshore	295.70	277.40	275.00	282.12	290.45	289.46	283.53	279.86	707.40	723.16	743.38	736.40	769.20	792.66	745.41	810.10
Arunachal Pradesh	3.53	3.39	3.42	3.37	2.95	1.64	1.73	1.52	2.07	2.22	2.14	1.96	0.81	0.79	0.95	0.93
Andhra Pradesh	3.68	4.25	4.61	6.80	10.73	10.94	10.90	8.15	36.09	35.31	37.03	42.25	42.32	41.79	42.03	48.31
Nagaland	2.38	2.38	2.38	2.38	2.38	2.38	2.38	2.38	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
Jharkhand (CBM)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.78	51.14	27.46	28.91	28.91	28.91	28.13	8.02
West Bengal(CBM)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	37.96	14.35	37.95	39.71	39.55	39.33	66.24	66.45
Madhya Pradesh(CBM)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	32.14	32.14	32.14	32.14	32.13	32.13	32.12	32.11
Tamil Nadu	7.69	8.11	8.49	8.52	8.43	8.47	8.99	9.00	34.04	36.66	39.07	37.69	36.76	35.36	31.68	31.98
Tripura	0.08	0.08	0.08	0.07	0.07	0.07	0.07	0.07	27.11	27.21	29.97	30.61	30.27	30.74	28.28	36.10
Assam	168.18	167.02	169.25	168.18	169.25	165.91	160.78	159.96	134.01	137.86	137.88	140.68	140.04	149.38	153.76	158.57
Rajasthan	80.48	75.33	68.78	60.19	44.99	37.32	31.72	24.55	13.57	13.13	13.19	13.77	13.97	36.93	35.66	34.86
Gujarat	121.78	122.07	120.15	119.93	118.12	119.41	121.16	118.61	69.27	68.32	66.45	67.48	65.05	63.79	63.06	62.28
B. Total Onshore	387.80	382.63	377.16	369.44	356.93	346.13	337.75	324.24	390.14	418.43	423.39	435.29	429.90	459.23	481.99	479.71
Total Reserves (A+B)	683.51	660.04	652.16	651.55	647.38	635.59	621.28	604.10	1097.54	1141.59	1166.77	1171.69	1199.10	1251.89	1227.40	1289.81

Notes:

1. Proved and indicated Balance Recoverable Reserves as on 1st April.
2. Western offshore includes Gujarat offshore
3. Total may not tally due to rounding off

Source: ONGC, OIL and DGH.

Figure II.3(a): Crude Oil Reserves (as on 01.04.2017)

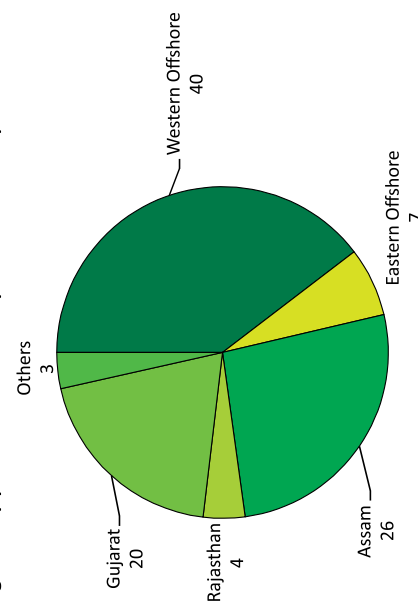
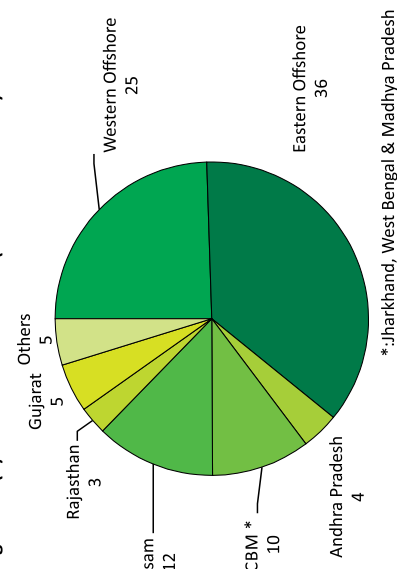


Figure II.3(b): Natural Gas Reserves (as on 01.04.2017)



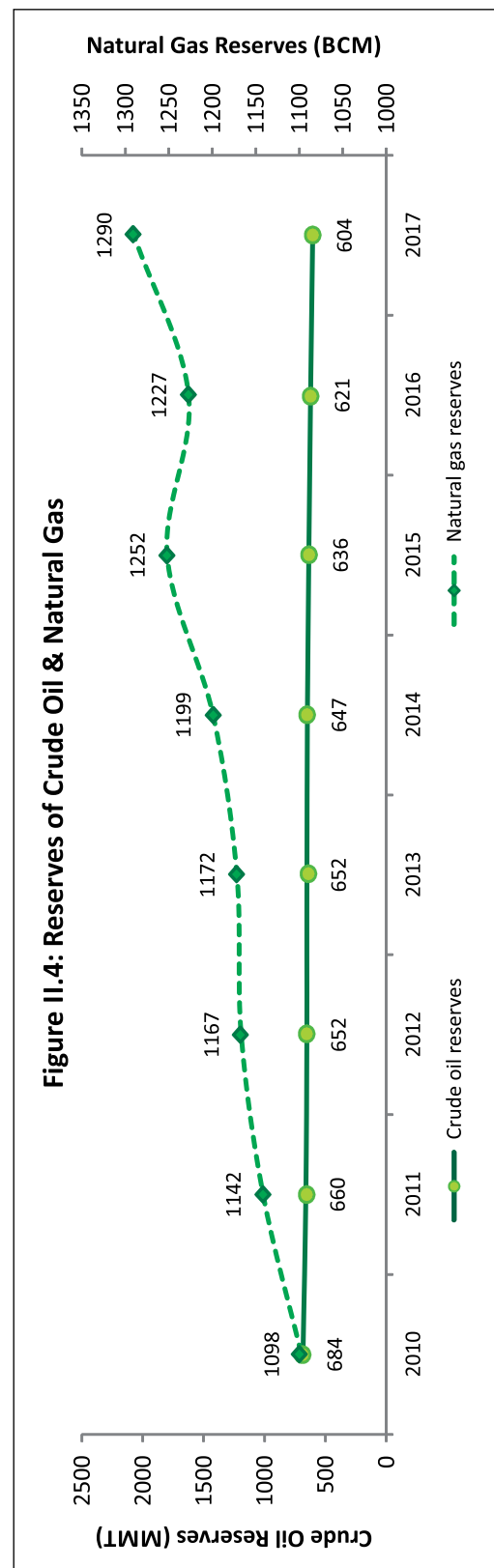
II. 10 Company-wise Balance Recoverable Reserves of Crude Oil & Natural Gas																
Area/State	Crude Oil (MMT)								Natural Gas (BCM)							
	2010	2011	2012	2013	2014	2015	2016	2017	2010	2011	2012	2013	2014	2015	2016	2017
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
Onshore																
ONGC(Nomination)	214.89	215.45	214.52	215.02	212.12	212.40	209.78	208.98	195.32	197.54	203.14	209.07	205.71	201.65	190.76	195.33
OIL (Nomination)	82.53	81.79	84.04	84.04	86.04	83.23	80.74	78.72	102.75	105.55	105.61	109.57	109.18	114.52	119.46	123.65
PSC Regime	90.38	85.39	78.60	70.38	58.77	50.50	47.22	36.54	92.07	115.34	114.64	116.65	115.01	143.06	171.77	160.73
A. Total Onshore	387.80	382.63	377.16	369.44	356.93	346.13	337.75	324.24	390.14	418.43	423.39	435.29	429.90	459.23	481.99	479.71
Offshore																
ONGC (Nomination)	253.98	239.80	239.58	248.40	239.83	241.56	234.85	228.30	288.31	314.28	319.49	325.77	330.23	338.93	327.28	338.12
PSC Regime	41.72	37.60	35.42	33.72	50.62	47.90	48.68	51.56	419.09	408.88	423.89	410.63	438.97	453.73	418.13	471.98
B. Total Offshore	295.70	277.40	275.00	282.12	290.45	289.46	283.53	279.86	707.40	723.16	743.38	736.40	769.20	792.66	745.41	810.10
Grand Total (A+B)	683.51	660.04	652.16	651.55	647.38	635.59	621.28	604.10	1097.54	1141.59	1166.77	1171.69	1199.10	1251.89	1227.40	1289.81

Note:

1. Proved and Indicated Balance Recoverable Reserves as on 1st April.

2. Total may not tally due to rounding off

Source: ONGC, OIL and DGH.



II.11 Production of Crude Oil & Condensate and Natural Gas

(Calendar Year-wise)							
State/Region	2010	2011	2012	2013	2014	2015	2016 (P)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1. Crude Oil Production (TMT)							
(a) Onshore							
Andhra Pradesh	300	308	295	301	258	295	273
Arunachal Pradesh	122	117	118	116	84	57	58
Assam	4648	5003	4948	4869	4492	4239	4153
Gujarat	5927	5855	5414	5229	4750	4444	4589
Rajasthan	3880	6281	8228	8513	8996	8578	8166
Tamil Nadu	225	250	243	225	237	255	269
Total (a) of which	15101	17815	19245	19254	18816	17868	17507
OIL	3538	3825	3757	3644	3359	3284	3206
ONGC	7431	7476	7014	6860	6243	5804	5913
PSC Regime	4132	6514	8475	8751	9214	8779	8389
(b) Offshore							
ONGC	15249	14563	13622	13731	14488	15286	14901
PSC Regime	4137	3730	2885	2809	2582	2597	2183
Total (b)	19386	18293	16507	16541	17070	17883	17085
Total Oil Production (a+b)	34487	36107	35752	35795	35886	35750	34592
(c). Condensate							
Assam	13	1	^	^	^	^	^
Gujarat	^	^	^	^	1	^	^
Rajasthan	6	8	9	36	63	96	122
Offshore	2180	2123	2220	1978	1591	1388	1327
Total (c) of which	2199	2133	2230	2015	1654	1485	1450
ONGC	1946	1910	2086	1908	1520	1329	1298
PSC Regime	253	223	144	107	134	155	152
Total Oil & Condensate (a+b+c)	36685	38240	37982	37810	37540	37235	36042
2. Natural Gas Production (MMSCM)							
(a) Onshore							
Andhra Pradesh	1409	1344	1298	1190	673	593	811
Arunachal Pradesh	46	41	40	42	34	31	27
Assam	2657	2865	2916	2896	2934	2966	3113
Gujarat	2293	2155	2120	1745	1538	1481	1529
Jharkhand (CBM)	0	2	3	3	3	2	3
Madhya Pradesh (CBM)	0	1	3	5	4	1	5
Rajasthan	380	567	655	879	1128	1329	1313
Tamil Nadu	1115	1247	1212	1283	1255	1046	962
Tripura	596	636	633	716	1113	1293	1402
West Bengal (CBM)	37	72	97	137	203	354	516
Total (a) of which	8533	8929	8977	8896	8885	9095	9681
OIL	2334	2595	2631	2650	2682	2784	2929
ONGC	17502	5639	5579	5282	4942	4732	5039
PSC Regime	687	697	767	964	1262	1579	1712
(b) Offshore:							
ONGC (Mumbai High)	17502	17374	18170	18019	17466	16966	16286
PSC Regime	27293	22432	15594	9082	7756	6896	5471
Total (b)	44796	39806	33764	27101	25222	23862	21757
Grand Total (a+b)	53328	48736	42742	35997	34106	32957	31437

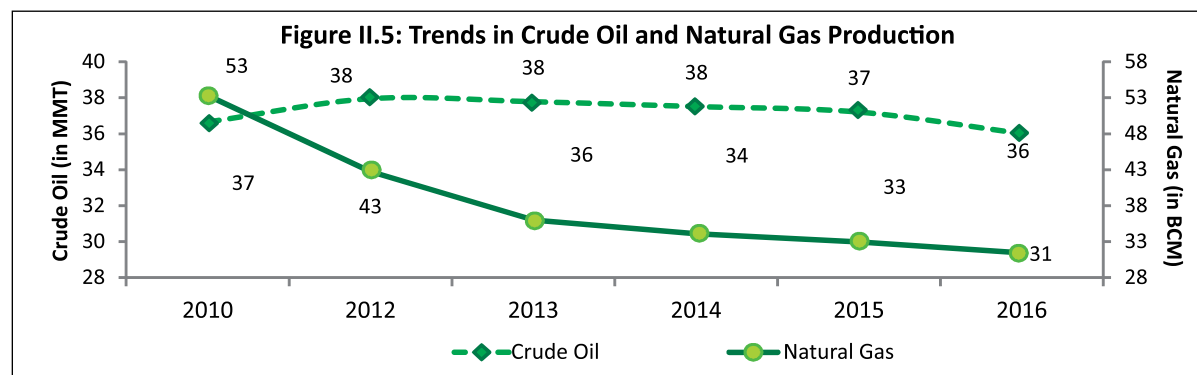
Note: Total may not tally due to rounding off

CBM: Coal Bed Methane

^: less than 0.5

P: Provisional

Source: ONGC, OIL and DGH.



II.12 Production of Crude Oil and Condensate

(Financial Year-wise)

(in TMT)

State/Region	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17 (P)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1. Crude Oil Production (TMT)							
(a) Onshore							
Andhra Pradesh	305	305	295	297	254	295	276
Arunachal Pradesh	116	118	121	111	76	57	55
Assam	4710	5024	4863	4710	4466	4185	4203
Gujarat	5905	5779	5331	5061	4653	4459	4605
Rajasthan	5141	6543	8583	9131	8783	8490	8049
Tamil Nadu	233	247	238	226	240	255	284
Total (a)	16411	18016	19431	19536	18472	17741	17472
of which							
OIL	3582	3847	3661	3466	3412	3226	3258
ONGC	7447	7386	6944	6705	6069	5817	5934
PSC Regime	5382	6784	8826	9365	8991	8698	8280
(b) Offshore							
ONGC	15081	14378	13541	13735	14758	15264	14921
PSC Regime	4035	3540	2689	2595	2661	2495	2108
Total (b)	19116	17918	16230	16330	17419	17759	17029
Total Oil Production (a+b)	35527	35934	35661	35865	35891	35500	34501
2. Condensate							
Assam	10	1	^	^	^	^	^
Gujarat	^	^	^	^	1	^	^
Rajasthan	8	9	10	49	65	111	115
Offshore	2139	2146	2191	1874	1505	1330	1392
Total	2157	2156	2201	1923	1570	1442	1508
of which							
ONGC	1892	1952	2076	1806	1437	1279	1363
PSC Regime	265	203	125	117	133	163	144
Total Oil & Condensate (1+2)	37684	38090	37862	37788	37461	36942	36009

Note: Total may not tally due to rounding off

^: less than 0.5

P: Provisional

Source: ONGC, OIL and DGH.

Figure II.6 (a): Crude Oil and Condensate Production

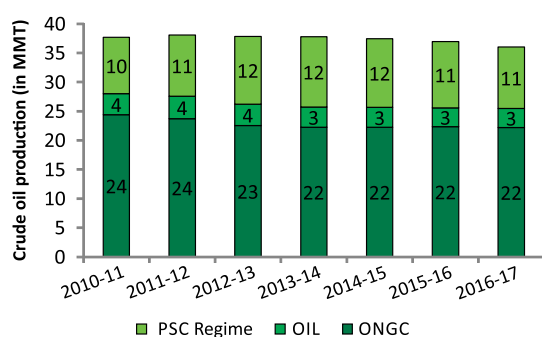
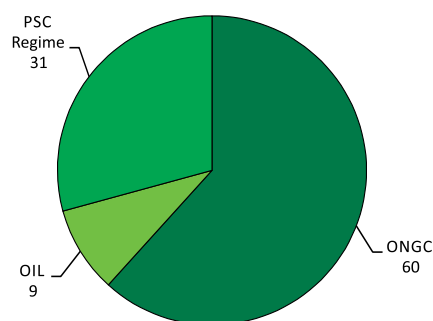


Figure II.6 (b): Nomination (ONGC, OIL) vs. PSC Regime: Share in Crude Oil and Condensate Production during 2016-17 (%)



II.13 Production of Natural Gas

(Financial Year-wise)

(in MMSCM)

State/Region	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17 (P)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(a) Onshore:							
Andhra Pradesh	1384	1364	1249	1171	541	619	868
Arunachal Pradesh	44	40	41	41	34	30	28
Assam	2680	2905	2910	2868	2958	3025	3128
Gujarat	2262	2173	2032	1657	1527	1490	1580
Rajasthan	432	590	685	982	1178	1338	1277
Tamil Nadu	1119	1285	1206	1304	1192	1011	983
Tripura	610	644	647	822	1140	1332	1430
Jharkhand (CBM)	0	4	3	3	2	2	3
Madhya Pradesh (CBM)	0	2	3	6	2	1	6
West Bengal (CBM)	41	79	101	156	224	389	555
Total (a)	8574	9084	8877	9012	8797	9237	9858
of which							
OIL	2350	2633	2639	2626	2722	2838	2937
ONGC	5504	5751	5447	5316	4752	4770	5205
PSC Regime	720	699	791	1069	1323	1629	1717
(b) Offshore:							
ONGC	17591	17565	18102	17968	17272	16406	16883
PSC Regime	26054	20910	13700	8428	7589	6605	5155
Total (b)	43645	38475	31802	26395	24861	23012	22038
Grand Total (a+b)	52219	47559	40679	35407	33657	32249	31897

Note: Total may not tally due to rounding off
Source: ONGC, OIL and DGH.

CBM: Coal and Bed Methane

P: Provisional

Figure II.7(a): Natural Gas Production

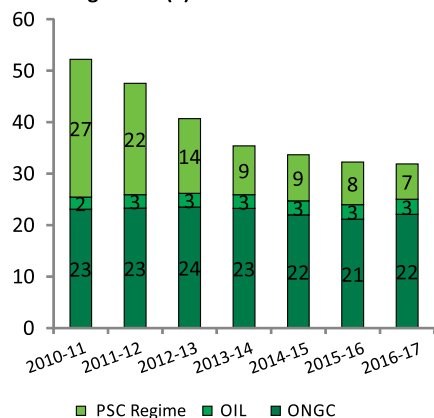
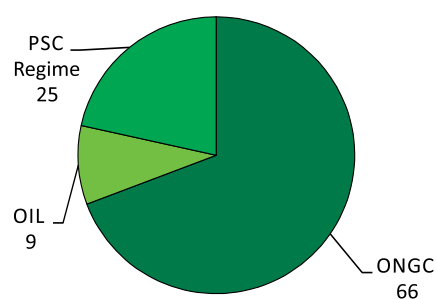


Figure II.7(b): Nomination (ONGC, OIL) vs. PSC Regime: Share in Natural Gas Production during 2016-17 (%)



II.14 Field-wise Production of Crude Oil and Natural Gas						
AREA	STATE	ASSET	Oil (TMT)		Gas (MMSCM)	
			2015-16	2016-17 (P)	2015-16	2016-17 (P)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Oil and Natural Gas Corporation						
Offshore	Mumbai Offshore (Off the coast of Maharashtra) and Eastern offshore	Mumbai High	9920	9678	5083	5215
		Neelam + Heera+ B-173 + B134A	2774	2635	1068	1066
		Bassein & Satellite	2543	2592	10043	10131
		Condensate receipt	1279	1363	-	-
		Eastern offshore	27	16	212	470
	Total Offshore		16543	16284	16406	16883
Onshore	Gujarat	Ahmedabad	1299	1325	138	142
		Mehsana	2127	2118	202	207
		Ankleshwar	740	848	1050	1132
		Cambay	142	177	9	10
		Total Gujarat	4309	4468	1399	1490
	Assam	Assam	965	953	405	435
	Tamilnadu	Cauvery	248	238	1010	977
	Andhra Pradesh	Rajahmundry	295	276	619	868
	Tripura	Tripura	-	-	1332	1430
	Rajasthan	Jodhpur	-	-	5	5
	Total Onshore		5817	5934	4770	5205
	Total ONGC			22360	22218	21177
Oil India Limited						
Onshore	Assam	Greater Naharkatia Field	226	197	301	257
		Greater Jorajan Field	109	124	461	465
		Moran Field	47	54	48	50
		Greater Shalmari Field	174	163	22	39
		Greater Hapjan Field	1358	1331	341	303
		Greater Chandmari Field	448	507	446	591
		Tengakhat Field	85	72	35	34
		Bhogpara Field	103	148	10	13
		Greater Kathaloni Field	174	129	31	29
		Greater Dikom Field	193	174	252	210
		Western Satellite Field	37	66	9	18
		Eastern Satellite Field	33	31	93	83
		Central Small Field	226	252	569	600
		Digboi	6	5	1	0
		Total Assam	3220	3250	2620	2693
	Arunachal Pradesh	Kumchai Field	6	8	11	12
	Rajasthan	Dandewala	-	-	202	226
		Bagitibba	-	-	4	6
		Tanot	-	-	0	0
		Total Rajasthan	-	-	206	232
Total OIL (Onshore)			3226	3258	2838	2937

Contd...

II.14 Field-wise Production of Crude Oil and Natural Gas (Contd...)						
AREA	STATE	ASSET	Oil (TMT)		Gas (MMSCM)	
			2015-16	2016-17 (P)	2015-16	2016-17 (P)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Private/JVs						
Onshore	Arunachal Pradesh	KHARSANG	52	48	18	16
	Gujarat	CB-ON/3	1	1	0	0
		CB-ON/2	10	10	9	10
		CB-ONN-2000/1	38	35	2	2
		CB-ONN-2002/3	0	0	0	0
		CB-ONN-2003/2	3	3	0	0
		UNAWA	1	0	0	0
		SANGANPUR	0	0	0	0
		ALLORA	0	1	0	0
		DHOLASAN	0	0	0	0
		KANAWARA	4	3	10	9
		NORTH KATHANA	0	0	0	0
		ASJOL	1	1	0	0
		CB-ON/7	5	5	0	0
		N.BALOL	0	0	5	4
		DHOLKA	47	43	12	13
		WAVEL	3	4	0	0
		HAZIRA	5	4	42	42
		BHANDUT	0	0	0	2
		CAMBAY	1	0	1	0
		CB-ONN-2001/1	1	1	0	0
		CB-ONN-2002/1	0	0	0	0
		CB-ONN-2004/1	1	2	0	0
		BAKROL	18	16	8	8
		INDRORA	2	2	0	0
		LOHAR	6	5	0	0
		Total Gujarat	149	137	91	90
	Rajasthan	RJ-ON-90/1	8599	8162	699	686
		RJ-ON/6	3	3	428	354
		Total Rajasthan	8602	8165	1127	1041
	Tamil Nadu	CY-ONN-2002/2	7	46	1	6
	Total Onshore		8809	8395	1236	1152
CBM	Jharkhand	JHARIA	-	-	2	3
		SOHAGPUR EAST	-	-	0	0
	Madhya Pradesh	SOHAGPUR WEST	-	-	1	6
		Total M.P.	-	-	1	6
	West Bengal	RANIGANJ EAST	-	-	236	385
		RANIGANJ WEST	-	-	153	170
		Total West Bengal	-	-	389	555
	TOTAL CBM		-	-	393	565
Offshore	Eastern Offshore	RAVVA	1019	808	260	192
		KG-OSN-2001/3	4	7	134	128
		PY-1	2	2	22	18
		KG-DWN-98/3	208	146	3940	2862
		Total Eastern Off.	1232	963	4356	3200
	Gujarat Offshore	CB-OS/2	411	382	68	81
		M&S TAPTI	16	0	131	0
	Western Offshore	PANNA-MUKTA	887	793	2050	1874
		Total Western Off.	903	793	2181	1874
	Total Offshore		2546	2137	6605	5155
Total Pvt/JVs			11355	10532	8235	6872
Total Production			36942	36009	32249	31897

Note: Total may not tally due to rounding off
Source: ONGC, OIL and DGH.

CBM: Coal and Bed Methane

P: Provisional

II.15 State-wise Gross & Net Production of Natural Gas in India

(in MMSCM)

State / Utilisation	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17 (P)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Assam							
Gross Production (GP)	2679.85	2904.54	2909.79	2868.03	2958.25	3024.78	3127.88
Flared	174.76	168.65	193.89	172.63	178.29	171.72	192.23
Net Availability	2505.09	2735.89	2715.90	2695.40	2779.96	2853.06	2935.65
Internal Use+Losses	546.30	584.03	576.78	567.54	587.67	572.92	586.38
Net Production (Sales)	1958.79	2151.86	2139.12	2127.86	2192.29	2280.14	2349.27
% Flared to GP	6.52	5.81	6.66	6.02	6.03	5.68	6.15
Arunachal Pradesh							
Gross Production	44.49	39.50	41.07	41.39	33.53	29.56	27.54
Flared	30.64	25.83	26.92	22.86	14.10	13.06	12.26
Net Availability	13.84	13.67	14.15	18.53	19.43	16.50	15.28
Internal Use+Losses	13.84	13.67	14.15	18.53	19.43	16.50	15.28
Net Production (Sales)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
% Flared to GP	68.88	65.38	65.54	55.22	42.05	44.19	44.51
Rajasthan							
Gross Production	432.49	590.18	685.42	982.20	1177.77	1338.01	1277.34
Flared	48.68	33.31	51.74	38.40	38.68	59.58	43.91
Net Availability	383.80	556.87	633.68	943.81	1139.08	1278.43	1233.43
Internal Use+Losses	200.37	259.84	360.55	469.65	568.02	621.80	612.12
Net Production (Sales)	183.43	297.03	273.13	474.16	571.06	656.63	621.31
% Flared to GP	11.26	5.64	7.55	3.91	3.28	4.45	3.44
Gujarat							
Gross Production	2261.83	2172.93	2032.09	1656.94	1526.82	1490.08	1580.27
Flared	30.57	69.43	38.61	72.35	121.88	87.13	62.87
Net Availability	2231.26	2103.51	1993.48	1584.59	1404.94	1402.95	1517.40
Internal Use+Losses	622.09	605.98	570.52	475.61	428.64	458.55	470.31
Net Production (Sales)	1609.17	1497.52	1422.96	1108.98	976.31	944.41	1047.09
% Flared to GP	1.35	3.20	1.90	4.37	7.98	5.85	3.98
Tamil Nadu							
Gross Production	1119.18	1284.76	1206.04	1304.02	1191.57	1010.87	983.17
Flared	13.20	8.19	6.89	5.74	17.02	20.82	17.77
Net Availability	1105.98	1276.57	1199.15	1298.28	1174.55	990.05	965.39
Internal Use+Losses	1.84	1.85	1.40	1.40	1.39	1.98	4.52
Net Production (Sales)	1104.14	1274.72	1197.75	1296.88	1173.16	988.07	960.88
% Flared to GP	1.18	0.64	0.57	0.44	1.43	2.06	1.81
Andhra Pradesh							
Gross Production	1384.39	1363.78	1248.55	1171.34	540.59	619.36	867.78
Flared	1.78	2.22	2.97	3.65	21.83	50.40	34.13
Net Availability	1382.61	1361.56	1245.58	1167.69	518.76	568.95	833.65
Internal Use+Losses	10.26	18.56	28.19	30.60	15.64	20.18	31.60
Net Production (Sales)	1372.36	1343.00	1217.40	1137.09	503.12	548.77	802.05
% Flared to GP	0.13	0.16	0.24	0.31	4.04	8.14	3.93
Tripura							
Gross Production	609.98	643.90	646.74	822.24	1140.04	1331.96	1429.91
Flared	0.10	0.01	0.06	6.32	0.17	0.46	0.21
Net Availability	609.88	643.90	646.68	815.92	1139.88	1331.51	1429.70
Internal Use+Losses	1.66	1.67	2.63	2.58	2.36	2.37	2.48
Net Production (Sales)	608.22	642.22	644.05	813.33	1137.52	1329.14	1427.22
% Flared to GP	0.02	0.00	0.01	0.77	0.01	0.03	0.01

Contd...

II.15 State-wise Gross & Net Production of Natural Gas in India (Contd...)

(in MMSCM)

State / Utilisation	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17 (P)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
West Bengal (CBM)							
Gross Production	41.36	79.11	100.85	156.49	223.68	389.42	555.07
Flared	5.10	10.31	4.86	15.54	20.32	128.91	240.66
Net Availability	36.26	68.79	95.99	140.95	203.36	260.51	314.41
Internal Use+Losses	5.20	9.41	12.30	21.43	33.73	41.48	50.36
Net Production (Sales)	31.06	59.39	83.68	119.52	169.63	219.04	264.04
% Flared to GP	12.33	13.04	4.82	9.93	9.09	33.10	43.36
Madhya Pradesh (CBM)							
Gross Production	-	1.53	3.44	5.65	2.08	1.40	6.44
Flared	-	0.89	2.30	4.09	1.29	0.31	0.91
Net Availability	-	0.63	1.14	1.57	0.79	1.09	5.53
Internal Use+Losses	-	0.63	1.14	1.57	0.79	1.06	4.65
Net Production (Sales)	-	0.00	0.00	0.00	0.00	0.03	0.87
% Flared to GP	-	58.58	66.89	72.29	62.16	22.22	14.18
Jharkhand (CBM)							
Gross Production	-	3.56	2.95	3.38	2.48	2.04	3.08
Flared	-	0.00	0.00	0.00	0.00	0.00	0.00
Net Availability	-	3.56	2.95	3.38	2.48	2.04	3.08
Internal Use+Losses	-	0.00	0.00	0.00	0.02	0.16	0.49
Net Production (Sales)	-	3.56	2.95	3.38	2.46	1.88	2.59
% Flared to GP	-	0.00	0.00	0.00	0.00	0.00	0.00
A. Total Onshore							
Gross Production	8573.57	9083.80	8876.92	9011.68	8796.80	9237.48	9858.47
Flared	304.84	318.85	328.23	341.57	413.57	532.39	604.95
Net Availability	8268.73	8764.95	8548.69	8670.11	8383.23	8705.09	9253.52
Internal Use+Losses	1401.56	1495.65	1567.65	1588.91	1657.68	1736.99	1778.20
Net Production (Sales)	6867.17	7269.30	6981.04	7081.20	6725.55	6968.10	7475.33
% Flared to GP	3.56	3.51	3.70	3.79	4.70	5.76	6.14
B. Offshore							
Gross Production	43645.09	38474.84	31802.34	26395.20	24860.64	23011.74	22038.23
Flared	662.90	758.35	574.18	427.10	451.53	474.31	372.10
Net Availability	42982.19	37716.49	31228.16	25968.10	24409.10	22537.43	21666.13
Internal Use+Losses	3808.96	3817.36	3861.00	4065.46	4354.97	4208.93	4149.59
Net Production (Sales)	39173.23	33899.14	27367.16	21902.64	20054.14	18328.50	17516.54
% Flared to GP	1.52	1.97	1.81	1.62	1.82	2.06	1.69
Total (A+B)							
Gross Production	52218.66	47558.64	40679.26	35406.88	33657.44	32249.21	31896.70
Flared	967.74	1077.20	902.42	768.67	865.11	1006.70	977.05
Net Availability	51250.92	46481.44	39776.85	34638.21	32792.33	31242.52	30919.65
Internal Use+Losses	5210.52	5313.01	5428.65	5654.38	6012.64	5945.92	5927.79
Net Production (Sales)	46040.40	41168.44	34348.20	28983.83	26779.68	25296.60	24991.86
% Flared to GP	1.85	2.26	2.22	2.17	2.57	3.12	3.06

P: Provisional

CBM: Coal and Bed Methane

Note:

1. Total may not tally due to rounding off.
2. Net availability denotes natural gas available for consumption which is derived by deducting gas flared from Gross Production.

Source: ONGC, OIL and DGH.

II.16 Sector-wise Consumption of Natural Gas

(in MMSCM)

Sector	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17 (P)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
(a) Energy Purpose						
Power	22628.46	16077.71	11283.62	10719.80	10889.20	11616.26
Industrial	283.75	269.40	155.89	394.51	401.11	688.15
Manufacture	29.61	0.00	104.84	138.30	144.22	105.50
Road Transport	0.00	0.00	66.30	0.02	0.00	0.00
City or Local Natural Gas Distribution Network	5598.79	5779.84	5837.79	5415.49	5463.89	7350.00
Tea Plantation	175.28	182.10	195.72	180.48	187.06	183.33
Internal Consumption for Pipeline System	385.14	386.82	372.13	350.57	409.58	471.18
Refinery	4256.87	3890.54	3968.48	4575.20	5076.54	5374.37
Miscellaneous	9063.73	7975.90	7479.30	5941.23	4111.65	3745.96
Total (a)	42421.62	34562.30	29464.05	27715.60	26683.25	29534.74
(b) Non-Energy Purpose						
Fertilizer Industry	14003.32	14733.29	15869.37	15190.30	16134.61	15428.57
Petrochemical	1857.69	2485.96	2404.66	2889.67	3733.28	4170.06
Sponge Iron	1333.26	1105.74	274.12	153.59	544.32	885.05
LPG Shrinkage	1068.37	1027.29	981.85	1005.48	754.19	759.45
Total (b)	18262.64	19352.29	19530.01	19239.04	21166.40	21243.13
Grand Total (a+b)	60684.26	53914.59	48994.06	46954.64	47849.65	50777.87
Total in MMSCMD	165.80	147.71	134.23	128.64	130.74	139.12

Note:

P: Provisional

1. Re-classification among the sectors of consumption of natural gas under energy and non-energy sectors, has been done depending on usage. Sectors where natural gas is being used as feedstock are classified as consumption of gas under non-energy purpose whereas those sectors where natural gas is being used as fuel are classified as consumption of gas under energy purpose.

Figure II.8(a): Trends in Natural Gas Consumption

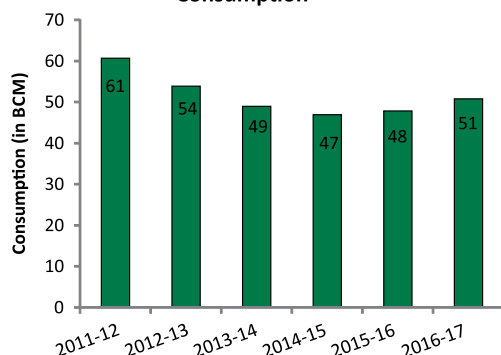
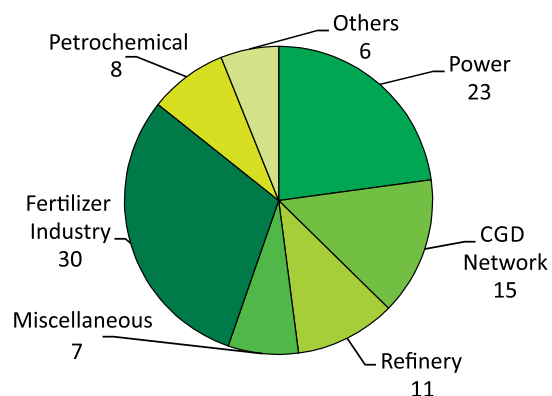


Figure II.8(b): Sector-wise Consumption of Natural Gas during 2016-17 (%)



Chapter III

Refining Transportation & Marketing

CHAPTER I

CHAPTER II

CHAPTER III

CHAPTER IV

CHAPTER V

CHAPTER VI

CHAPTER VII

CHAPTER VIII

CHAPTER IX

CHAPTER X

CHAPTER XI

APPENDIX



Chapter Highlights

- Petroleum Refining Capacity in India reached to 233.966 MMTPA as on 31.03.2017 from 230.066 MMTPA as on 31.03.2016 due to addition of 2.9 MMTPA and 1 MMTPA capacity in BPCL, Kochi and HPCL, Mumbai refineries respectively. Share of Public, JV and Private sector refineries stood at 59%, 7% and 34% respectively.
- Indian Oil Corporation Limited (IOCL) having 9 refineries has the largest share of all refineries at 30% (69.2 MMTPA) of total refining capacity as on 31.03.2017.
- Crude Throughput registered a sharp increase of 5.4% to reach 245362 TMT in year 2016-17 over 2015-16.
- Production of Petroleum Products at 243551 TMT witnessed a growth of 5% in 2016-17 over 2015-16.
- In line with Pradhan Mantri Ujjwala Yojana (PMUY), which envisages to provide clean fuel to 5 crore Below Poverty Line (BPL) families within 3 years, LPG production has increased by 7.2% from 10.568 MT in 2015-16 to 11.326 MT in 2016-17.
- Total pipeline length is 44070 Km as on 31.03.2017 registered a growth of 3.6% as against 42528 Km as on 31.03.2016.
- Total Crude Oil pipelines have increased by 3.86% to reach 10215 km as on 31.03.2017 as against 9,853 Km as on 31.03.2016.
- Total Natural Gas pipeline increased by 4.13% to reach 17753 Km as on 31.03.2017 as against 17680 Km as on 31.03.2016.
- Product Pipeline registered a growth of 7.38% to reach 16103 km as on 31.03.2017 as against 14995 Km as on 31.03.2016.
- Total PDS SKO Kerosene allocated to States is at 8908944 MT in 2016-17 against which uplifted was only 5197235 MT (58%). Maximum SKO (around 17%) was allocated to Uttar Pradesh at 1501152 MT.
- LPG Bottling Capacity has increased by 7.19% from 15172 TMT in 2015-16 to 16264 TMT in 2016-17. LPG Distributors consumers of CPSE OMCs increased by 16.2% to 23.46 crore as on 31.03.2017 as compared to 31.03.2016.
- With strong emphasis on clean energy, Compressed Natural Gas (CNG) Sales has increased by 9.8% from 2155 TMT in 2015-16 to 2366 TMT in 2016-17.
- To meet the increasing demand of CNG, number of CNG stations has shown a sharp increase of over 14% from 1081 on 31.03.2016 to 1233 as on 31.03.2017.
- As of 31.03.2017, there are 59595 Retail Outlets (ROs) in India, registering a 6% increase in 2016-17 as compared to 2015-16.

III.1 Petroleum Refining Capacity in India

(in MMTPA)

Sl. No.	Refinery Location & Year of Commissioning	Capacity as on 1 st April						
		2011	2012	2013	2014	2015	2016	2017
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
A	Public Sector	116.886	120.066	120.066	120.066	120.066	135.066	138.966
	Indian Oil Corporation Ltd.	54.200	54.200	54.200	54.200	54.200	69.200	69.200
1	Digboi, Assam - 1901	0.650	0.650	0.650	0.650	0.650	0.650	0.650
2	Guwahati, Assam - 1962	1.000	1.000	1.000	1.000	1.000	1.000	1.000
3	Barauni, Bihar - 1964	6.000	6.000	6.000	6.000	6.000	6.000	6.000
4	Koyali, Gujarat - 1965	13.700	13.700	13.700	13.700	13.700	13.700	13.700
5	Haldia, West Bengal - 1975	7.500	7.500	7.500	7.500	7.500	7.500	7.500
6	Mathura, Uttar Pradesh - 1982	8.000	8.000	8.000	8.000	8.000	8.000	8.000
7	Panipat, Haryana - 1998	15.000	15.000	15.000	15.000	15.000	15.000	15.000
8	Bongaigaon, Assam - 1974	2.350	2.350	2.350	2.350	2.350	2.350	2.350
9	Paradip, Odisha-2016	-	-	-	-	-	15.000	15.000
	Bharat Petroleum Corporation Ltd.	21.500	21.500	21.500	21.500	21.500	21.500	24.400
10	Mumbai, Maharashtra - 1955	12.000	12.000	12.000	12.000	12.000	12.000	12.000
11	Kochi, Kerala - 1963	9.500	9.500	9.500	9.500	9.500	9.500	12.400
	Hindustan Petroleum Corporation Ltd.	14.800	14.800	14.800	14.800	14.800	14.800	15.800
12	Mumbai, Maharashtra - 1954	6.500	6.500	6.500	6.500	6.500	6.500	7.500
13	Visakh, Andhra Pradesh - 1957	8.300	8.300	8.300	8.300	8.300	8.300	8.300
	Chennai Petroleum Corporation Ltd.	11.500	11.500	11.500	11.500	11.500	11.500	11.500
14	Manali, Tamil Nadu - 1965	10.500	10.500	10.500	10.500	10.500	10.500	10.500
15	Narimanam, Tamil Nadu - 1993	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	Numaligarh Refinery Ltd.	3.000	3.000	3.000	3.000	3.000	3.000	3.000
16	Numaligarh, Assam-1999	3.000	3.000	3.000	3.000	3.000	3.000	3.000
	Oil & Natural Gas Corporation Ltd.	0.066	0.066	0.066	0.066	0.066	0.066	0.066
17	Tatipaka, Andhra Pradesh - 2001	0.066	0.066	0.066	0.066	0.066	0.066	0.066
	Mangalore Refinery & Petrochemical Ltd.	11.820	15.000	15.000	15.000	15.000	15.000	15.000
18	Mangalore, Karnataka- 1996	11.820	15.000	15.000	15.000	15.000	15.000	15.000
B	Private Sector	70.500	78.000	80.000	80.000	80.000	80.000	80.000
	Reliance Industries Ltd.	60.000	60.000	60.000	60.000	60.000	60.000	60.000
19	Jamnagar, Gujarat - 1999	33.000	33.000	33.000	33.000	33.000	33.000	33.000
20	Jamnagar (SEZ), Gujarat - 2008	27.000	27.000	27.000	27.000	27.000	27.000	27.000
	Essar Oil Ltd.	10.500	18.000	20.000	20.000	20.000	20.000	20.000
21	Vadinar, Gujarat - 2006	10.500	18.000	20.000	20.000	20.000	20.000	20.000
C	Joint Venture (JV)	-	15.000	15.000	15.000	15.000	15.000	15.000
	Bharat Oman Refinery Ltd.	-	6.000	6.000	6.000	6.000	6.000	6.000
22	Bina, Madhya Pradesh - 2011	-	6.000	6.000	6.000	6.000	6.000	6.000
	HPCL Mittal Energy Ltd.	-	9.000	9.000	9.000	9.000	9.000	9.000
23	Bathinda, Punjab - 2012	-	9.000	9.000	9.000	9.000	9.000	9.000
	Total Refinery Capacity	187.386	213.066	215.066	215.066	215.066	230.066	233.966

Source: Oil Companies

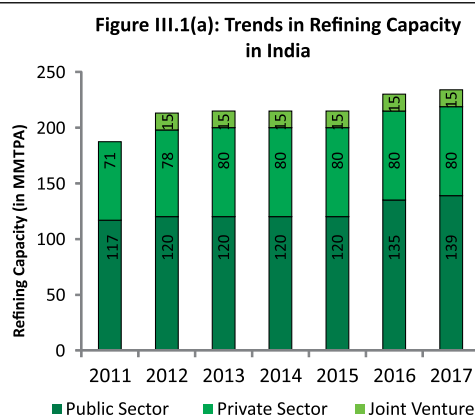
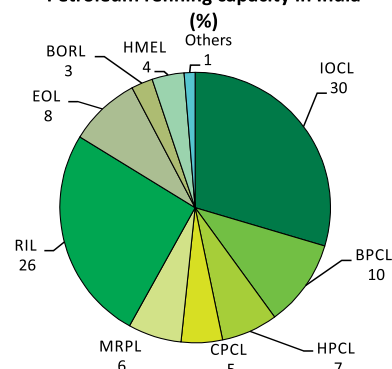


Figure III.1(b): Distribution of Petroleum refining capacity in India (%)



III.2 Refinery Crude Throughput and Production of Petroleum Products

(in TMT)

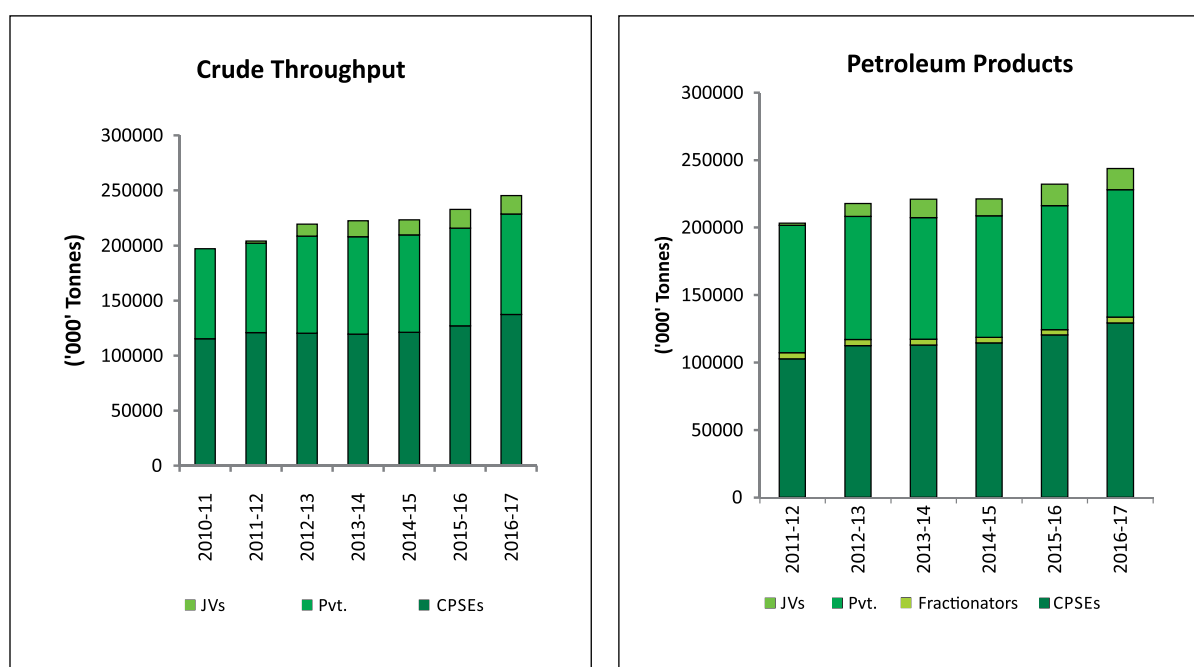
Year	Crude Throughput				Production of Petroleum Products					
	Refinery			Total	Refinery				Fractionators	Grand Total
	CPSEs	Pvt.	JVs		CPSEs	Pvt.	JVs	Total		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(Calendar Years)										
2010	112829	83407	-	196236	103981	84080	-	188060	4558	192618
2011	121030	81387	1242	203660	112609	84360	980	197949	4644	202594
2012	119763	87363	8035	215160	111558	90034	7191	208783	4566	213349
2013	119749	88097	14472	222318	114144	85588	16878	216610	4396	221006
2014	120944	88436	13442	222822	114401	89977	12580	216958	4101	221059
2015	123342	87096	16659	227097	116397	89908	15832	222137	3936	226073
2016 (P)	137891	91428	16894	246212	129740	93973	15743	239457	4183	243640
(Financial Years)										
2010-11	115311	81678	-	196989	106428	83888	-	190316	4504	194821
2011-12	120895	81179	2048	204121	102518	94328	1716	198561	4640	203202
2012-13	120303	88273	10636	219212	112329	91197	9692	213219	4518	217736
2013-14	119547	88229	14721	222497	112738	90101	13617	216456	4300	220756
2014-15	121183	88533	13526	223242	114462	89997	12682	217141	3994	221136
2015-16	127087	88662	17116	232865	120227	91734	15945	227907	4016	231923
2016-17 (P)	137388	91093	16882	245362	129244	94285	15728	239256	4294	243551

Note: 1. Crude throughput in terms of crude oil processed
2. Total may not tally due to rounding-off

P: Provisional

Source: Oil Companies

Figure III.2: Refinery Crude Throughput and Production of Petroleum Products



III.3 Refinery-wise Crude Oil Processed

								(in TMT)
Refinery	Crude Throughput (in TMT)							% variation in 2016-17 over 2015-16
	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17 (P)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(a) PUBLIC SECTOR	115311	120895	120303	119547	121183	127087	137388	8.1
IOCL, Guwahati	1118	1058	956	1019	1006	904	864	-4.4
IOCL, Barauni	6207	5730	6344	6478	5944	6545	6526	-0.3
IOCL, Koyali	13561	14253	13155	12960	13285	13820	13994	1.3
IOCL, Haldia	6878	8072	7490	7952	7650	7776	7689	-1.1
IOCL, Mathura	8880	8202	8561	6641	8515	8860	9230	4.2
IOCL, Digboi	651	622	660	651	591	562	533	-5.1
IOCL, Panipat	13660	15496	15126	15098	14191	15282	15638	2.3
IOCL, Bongaigaon	2008	2188	2356	2328	2403	2442	2486	1.8
IOCL, Paradip ¹	-	-	-	-	-	1817	8230	-
Total IOCL	52964	55621	54649	53126	53586	58007	65191	12.4
BPCL, Mumbai	13020	13355	13077	12684	12821	13371	13541	1.3
BPCL, Kochi	8699	9472	10105	10285	10356	10712	11820	10.4
Total BPCL	21719	22828	23183	22969	23177	24083	25362	5.3
HPCL, Mumbai	6638	7506	7748	7785	7408	8013	8510	6.2
HPCL, Vishakhapatnam	8200	8682	8028	7776	8770	9220	9335	1.2
Total HPCL	14838	16189	15777	15561	16179	17234	17846	3.6
CPCL(MRL), Manali	10104	9953	9105	10065	10251	9100	9725	6.9
CPCL(MRL), Narimanam	703	611	640	559	531	544	531	-2.3
Total CPCL	10807	10565	9745	10624	10782	9644	10256	6.4
NRL, Numaligarh	2252	2825	2478	2613	2777	2520	2683	6.5
MRPL, Mangalore	12662	12798	14415	14589	14632	15532	15965	2.8
ONGC, Tatipaka	69	69	57	65	51	67	86	27.1
(b) PRIVATE SECTOR	81678	81179	88273	88229	88533	88662	91093	2.7
RIL, Jamnagar	31198	32497	32613	30307	30867	32428	32823	1.2
RIL, SEZ-Jamnagar	35607	35186	35892	37720	37174	37133	37351	0.6
Total RIL	66805	67683	68504	68027	68042	69561	70174	0.9
EOL, Vadinar	14873	13496	19769	20202	20491	19101	20919	9.5
(c) JOINT VENTURE	-	2048	10636	14721	13526	17116	16882	-1.4
BORL, Bina	-	2048	5732	5450	6209	6402	6360	-0.7
HMEL, Bathinda	-	-	4904	9271	7318	10713	10521	-1.8
Grand Total	196989	204121	219212	222497	223242	232865	245362	5.4

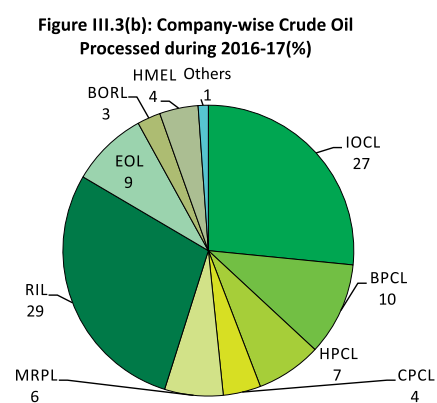
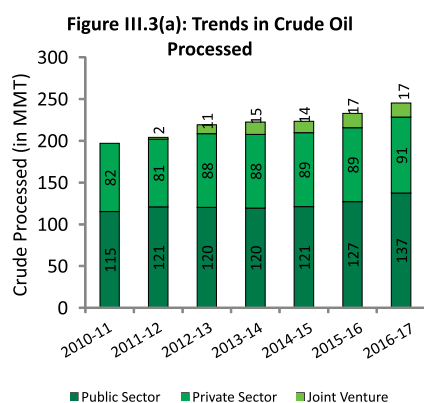
Note: 1. Production in Paradeep Refinery started in January, 2016.

P: Provisional

2. Crude throughput in terms of crude oil processed.

3. Total may not tally due to rounding off

Source: Oil Companies



III.4 Refinery-wise Production of Petroleum Products

Refinery	Production of Petroleum Products							(in TMT)
	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17 (P)	% variation in 2016-17 over 2015-16
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(a) PUBLIC SECTOR	106429	112518	112329	112738	114462	120227	129244	7.5
IOCL, Guwahati	997	927	881	1078	1067	1103	1121	1.6
IOCL, Barauni	5654	5210	5732	5948	5412	6079	5881	-3.3
IOCL, Koyali	12687	13437	12480	12300	12492	13246	13106	-1.1
IOCL, Haldia	6242	7283	6793	7233	7008	7133	6982	-2.1
IOCL, Mathura	8561	7926	8281	6370	8243	8640	8916	3.2
IOCL, Digboi	633	602	652	650	591	541	542	0.2
IOCL, Panipat	12026	14029	14112	14795	14110	15501	15833	2.1
IOCL, Bongaigoan	1841	1969	2116	2121	2186	2253	2273	0.9
IOCL, Paradip ¹	-	-	-	-	-	1107	6920	-
Total IOCL	48642	51382	51048	50494	51110	55602	61573	10.7
BPCL, Mumbai	12406	12726	12458	12365	12346	12802	13013	1.6
BPCL, Kochi	8138	8796	9385	9674	9803	10164	11194	10.1
Total BPCL	20544	21523	21843	22039	22149	22965	24206	5.4
HPCL, Mumbai	5987	7225	7388	7213	7030	7468	7952	6.5
HPCL, Vishakhapatnam	7626	8017	7452	7246	8241	8558	8653	1.1
Total HPCL	13613	15242	14840	14459	15271	16026	16605	3.6
CPCL(MRL), Manali	9098	8998	8140	9169	9421	8330	8963	7.6
CPCL(MRL), Narimanam	696	602	635	558	539	550	532	-3.3
Total CPCL	9794	9601	8775	9728	9959	8881	9496	6.9
NRL, Numaligarh	1996	2750	2373	2557	2754	2521	2653	5.2
MRPL, Mangalore	11773	11952	13394	13397	13169	14166	14629	3.3
ONGC, Tatipaka	68	68	56	64	50	66	82	24.1
(b) PRIVATE SECTOR	83887	84328	91197	90101	89997	91734	94285	2.8
RIL, Jamnagar	31514	33114	32755	30815	30864	32331	32927	1.8
RIL, SEZ-Jamnagar	37871	38541	39399	39799	39329	41089	41261	0.4
Total RIL	69385	71655	72154	70613	70192	73419	74188	1.0
EOL, Vadinar	14502	12673	19043	19487	19804	18315	20096	9.7
(c) JOINT VENTURE	-	1716	9692	13617	12682	15945	15728	-1.4
BORL, Bina	-	1716	5209	4994	5782	5916	5767	-2.5
HMEL, Bathinda	-	-	4483	8623	6900	10029	9961	-0.7
(d) FRACTIONATORS	4504	4640	4518	4300	3994	4016	4294	6.9
Grand Total	194821	203202	217736	220756	221136	231923	243551	5.0

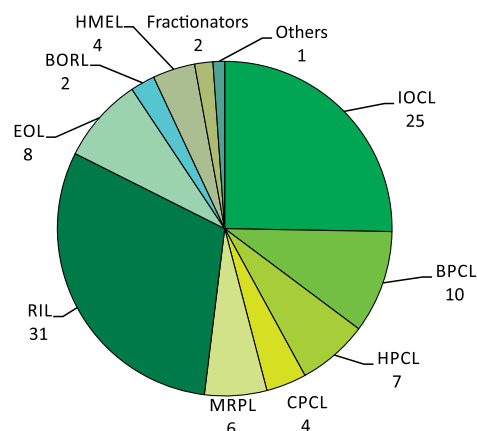
Note: 1. Production in Paradeep Refinery started in January, 2016.

P: Provisional

2. Total may not tally due to rounding off

Source: Oil Companies

Figure III.4: Company-wise Production of Petroleum Products during 2016-17 (%)



III.5 Refinery-wise and Product-wise Production of Petroleum Products during 2016-17 (P)

Refinery/Plant (1)	LPG (2)	Motor Spirit (3)	Naphtha (4)	ATF (5)	SKO (6)	Diesel (7)	Furnace Oil (8)	Bitumen (9)	Lube Oil (10)	Petroleum Coke (11)	Others (12)	Total Production (13)	Fuel & Losses (14)	Crude Processed (15)
IOC, Guwahati	39	251	15	37	90	630	0	0	0	57	2	1121	113	864
IOC, Barauni	319	1155	266	0	620	3258	30	3	0	156	74	5881	604	6526
IOC, Koyali	481	2056	547	350	648	7123	408	443	0	758	292	13106	1307	13994
IOC, Haldia	219	589	503	402	804	2633	867	577	183	0	205	6982	677	7689
IOC, Mathura	440	1435	407	591	391	3337	1290	772	0	0	253	8916	728	9230
IOC, Digboi	15	89	-1	0	6	302	51	0	0	35	45	542	70	533
IOC, Panipat	780	1745	1617	1337	663	7131	371	405	0	919	865	15833	1457	15638
IOCL, Bongaigaon, Assam	59	191	177	27	164	1464	35	0	0	141	15	2273	208	2486
IOCL, Paradip, Odisha	601	1012	542	168	273	3237	0	0	0	592	496	6920	1318	8230
BPCL, Mumbai	505	2347	822	920	216	6328	803	410	255	0	406	13013	590	13541
BPCL, Kochi	594	2171	583	559	192	5868	895	212	0	0	121	11194	717	11820
HPCL, Mumbai	438	1498	406	419	209	3165	581	596	431	0	211	7952	614	8510
HPCL, Vishakhapatnam	402	1789	223	118	315	3983	1084	620	0	0	120	8653	680	9335
CPCL(MRL), Manali	289	1105	513	694	318	3991	1159	522	160	0	212	8963	913	9725
CPCL(MRL), Narimanam	17	0	206	0	22	191	0	0	0	0	96	532	26	531
NRL, Numaligarh	55	540	15	80	103	1742	0	0	0	74	44	2653	180	2683
MRPL, Mangalore	858	1306	1584	1425	184	6565	549	202	0	771	1185	14629	1640	15965
ONGC, Tatipaka	0	0	27	0	6	23	0	0	0	0	26	82	3	86
RPL, Jamnagar	255	2419	6210	3026	0	8652	938	0	0	2872	8554	32927	2472	32823
RPL, SEZ	850	8674	2991	2018	0	15689	593	0	0	3685	6761	41261	3342	37351
EOL, Vadinar	1006	3497	1012	980	29	10052	40	423	0	2404	652	20096	1180	20919
BORL, Bina	207	1057	34	479	462	3021	0	0	0	403	104	5767	565	6360
HMEL, Bathinda	809	1669	89	198	291	4720	0	0	0	1069	1117	9961	666	10521
Total Refinery	9238	36593	18786	13828	6008	103105	9694	5185	1029	13936	21854	239256	20070	245362
Fractionators	2088	0	1160	3	33	8	0	0	0	0	1003	4294	0	0
Grand Total	11326	36593	19946	13831	6041	103113	9694	5185	1029	13936	22858	243551	20070	245362

Note: Others include VGO, Benzene, MTO, CBFS, Sulphur, LSHS, Waxes, MTBE & Reformate, etc.

Source: Oil Companies

P: Provisional

III.6 Production of Petroleum Products

(Calendar Year-wise)

(in TMT)

Products	Year							% variation in 2016 over 2015
	2010	2011	2012	2013	2014	2015	2016 (P)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
LPG	9628	9717	9709	9853	9953	10301	11285	9.6
Motor Spirit	25881	26845	29549	30263	31800	34056	36421	6.9
Naphtha	19366	18927	18648	18779	17821	17300	19699	13.9
Kerosene	8056	7815	8115	7461	7604	7433	6547	-11.9
ATF	9212	10593	9538	11208	10926	11084	13929	25.7
HSD	76726	82255	89283	93022	94693	96391	102718	6.6
LDO	528	537	428	427	351	410	527	28.5
Total Fuel Oils	20167	19067	15832	13787	12307	10278	10275	0.0
of which								
(a) Furnace Oil	18294	17324	14266	13156	11745	9855	10025	1.7
(b) LSHS/HHS/RFO	1872	1744	1566	631	562	423	250	-40.7
Lube Oils	859	1016	954	915	878	1073	1060	-1.3
Bitumen	4510	4629	4555	4876	4756	4769	5394	13.1
Petroleum Coke	2657	6706	9990	11892	10060	9800	13952	42.4
Paraffin Wax	63	50	54	52	54	57	81	41.4
Others	17221	14438	16694	18470	19855	23123	21751	-5.9
Total Production of Petroleum Products	194874	202594	213349	221006	221059	226074	243640	7.8
of which								
Refineries	190316	197949	208783	216610	216958	222137	239457	7.8
Fractionators	4558	4644	4566	4396	4101	3937	4183	6.3

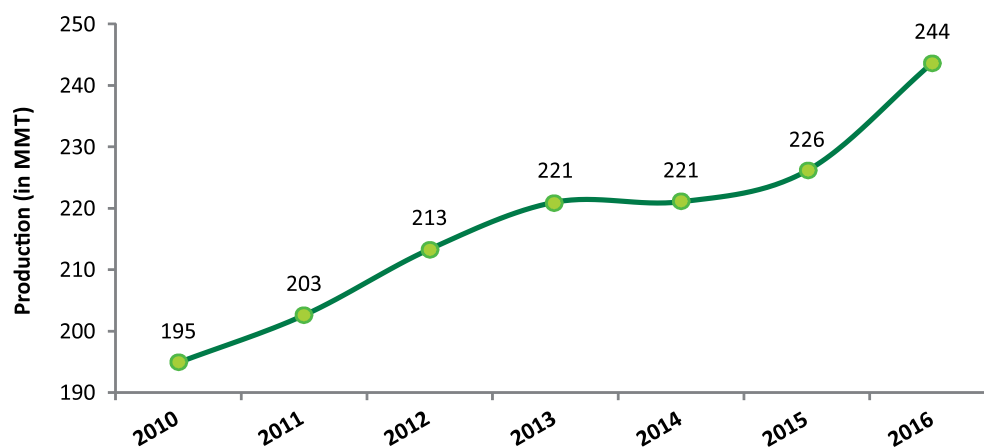
Note: 1. Others include VGO, Benzene, MTO, CBFS, Sulphur, LSHS, Waxes, MTBE & Reformate, etc.

P: Provisional

2. Total may not tally due to rounding off.

Source: Oil Companies

Figure III.5: Production of Petroleum Products during 2010 to 2016



III. 7 Production of Petroleum Products

(Financial Year-wise)

(in TMT)

Products	Year							% variation in 2016-17 over 2015-16
	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17 (P)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
LPG	9708	9547	9825	10030	9840	10568	11326	7.2
Motor Spirit	26138	27186	30118	30275	32325	35321	36593	3.6
Naphtha	19196	18825	19018	18505	17391	17861	19946	11.7
Kerosene	7809	7861	7971	7418	7559	7503	6041	-19.5
ATF	9589	10065	10088	11220	11103	11789	13831	17.3
HSD	78057	82880	91103	93759	94428	98588	102484	4.0
LDO	590	502	400	423	358	429	629	46.7
Total Fuel Oils	20519	18433	15054	13405	11919	9727	9962	2.4
of which								
a) Furnace Oil	18659	16732	13690	12920	11248	9468	9694	2.4
b) LSHS/HHS/RFO	1860	1701	1364	485	671	259	268	3.5
Lube Oils	884	1028	896	941	946	1037	1029	-0.8
Bitumen	4478	4610	4670	4785	4632	5157	5185	0.5
Petroleum Coke	2711	7837	10943	12068	12448	13322	13936	4.6
Paraffin Wax	61	47	52	55	51	65	85	29.7
Others	15081	14381	17598	17871	18137	20557	22504	9.5
Total Production of Petroleum Products	194821	203202	217736	220756	221136	231923	243551	5.0
of which								
Refineries	190316	198561	213219	216456	217141	227907	239256	5.0
Fractionators	4504	4640	4518	4300	3994	4016	4294	6.9

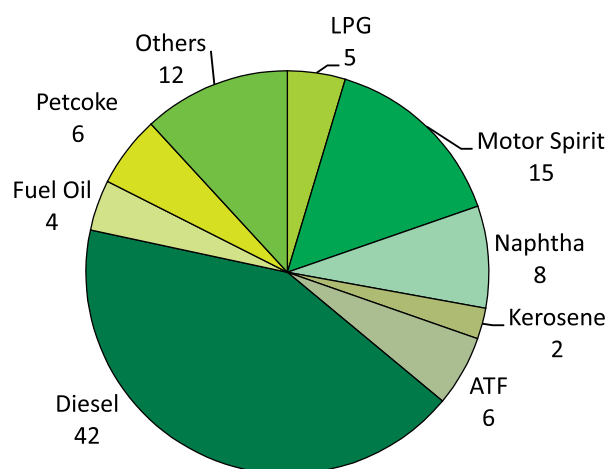
Note: 1. Others include VGO, Benzene, MTO, CBFS, Sulphur, LSHS, Waxes, MTBE & Reformate, etc.

P: Provisional

2. Total may not tally due to rounding off.

Source: Oil Companies

Figure III.6: Distribution of Petroleum Products Produced during 2016-17 (%)



III.8 Crude Oil, Natural Gas and Product Pipelines in India								
Type of Pipeline / Owner	Length (in Kms.) as on 31 st March							
	2010	2011	2012	2013	2014	2015	2016	2017
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crude Pipelines (Onshore)								
ONGC	647	790	835	820	820	743	692	703
OIL	1193	1193	1193	1193	1193	1193	1193	1193
IOCL	4332	4332	4342	4448	4448	4448	4867	5217
BORL (JV with BPCL)	-	-	937	937	937	937	937	937
HMEL (JV with HPCL)	-	-	1017	1017	1017	1017	1017	1017
CAIRN	-	-	-	-	660	660	660	660
Subtotal	6172	6315	8323	8414	9074	8997	9365	9727
Crude Pipelines (Offshore)								
ONGC	488	488	488	488	488	488	488	488
Subtotal	488	488	488	488	488	488	488	488
Total Crude Oil Pipelines	6660	6803	8811	8902	9562	9485	9853	10215
Gas Pipelines (Onshore)								
ONGC	-	-	-	53	53	53	53	53
IOCL	-	132	132	134	134	140	140	140
GAIL	7803	8197	9454	10702	10909	10984	11077	11077
GSPL	-	-	-	2163	2174	2192	2540	2612
RIL1	1480	1480	1480	1480	1480	1480	1480	1480
AGC,DNPL	-	-	-	-	811	811	811	811
CAIRN	-	-	-	-	581	581	592	592
Subtotal	9283	9809	11066	14532	16142	16242	16693	16766
Gas Pipelines (Offshore)								
ONGC	963	963	963	987	987	987	987	987
Subtotal	963	963	963	987	987	987	987	987
Total Gas Pipelines	10246	10772	12029	15519	17129	17229	17680	17753
Product Pipelines (Onshore)								
IOCL	6175	6401	6401	6633	6633	6633	6739	7491
BPCL	1389	1389	1648	1648	1697	1936	1936	1936
HPCL	2134	2134	2164	2407	2407	2514	2977	3333
OIL	654	654	654	654	654	654	654.3	654.3
PCCK	293	293	293	293	293	293	293	293
PHMB	364	364	364	364	364	364	364	364
GAIL	1978	1978	2038	2038	2032	2032	2032	2032
Subtotal	12987	13213	13562	14037	14080	14426	14995	16103
Product Pipelines (Offshore)	-	-	-	-	-	-	-	-
Total Product Pipeline	12987	13213	13562	14037	14080	14426	14995	16103
Grand Total	29893	30788	34402	38458	40771	41140	42528	44070

Note: Detail in Tables III.9, III.10 and III.11

Source: Oil Companies

III.9 Major Crude Oil Pipelines in India									
Type of Pipeline / Owner/Name of Pipeline	Capacity (TMT)			Length (KM)		Throughput (TMT)		Utilization (%)	
	1.03.2015	31.03.2016	31.03.2017	31.03.2016	31.03.2017	2015-16	2016-17(P)	2015-16	2016-17
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Onshore									
IOCL	40400	40400	48600	4867.0	5217.0	50542	51337	125.1	127.1
Salaya Mathura Pipeline	21000	21000	25000	2226.0	2576.0	25142	26124	119.7	124.4
Mundra Panipat Pipeline	8400	8400	8400	1194.0	1194.0	8726	8618	103.9	102.6
Paradip Haldia Barauni Pipeline	11000	11000	15200	1447.0	1447.0	16674	16595	151.6	150.9
ONGC	23587	23497	24997	691.8	702.9	9525	9676	40.4	41.2
14" MHN-NGM Trunk pipeline	2265	2265	2265	77.0	77.0	2107	2072	93.0	91.5
14" Kalol-Nawagam-New	3140	3140	3140	62.5	62.5	1037	1029	33.0	32.8
18" Nawagam-Koyali pipeline	5400	5400	5400	78.4	78.4	2255	2225	41.8	41.2
14" Nawagam-Koyali pipeline ¹	3300	3300	3300	78.4	78.4	1378	1360	41.8	41.2
16" CTF, Ankl to Koyali Pipeline ²	2199	2199	2199	94.8	94.8	743	854	33.8	38.8
8" CTF, Ankl to CPF, Gandhar	394	394	394	44.3	44.3	0	0	0.0	0.0
12" CPF, Gandhar to Saraswani 'T' point	1805	1805	1805	56.7	56.7	589	673	32.6	37.3
10" Akholjuni to Laxmipura 'T' point	481	481	481	65.5	65.5	124	162	25.8	33.8
12" Lakwa-Moran pipeline	1500	1500	1500	17.5	14.6	303	221	20.2	14.7
12" Lakwa-Moran pipeline (New) ³	0	0	1500	0.0	17.5	0	111	-	-
14" Geleki-Jorhat pipeline	1500	1500	1500	48.5	48.5	494	472	32.9	31.4
12" Borholla-Jorhat pipeline	600	600	600	42.8	42.8	146	139	24.3	23.2
4" Kesnapalli-WGGS to Tatipaka Refinery	83	83	83	13.5	13.5	21	16	25.3	19.3
4" GMAA EPT to S. Yanam unloading terminal (1st Line) ⁴	90	-	-	3.5	-	-	-	-	-
4" GMAA EPT to S. Yanam unloading terminal (New line)	90	90	90	3.5	3.5	83	63	92.2	70.0
8" Narimanam to CPCL refinery pipeline	740	740	740	4.9	4.9	245	280	33.1	37.8
OIL: Duliajan-Digboi-Barauni-Bongaigaon Pipeline	8400	8400	8400	1192.6	1192.6	6426	6604	76.5	78.6
HMEL: Mundra - Bhatinda Pipeline	9000	9000	9000	1017.0	1017.0	10710	10520	119.0	116.9
BORL: Vadinar - Bina Pipeline	6000	6000	6000	937.0	937.0	6422	6377	107.0	106.3
Cairn: Mangala- Bhogat Pipeline	8714	8714	8714	660.0	660.0	8700	8100	99.8	93.0
Total Onshore Crude Pipeline	96101	96011	105711	9365.4	9726.5	92325	92614	96.1	96.5
Offshore									
ONGC	45134	45134	45134	488.0	488.0	13067	12884	29.0	28.5
Mumbai High - Uran Trunk Pipeline	15634	15634	15634	204.0	204.0	8829	9322	56.5	59.6
Heera-Uran Trunk Pipeline	11500	11500	11500	81.0	81.0	4238	3552	36.9	30.9
Bombay-Uran Trunk 30" Pipeline	18000	18000	18000	203.0	203.0	0	10	0.0	0.1
Total Offshore Crude Pipeline	45134	45134	45134	488.0	488.0	13067	12884	29.0	28.5
Total Crude pipeline	141235	141145	150845	9853.4	10214.5	105392	105498	74.6	74.7

Source: Oil Companies

P: Provisional

Note:

1. 78 km X 14" Nawagam-Koyali line was given on lease to IOC in 2000 and was handed back to ONGC on 1st Apr.'10. The line was restored and re-commissioned in Oct.'12
2. 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 31.08.2013. 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 Oil Pipeline (AKCL) actual quantity includes Ankleshwar, PSC, JV and Cambay crude oil also.
3. New 12" Lakwa-Moran Oil Line commissioned on 22.08.16.
4. Pipeline is not under use due to multiple leakages and required repair on account of RoU issues.

III.10 Major Gas Pipelines in India									
Type of Pipeline / Owner/ Name of Pipeline	Capacity (MMSCMD)			Length (KM)		Throughput (MMSCMD)		Utilization (%)	
	1.03.2015	31.03.2016	31.03.2017	31.03.2016	31.03.2017	2015-16	2016-17(P)	2015-16	2016-17
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Onshore									
GAIL¹	206.04	206.04	206.04	11077.4	11077.4	92.09	100.38	44.70	48.72
HVJ-GREP-DVPL	53.00	53.00	53.00	4659.0	4659.0	33.06	33.16	62.38	62.57
DVPL-GREP Upgradation (DVPL-II & VDPL)	54.00	54.00	54.00	1118.7	1118.7	24.87	28.26	46.06	52.33
Chhainsa-Jhajjar-Hissar P/L (SNPL PART)	5.00	5.00	5.00	265.0	265.0	0.77	0.97	15.40	19.40
Dadri Bawana Nangal	31.00	31.00	31.00	835.2	835.2	4.06	4.65	13.10	15.00
Dahej-Panvel-Dhabol	19.90	19.90	19.90	875.0	875.0	9.53	12.62	47.89	63.42
Kochi-Kootanad-Bangalore-Mangalore (Phase-1)	6.00	6.00	6.00	48.0	48.0	0.57	1.03	9.50	17.17
Dhabol Bangalore	16.00	16.00	16.00	1097.4	1097.4	0.98	1.17	6.13	7.31
South Gujarat Regional	15.42	15.42	15.42	538.0	538.0	3.82	4.08	24.77	26.46
North Gujarat Regional (Ahmedabad)	2.91	2.91	2.91	133.0	133.0	0.27	0.26	9.28	8.93
Rajasthan Regional (Jaisalmer)	2.35	2.35	2.35	151.4	151.4	1.40	1.44	59.57	61.28
Cauvery Basin	8.66	8.66	8.66	278.2	278.2	2.74	2.65	31.63	30.59
K G Basin	16.00	16.00	16.00	881.4	881.4	4.88	5.39	30.51	33.72
Assam (Lakwa)	2.50	2.50	2.50	7.8	7.8	0.40	0.37	16.00	14.80
Tripura (Agartala)	2.26	2.26	2.26	60.6	60.6	1.47	1.44	65.04	63.72
Mumbai Regional	7.04	7.04	7.04	128.7	128.7	8.10	8.51	115.12	120.94
IOCL: Dadri Panipat RLNG Pipeline	9.50	9.50	9.50	140.4	140.4	3.89	4.47	40.95	47.05
ONGC: 20" Agartala Dome-OTPC Palatana	3.20	3.20	3.20	52.8	52.8	1.88	2.18	58.83	68.15
GSPL: Network incl. Spur Lines	43.00	43.00	43.00	2539.7	2612.0	24.50	24.85	56.97	57.80
DNPL: Duliajan to Numaligarh	1.20	1.20	1.20	192.0	192.0	0.63	0.63	52.14	52.28
AGCL: Duliajan to Numaligarh²	2.06	2.06	2.06	619.1	619.1	1.73	1.56	83.93	75.60
RIL: East-West Pipeline³	80.00	80.00	80.00	1480.0	1480.0	19	17	23.75	21.25
Cairn: Raageshwari Bhogat Pipeline	0.62	0.62	0.62	592.0	592.0	0.40	0.28	64.20	44.72
Total Onshore Gas Pipeline	345.62	345.62	345.62	16693.4	16765.7	144.11	151.35	41.70	43.79
Offshore									
ONGC	105.75	105.75	105.75	987.0	987.0	40.42	41.22	38.22	38.98
28" MUT Gas Pipeline	12.25	12.25	12.25	204.0	204.0	8.74	9.33	71.36	76.15
26" BUT Gas Pipeline	12.50	12.50	12.50	203.0	203.0	0.00	0.00	0.00	0.00
26" HUT Gas Pipeline	16.00	16.00	16.00	81.0	81.0	2.05	2.09	12.81	13.05
36" BPA - Hazira (gas)	22.00	22.00	22.00	231.0	231.0	11.62	9.60	52.82	43.62
42" BPB - Hazira (gas)	37.00	37.00	37.00	244.0	244.0	14.19	16.61	38.35	44.89
20" Uran Trombay Gas Trunk Line	6.00	6.00	6.00	24.0	24.0	3.82	3.60	63.67	60.00
Total Offshore Gas Pipeline	105.75	105.75	105.75	987.0	987.0	40.42	41.22	38.22	38.98
Total Gas Pipeline	451.36	451.36	451.36	17680.4	17752.7	184.53	192.57	40.88	42.66

Note:

P: Provisional

- GAIL's total capacity/throughput does not include capacity/throughput of Chhainsa-Jhajjar-Hissar pipeline and Dadri Bawana Nangal pipelines as these are extension of DVPL-GREP upgradation pipeline.
- Includes 514 KM CGD pipeline of AGCL.
- Capacity determination for 15-16 & 16-17 is being processed by PNGRB . Gas pipeline comprised 1375kms trunkline + 105 kms spurlines.

Source: Oil Companies

III.11 Major LPG & Petroleum Products Pipelines in India									
Type of Pipeline / Owner/Name of Pipeline	Capacity (TMT)			Length (KM)		Throughput (TMT)		Utilization (%)	
	1.03.2015	31.03.2016	31.03.2017	31.03.2016	31.03.2017	2015-16	2016-17(P)	2015-16	2016-17
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
LPG Pipelines									
BPCL: Mumbai Uran LPG Pipeline	800	800	800	28.0	28.0	290	314	36.25	39.25
IOCL: Panipat - Jalandhar LPG Pipeline	700	700	700	274.0	274.0	558	573	79.71	81.86
HPCL: Mangalore-Hassan-Mysore-Solure	-	-	1940	-	356.0	-	115	-	5.93
GAIL	3830	3830	3830	2032.0	2032.0	3724	3362	97.23	87.78
Jamnagar-Loni LPG Pipeline	2500	2500	2500	1414.0	1414.0	2063	2437	82.52	97.48
Vizag-Secunderabad LPG Pipeline	1330	1330	1330	618.0	618.0	1661	925	124.89	69.55
Total LPG Pipeline	5330	5330	7270	2334.0	2690.0	4572	4364	85.78	81.88
Product Pipelines									
IOCL	39390	44390	44390	6465.0	7217.0	28724	30524	72.92	68.76
Koyali Ahmedabad Pipeline	1100	1100	1100	116.0	116.0	758	822	68.91	74.73
Koyali Sanganer Pipeline	4600	4600	4600	1288.0	1288.0	3283	3541	71.37	76.98
Koyali Ratlam Pipeline	2000	2000	2000	265.0	265.0	1388	1463	69.40	73.15
Koyali Dahej Pipeline	2600	2600	2600	197.0	197.0	577	505	22.19	19.42
Barauni Kanpur Pipeline	3500	3500	3500	745.0	745.0	2401	2519	68.60	71.97
Haldia Mourigram Rajbandh Pipeline	1350	1350	1350	277.0	277.0	1800	1765	133.33	130.74
Haldia Barauni Pipeline	1250	1250	1250	526.0	526.0	1351	1447	108.08	115.76
Guwahati Siliguri Pipeline	1400	1400	1400	435.0	435.0	1877	1953	134.07	139.50
Panipat Bhatinda Pipeline	1500	1500	1500	219.0	219.0	1400	1505	93.33	100.33
Panipat Rewari Pipeline	2100	2100	2100	155.0	155.0	1582	1634	75.33	77.81
Panipat Ambala Jalandhar Pipeline	3500	3500	3500	434.0	434.0	2761	2964	78.89	84.69
Panipat Delhi Pipeline	3000	3000	3000	189.0	189.0	1618	1153	53.93	38.43
Mathura Delhi Bijwasan Panipat Pipeline	3700	3700	3700	258.0	258.0	2333	2644	63.05	71.46
Mathura Tundla Bharatpur Pipeline	1200	1200	1200	77.0	77.0	921	671	76.75	55.92
Chennai Trichy Madurai Pipeline	2300	2300	2300	683.0	683.0	2611	2765	113.52	120.22
Chennai Bangalore Pipeline	2450	2450	2450	290.0	290.0	1229	1475	50.16	60.20
Chennai Meenambakkam ATF Pipeline	180	180	180	95.0	95.0	164	186	91.11	103.33
Digboi Tinsukia Pipeline	1000	1000	1000	75.0	75.0	440	400	44.00	40.00
Devangonhi Devanahalli Pipeline	660	660	660	36.0	36.0	216	200	32.73	30.30
Paradip Raipur Ranchi Pipeline	-	5000	5000	105.0	857.0	14	912	-	18.24
BPCL	14140	14140	14140	1908.0	1908.0	10590	10721	74.89	75.82
Mumbai Manmad Manglya Piyala Bijwasan(MS/SKO/HSD)	6000	6000	6000	1389.0	1389.0	6740	6654	112.33	110.90
Bina Kota (MS/SKO/HSD)	4400	4400	4400	259.0	259.0	2880	2966	65.45	67.41
Mumbai Refinery - Santacruz Airport (ATF)	1440	1440	1440	15.0	15.0	760	864	52.78	60.00
Kochi Refinery - Kochi Airport (ATF)	600	600	600	34.0	34.0	210	237	35.00	39.50
Kota Jobner (MS/SKO/HSD) ¹	1700	1700	1700	211.0	211.0	-	-	-	-
HPCL	32690	32690	32690	2976.7	2976.7	18971	20721	58.03	63.39
Mumbai - Pune - Solapur Pipeline	4300	4300	4300	508.0	508.0	4445	4134	103.37	96.14
Visakh - Vijayawada - Secunderabad Pipeline	5380	5380	5380	572.0	572.0	4425	5025	82.25	93.40
Mundra - Delhi Pipeline	5000	5000	5000	1054.0	1054.0	2909	2506	58.18	50.12
Ramanmandi - Bahadurgarh Pipeline	4710	4710	4710	243.0	243.0	4456	4722	94.61	100.25
Ramanmandi - Bhatinda Pipeline	1130	1130	1130	30.0	30.0	839	867	74.25	76.73
Awa-Salawas Pipeline	2340	2340	2340	93.0	93.0	683	602	29.19	25.73
Bahadurgarh-Tikrikalan Pipeline	750	750	750	14.0	14.0	531	536	70.80	71.47
Rewari-Kanpur Pipeline	7980	7980	7980	443.0	443.0	193	1908	2.42	23.91
Mumbai Refinery - Mumbai Airport (ATF)	1100	1100	1100	19.7	19.7	490	421	44.55	38.27
OIL: Numaligarh - Siliguri Pipeline	1721	1721	1721	654.3	654.3	1744	1781	101.34	103.49
PCCK: Cochin - Coimbatore - Karur Pipeline	3300	3300	3300	292.5	292.5	2715	2775	82.27	84.09
PHMB: Mangalore Hassan Bengaluru Pipeline	2140	2140	2140	364.0	364.0	3318	3429	155.05	160.23
Total Products Pipeline	93381	98381	98381	12660.5	13412.5	66062	69951	70.74	71.10
Grand Total Pipelines (including LPG)	98711	103711	105651	14994.5	16102.5	70634	74315	71.56	71.66

Note:

P: Provisional

1. Design capacity of pipeline is 1.70 MMTA. However, its throughput is not shown as it is Branch Line for pumping product from MMBPOL or BKPL

Source: Oil companies

III.12 Tonnage of Indian Tankers Fleet

	2010	2011	2012	2013	2014	2015	2016	2017
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
A. Coastal Trade (Oil Tankers)								
1. Product Carriers								
No. of tankers	13	13	14	13	14	14	14	15
DWT ('000' tonnes)	43	43	43	43	44	44	44	46
2. Crude Oil Carriers								
No. of tankers	2	2	2	1	2	3	4	4
DWT ('000' tonnes)	82	82	82	41	41	358	403	403
3. Offshore Supply Vessels								
No. of tankers	110	110	115	106	108	102	106	106
DWT ('000' tonnes)	133	134	134	113	115	110	114	119
4. Specialized vessels for offshore								
No. of tankers	38	38	38	38	38	36	36	36
DWT ('000' tonnes)	51	51	50	50	50	49	49	49
Total (1+2+3+4)								
No. of tankers	163	163	169	158	162	155	160	161
DWT ('000' tonnes)	308	310	310	247	250	560	609	617
B. Overseas Trade (Oil Tankers)								
5. Ore Oil Bulk Carriers								
No. of tankers	2	2	2	1	1	1	1	1
DWT ('000' tonnes)	169	169	169	46	46	46	46	46
6. Crude Oil Carriers								
No. of tankers	60	72	71	59	64	60	63	65
DWT ('000' tonnes)	5688	6665	6506	5661	5786	5608	5858	6231
7. Product Carriers								
No. of tankers	57	55	55	49	47	47	50	53
DWT ('000' tonnes)	3587	3474	3405	3266	3273	3313	3440	3555
8. LPG Carriers								
No. of tankers	9	8	9	9	9	8	11	14
DWT ('000' tonnes)	277	241	241	273	273	223	303	451
Total Overseas (5+6+7+8)								
No. of tankers	128	137	137	118	121	116	125	133
DWT ('000' tonnes)	9721	10549	10321	9246	9377	9190	9646	10283
Total Oil Tankers (A+B)								
No. of tankers	291	300	306	276	283	271	285	294
DWT ('000' tonnes)	10029	10859	10631	9494	9627	9750	10256	10899

DWT: Dead Weight Tonnage.

Source: Directorate General of Shipping, Mumbai.

III.13 Indian Tonnage as on 31.03.2017

(in Tonnes)			
Sl. No.	Owner of the ship	Gross Registered Tonnage	Dead Weight Tonnage
Coastal Trade			
Tankers (Product Carriers)			
1	Associated Maritime Pvt.Ltd.	1090	2052
2	Atlantic Shipping Pvt. Ltd.	2814	3617
3	Blue Ocean Sea Transport Ltd.	396	596
4	Castle Ships Pvt.Ltd.	1332	2127
5	Coast Line Services (India)Pvt. Ltd.	493	872
6	Jaisu Shipping (P) Ltd.	1873	2808
7	K. Raghupathi Rao (Raghu)	65	0
8	M.Gangadhar Rao	36	0
9	Marine Blue Shipping Pvt. Ltd.	708	0
10	Pratibha Shipping Co.Ltd.	30565	28610
11	Shiny Shipping & Logistics Pvt. Ltd.	2153	2734
12	Vamsee Shipping Carrier Pvt.Ltd.	1495	2238
Total		43020	45654
Tankers (Crude Oil Carriers)			
1	Jadwet Trading Company	40	0
2	Seven Islands Shipping Ltd.	29083	44970
3	The Shipping Corpn.of India Ltd.	190359	357757
Total		219482	402727
Offshore Supply Vessels			
1	Administration of U.T. of Lakshadweep	10721	960
2	Albatross Shipping Agencies	2893	3798
3	ARC Maritime Pvt. Ltd.	1591	1921
4	Asian Marine Supplier	104	0
5	Atlas Offshore Services Pvt. Ltd.	297	1018
6	Bhambhani Shipping Ltd.	1788	2085
7	Chandra Ship Management Pvt. Ltd.	285	0
8	Coastal Marine Const. & Engg. Ltd.	2101	1204
9	Damodar Marine Services Pvt. Ltd.	487	737
10	Daniel Engineering Works & Ship Repairs	850	1000
11	Diplomat Marine	1221	1149
12	Dolphin Offshore Shipping Ltd.	1008	491
13	Dolphin Offshore Shipping Ltd.	363	272
14	Dunnimaa Engineers & Divers Ent. P.Ltd.	639	627
15	First Oil & Gas Servives Pvt. Ltd.	2568	2105
16	Fugro Survey (India) Pvt. Ltd.	494	509
17	GAL Offshore Shipping	640	0
18	Glory Ship Management Pvt. Ltd.	495	0
19	GOL Offshore Ltd.	10342	13848
20	Greatship (India) Ltd.	4983	2416
21	Hal Offshore Ltd.	1085	832
22	Hede Ferrominas(P) Ltd.	1332	1686
23	Hind Offshore Pvt. Ltd.	6908	5442
24	ITT Lines Pvt. Ltd.	1042	1207
25	Jayesh Shipping P. Ltd.	69	0
26	KEI-RSOS Maritime Ltd.	2779	2914
27	Lewek Alter Shipping Pvt. Ltd.	3601	0
28	Mathew Meenathethil George	322	500
29	Mr. Nikhil Kumar Dhali	189	0
30	Mrs. Ishrat Johan W/o. Mr. Riaz Khan	140	15
31	Mustan Tahderbhai Khanbhai	1310	1817
32	Netincon Logistics Pvt. Ltd.	2419	0
33	Ocean Sparkle Ltd.	9255	7142
34	Oil & Natural Gas Corporation	16592	19978
35	PFS Shipping (India)Ltd.	3844	3842
36	Prince Marine Transport Services	3634	1172
37	Raj Shipping Agencies Ltd.	4337	4759
38	S. S. Offshore Pvt. Ltd.	1310	1812
39	S.R.Offshore Pvt. Ltd.	417	0
40	Sambhulingam Marine Services	317	0
41	Samson Maritime Ltd.	5375	5945
42	Samudrika Logistics Pvt. Ltd.	275	290
43	Sun Marine	1310	1758
44	Synergy Offshore Services	189	125
45	TAG Offshore Ltd.	9217	7605
46	TAG Sea Logistics Ltd.	3939	4952
47	Tarun Shipping & Industries Ltd.	1978	2172
48	The Shipping Corpn. Of India Ltd.	7841	6917
49	Transtar Marine & Offshore Services	1078	0
50	Tulshyan Shipping & Offshore Services Pvt. Ltd.	2095	2374
Total		138069	119396

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APPENDIX

III.13 Indian Tonnage as on 31.3.2017 (Contd...)

(in Tonnes)			
Sl. No.	Owner of the ship	Gross Registered Tonnage	Dead Weight Tonnage
Coastal Trade			
Specialized Vessels for Offshore Services			
1	Dolphin Offshore Shipping Ltd.	405	436
2	Hind Offshore Pvt. Ltd.	3114	1480
3	Jaisu Shipping Co. (P) Ltd.	99	99
4	K. Desai & Company	181	0
5	National Institute of Oceanography, Goa	4862	0
6	National Institute of Ocean Technology	709	297
7	Oil & Natural Gas Corporation	45281	26469
8	Raj Shipping Agencies Ltd.	715	915
9	Reliance Industries Ltd.	2421	3104
10	Safe & Sure Marine Services Pvt. Ltd.	490	826
11	Sea Rides Ship Management	1011	1142
12	Sealion Sparkle Maritime Services Ltd.	136	14
13	Sunrise Marine Services	392	469
14	South East Asia Marine Engg & Const. Ltd.	11211	6135
15	The Council of Scientific & Industrial Research	2661	800
16	The Dept. of Ocean Development	4582	1605
17	The Dir. Gen. of Light House & Lightship	5823	3083
18	The Geological Survey of India	2942	2005
Total		87035	48879
Ore Oil Bulk Carriers			
1	The Shipping Corpn.of India Ltd.	28029	45792
Total		28029	45792
Oil Tankers (Crude Carriers)			
1	Arya Ship Charters Pvt. Ltd.	132854	245254
2	Arya Tankers Pvt. Ltd.	28414	44998
3	Arya Voyagers Pvt. Ltd.	22181	35024
4	Chambal Fertilizers & Chemicals	283556	519254
5	Essar Shipping Ports & LogisticsLtd.	149274	281396
6	Great Eastern Shipping Co. Ltd.	352335	610606
7	Gu Crude Carriers Pvt. Ltd.	79751	152923
8	Mercator Lines Ltd.	136977	234833
9	LMCS Maritime Pvt. Ltd.	78845	150709
10	Pratibha Shipping Co.Ltd.	205806	364629
11	Seven Islands Shipping Ltd.	258081	456899
12	The Shipping Corpn.of India Ltd.	1610570	2910569
13	Varun Shipping Co.Ltd.	114263	213678
14	Zen Shipping & Ports India Pvt. Ltd.	5998	10280
Total		3458905	6231052
Oil Tankers (Product Carriers)			
1	Arya Tankers Pvt. Ltd.	22848	35437
2	ASM Shipping	18101	30990
3	Castle Ships Pvt.Ltd.	4473	7335
4	Doehle Danautic (I) Pvt. Ltd.	28226	45999
5	Great Eastern Shipping Co. Ltd.	628855	1097489
6	Indian Ocean Shipping Pvt. Ltd.	50306	78425
7	M.P.Recycling Co. Pvt. Ltd.	20378	29990
8	Mercator Lines	387744	675026
9	Pratibha Shipping Ltd.	45172	76881
10	Sanmar Shipping Ltd.	117250	203119
11	SCI Forbes Ltd.	34500	52489
12	Seven Islands Shipping Ltd.	30691	53401
13	TAG Offshore Ltd.	22650	19939
14	The Shipping Corpn. Of India Ltd.	668271	1133958
15	Zen Shipping & Ports India Pvt. Ltd.	8253	14003
Total		2087718	3554481
LPG Carriers			
1	Global United Shipping India Pvt. Ltd.	126524	151270
2	Mercator Ltd.	44704	0
3	The Great Eastern Shipping Co. Ltd.	44694	49849
4	The Shipping Corpn.of India Ltd.	35556	35202
5	Varun Resources Ltd.	23878	27200
6	Varun Shipping Co.Ltd.	155605	187978
Total		430961	451499

Source: Directorate General of Shipping, Mumbai.

III.14 Share of Traffic of Petroleum Products in the Total Traffic Handled at Major Ports				
(in Million Tonnes)				
Name of the port	Year	Total Traffic	POL Traffic	POL as %age of total traffic at the port
(1)	(2)	(3)	(4)	(5)
Kolkata/Haldia	2010-11	47.43	11.65	24.60
	2011-12	43.24	8.58	19.80
	2012-13	39.88	6.90	17.30
	2013-14	41.38	6.82	16.50
	2014-15	46.29	6.15	13.30
	2015-16	50.19	7.74	15.40
	2016-17	50.31	7.69	15.30
Mumbai	2010-11	54.59	33.23	60.90
	2011-12	56.19	33.31	59.30
	2012-13	58.04	34.78	59.90
	2013-14	59.18	35.98	60.80
	2014-15	61.66	36.28	58.80
	2015-16	61.11	36.27	59.40
	2016-17	63.05	36.65	58.10
Chennai	2010-11	61.46	13.88	22.60
	2011-12	55.71	13.29	23.90
	2012-13	53.40	13.42	25.10
	2013-14	51.11	12.78	25.00
	2014-15	52.54	12.74	24.20
	2015-16	50.06	11.89	23.80
	2016-17	50.21	12.21	24.30
Cochin	2010-11	17.47	12.10	69.30
	2011-12	20.09	14.01	69.70
	2012-13	19.85	13.90	70.00
	2013-14	20.89	14.32	68.50
	2014-15	21.60	14.02	64.90
	2015-16	22.10	13.78	62.40
	2016-17	25.01	15.79	63.10
Kandla	2010-11	81.88	48.43	59.10
	2011-12	82.50	46.94	56.90
	2012-13	93.62	54.36	58.10
	2013-14	87.01	53.14	61.10
	2014-15	92.50	55.59	60.10
	2015-16	100.05	55.59	55.60
	2016-17	105.44	60.34	57.20
Visakhapatnam	2010-11	68.04	19.27	28.30
	2011-12	67.42	18.44	27.40
	2012-13	58.96	15.02	25.50
	2013-14	58.50	14.01	23.90
	2014-15	58.00	14.64	25.20
	2015-16	57.03	16.94	29.70
	2016-17	61.02	16.61	27.20
Mormugao	2010-11	50.02	0.94	1.90
	2011-12	39.00	0.92	2.40
	2012-13	17.74	0.82	4.60
	2013-14	11.74	0.53	4.50
	2014-15	14.71	0.57	3.90
	2015-16	20.78	0.56	2.70
	2016-17	33.18	0.63	1.90

Contd...

III.14 Share of Traffic of Petroleum Products in the Total Traffic Handled at Major Ports (Contd...)				
(in Million Tonnes)				
Name of the port	Year	Total Traffic	POL Traffic	POL as %age of total traffic at the port
(1)	(2)	(3)	(4)	(5)
J.N.P.T.	2010-11	64.30	5.13	8.00
	2011-12	65.75	4.93	7.50
	2012-13	64.50	4.29	6.70
	2013-14	62.33	4.41	7.10
	2014-15	63.80	4.03	6.30
	2015-16	64.03	4.09	6.40
	2016-17	62.15	4.50	7.20
Paradip	2010-11	56.03	12.85	22.90
	2011-12	54.25	15.09	27.80
	2012-13	56.55	16.47	29.10
	2013-14	68.00	17.70	26.00
	2014-15	71.01	17.98	25.30
	2015-16	76.39	20.57	26.90
	2016-17	88.96	27.70	31.10
Tuticorin (VOC Port)	2010-11	25.73	0.74	2.90
	2011-12	28.10	0.84	3.00
	2012-13	28.26	0.79	2.80
	2013-14	28.64	0.48	1.70
	2014-15	32.41	0.61	1.90
	2015-16	36.85	0.69	1.90
	2016-17	38.46	0.67	1.70
New Mangalore	2010-11	31.55	21.55	68.30
	2011-12	32.94	22.25	67.50
	2012-13	37.04	24.30	65.60
	2013-14	39.36	24.65	62.60
	2014-15	36.57	22.97	62.80
	2015-16	35.68	23.93	67.10
	2016-17	39.95	25.10	62.80
Ennore	2010-11	11.01	0.51	4.60
	2011-12	14.96	0.50	3.30
	2012-13	17.89	1.12	6.30
	2013-14	27.34	2.34	8.60
	2014-15	30.25	3.19	10.50
	2015-16	32.20	3.88	12.00
	2016-17	30.02	4.06	13.50
Grand Total	2010-11	569.51	180.36	31.70
	2011-12	560.15	179.10	32.00
	2012-13	545.68	186.17	34.10
	2013-14	545.68	186.17	34.10
	2014-15	581.26	188.74	32.50
	2015-16	606.37	195.94	32.30
	2016-17	647.76	211.93	32.70

Source: Ministry of Shipping.

III.15 Movement of POL Traffic on Railways					
Year	Tonnes Originating	Earnings	Average Lead	Earnings	Average Freight
	(TMT)	(in ₹ crore)	(Kms)	(Paise/Tonnes/Kms)	(₹/Tonne)
(1)	(2)	(3)	(4)	(5)	(6)
2010-11	39293	3353.76	664	128.60	853.53
2011-12	39774	3623.64	656	138.90	911.06
2012-13	40607	4717.86	692	168.01	1161.83
2013-14	41159	5343.95	723	179.69	1298.37
2014-15	41095	5515.66	662	202.62	1342.17
2015-16	43238	5926.97	678	202.11	1370.78
2016-17 (P)	42360	5779.35	666	204.74	1364.34

Source : Ministry of Railways

P: Provisional

III.16 Rail Freight Rates in respect of Petroleum Products								
(in ₹/Tonne)								
Effective Dates	Distance in Kilometers							
	100	300	500	800	1000	1500	2000	2500
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
01.04.2011	166.8	405.0	640.8	998.0	1231.2	1817.6	2280.6	2590.8
01.04.2012	200.2	486.0	769.0	1197.6	1477.4	2181.2	2736.8	3109.0
01.04.2013	211.8	514.0	813.6	1267.0	1563.2	2367.6	2896.6	3289.4
10.10.2013	215.4	522.6	827.2	1288.0	1589.0	2346.0	2944.0	3344.2
25.06.2014	257.8	556.4	880.8	1371.4	1692.2	2497.8	3134.4	3560.6
01.04.2015	255.2	550.8	871.9	1357.7	1675.3	2472.8	3103.0	3524.9
01.04.2016	255.2	550.8	871.9	1357.7	1675.3	2472.8	3103.0	3524.9
01.04.2017	255.2	550.8	871.9	1357.7	1675.3	2472.8	3103.0	3524.9

Source : Ministry of Railways

III.17 Total Retail Outlets in India as on 31st March

(in Number)

Year	Unit	BPCL	HPCL	IOCL	Others	TOTAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
2011	Nos.	9289	10212	19463	2983	41947
	%	22.1	24.3	46.4	7.1	100
2012	Nos.	10310	11253	20575	2966	45104
	%	22.9	24.9	45.6	6.6	100
2013	Nos.	11637	12173	22372	2487	48669
	%	23.9	25.0	46.0	5.1	100
2014	Nos.	12123	12869	23993	2883	51868
	%	23.4	24.8	46.3	5.6	100
2015	Nos.	12809	13233	24405	2972	53419
	%	24.0	24.8	45.7	5.6	100
2016	Nos.	13439	13802	25363	3586	56190
	%	23.9	24.6	45.1	6.4	100
2017	Nos.	13983	14412	26212	4988	59595
	%	23.5	24.2	44.0	8.4	100

Source: Oil Companies

Figure III.7(a): Retail Outlets in India during 2011 to 2017

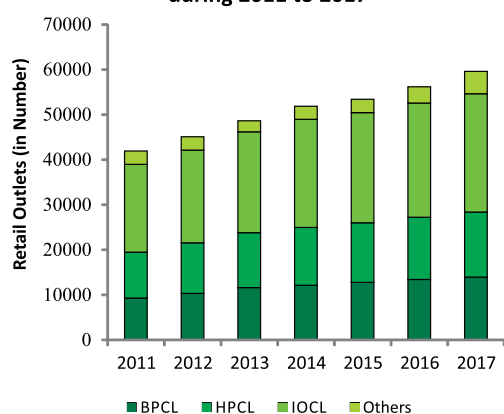
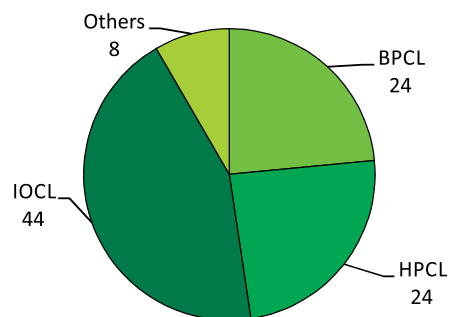


Figure III.7(b): Distribution of retail outlets across oil companies (%) (as on 31.03.2017)



III.18 State-wise Number of Retail Outlets, LDO/SKO Dealers and LPG Distributors

(in Number)

State / UT	As on 31 st March 2017		
	Retail Outlets	LDO/SKO Dealers	LPG Distributors
(1)	(2)	(3)	(4)
STATES			
Andhra Pradesh	3197	394	876
Arunachal Pradesh	74	33	59
Assam	828	359	447
Bihar	2604	372	1076
Chhattisgarh	1176	108	374
Delhi	396	116	321
Goa	115	22	51
Gujarat	3765	478	759
Haryana	2726	141	479
Himachal Pradesh	414	26	166
Jammu & Kashmir	494	47	246
Jharkhand	1189	87	392
Karnataka	4027	323	1007
Kerala	2048	237	594
Madhya Pradesh	3528	284	1240
Maharashtra	5684	767	1756
Manipur	85	36	82
Meghalaya	198	35	49
Mizoram	37	19	54
Nagaland	70	19	60
Orissa	1639	177	576
Punjab	3380	237	759
Rajasthan	4116	250	1063
Sikkim	50	12	15
Tamil Nadu	5039	466	1245
Telangana	2434	202	694
Tripura	68	40	62
Uttar Pradesh	7069	696	2959
Uttarakhand	570	73	253
West Bengal	2299	458	1009
UNION TERRITORIES			
Andaman & Nicobar	12	2	5
Chandigarh	41	12	27
Dadra & Nagar Haveli	31	2	2
Daman & Diu	32	5	3
Lakshadweep	0	0	1
Puducherry	160	8	25
Grand Total	59595	6543	18786

Source: Oil Companies

III.19 State-wise and Company-wise Retail Outlets

(in Number)

State / UT	As on 31 st March 2017					Total as on 31.03.2016
	IOCL	HPCL	BPCL	CPSEs Outlets	Total Outlets ¹	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
STATES						
Andhra Pradesh	1242	969	744	2955	3197	3004
Arunachal Pradesh	49	0	8	57	74	71
Assam	512	91	137	740	828	788
Bihar	1384	490	642	2516	2604	2511
Chhattisgarh	506	354	284	1144	1176	1108
Delhi	189	97	107	393	396	395
Goa	31	36	48	115	115	114
Gujarat	1304	777	824	2905	3765	3384
Haryana	1391	714	404	2509	2726	2534
Himachal Pradesh	219	116	68	403	414	396
Jammu & Kashmir	222	135	137	494	494	485
Jharkhand	501	278	328	1107	1189	1151
Karnataka	1855	922	1005	3782	4027	3836
Kerala	891	592	475	1958	2048	2009
Madhya Pradesh	1387	865	966	3218	3528	3269
Maharashtra	1912	1606	1718	5236	5684	5419
Manipur	69	0	12	81	85	85
Meghalaya	119	24	42	185	198	190
Mizoram	31	3	2	36	37	36
Nagaland	46	3	9	58	70	69
Orissa	773	327	425	1525	1639	1560
Punjab	1708	888	617	3213	3380	3316
Rajasthan	1710	1025	853	3588	4116	3736
Sikkim	19	7	23	49	50	47
Tamil Nadu	2059	1211	1384	4654	5039	4702
Telangana	981	689	591	2261	2434	2228
Tripura	63	0	2	65	68	67
Uttar Pradesh	3520	1453	1372	6345	7069	6616
Uttarakhand	248	174	117	539	570	551
West Bengal	1137	494	584	2215	2299	2244
UNION TERRITORIES						
Andaman & Nicobar	12	0	0	12	12	10
Chandigarh	20	11	10	41	41	41
Dadra & Nagar Haveli	11	11	4	26	31	31
Daman & Diu	11	11	7	29	32	31
Lakshadweep	0	0	0	0	0	0
Puducherry	80	39	34	153	160	156
Grand Total	26212	14412	13983	54607	59595	56190

Note: Including Pvt. Retail Outlets

Source: Oil Companies

III.20 State-wise and Company -wise LPG Registered Domestic Consumers					
(in Number)					
State / UT	As on 31 st March 2017				Total as on 31.03.2016
	IOCL	HPCL	BPCL	TOTAL	
(1)	(2)	(3)	(4)	(5)	(6)
STATES					
Andhra Pradesh	5447941	6320320	2738575	14506836	13447001
Arunachal Pradesh	271115	0	5216	276331	263025
Assam	3761072	117117	414563	4292752	3936216
Bihar	5840028	2675102	2466434	10981564	7582324
Chhattisgarh	1877950	1138816	557338	3574104	2364266
Delhi	4152322	882935	1453159	6488416	6333984
Goa	15978	376729	198034	590741	571752
Gujarat	5118703	2131302	2393464	9643469	8574716
Haryana	2997045	1329280	2154820	6481145	5790299
Himachal Pradesh	1702724	231905	147355	2081984	2013732
Jammu & Kashmir	756653	1675805	289523	2721981	2331484
Jharkhand	1864745	714894	469603	3049242	2343277
Karnataka	5480782	4402218	3166341	13049341	12109163
Kerala	4743568	1672773	2697093	9113434	8810144
Madhya Pradesh	5542885	3035782	2584772	11163439	8577654
Maharashtra	3501713	10942678	11205910	25650301	23458706
Manipur	446695	0	0	446695	419321
Meghalaya	204703	0	4768	209471	198840
Mizoram	314005	0	0	314005	307884
Nagaland	253168	308	3316	256792	244125
Orissa	2064790	1878234	1244577	5187601	3915685
Punjab	5032946	1668421	2125670	8827037	8113938
Rajasthan	5393498	3429949	3352973	12176420	9947374
Sikkim	175706	0	0	175706	168589
Tamil Nadu	11334762	3077104	5025868	19437734	18310045
Telangana	4568292	3807191	2669461	11044944	10467723
Tripura	550577	0	0	550577	512023
Uttar Pradesh	18341021	5720196	8494505	32555722	24839294
Uttarakhand	2163809	209727	490684	2864220	2617444
West Bengal	9492379	3350161	2962127	15804667	12167353
UNION TERRITORIES					
Andaman & Nicobar	101316	0	0	101316	94100
Chandigarh	281150	86237	58893	426280	417516
Dadra & Nagar Haveli	0	82090	0	82090	75769
Daman & Diu	0	46497	28413	74910	72086
Lakshadweep	4820	0	0	4820	4756
Puducherry	145952	155080	98152	399184	387049
GRAND TOTAL	113944813	61158851	59501607	234605271	201788657

Source: Central Public Sector Enterprises

III.21 State-wise and Company -wise LPG Distributors

(in Number)

State / UT	As on 31 st March 2017				Total as on 31.03.2016
	IOCL	HPCL	BPCL	TOTAL	
(1)	(2)	(3)	(4)	(5)	(6)
STATES					
Andhra Pradesh	364	296	216	876	842
Arunachal Pradesh	58	0	1	59	57
Assam	364	27	56	447	423
Bihar	559	251	266	1076	1045
Chhattisgarh	186	115	73	374	363
Delhi	195	49	77	321	320
Goa	5	29	17	51	51
Gujarat	414	173	172	759	744
Haryana	227	98	154	479	416
Himachal Pradesh	127	22	17	166	160
Jammu & Kashmir	123	92	31	246	231
Jharkhand	225	88	79	392	390
Karnataka	459	297	251	1007	934
Kerala	300	125	169	594	572
Madhya Pradesh	638	309	293	1240	1210
Maharashtra	410	669	677	1756	1697
Manipur	82	0	0	82	77
Meghalaya	45	0	4	49	48
Mizoram	54	0	0	54	54
Nagaland	54	1	5	60	56
Odisha	251	194	131	576	563
Punjab	410	161	188	759	731
Rajasthan	513	284	266	1063	1022
Sikkim	15	0	0	15	15
Tamil Nadu	679	238	328	1245	1130
Telangana	312	199	183	694	664
Tripura	62	0	0	62	57
Uttar Pradesh	1613	568	778	2959	2814
Uttarakhand	180	24	49	253	243
West Bengal	611	206	192	1009	926
UNION TERRITORIES					
Andaman & Nicobar	5	0	0	5	5
Chandigarh	18	5	4	27	27
Dadra & Nagar Haveli	0	2	0	2	2
Daman & Diu	0	2	1	3	3
Lakshadweep	1	0	0	1	1
Puducherry	11	8	6	25	23
Grand Total	9570	4532	4684	18786	17916

Source: Central Public Sector Enterprises

III.22 State-wise and Company-wise SKO/LDO Dealerships					
					(in Number)
State / UT	As on 31 st March 2017				Total as on 31.03.2016
	IOCL	HPCL	BPCL	TOTAL	
(1)	(2)	(3)	(4)	(5)	(6)
STATES					
Andhra Pradesh	171	176	47	394	394
Arunachal Pradesh	33	0	0	33	33
Assam	359	0	0	359	359
Bihar	284	37	51	372	372
Chhattisgarh	61	39	8	108	108
Delhi	78	23	15	116	116
Goa	8	7	7	22	22
Gujarat	274	127	77	478	480
Haryana	78	41	22	141	141
Himachal Pradesh	18	3	5	26	26
Jammu & Kashmir	35	8	4	47	47
Jharkhand	57	13	17	87	87
Karnataka	179	94	50	323	324
Kerala	135	72	30	237	237
Madhya Pradesh	163	63	58	284	284
Maharashtra	301	260	206	767	767
Manipur	36	0	0	36	36
Meghalaya	35	0	0	35	35
Mizoram	19	0	0	19	19
Nagaland	19	0	0	19	19
Orissa	105	47	25	177	177
Punjab	131	71	35	237	239
Rajasthan	114	103	33	250	250
Sikkim	10	0	2	12	12
Tamil Nadu	268	139	59	466	466
Telangana	109	68	25	202	202
Tripura	40	0	0	40	40
Uttar Pradesh	408	138	150	696	696
Uttarakhand	46	12	15	73	73
West Bengal	314	89	55	458	458
UNION TERRITORIES					
Andaman & Nicobar	2	0	0	2	2
Chandigarh	7	3	2	12	12
Dadra & Nagar Haveli	1	0	1	2	2
Daman & Diu	3	0	2	5	5
Lakshadweep	0	0	0	0	0
Puducherry	3	5	0	8	8
Grand Total	3904	1638	1001	6543	6548

Source: Central Public Sector Enterprises

III.23 State-wise PDS SKO Kerosene allocated and Quantity Uplifted				
(in MTs)				
State	2015-16		2016-17 (P)	
	PDS SKO Allocation	Upliftment	PDS SKO Allocation	Upliftment
(1)	(2)	(3)	(4)	(5)
Andaman & Nicobar Islands	4492	4478	6631	3787
Andhra Pradesh	207530	180581	290019	149064
Arunachal Pradesh	8031	8015	11935	7119
Assam	250095	249832	371684	223980
Bihar	620003	618441	913296	548906
Chandigarh ¹	2325	663	0	0
Chhattisgarh	134064	123846	173968	94685
Dadra & Nagar Haveli	1429	1429	2128	1289
Daman and Diu	644	644	971	374
Delhi ²	0	0	0	0
Goa	3997	3922	5937	2045
Gujarat	511546	511308	633515	383424
Haryana	68750	54929	85134	27960
Himachal Pradesh	18789	18747	23284	13967
Jammu and Kashmir ³	63175	62313	93877	52819
Jharkhand	204336	202694	282309	170437
Karnataka	396756	376843	369479	202530
Kerala	91658	91629	113522	68750
Lakshadweep	766	766	1203	728
Madhya Pradesh	459007	451478	568443	332488
Maharashtra	487359	477820	724277	403078
Manipur	18201	18148	27062	11854
Meghalaya	19788	19751	29406	17659
Mizoram	5192	5164	7725	4679
Nagaland	13037	13037	19383	7008
Odisha	303287	299674	375600	220202
Puducherry	3315	3269	4934	2979
Punjab	66444	64783	95519	48487
Rajasthan	385354	374739	477249	276862
Sikkim	4445	4445	5520	3343
Tamil Nadu	265933	265932	395215	239364
Telangana	135782	132345	199735	104227
Tripura	29883	29883	44410	26864
Uttar Pradesh	1212140	1211419	1501152	908599
Uttrakhand	27390	27252	40724	24246
West Bengal	734111	733172	1013695	613433
Total	6759054	6643391	8908944	5197235

Note:

P: Provisional

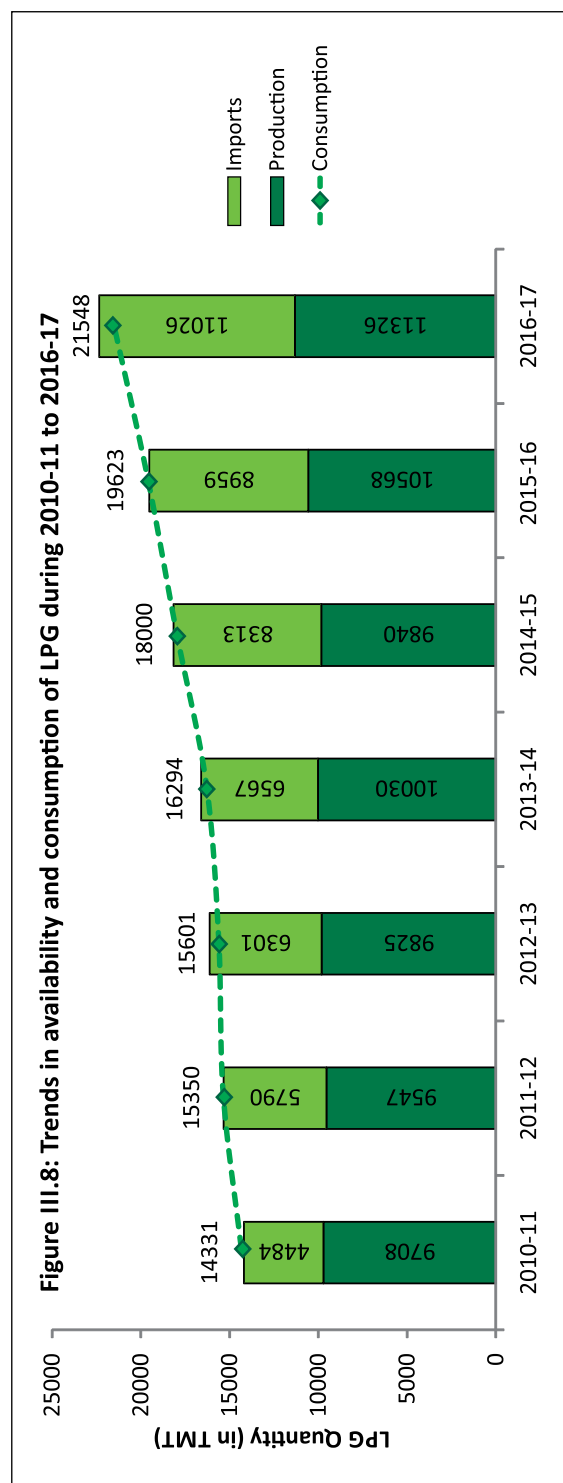
1. Chandigarh has been declared kerosene free city, effective April 1, 2016.
2. NCT of Delhi has been declared Kerosene free city, effective October 1, 2013.
3. Allocation for Jammu and Kashmir includes separate allocation of 3600 MT for Ladakh region.

Source: Petroleum Planning & Analysis Cell.

III.24 LPG Marketing in India								
Item (1)	Unit (2)	2010-11 (3)	2011-12 (4)	2012-13 (5)	2013-14 (6)	2014-15 (7)	2015-16 (8)	2016-17 (P) (9)
Consumption	TMT	14331	15350	15601	16294	18000	19623	21548
LPG Domestic Registered Customers (CPSE OMCs)	Lac	1254	1371	1504	1663	1819	2018	2346
LPG Domestic Active Customers (CPSE OMCs)	Lac	NA	NA	NA	NA	1486	1663	1988
LPG Distributors (CPSE OMCs)	No.	10541	11489	12610	13896	15930	17916	18786
LPG Markets (CPSE OMCs)	No.	4866	4990	5105	5245	5485	5805	6015
New Enrolment in LPG domestic category (CPSE OMCs)	Lac	104	123	132	159	163	205	332
Indigenous Production (CPSE/Pvt) of which	TMT	9708	9547	9825	10030	9840	10568	11326
(a) Refineries	TMT	7541	7333	7694	7890	7662	8562	9238
(b) Fractionators	TMT	2167	2214	2130	2140	2178	2006	2088
Imports (CPSE/Pvt)	TMT	4484	5790	6301	6567	8313	8959	11042
Rated Bottling Capacity (CPSEs)	TMT/PA	11889	12723	13458	13515	14044	15172	16264

Source: Petroleum Planning & Analysis Cell.

P: Provisional



III.25 CNG activities in India as on 31.03.2017											
Company	State	No. of Companies	No. of CNG Stations	No. of CNG Vehicles		CNG Sales (TMT)					
				As on 31.03.2017		2012-13	2013-14	2014-15	2015-16	2016-17 (P)	
(1)	(2)	(3)	(4)	(5)		(6)	(7)	(8)	(9)	(10)	
AdaniEnergy Ltd., Gujarat Gas Ltd., (An amalgamated entity of Gujarat State Petroleum Corporation Gas Company Ltd. and Gujarat Gas Company Ltd.) Sabarmati Gas Ltd. (SGL), Hindustan Petroleum Corporation Ltd.(HPCL), Vadodara Gas Limited (JV of GAIL Gas Ltd. and Vadodara Mahanagar Seva Sadan), Charotar Gas Sahkari Mandali Ltd.	Gujarat	6	396	1094973		442	464	476	503	546	
Indraprastha Gas Ltd. (IGL), New Delhi	Delhi	1	421	939475		695	698	717	738	804	
GAIL Gas Ltd.	Rajasthan	1	3	5688		1	2	3	4	4	
Mahanagar Gas Ltd.(MGL),Mumbai, Maharashtra Natural Gas Ltd.(MNGL), Pune, GAIL Gas Ltd.	Maharashtra	3	245	685883		425	476	531	565	593	
Bhagyanagar Gas Ltd.(BGL), Hyderabad. Godavari Gas Pvt. Ltd.	Andhra Pradesh / Telangana	2	42	39281		25	25	26	27	29	
Green Gas Ltd. (Lucknow), Central UP Gas Ltd., Kanpur, Sifi Energy Ltd., GAIL Gas Ltd., Sanwaria Gas Ltd., Indraprastha Gas Ltd., Indian Oil- Adani Gas Pvt. Ltd.	Uttar Pradesh	7	54	117686		138	163	185	212	245	
Tripura Natural Gas Co. Ltd.(TNGCL), Agartala.	Tripura	1	5	9438		4	7	10	11	12	
Avantika Gas Ltd.,(Indore) and GAIL Gas Ltd.	Madhya Pradesh	2	24	23310		15	16	17	19	22	
Haryana City Gas Ltd., GAIL Gas Ltd., Adani Gas Ltd.	Haryana	3	31	125227		73	78	72	75	109	
Great Eastern Energy Corporation Ltd.	West Bengal	1	7	3172		1	1	1	1	2	
GAIL Gas Ltd.	Karnataka	1	3	135		-	-	-	-	0	
Indian Oil-Adani Gas Pvt. Ltd.	Chandigarh	1	2	1000		-	-	-	-	0	
Total		21*	1233	3045268		1818	1928	2037	2155	2366	

Note: The No. of CNG vehicles for GGL and VGL are based on average no. of vehicles filled at company's CNG stations per day.

*GAIL Gas is operating in 5 states, Adani Gas in 3 states and BGL & IGL operating in two States. Hence, their number is taken once only.

Source: Petroleum Planning & Analysis Cell.

III.26 PNG Status as on 31.03.2017					
State	City Covered	CGD Companies	Domestic connections	Commercial connections	Industrial connections
(1)	(2)	(3)	(4)	(5)	(6)
Delhi / NCR	National Capital Territory of Delhi (Including Noida and Ghaziabad)	Indraprastha Gas Ltd.	742205	1903	962
	Mumbai, Thane, Mira-Bhayender, Navi Mumbai, Pune, Kalyan, Ambernath, Panvel, Bhiwandi	Mahanagar Gas Ltd., Maharashtra Natural Gas Ltd., Gujarat Gas Ltd.	999868	3387	191
Gujarat	Gandhinagar, Mehsana, Sabarkantha,Nadiad, Halol, Hazira, Rajkot, Khambhat, Palej, Valsad, Navsari, Surendra Nagar, Ahmedabad, Vadodara, Surat, Ankeleswar, Bhavnara, Anand.	Sabarmati Gas Ltd., Gujarat Gas Ltd., Hindustan Petroelum Corporation Ltd., Vadodara Gas Ltd, Adani Gas Ltd., Charotar Gas Sakhari Mandal Ltd.	1653663	14766	4200
	Merrut, Mathura, Agra, Firozabad,Kanpur, Bareilly, Lucknow, Moradabad, Khurja, Allahabad	Green Gas Ltd. (Lucknow), Central UP Gas Limited (Kanpur), GAIL Gas Ltd., Sanwariya Gas Ltd., Siti Energy Ltd.,Adani Gas Ltd., Indian Oil- Adani Gas Pvt. Ltd.	51195	272	500
Tripura	Agartala	Tripura Natural Gas Company Ltd.	28669	366	50
Madhya Pradesh	Dewas, Indore, Ujjain, Gwalior	GAIL Gas Ltd., Avantika Gas Ltd.	13888	63	99
	Kota	GAIL Gas Ltd.	157	1	16
Assam	Tinsukia, Dibrugarh, Sibsagar,Jorhat	Assam Gas Co. Ltd.	30023	1002	400
Andhra Pradesh/ Telangana	Kakinada, Hyderabad, Vijayawada, Kovvur	Bhagyanagar Gas Ltd., Godavari Gas Pvt. Ltd.	6608	46	5
Haryana	Sonepat, Gurgaon, Faridabad	GAIL Gas Ltd, Adani Gas Ltd., Haryana City Gas Distribution Ltd.	54414	166	241
Karnataka	Bengaluru	GAIL Gas Ltd.	2446	17	3
Chandigarh	Chandigarh	Indian Oil-Adani Gas Pvt. Ltd.	2350	0	0
Kerala	Ernakulam	Indian Oil-Adani Gas Pvt. Ltd.	102	2	0
	Dadra & Nagar Haveli	Gujarat Gas Ltd.	58	5	3
Total			3585646	21996	6670

Source: Petroleum Planning & Analysis Cell.

APPENDIX	CHAPTER XI	CHAPTER X	CHAPTER IX	CHAPTER VIII	CHAPTER VII	CHAPTER VI	CHAPTER V	CHAPTER IV	CHAPTER III	CHAPTER II	CHAPTER I
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III.27 Introduction to Green Fuels in India		
Product	Effective Date	Areas Covered
(1)	(2)	(3)
Bio Diesel	01.01.2006	Bio Diesel purchase policy announced: 20 purchase centres have been nominated: For Andhra Pradesh, Jharkhand & Odisha – Ghatkesar; Chhattisgarh – Mandirhasaud; Delhi – Biijwasan; Gujarat – Kandla; Haryana – Rewari; Karnataka – Devangunthi & Mangalore; Madhya Pradesh – Mangliagaon; Maharashtra – Manmad, Borkhedi, Loni & Vashi; Punjab – Bhatinda; Rajasthan – Sanganer & Salawas; Tamil Nadu–Korruupet, Narimanam & Karur; Uttar Pradesh & Uttarakhand–Panki & Amousi
	16.01.2015	Direct sale of bio-diesel by private manufacturers/authorised dealers and JVs of OMCs to all consumers
	10.08.2015	Direct sale of Bio-Diesel (B100) by private manufactures to bulk consumers
Ethanol Blended Petrol (EBP)	20.09.2006*	20 States: A.P., Bihar, Chhattisgarh, Delhi, Goa, Gujarat, Haryana, H.P., Jharkhand, Karnataka, Kerala, M.P., Maharashtra, Orissa, Punjab, Rajasthan, T.N., Uttarakhand, U.P & West Bengal and 4 UTs: Chandigarh, Daman & Diu, Dadar & Nagar Haveli & Pondicherry.
	02.01.2013	As per MoPNG Gazette Notification No. G.S.R. 4(E). dated 02.01.2013, Oil Marketing Companies shall sell Ethanol-blended–petrol with percentage of Ethanol up to ten per cent and as per the Bureau of Indian Standard Specification to achieve five per cent Ethanol blending across the country as a whole.
	10.12.2014	Delivered price of Ethanol increased from ₹ 48.50 to ₹ 49.50 per litre
	13.10.2016	For EBP Programme Ethanol price fixed at Rs.39 per litre.
MS(BS-IV) &HSD (BS IV)	01.04.2010	Delhi & NCR, Mumbai, Kolkata, Chennai, Bengaluru, Hyderabad, Kanpur, Agra, Pune, Surat, Ahmedabad, Lucknow, Sholapur
	01.01.2012	Puducherry, Mathura
	01.02.2012	Jamnagar, Vapi
	01.03.2012	Ankleshwar, Hissar , Bharatpur
	01.07.2012	Silvasa, Daman, Diu
	01.10.2012	Aligarh, Rae Bareilly, Unnao
	01.03.2013	Valsad, Karnal, Kurukshetra , Yamuna Nagar
	01.07.2013	Nizamabad, Medak, Mehboobnagar
	01.01.2014	Mahabaleshwar, Ahmednagar, Hindaun, Dholpur, Kosi Kalan, Vrindavan
	15.3.2015	Lonawala, Palgarh, Dahanu, Talasari, Boisar, Panchgani, Mahad, Nagothana, Indapur, Vizag, Kochi, Thiruvananthapuram, Kavaratti, Nagra, Dig, Nadbai, Bhiwani, Jind, Mahendragarh, Hansi, Charki Dadri, Narnaul, Kiruli and Fatehpur Sikri
	1.4.2015	The whole of Northern India covering Jammu & Kashmir, (except Leh/Kargil and 7 districts of J&K), Punjab, Haryana, Himachal Pradesh, Uttarakhand, Chandigarh, Delhi and the bordering districts in Rajasthan and Western Uttar Pradesh. The relevant districts of Rajasthan are Bharatpur, Alwar, Hanumangarh and Sriganganagar. The districts of West Uttar Pradesh covered are Saharanpur, Muzaffarnagar, Baghpat, Meerut, Bijnor, Ghaziabad, Gautam Buddha Nagar, Bulandshar, Jyotiba Phule Nagar, Rampur, Moradabad, Aligarh, Budaun, Bareilly, Mathura, Mahamaya Nagar, Etah, Agra, Ferozabad, Etawah and Mainpuri.
	15.4.2015	7 additional districts of Uttar Pradesh (Pilibhit, Shamli, Sambhal, Farrukhabad, Kannauj, Auraiya and Kasganj)
	1.5.2015	7 districts of J&K (Pulwama, Baramullah, Badgam, Srinagar, Kudwara, Bandipora and Ganderbal)
	1.9.2015	2 additional districts of J&K (Leh and Kargil)
	1.4.2016	All of Goa, Kerala, Karnataka, Telangana, Odisha, and the Union Territories of Daman & Diu, Dadra-Nagar-Haveli and Andaman & Nicobar Islands.
	1.4.2016	Certain districts of Maharashtra (Mumbai, Thane, Pune and Palghar districts), Gujarat (Surat, Valsad, Dangs, Tapi and Navsari districts) and highway corridor connecting Northern India and Western ports
	1.4.2017	Entire country is covered with BS-IV auto fuels
MS (BS-III) & HSD (BS-III)	01.04.2010	Goa
	16.05.2010	Chhattisgarh, Andaman & Nicobar
	31.05.2010	Madhya Pradesh, Maharashtra
	16.05.2010	Andaman & Nicobar
	16.06.2010	Punjab, Rajasthan, Chandigarh, Orissa, Sikkim, West Bengal, Haryana, Uttarakhand, Himachal Pradesh, Gujarat, UTs of Dadar & Nagar Haveli and Daman & Diu.
	30.06.2010	Western UP, Andhra Pradesh, Tamil Nadu, Puducherry, Jammu & Kashmir (other than Leh & Kargil)
	16.07.2010	Leh & Kargil
	16.09.2010	Eastern UP, Bihar & Jharkhand
	31.07.2010	Karnataka
	16.09.2010	Kerala, including, UT of Lakshadweep & Puducherry area fed Ex- Kerala.
	22.09.2010	Arunachal Pradesh, Assam, Manipur Meghalaya, Mizoram, Nagaland & Tripura.

Note: * :Vide Notification No. GSR-580(E) dated 20.09.2006, MoPNG decided to introduce Ethanol Blended Petrol(EBP) in 20 States and 4 UTs subject to commercial viability.

Chapter IV

Prices



CHAPTER I

CHAPTER II

CHAPTER III

CHAPTER IV

CHAPTER V

CHAPTER VI

CHAPTER VII

CHAPTER VIII

CHAPTER IX

CHAPTER X

CHAPTER XI

APPENDIX



Chapter Highlights

- Wholesale Price Index (WPI) inflation for all commodities increased by around 2% in 2016-17 as compared to 2015-16. Increase in crude oil WPI stood at 5% whereas the same registered a negative growth of 1% and 21% for petroleum products and natural gas respectively.
- Inflation was observed in Kerosene (7%), High Speed Diesel Oil (1%), Furnace Oil (7%) and Petroleum Coke (19%) whereas deflation was observed in LPG (6%), Petrol (4%), Naphtha (1%), Lube Oil (3%) and Bitumen (12%).
- The international crude oil price (Indian basket) dipped to 28.08 US \$/bbl in January, 2016 and started increasing thereafter and reached at 54.86 US \$/bbl in February, 2017. However, the price remained below US \$55/bbl during 2016-17.
- Share of petroleum sector in total subsidies has declined from 11.36% (₹ 29999 crore (actual) in 2015-16 to 10.57 % [₹ 27532 crore (RE)] in 2016-17 and is budgeted at 9.18% [₹ 25000 crore (B.E)] in 2017-18.
- Total under recovery on sensitive petroleum products during 2016-17 at ₹ 27570 crore, which is 18% less than the under recovery in 2015-16 (₹ 27570 crore).
- Under recovery of CPSEs on PDS SKO reduced by 33.83% from ₹ 11496 crore in 2015-16 to ₹7606 crore in 2016-17 whereas that on Domestic LPG reduced by 5.86% from ₹16074 crore in 2015-16 to ₹15132 crore in 2016-17.

IV.1. Wholesale Price Indices of Selected Petroleum Products						
Base Year 2011-12=100						
Items	Weight(%)	2012-13	2013-14	2014-15	2015-16	2016-17
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crude Petroleum & Natural Gas	2.4096	109.4	119	103.5	76.6	73.1
LPG	0.64481	107.8	118.6	103.5	76.7	72.0
Petrol	1.60470	114.9	124.6	108.6	75.7	72.4
Naphtha	0.86678	109.8	119.4	103.0	66.9	66.5
Kerosene	0.18685	107.1	109.3	103.5	88.4	94.3
Aviation Turbine Fuel	0.31991	112.6	119.7	105.1	69.5	69.3
High Speed Diesel Oil	3.09548	111.6	126.3	114.8	73.4	74.4
Furnace Oil	0.66576	107.7	111.5	93.6	54.3	58.1
Lube Oil	0.29199	109.6	114.2	118.8	120.8	116.8
Bitumen	0.22677	101.3	112.1	106.1	77.1	68.0
Petroleum Coke	0.04663	99.4	92.8	94.3	78.3	93.0
Total Petroleum Products (Mineral Oils)	7.94968	110.9	121.6	108.7	73.9	73.3
Crude Petroleum	1.94537	108.4	117.1	95.2	60.9	63.8
Natural Gas	0.46423	113.8	126.8	138.5	142.6	112.3
All commodities	100	106.9	112.5	113.9	109.7	111.6

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

IV.2 Consumer and Producer Prices of Natural Gas						
(in ₹/'000' cubic metre)						
Effective Date	Consumer Prices		Producer Prices			Calorific Value (K. Cal / SCM)
	Off-shore (Landfall point) and On-shore	For North-East States	ONGC	ONGC (North-East States)	OIL (North-East States)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
01.04.2010	3200	1920	3200	1920	3200	10000
01.04.2011	7499	4499	7498	7498	7499	10000
01.04.2012	8387	5032	8387	8387	8387	10000
01.04.2013	9067	5440	9067	9067	9067	10000
01.04.2014	10168	6101	10168	10168	10168	10000
01.11.2014	12292	7375	12292	12292	12292	10000
01.04.2015	11548	6929	11548	11548	11548	10000
01.10.2015	10038	6023	10038	10038	10038	10000
01.04.2016	8138	4883	8138	8138	8138	10000
01.10.2016	6586	3973	6586	6586	6586	10000
01.04.2017	6483	3895	6483	6483	6483	10000

Notes:

- Effective 01.04.2010, the price of Natural gas was fixed by the Government at USD 4.2/mmbtu on Net Calorific Value, Price of APM gas upto 31.05.2010 was exclusive of royalty/levies.
- GOI has issued the New Domestic Gas Pricing Guidelines on 25.10.2014. In line with these guidelines, PPAC declared the price of natural gas at USD 3.06/mmbtu during 01.04.2016 to 30.09.2016, USD 2.50/mmbtu during 01.10.2016 to 31.03.2017 and USD 2.48/mmbtu during 01.04.2017 to 30.09.2017 on gross calorific value.
- Consumer price for NE states is 60% of the applicable producer price.
- Above price is inclusive of royalty.
- Above price is for 10000 K Cal. However, actual price realised from consumers is for the actual calorific value.

Source: ONGC, OIL

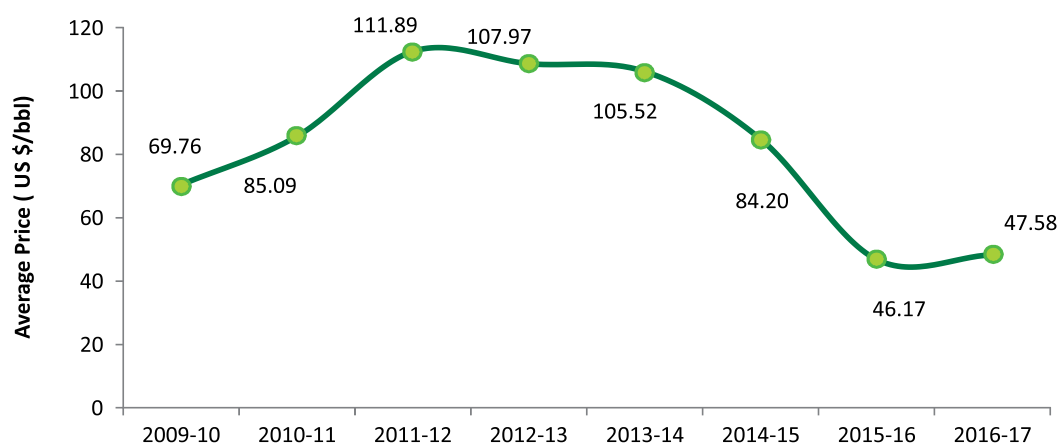
IV.3 Month-wise & Year-wise average International Crude Oil Prices (Indian Basket)

(in US\$/bbl.)

Year/Month	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	% Growth in 2016-17 over 2015-16
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
April	84.13	118.79	117.98	101.57	105.56	59.07	39.88	-32.49
May	76.11	110.70	108.05	101.10	106.85	63.82	45.01	-29.48
June	74.36	109.99	94.51	101.11	109.05	61.75	46.96	-23.95
July	73.54	112.53	100.34	104.86	106.28	56.30	43.52	-22.70
August	75.13	106.94	110.07	108.45	101.89	47.33	44.39	-6.21
September	76.09	108.79	111.77	109.47	96.96	46.10	44.41	-3.67
October	81.11	106.11	109.79	107.37	86.83	46.68	49.25	5.52
November	84.26	109.62	107.87	106.55	77.58	42.50	44.46	4.60
December	89.78	107.20	107.28	108.72	61.21	35.68	52.74	47.81
January	93.87	110.47	109.55	105.29	46.58	28.08	54.07	92.57
February	101.16	117.67	112.68	106.19	56.43	30.53	54.86	79.72
March	110.72	123.61	106.45	105.30	55.18	36.42	51.47	41.32
Year Average	85.09	111.89	107.97	105.52	84.20	46.17	47.58	3.05

Source: PPAC

Figure IV.1: Year-wise Average International Crude Oil Prices (Indian Basket)



IV.4 International prices of crude oil and major petroleum products

Period	Crude Oil (Indian Basket)	Petrol	Diesel	Kerosene	LPG
	(\$/BBL)				(\$/MT)
(1)	(2)	(3)	(4)	(5)	(6)
2010-11	85.09	92.43	95.66	96.79	745.29
2011-12	111.89	121.63	125.38	125.99	899.42
2012-13	107.97	118.98	121.98	123.11	885.20
2013-14	105.52	114.31	119.41	118.80	880.49
2014-15	84.20	95.45	96.64	96.98	683.87
2015-16	46.17	61.72	55.02	55.71	394.71
2016-17	47.58	58.10	56.59	56.81	383.92

Notes:

1. The composition of Indian Basket of Crude represents Average of Oman & Dubai for sour grades and Brent (Dated) for sweet grade in the ratio of 71.03:28.97 w.e.f. 1st April, 2016 and for 72.28 : 27.72 w.e.f. 1st April, 2015 and for 72.04:27.96 during 2014-15; 69.9:30.1 for 2013-14; 68.2:31.8 for 2012-13; 65.2:34.8 for 2011-12; 67.6:32.4 for 2010-11.
2. Price of kerosene (0.5% sulphur) is for Arab Gulf Market and Price of Petrol is 92 RON unleaded for Singapore market.
3. LPG Price is Saudi Aramco CP based on 60:40 butane / propane ratio.
4. From 02.01.2013 the Diesel price in Arab Gulf Market is for 0.05% Sulphur, for earlier years the price is for 0.5% Sulphur.

Source: IOCL

IV.5 Weighted Average Crude Oil Prices

(in ₹/MT)					
Year		Basic Price	Royalty	OID Cess	Sales Tax/VAT/CST
(1)	(2)	(3)	(4)	(5)	(6)
2010-11	Offshore crude	31525	2664	2500	846
	Onshore crude	28829	4411	2500	1109
	Offshore and Onshore crude	30614	3255	2500	935
2011-12	Offshore crude	42902	3636	2500/4500	1356
	Onshore crude	41143	6327	2500/4500	1932
	Offshore and Onshore crude	42293	4567	2500/4500	1555
2012-13	Offshore crude	46134	3933	4500	1385
	Onshore crude	43656	6728	4500	2034
	Offshore and Onshore crude	45295	4880	4500	1605
2013-14	Offshore crude	49911	4235	4500	1654
	Onshore crude	45600	7037	4500	2128
	Offshore and Onshore crude	48504	5149	4500	1809
2014-15	Offshore crude	40129	3392	4500	1294
	Onshore crude	37089	5685	4500	1727
	Offshore and Onshore crude	39215	4081	4500	1425
2015-16	Offshore crude	24453	2066	4450	781
	Onshore crude	22149	3307	4404	1055
	Offshore and Onshore crude	23799	2418	4437	859
2016-17	Offshore crude	26078	2157	4105	820
	Onshore crude	23831	3578	3778	1113
	Offshore and Onshore crude	25433	2565	4011	904

Notes:

1. Basic Price is all inclusive gross (pre-discount) price and linked to international crude price, though ONGC net price realization has been lower due to sharing of under-recoveries of OMCs by extending discount, as per the directives of MoPNG.
2. VAT/CST and Royalty are worked out based on Gross (Pre-discount) Price. However, the above levies are actually paid on post-discount price.
3. During 2016-17, no subsidy discount was extended by ONGC to refineries /OMCs.
4. Royalty and OID Cess are production levies and are part of cost.
5. NCCD @ ₹ 50/MT is also paid on crude oil & Education Cess @ 3% on OID Cess and NCCD were paid till 2014-15.
6. OID Cess in ₹/MT is worked out considering specific rate of ₹ 4,500/MT from 17.03.12 till Feb'16 and "20% ad-valorem" w.e.f. 01st March, 2016

Source: ONGC

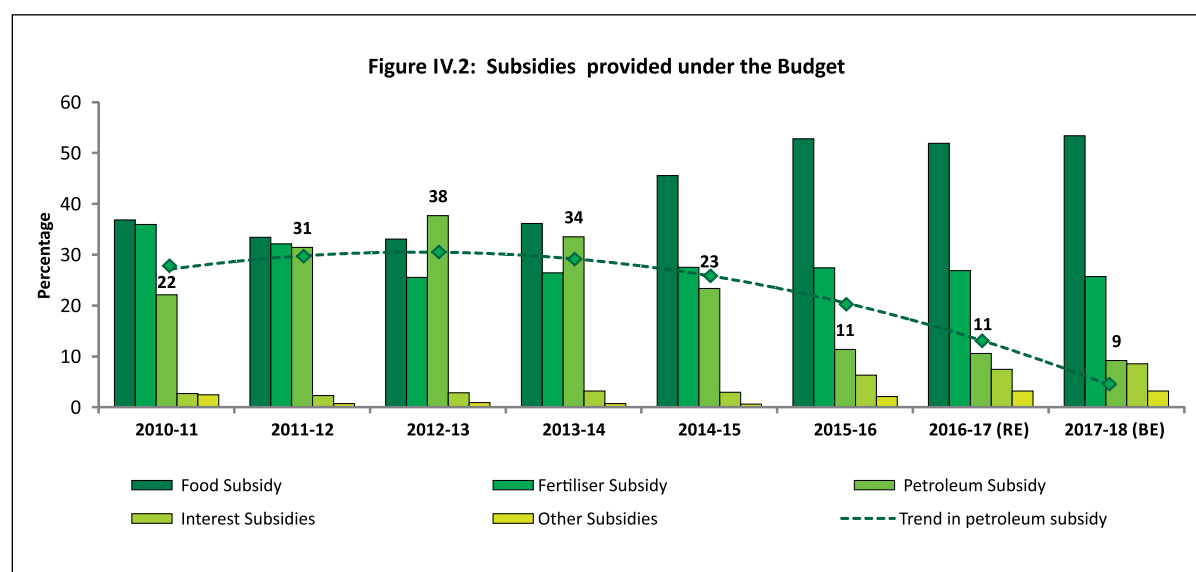
IV.6 Rates of Dealers' Commission for MS, HSD and LPG in India

Effective	MS	HSD	Effective	LPG (Packed Domestic)		
				14.2 Kg	5Kg	Additional commission for sale at market determined price
	(₹/Kilolitre)			(₹/Cylinder)		(₹/14.2 KG cyl.)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
07.09.2010	1218	757	-	-	-	-
01.07.2011	1499	912	01.07.2011	25.83	13.30	-
27.10.2012	1794	1089	07.10.2012	37.25	18.63	-
21.12.2013	₹ 1390.15/ KL + 0.883% of Product Billable Price	1186	11.12.2013	40.71	20.36	-
1.4.2014	₹ 1390.15/KL+ 0.883% of Product Billable Price	₹ 1186/KL	01.04.2014	40.71	20.36	0.75
23.10.2014	₹ 1499.37/KL+ 0.887% of Product Billable Price	₹ 1116.09/KL+ 0.29% of Product Billable Price	23.10.2014	44.06	22.03	0.82
01.08.2015	₹ 1749.86/KL + 0.883% of Product Billable Price	₹ 1301.70/KL + 0.286% of Product Billable Price	9.12.2015	45.83	22.67	0.26
16.11.2015	₹ 1750.08/KL + 0.883% of Product Billable Price	₹ 1301.88/KL + 0.286% of Product Billable Price	01.01.2016	45.83	22.67	0.33
			01.02.2016	45.83	22.67	0.22
			01.03.2016	45.83	22.67	0.13
			01.05.2016	45.83	22.67	0.15
01.06.2016	₹ 1750.29/KL + 0.883% of Product Billable Price	₹ 1302.06/KL + 0.286% of Product Billable Price	01.06.2016	45.83	22.67	0.18
			01.07.2016	45.83	22.67	0.16
			01.08.2016	45.83	22.67	0.09
			01.09.2016	45.83	22.67	0.06
			01.10.2016	45.83	22.67	0.09
05.10.2016	₹ 1868.14/KL + 0.875% of Product Billable Price	₹ 1389.35/KL + 0.28% of Product Billable Price	28.10.2016	47.48	23.74	0.09
			01.11.2016	47.48	23.74	0.14
16.11.2016	₹ 2006.33/KL + 0.875% of Product Billable Price	₹ 1491.72/KL + 0.28% of Product Billable Price	01.12.2016	47.48	23.74	0.21
			01.02.2017	47.48	23.74	0.30
			01.03.2017	47.48	23.74	0.43
01.04.2017	₹ 2020.38/KL + 0.859% of Product Billable Price	₹ 1502.13/KL + 0.267% of Product Billable Price	01.04.2017	47.48	23.74	0.40
			01.05.2017	47.48	23.74	0.27

Source: PPAC

IV.7 Subsidies provided under Budget of Government of India									
Sector	Actuals	Actuals	Actuals	Actuals	Actuals	Actuals	Budget	Revised	Budget
	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2016-17	2017-18
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(in ₹ crore)									
1. Food Subsidy	63844	72822	85000	92000	117671	139419	134835	135173	145339
2. Fertilisers									
(i) Indigenous (Urea) Fertilisers	15081	20208	20000	26500	38200	-	-	-	-
(ii) Imported (Urea) Fertilisers	6454	13716	15132	11538	12223	-	-	-	-
(iii) Nutrient Based Subsidy	-	-	-	-	-	21938	19000	19000	20232
(iv) Sale of decontrolled fertiliser with concession to Farmers	40767	36089	30480	29301	20653	-	-	-	-
(v) Urea Subsidy	-	-	-	-	-	50478	51000	51000	49768
Total Fertiliser Subsidy	62301	70013	65613	67339	71076	72415	70000	70000	70000
3. Petroleum Subsidy	38371	68484	96880	85378	60269	29999	29000	27532	25000
4. Interest Subsidies	4680	5049	7270	8137	7632	16730	19022	19425	23204
5. Other Subsidies	4223	1573	2316	1778	1610	5542	10284	8356	8733
Total Subsidies	173420	217941	257079	254632	258258	264106	263141	260485	272276
(as Percentage of Total Subsidy)									
1. Food Subsidy	36.81	33.41	33.06	36.13	45.56	52.79	51.24	51.89	53.38
2. Fertiliser Subsidy	35.93	32.12	25.52	26.45	27.52	27.42	26.60	26.87	25.71
3. Petroleum Subsidy	22.13	31.42	37.68	33.53	23.34	11.36	11.02	10.57	9.18
4. Interest Subsidies	2.70	2.32	2.83	3.20	2.96	6.33	7.23	7.46	8.52
5. Other Subsidies	2.44	0.72	0.90	0.70	0.62	2.10	3.91	3.21	3.21

Sources: Expenditure Budget 2016-17 (Vol.-I)



IV.8 Subsidy Provided by the Government & Oil Companies on PDS SKO & Domestic LPG

Years	PDS SKO			Domestic LPG				(in ₹ crore)	
	Fiscal Subsidy ¹	DBTK Subsidy ²	Total	Fiscal Subsidy	DBTL Subsidy ³	PMUY Subsidy ⁴	Under Recoveries to Oil Company	Total	(Subsidy and Under Recoveries)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2010-11	936	-	20420	1991	-	-	21772	23763	44183
2011-12	868	-	28220	2155	-	-	29997	32152	60372
2012-13	746	-	30156	2007	-	-	39558	41565	71721
2013-14	681	-	31255	1920	3869	-	46458	52247	83502
2014-15	5	-	24804	18	3971	-	36580	40569	65373
2015-16	-	-	11496	0	16056	-	18	16074	27570
2016-17 (P)	860	11	8466	2433	12133	2999	0	17565	26031

1: Fiscal Subsidy includes subsidy under 'PDS Kerosene and Domestic LPG Subsidy Scheme, 2002', 'Freight Subsidy (For Far-Flung Areas) Scheme, 2002' on payment basis.

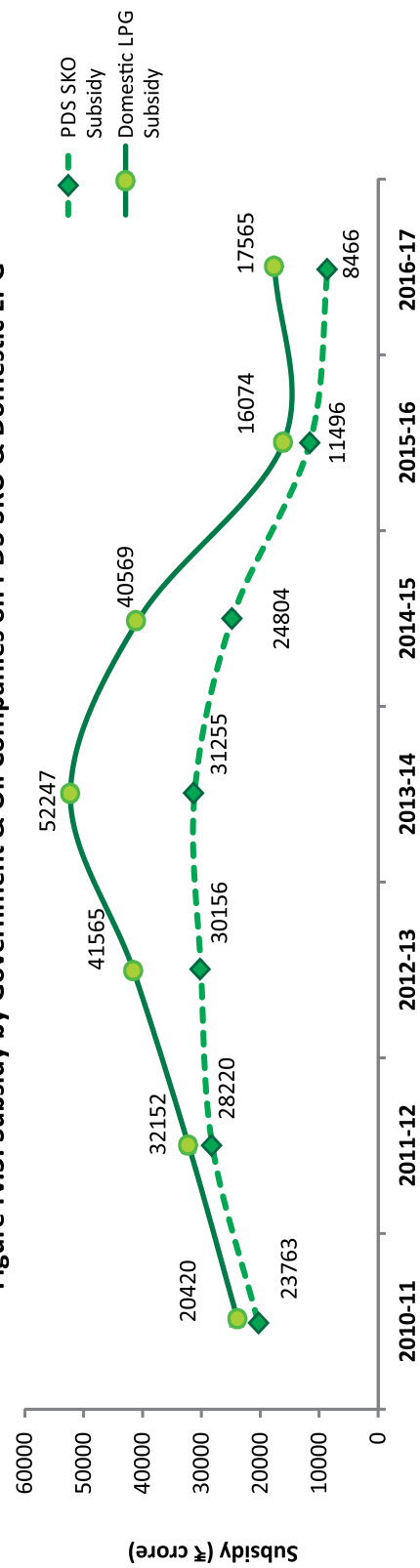
2: DBTK subsidy claims on PDS SKO from 2016-17 onwards.

3: DBTL subsidy claims on Domestic LPG from 2013-14 onwards.

4: PMUY subsidy claims on Domestic LPG for BPL Women from 2016-17 onwards.

Source: Budget Documents and Petroleum Planning & Analysis Cell

Figure IV.3: Subsidy by Government & Oil Companies on PDS SKO & Domestic LPG



IV.9 Under-Recoveries by Oil Marketing Companies on Sensitive Petroleum Products

(in ₹ crore)

Products	Under-Recovery						
	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
PDS Kerosene ¹	19484	27352	29410	30574	24799	11496	7606
Domestic LPG ²	21772	29997	39558	50327	40551	16074	15132
Petrol ³	2227	-	-	-	-	-	-
Diesel ⁴	34706	81192	92061	62837	10935	-	-
Total	78189	138541	161029	143738	76285	27570	22738

Note:

1: Including DBTK subsidy claims

2: Including DBTL & PMUY subsidy claims

3: Under recovery on Petrol is only upto 25th June 2010.

4: Under recovery on Diesel is only upto 18th October, 2014.

Source: PPAC

IV.10 Under Recovery and its Burden Sharing

(in ₹ crore)

Items	Under-Recovery & Burden Sharing						
	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Total Under Recovery	78189	138541	161029	143738	76285	27570	22738
Burden Sharing through Oil Bonds/ Cash Subsidy ¹	41000	83500	100000	74641	26056	26301	22738
Borne by OMCs	6893	41	1029	2076	2184	18	-
Upstream Companies ²	30297	55000	60000	67021	42822	1251	-

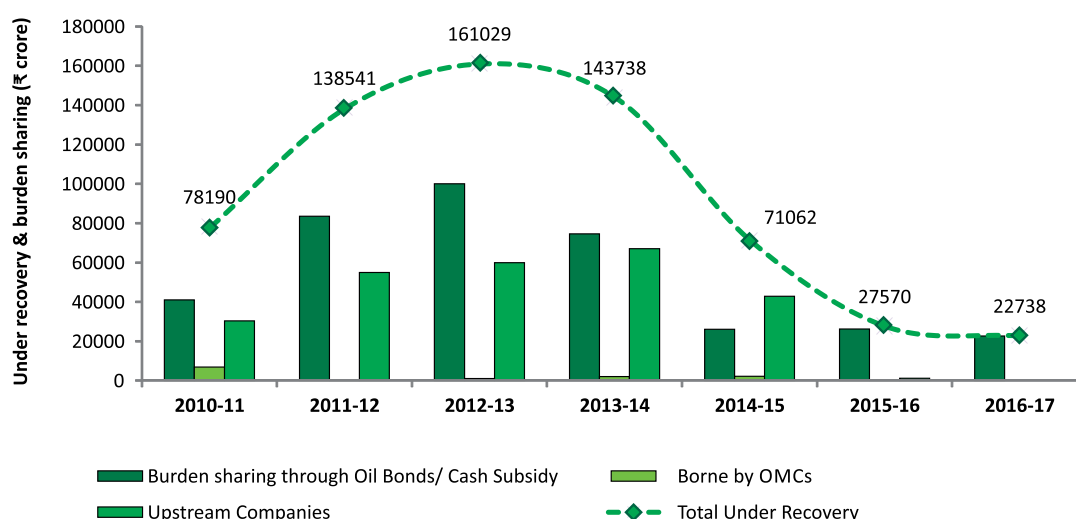
Note:

1. Since 2009-10, cash subsidy was provided by Government in place of Oil Bonds and includes DBTL subsidy.

2. OIL, ONGC & GAIL

Source: PPAC

Figure IV.4: Under recovery & its burden sharing



IV.11 Price Build-up of Selected Petroleum Products in Major Cities

(As on 01.04.2017)

Market	Delhi	Kolkata	Mumbai	Chennai
Liquefied Petroleum Gas (Domestic) (₹/14.2 Kg Cyl)				
Cost Price at LPG Bottling Plant	632.17	647.51	602.48	640.61
Add: Delivery Charges	10.00	10.00	10.00	10.00
Add: State Specific Costs	0.00	0.00	14.98	0.00
Add: Octroi/Toll Tax	0.00	0.21	0.00	0.00
Add : Uncompensated Costs (Import Costs, Recovery for Non-revision, Rounding-off, Diff in SSC, Diff in TC, Diff in WC & Delivery Charges)	33.01	36.45	33.01	33.01
Market Determined Price	675.18	694.17	660.47	683.62
Add : VAT(including VAT on Distributor Commission)	0.00	0.00	21.25	0.00
Add : Distributor Commission	47.88	47.88	47.88	47.88
Retail Selling Price	723.06	742.05	729.60	731.50
Retail Selling Price (Rounded)	723.00	742.00	729.50	731.50
Less: Cash Compensation to Consumer under DBTL (including impact of uncompensated cost to OMCs)	282.10	299.10	253.00	303.10
Effective Cost to Consumer after Subsidy	440.90	442.90	476.50	428.40

Contd...

IV.11 Price Build-up of Selected Petroleum Products in Major Cities (Contd...)				
(As on 01.04.2017)				
Market	Delhi	Kolkata	Mumbai	Chennai
(1)	(2)	(3)	(4)	(5)
Superior Kerosene Oil (₹/KL)				
Ex-Storage Price		16302.00	16302.00	16302.00
State Specific Cost		0.00	420.00	869.00
State Specific Cost (BMC)		0.00	60.00	0.00
Past Dues - Surcharge		0.00	0.00	0.00
Siding Charge		0.00	0.00	0.00
Rly/PL/Ocean/Freight		19.37	0.00	0.00
Ass. Value		16321.37	16782.00	17171.00
Excise Duty Rate %		0.00	0.00	0.00
Excise Duty Amount		0.00	0.00	0.00
Other State Levies		0.00	0.00	-4812.00
Sub Total		16321.37	16782.00	12359.00
Entry Tax Amount/Tn Rebate		0.00	0.00	0.00
Octroi At Depot		0.00	0.00	0.00
Sales Tax %		0.00	3.00	5.00
Sales Tax Amount		0.00	503.46	617.95
Surcharge On Sales Tax%		0.00	0.00	0.00
Surcharge On Sales Amt		0.00	0.00	0.00
Sub Total		16321.37	17285.46	12976.95
Cess/Toll Charges/Tot Rate		0.00	0.00	0.00
Cess/Toll Charges/Tot amt		0.00	0.00	0.00
Less State Govt Subsidy		0.00	0.00	0.00
Ex-Mi/ Depot Price/KL-Oil Co.		16321.37	17285.46	12976.95
Ex-Mi/ Depot Price/KL-St. Govt.		16321.37	17285.46	12976.95
Wholesales Margin		787.82	787.82	170.00
Wholesalers Extra Ordinary Margin		0.00	99.00	0.00
Transport Charges		816.60	280.79	119.17
Vat On Wholesale Margin		0.00	37.32	8.50
Toll		0.00	70.00	0.00
Handling Charges		213.21	0.00	0.00
Rounding Up		0.00	6.55	0.00
Wholesales Price/KL		18139.00	18566.94	13274.62
Retailer Margin		1048.30	450.00	360.00
Handling Charges		612.78	0.00	0.00
Leakage And Other Expenses		0.00	0.00	0.00
Retailer Transportation		386.60	0.00	40.00
VAT On Retailer Margin		0.00	13.50	18.00
Retail Extraordinary Commission		0.00	0.00	0.00
Rounding Up		0.00	0.00	0.00
Retail Selling Price/KL		20186.68	19030.44	13692.62
RSP/Ltr		20.19	19.03	13.60

Note : 1. Selling price for Superior Kerosene Oil is for Public Distribution System (PDS)

2. Delhi is declared as Kerosene free city, hence no PDS SKO rate declared.

Source: IOCL

IV.12 Trends in Retail Selling Prices of Selected Petroleum Products in Metropolitan Cities in India

Price as on	Delhi	Kolkata	Mumbai	Chennai
(1)	(2)	(3)	(4)	(5)
Motor Spirit (₹/Litre)				
01.04.2010	47.93	51.67	52.20	52.13
01.04.2011	58.37	62.51	63.08	61.93
01.04.2012	65.64	70.02	70.65	69.55
01.04.2013	68.30	75.78	75.20	71.42
01.04.2014	72.26	80.13	80.89	75.49
01.04.2015	60.49	67.67	68.04	63.26
01.04.2016	59.68	63.76	65.79	59.13
01.04.2017	66.29	68.97	72.66	69.28
High Speed Diesel Oil (₹/Litre)				
01.04.2010	38.10	37.99	39.88	38.05
01.04.2011	37.75	40.06	42.06	40.16
01.04.2012	40.91	43.73	45.27	43.95
01.04.2013	48.63	52.85	54.87	51.77
01.04.2014	55.49	60.11	63.86	59.18
01.04.2015	49.71	54.28	57.02	52.91
01.04.2016	48.33	50.75	55.06	49.09
01.04.2017	55.61	57.86	61.27	58.82
Superior Kerosene Oil (₹/Litre)				
01.04.2009	9.22	9.75	9.10	8.39
01.04.2010	9.32	9.62	9.13	8.41
01.04.2011	9.10	9.75	9.22	8.39
01.04.2012	14.82	14.84	14.38	13.54
01.04.2013	14.96	14.84	14.71	13.69
01.04.2014	14.96	15.25	15.25	13.70
01.04.2015	14.96	16.08	15.24	13.69
01.04.2016	14.96	16.00	15.42	13.70
01.04.2017	-	20.19	19.03	13.60
Liquefied Petroleum Gas (₹/14.2 Kg Cylinder)				
01.04.2009	279.70	327.25	312.05	314.55
01.04.2010	310.35	328.70	313.45	315.95
01.04.2011	345.35	365.10	348.45	352.35
01.04.2012	399.00	405.00	414.00	393.50
01.04.2013	410.50	412.50	437.50	398.00
01.04.2014	414.00	416.00	451.50	401.00
01.04.2015	417.82	419.82	458.07	405.32
01.04.2016	419.13	421.13	455.99	406.63
01.04.2017	440.90	442.90	476.50	428.40

Note : 1. Selling price for Superior Kerosene Oil is for Public Distribution System (PDS)

2. Delhi is declared as Kerosene free city, hence no PDS SKO rate declared.

Source: IOCL

Chapter V

Consumption

CHAPTER I

CHAPTER II

CHAPTER III

CHAPTER IV

CHAPTER V

CHAPTER VI

CHAPTER VII

CHAPTER VIII

CHAPTER IX

CHAPTER X

CHAPTER XI

APPENDIX



Chapter Highlights

- Total consumption of petroleum products in the country during 2016-17 was 193.7 million metric tonnes (MMT) which marked a growth of 4.9% over the consumption of 184.7 MMT during 2015-16.
- Diesel (LDO+HSD) accounted for the highest consumption share (39%) followed by Petrol/Motor Spirit (12%), Petroleum Coke (12%), LPG (11%), Naphtha (7%) and Kerosene (3%).
- The share of public and private sector consumption in 2016-17 stood at 78% and 22% respectively as against 80% and 20% respectively in previous year.
- Highest consumption of LPG in 2016-17 was in domestic distribution sector (88%), naphtha in petrochemical sector (78%), kerosene mainly in domestic PDS (96%) and diesel in reseller/retail sector (86%).
- Highest market share in 2016-17 was captured by IOCL (40%) followed by BPCL (19%) and HPCL (18%). Market share of private companies stood at 22%.

V.1 Product-wise Consumption of Petroleum Products									
(Calendar Year-wise)									
(in '000' Tonnes)									
Products	2010	2011	2012	2013	2014	2015	2016 (P)	% to Total	% Growth
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Light Distillates	40903	43243	45581	47059	49735	55996	61103	31.2	9.12
LPG	14009	15209	15645	15855	17671	19040	21177	10.8	11.22
Motor Spirit	13914	14736	15535	16891	18384	21089	23660	12.1	12.19
Naphtha	10479	11069	11898	11433	10965	12910	13446	6.9	4.15
Others	2502	2229	2504	2879	2716	2958	2821	1.4	-4.61
Middle Distillates	74051	78062	82461	82125	82550	86399	90341	46.1	4.56
SKO	9000	8434	7655	7249	7127	6887	5931	3.0	-13.88
ATF	4932	5465	5318	5449	5678	6095	6806	3.5	11.65
HSDO	59186	63231	68623	68641	69021	72665	76728	39.2	5.59
LDO	439	442	392	384	354	403	458	0.2	13.52
Others	493	490	473	401	370	349	419	0.2	20.01
Heavy Ends	24734	24835	27187	28604	31025	35094	44338	22.6	26.34
Furnace Oil	8890	7942	6548	5853	5464	6031	7399	3.8	22.69
LSHS	2040	1849	1541	582	415	196	113	0.1	-42.40
Lubes/Greases	2434	2579	3087	3180	3421	3366	3570	1.8	6.06
Bitumen/Asphalt	4486	4657	4585	4986	5128	5570	6112	3.1	9.72
Petroleum Coke	5021	5811	9127	11285	13842	17006	23923	12.2	40.67
Wax	256	255	219	180	168	166	230	0.1	38.74
Others	1607	1741	2080	2538	2587	2759	2991	1.5	8.42
Total Consumption	139688	146139	155229	157788	163310	177489	195782	100.0	10.31
Refinery Boiler Fuel and Losses (RBF)	16166	17072	18168	17557	17536	18349	20197	-	4.64
Grand Total	155854	163211	173397	175345	180846	195838	215979	-	8.29

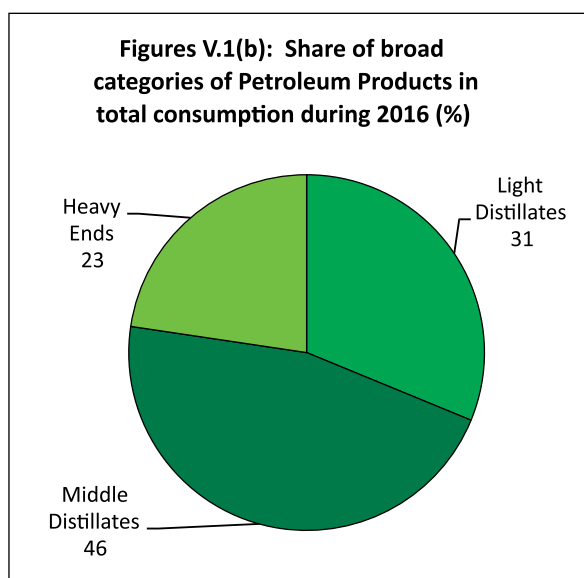
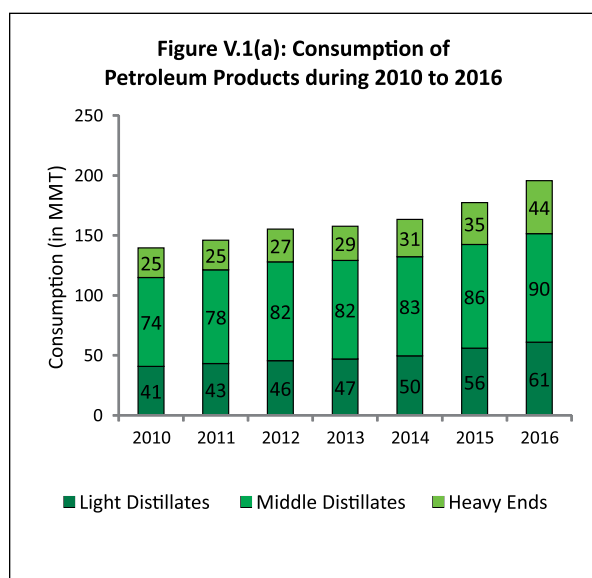
Note:

P:Provisional

1 : Consumption includes sales by oil companies, own consumption & direct private imports.

2 : Growth rate in 2016 over 2015.

Source: Petroleum Planning & Analysis Cell.



V.2 Product-wise Consumption of Petroleum Products

(Financial Year-wise)

(in '000' Tonnes)

Products	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17 (P)	% to Total	% Growth
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Light Distillates	41444	43870	46273	47578	50944	57743	61336	31.66	6.2
LPG	14331	15350	15601	16294	18000	19623	21537	11.12	9.8
Motor Spirit	14194	14992	15744	17128	19075	21847	23765	12.27	8.8
Naphtha	10676	11222	12289	11305	11082	13271	13174	6.80	-0.7
Others	2242	2306	2639	2851	2787	3002	2860	1.48	-4.7
Middle Distillates	75030	79415	82700	81830	82933	88517	89283	46.08	0.9
SKO	8928	8229	7502	7165	7087	6826	5397	2.79	-20.9
ATF	5078	5536	5271	5505	5723	6262	6998	3.61	11.8
HSDO	60071	64750	69080	68364	69416	74647	76015	39.23	1.8
LDO	455	415	399	386	365	407	449	0.23	10.3
Others	497	485	450	411	342	375	424	0.22	13.1
Heavy Ends	24567	24847	28084	28999	31643	38414	43126	22.26	12.3
Furnace Oil (FO)	8807	7547	6290	5787	5584	6482	7077	3.65	9.2
LSHS	1982	1759	1366	449	377	150	104	0.05	-30.7
Fuel Oil (FO+LSHS)	10789	9307	7656	6236	5961	6632	7182	3.71	8.3
Lubes/Greases	2429	2633	3196	3305	3310	3571	3353	1.73	-6.1
Bitumen	4536	4638	4676	5007	5073	5938	5939	3.07	0.0
Petroleum Coke	4982	6138	10135	11756	14557	19297	23254	12.00	20.5
Waxes	254	269	194	177	156	173	261	0.13	50.7
Others	1576	1863	2226	2519	2586	2802	3137	1.62	12.0
Total Consumption	141040	148132	157057	158407	165520	184674	193745	100	4.9
Refinery fuel and losses (RBF)	16381	17295	18347	17868	17669	18773	20070	-	6.25
Grand Total	157422	165427	175404	176274	183189	203447	213814	-	11.06

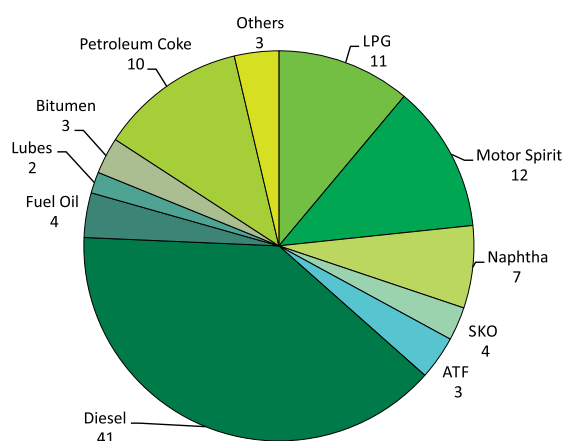
Note:

P:Provisional

1. Consumption includes sales by oil companies, own consumption & direct private imports.

2. Growth rate in 2016-17 over 2015-16.

Figure V.2: Share of different Petroleum Products in total Consumption during 2016-17 (%)



V.3 Product-wise Sale of Petroleum Products by Public & Private Sector

(in '000' Tonnes)

Products	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17 (P)	% Growth
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
A. PUBLIC SECTOR								
LPG	13901	14929	15202	15925	17571	19134	21179	10.7
Motor Spirit	13895	14724	15458	16727	18588	21079	22518	6.8
Naphtha	3704	4139	5197	5414	4814	4790	4898	2.3
SKO	8928	8229	7502	7165	7087	6826	5397	-20.9
ATF	4961	5369	5089	5304	5319	5629	6187	9.9
HSDO	58765	64662	69025	68200	68701	72092	71450	-0.9
LDO	455	415	399	386	365	407	449	10.3
Furnace Oil	7713	6191	5250	4720	4790	5514	5888	6.8
LSHS	1982	1759	1366	449	377	150	121	-19.7
Lubes/Greases	1216	1206	1222	1218	1162	1312	1339	2.1
Bitumen/Asphalt	4067	4322	4372	4500	4366	4819	4721	-2.0
Petroleum Coke	1147	1757	1807	2133	2391	3483	3952	13.5
Paraffin Wax	69	61	54	53	56	58	90	53.4
Others	1691	1770	2156	2083	2029	2241	2712	21.1
Total (A)	122494	129532	134098	134277	137616	147535	150901	2.3
B. PRIVATE SECTOR								
LPG	430	421	398	369	429	489	358	-26.7
Motor Spirit	299	268	286	401	487	768	1247	62.4
Naphtha	6972	7083	7092	5891	6268	8481	8276	-2.4
ATF	117	167	182	201	404	632	811	28.3
HSDO	1306	88	55	164	715	2555	4565	78.6
Furnace Oil	1094	1357	1041	1067	794	968	1173	21.2
Lubes/Greases	1213	1427	1974	2087	2148	2259	2014	-10.9
Bitumen/Asphalt	469	316	304	506	707	1118	1218	8.9
Petroleum Coke	3835	4381	8328	9622	12167	15815	19302	22.0
Paraffin Wax	na	na	140	124	99	115	171	49.3
Others	2811	3093	3159	3697	3685	3938	3709	-5.8
Total (B)	18546	18601	22959	24130	27904	37139	42844	15.4
TOTAL (A+B)	141040	148132.2054	157057.0219	158407	165520	184674	193745	4.9

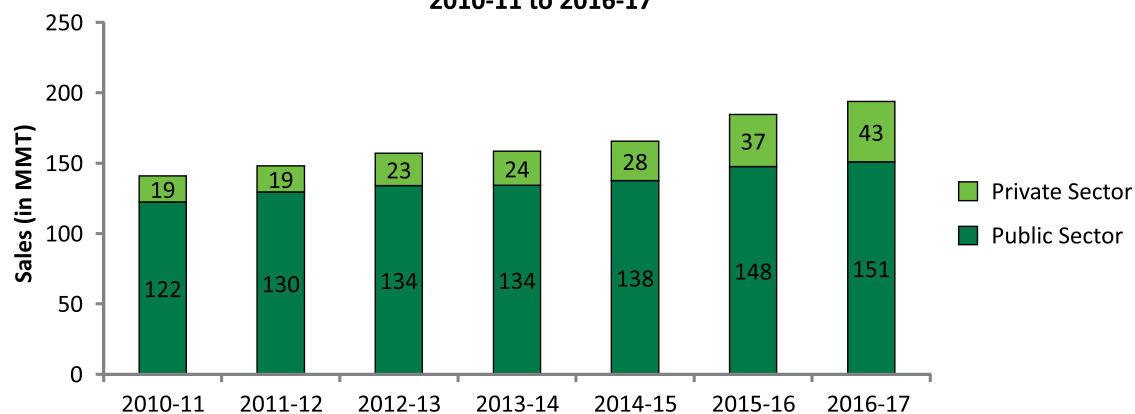
Note: Consumption includes sales by oil companies, own consumption & direct private imports.

na: not available

P: Provisional

Source: Petroleum Planning & Analysis Cell.

Figure V.3: Sale of Petroleum Products by Public & Private Sector during 2010-11 to 2016-17



V.4 Sector-wise Consumption (end use) of Liquefied Petroleum Gas (LPG)

(in '000' Tonnes)

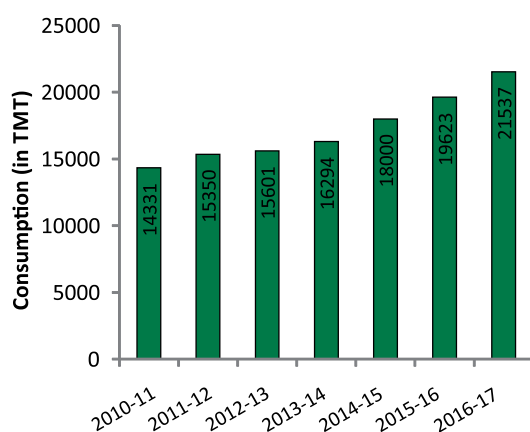
Sector		2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17 (P)
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Domestic Distribution	12368.68	13295.91	13568.03	14411.60	16040.39	17181.72	18871.4
2	Non-Domestic/ Industry/ Commercial	984.88	1068.54	1167.58	1073.60	1050.98	1464.37	1775.9
3	Transport	223.94	223.68	214.78	194.97	164.59	171.83	168.1
(i)	Auto LPG	223.01	222.84	214.00	194.27	163.83	170.91	167.3
(ii)	Railways	0.93	0.84	0.78	0.70	0.76	0.92	0.8
4	Power Generation	0.08	0.00	0.00	2.57	3.08	2.68	2.2
5	Agriculture Sector	2.37	4.76	3.73	3.95	6.09	7.13	7.8
6	Mining	0.00	0.00	0.00	0.00	0.00	0.00	0.0
7	Manufacturing (Bulk LPG)	165.15	186.30	144.78	134.75	207.92	201.66	220.0
(i)	Chemicals	8.34	19.74	11.32	5.42	35.03	5.21	12.4
(ii)	Engineering	0.66	1.19	1.95	1.52	1.80	2.13	2.5
(iii)	Electronics	14.00	11.44	10.36	7.09	4.85	3.86	4.5
(iv)	Mechanical	14.55	23.34	18.57	14.86	13.90	12.38	13.2
(v)	Metallurgical	93.32	97.02	77.95	84.50	125.29	134.09	138.9
(vi)	Textiles	2.78	2.39	2.12	2.87	2.21	2.47	2.3
(vii)	Other Consumer/ Industrial Goods	31.50	31.18	22.51	18.49	24.84	41.51	46.3
8	Resellers/Retail	*	*	58.58	57.77	45.19	44.92	67.0
9	Miscellaneous (Bulk)	156.30	149.67	44.75	45.95	52.68	59.87	66.6
	Total Sales	13901.40	14928.86	15143.65	15867.38	17525.74	19089.26	21179
10	Pvt Imports	430.00	420.84	398.47	368.50	429.17	489.05	358
	Total Consumption	14331.40	15349.70	15600.70	16293.65	18000.10	19623.21	21537.3

*: Included in Miscellaneous

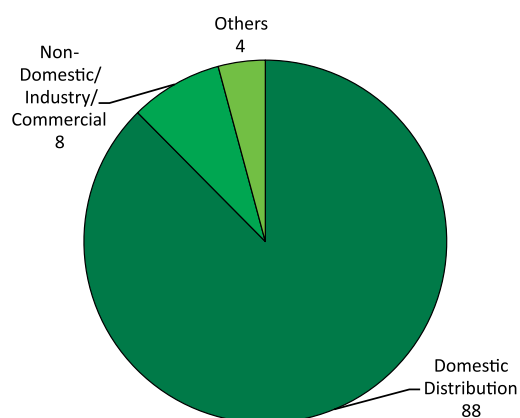
P : Provisional

Source: Petroleum Planning & Analysis Cell.

Figure V.4(a): LPG Consumption during 2010-11 to 2016-17



Figures V.4(b): Sector-wise Consumption of LPG during 2016-17 (%)



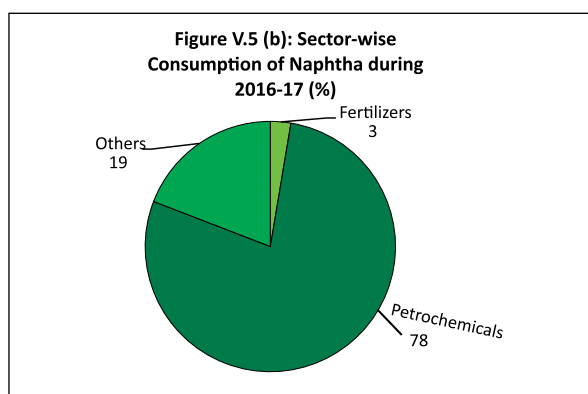
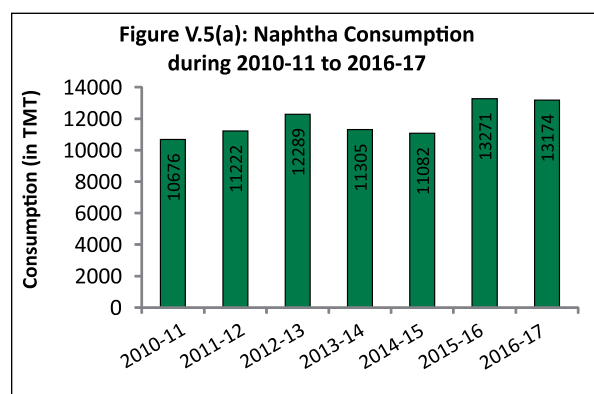
V.5 Sector-wise Consumption (end use) of Naphtha

(in '000' Tonnes)

Sector		2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17 (P)
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Fertilizers Sector	892.22	962.25	897.96	515.90	301.49	315.89	349.35
2	Petrochemicals Sector	7500.00	8140.82	9412.21	9463.94	9530.06	10350.23	10311.66
3	Power Sector	419.33	187.36	342.01	215.11	199.24	50.30	60.20
4	Steel Plants	0.01	0.19	0.00	0.00	0.00	0.00	0.00
5	Others	154.74	163.22	203.07	240.27	207.53	37.07	114.15
	Total Sales	8966.30	9453.84	10855.24	10435.22	10238.32	10753.48	10835.36
6	Pvt Imports	1710.00	1767.66	1434.16	869.98	843.71	2517.36	2338.62
Total Consumption		10676.30	11221.50	12289.40	11305.20	11082.03	13270.84	13173.98

P : Provisional

Source: Petroleum Planning & Analysis Cell.



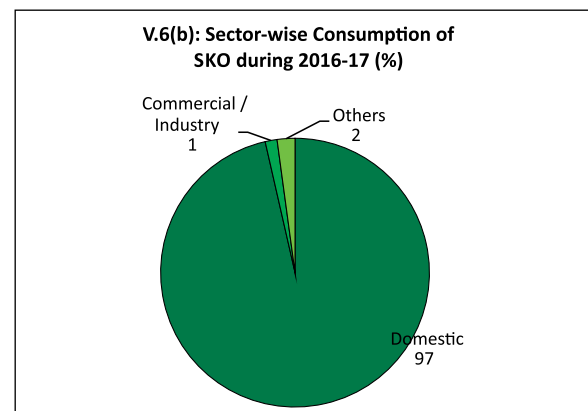
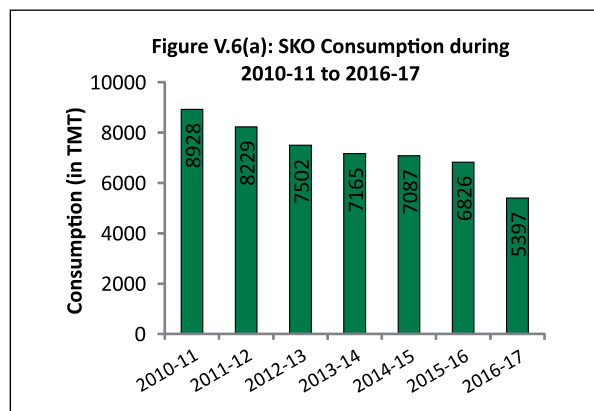
V.6 Sector-wise Consumption (end use) of Kerosene

(in '000' Tonnes)

Sector		2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17 (P)
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)
SKO (Kerosene)								
1	Domestic	8722.00	8045.00	7349.04	7008.86	6917.34	6648.94	5204.12
2	Commercial/Industry	67.00	61.00	37.18	107.30	60.11	63.94	77.11
3	Others	139.00	123.00	115.28	48.61	109.26	113.43	115.58
Grand Total		8928.00	8229.00	7501.50	7164.77	7086.72	6826.31	5396.81

P : Provisional

Source: Petroleum Planning & Analysis Cell.



V.7 Sector-wise Consumption (end use) of High Speed Diesel Oil

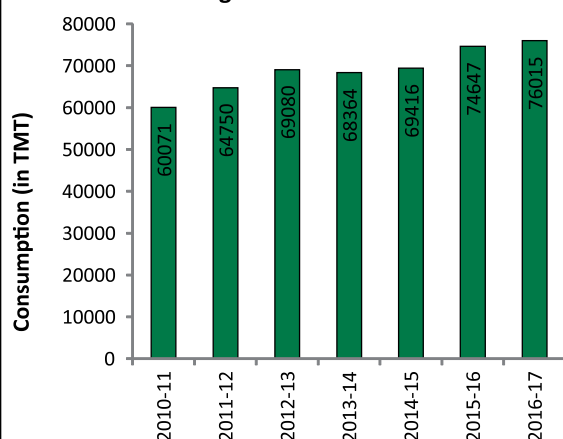
(in '000' Tonnes)

Sector		2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17 (P)
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Transport	5416.64	5528.77	5159.93	3203.10	4617.39	5764.59	5657.64
(i)	Road Transport	2483.41	2558.39	2207.17	205.85	1579.96	2671.28	2708.98
(ii)	Aviation	1.01	1.37	1.36	1.23	1.23	1.26	2.20
(iii)	Shipping	561.34	539.75	413.09	365.21	343.50	366.19	295.82
(iv)	Railways	2370.88	2429.26	2538.31	2630.80	2692.69	2725.85	2650.65
2	Agriculture	615.64	683.59	617.31	429.24	574.93	629.84	607.09
3	Power Generation	165.78	168.20	214.34	204.42	197.23	223.94	208.25
4	Mining & Quarrying	1365.86	1180.72	1073.28	873.12	998.18	1183.75	1223.98
5	Manufacture Industry	1440.04	1649.15	1627.59	686.93	793.77	1095.58	1032.69
(i)	Iron & Steel(Metallurgy)	239.08	290.38	263.03	153.83	162.06	170.44	159.03
(ii)	Textile	187.80	156.23	241.77	46.33	58.78	46.02	35.31
(iii)	Cement	211.56	226.18	213.02	124.68	148.69	203.58	158.74
(iv)	Ceramic & Glass	17.07	20.58	62.09	5.50	8.12	8.48	7.67
(v)	Chemicals & Allied	135.42	153.11	183.20	103.38	103.27	109.50	110.17
(vi)	Aluminium	15.43	20.83	26.37	28.19	19.19	17.76	24.33
(vii)	Civil Engineering	357.37	418.62	316.08	68.32	135.63	298.62	317.15
(viii)	Elec./Electronics	35.16	38.62	54.17	26.48	18.38	24.08	14.90
(ix)	Mechanical	106.08	200.29	137.56	70.08	77.91	137.45	143.68
(x)	Fertilizers	7.62	10.06	8.62	14.83	5.95	6.62	5.61
(xi)	Other Consumer/ Industrial Goods	127.45	114.24	121.67	45.30	55.81	73.02	56.10
6	Resellers/Retail	48703.92	53207.80	58021.31	61464.81	60402.94	63771.88	65089.36
7	Miscellaneous	2170.00	2262.00	2319.63	1425.67	1748.39	1922.10	2161.29
	Total	59877.88	64680.24	69033.39	68287.28	69332.82	74591.68	75980.31
8	Pvt Imports	193.14	69.74	46.66	76.65	83.40	55.40	34.19
	Total Consumption	60071.03	64749.98	69080.05	68363.92	69416.22	74647.07	76014.50

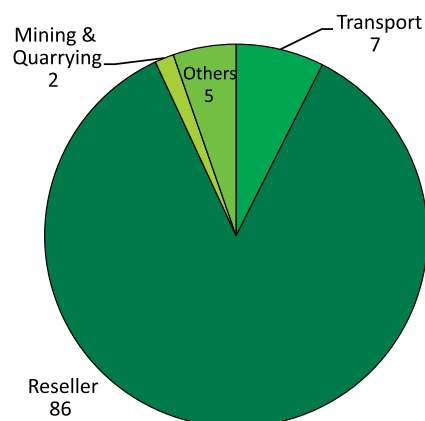
P : Provisional

Source: Petroleum Planning & Analysis Cell.

Figure V.7(a): HSD Consumption during 2010 -11 to 2016-17



V.7(b): Sector-wise Consumption of HSD during 2016-17 (%)



V.8 Sector-wise Consumption (end use) of Light Diesel Oil (LDO)								
(in '000' Tonnes)								
Sector		2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17 (P)
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)
LDO								
1	Transport	4.91	2.54	3.08	3.85	4.95	3.74	7.23
(i)	Road Transport	0.00	0.01	0.02	0.65	2.21	0.21	0.00
(ii)	Shipping	3.79	1.70	2.15	2.43	2.09	2.94	6.67
(iii)	Railways	1.12	0.83	0.90	0.76	0.65	0.59	0.56
2	Agriculture	1.83	1.40	1.32	1.35	1.06	1.26	2.02
3	Power Generation	136.94	126.66	142.36	131.77	132.18	154.21	174.35
4	Mining & Quarrying	2.75	2.32	2.43	3.44	3.80	2.23	2.30
5	Manufacture Industry	127.09	101.53	73.97	63.66	54.63	60.75	59.49
(i)	Civil Engineering	9.47	9.15	2.83	4.21	4.59	10.27	20.16
(ii)	Metallurgical	71.07	61.04	46.70	40.71	30.10	26.84	19.31
(iii)	Textile & Fibre	1.47	1.04	0.92	1.53	1.08	1.08	1.36
(iv)	Cement	2.12	0.00	1.23	0.00	1.19	1.25	1.67
(v)	Ceramic & Glass	0.00	0.02	0.00	0.01	0.01	0.04	0.13
(vi)	Chemicals & Allied	16.73	11.73	10.95	10.94	9.02	12.04	8.93
(vii)	Aluminium	6.70	4.84	3.04	3.75	6.91	3	4
(viii)	Elec./Electronics	0.24	0.09	0.08	0.05	0.00	0.24	0.07
(ix)	Mechanical	16.51	12.64	6.96	1.32	0.69	4.06	2.14
(x)	Other Consumer/ Industrial Goods	2.77	0.98	1.26	1.14	1.05	1.60	1.81
6	Resellers	*	*	0.76	0.69	3.81	1.11	1.04
7	Miscellaneous	181.52	180.34	174.64	181.56	164.83	183.77	202.54
	Total Sales	455.05	414.78	398.54	386.32	365.26	407.06	448.97
8	Pvt Imports	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total Consumption	455.05	414.78	398.54	386.32	365.26	407.06	448.97

*: Included in Miscellaneous

P : Provisional

Source: Petroleum Planning & Analysis Cell.

Figure V.8(a): LDO Consumption during 2010-11 to 2016-17

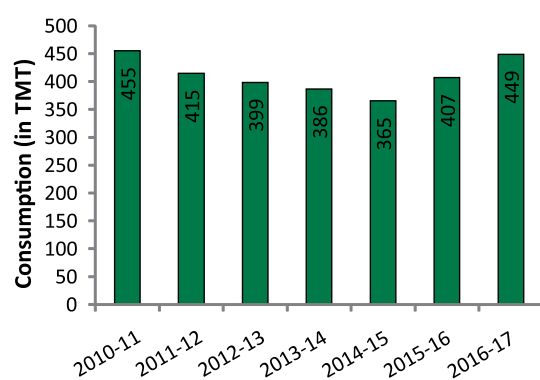
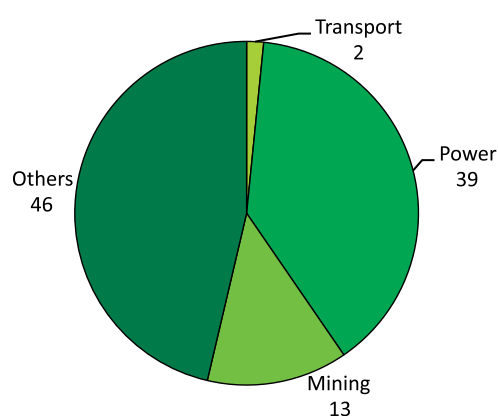


Figure V.8(b): Sector-wise consumption of LDO during 2016-17 (%)



V.9 Sector-wise Consumption (end use) of Furnace Oil

(in '000' Tonnes)

Sector		2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17 (P)
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Transport	780.13	370.96	276.66	315.34	346.45	379.50	444.15
(i)	Road Transport	0.09	0.67	1.35	6.15	10.17	44.97	36.96
(ii)	Shipping	776.15	366.92	272.70	306.74	334.48	332.63	407.17
(iii)	Railways	3.89	3.38	2.60	2.45	1.80	1.90	0.02
(iv)	Other Transport (incl. Agri. Retail Trade)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	Agriculture	70.40	70.37	79.16	74.53	55.62	56.62	51.41
3	Power Generation	822.78	646.56	586.79	535.68	445.77	430.36	360.95
4	Mining & Quarrying	7.23	45.24	12.45	38.48	45.10	52.66	71.45
5	Manufacturing Industry	2773.48	2408.31	2018.99	1833.32	1748.42	2136.47	2491.75
(i)	Civil Engineering	62.59	79.32	59.03	55.87	32.78	47.85	49.63
(ii)	Metallurgical	1100.26	710.29	602.91	549.88	611.38	763.95	1240.00
(iii)	Textile & Fibre	80.76	52.11	37.99	57.75	69.87	68.36	74.12
(iv)	Cement	74.79	39.43	27.78	13.08	12.73	14.66	11.99
(v)	Ceramic & Glass	236.83	221.54	145.67	123.25	87.91	142.72	171.04
(vi)	Chemicals & Allied	310.67	287.42	221.83	201.29	165.86	193.13	238.88
(vii)	Aluminium	0.00	219.56	233.09	231.61	232.26	218.48	0.00
(viii)	Electrical	6.55	13.10	30.35	7.30	1.65	1.32	1.62
(ix)	Mechanical	55.05	38.04	21.95	15.24	10.92	16.35	16.63
(x)	Fertilizers	479.02	458.13	475.21	408.08	393.28	476.45	487.71
(xi)	Other Consumer/ Industrial Goods)	366.96	289.38	163.17	169.99	129.78	193.19	200.11
6	Resellers	*	*	351.28	309.09	196.87	270.18	357.27
7	Miscellaneous	3978.85	3300.14	2356.88	1984.69	2175.37	2564.00	2485.35
	Total Sales	8432.88	6841.58	5682.21	5091.14	5013.60	5889.81	6262.32
8	Pvt Imports	374.00	706.04	608.29	695.81	570.04	592.12	815.01
	Total Consumption	8806.88	7547.62	6290.50	5786.95	5583.638	6481.93	7077.33

*: Included in Miscellaneous

P: Provisional

Source: Petroleum Planning & Analysis Cell.

Figure V.9(a): Furnace Oil Consumption during 2010-11 to 2016-17

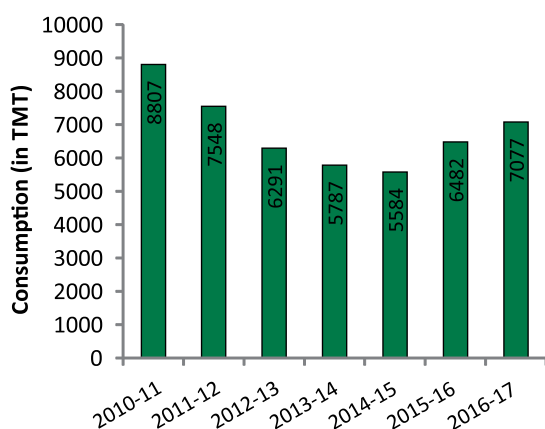
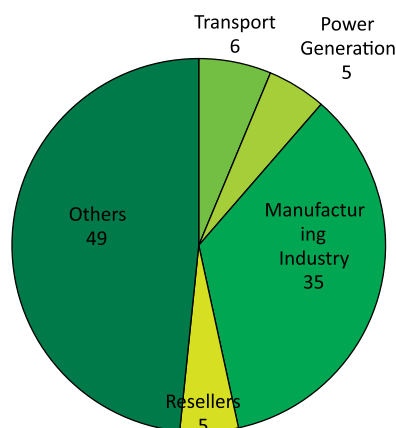


Figure V.9(b): Sector-wise consumption of Furnace Oil during 2016-17(%)



V.10 Sector-wise Consumption (end use) of LSHS/HHS

(in '000' Tonnes)

Sector		2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17 (P)
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Agriculture	0.29	0.17	0.00	0.00	0.00	0.00	0.00
2	Power Generation	468.57	399.19	438.98	328.14	226.18	50.70	16.43
3	Mining	0.22	0.92	0.00	0.00	0.00	0.00	0.00
4	Manufacturing Industry	1031.16	1066.99	778.01	76.32	103.59	70.45	50.88
(i)	Civil Engineering	0.33	0.37	0.25	0.00	0.00	0.00	0.00
(ii)	Metallurgical	32.03	26.66	9.86	0.71	0.00	0.00	0.00
(iii)	Iron & Steel	40.03	56.87	52.22	58.06	55.32	46.27	45.91
(iv)	Textile & Fibre	0.34	0.11	0.31	0.00	0.00	0.00	0.00
(v)	Cement	2.79	0.75	0.61	0.04	0.00	0.20	0.00
(vi)	Chemicals & Allied	22.33	11.82	6.01	2.80	46.62	20.72	3.71
(vii)	Electrical	105.90	76.14	20.50	0.00	0.00	0.00	0.00
(viii)	Mechanical	2.38	2.19	1.58	0.05	0.05	0.00	0.00
(ix)	Fertilizers	820.13	889.51	684.93	14.66	1.60	3.27	1.27
(x)	Other Consumer/ Industrial Goods)	4.90	2.58	1.75	0.00	0.00	0.00	0.00
5	Miscellaneous	482.17	291.87	149.00	44.25	47.50	29.23	36.91
	Total Sales	1982.41	1759.14	1365.99	448.71	377.26	150.38	104.23
6	Pvt Imports	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total Consumption	1982.41	1759.14	1365.99	448.71	377.26	150.38	104.23

P : Provisional

Source: Petroleum Planning & Analysis Cell.

Figure V.10(a): LSHS/HHS Consumption during 2010-11 to 2016-17

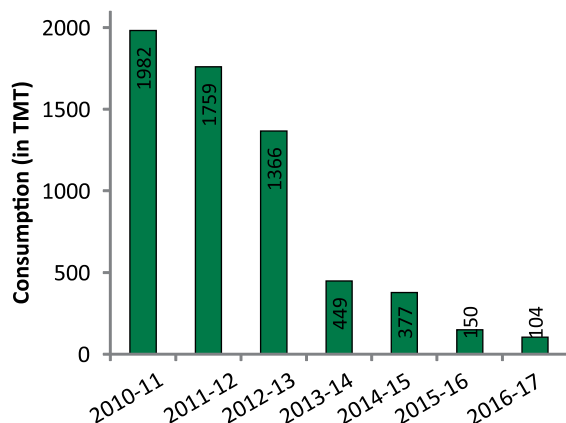
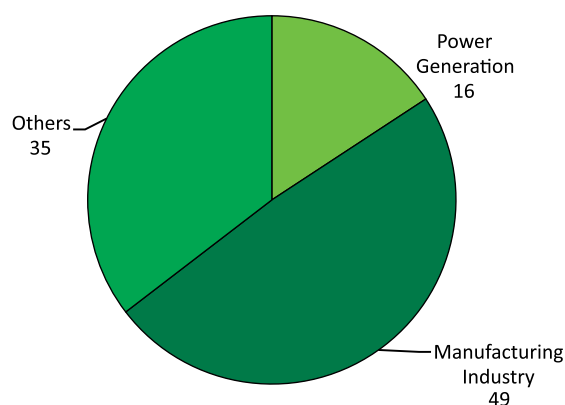


Figure V.10(b): Sector-wise Consumption of LSHS/HHS during 2016-17(%)



V.11 Consumption of Petroleum Products and Market Share of Oil Companies in India

(in '000' Tonnes)							
Year	Consumption	IOCL	BPCL	HPCL	Others	Private	TOTAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
2010-11	in TMT in %	66727 47.3	28461 20.2	25578 18.1	1728 1.2	18546 13.1	141040 100.0
2011-12	in TMT in %	70084 47.3	30228 20.4	27581 18.6	1639 1.1	18601 12.6	148132 100.0
2012-13	in TMT in %	71249 45.4	32232 20.5	28862 18.4	1755 1.1	22959 14.6	157057 100.0
2013-14	in TMT in %	69873 44.1	32776 20.7	30048 19.0	1581 1.0	24130 15.2	158407 100.0
2014-15	in TMT in %	71653 43.3	33394 20.2	30746 18.6	1824 1.1	27904 16.9	165520 100.0
2015-16	in TMT in %	75946 41.1	35514 19.2	33585 18.2	2490 1.3	37139 20.1	184674 100.0
2016-17 (P)	in TMT in %	77324 39.9	36376 18.8	34441 17.8	2759 1.4	42844 22.1	193745 100.0

Note:

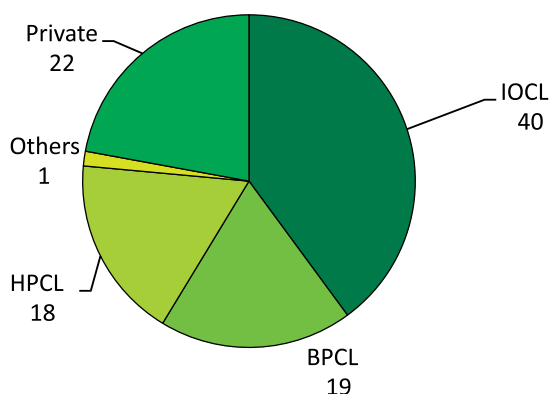
P: Provisional

1. Others companies include CPCL, GAIL, MRPL, NRL & ONGC

2. Private includes sales by private oil companies, own consumption & direct private imports

Source: Petroleum Planning & Analysis Cell.

Figure V.11: Market share of oil companies in India during 2016-17(%)



V.12 Deliveries made to International/Coastal Bunkers

(in '000' Tonnes)							
Items	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17 (P)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
INTERNATIONAL BUNKERS							
F.O	914.1	874.8	691.1	304.9	398.9	436.8	528.8
H.S.D	48.6	26.5	25.0	28.5	32.4	35.0	40.8
L.D.O	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	962.7	901.3	716.1	333.4	431.3	471.8	569.6
COASTAL BUNKERS							
F.O	181.3	172.2	165.9	201.9	202.4	232.8	227.5
H.S.D	638.6	770.5	810.4	778.1	763.3	727.8	674.8
L.D.O	4.5	2.8	1.8	2.3	1.9	2.6	7.3
TOTAL	824.4	945.5	978.1	982.3	967.6	963.2	909.6
TOTAL BUNKERS							
F.O	1095.4	1047.0	857.0	506.8	601.3	669.6	756.3
H.S.D	687.2	797.0	835.4	806.6	795.7	762.8	715.6
L.D.O	4.5	2.8	1.8	2.3	1.9	2.6	7.3
TOTAL	1787.1	1846.8	1694.2	1315.7	1398.9	1435.0	1479.2

Note: Figures reconciled for previous year from 2010-11.

P: Provisional

Source: Petroleum Planning & Analysis Cell.

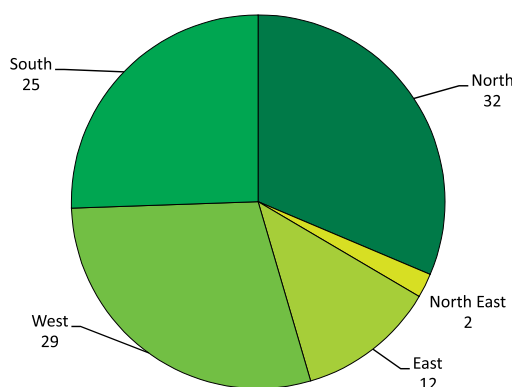
V.13 State-wise Sales of Major Petroleum Products during 2016-17 (P)

(in '000' Tonnes)													
Region/State	Naphtha	LPG	MS	SKO	ATF	HSD	LDO	F.O	HHS/LSHS	Lubs/Gr	Bitumen	Others	Total
Region: North													
Jammu & Kashmir	0	172	210	136	44	585	1	4	0	10	31	66	1259
Punjab	0	824	806	51	106	3348	6	217	0	43	215	729	6346
Rajasthan	0	1108	1298	279	151	5212	20	178	0	43	220	2475	10984
Uttar Pradesh	1	2703	2423	915	190	7706	51	327	0	72	644	897	15930
Haryana	3459	675	873	31	40	4952	8	166	0	47	127	342	10721
Himachal Pradesh	0	142	183	18	7	586	0	38	0	31	63	640	1707
Uttarakhand	0	250	264	28	9	722	0	85	0	20	51	57	1486
Chandigarh	0	52	97	0	28	102	1	12	0	2	4	90	388
Delhi	0	798	906	1	1726	1267	0	81	0	16	6	80	4882
North Total	3460	6724	7060	1459	2301	24481	88	1107	0	284	1361	5377	53702
Region: North East													
Arunachal Pradesh	0	18	35	13	1	132	0	0	0	1	24	0	225
Assam	51	325	308	225	146	861	4	3	0	23	23	266	2235
Manipur	0	24	42	12	3	80	0	0	0	0	2	0	163
Meghalaya	0	19	73	18	0	299	0	1	0	1	12	5	428
Mizoram	0	22	25	5	1	61	0	0	0	0	3	0	117
Nagaland	0	20	34	7	3	64	0	0	0	0	3	0	132
Tripura	0	38	41	27	4	90	0	0	0	1	13	0	215
Sikkim	0	13	17	10	0	61	0	1	0	0	3	0	104
North East Total	51	478	575	317	159	1649	4	5	0	27	83	272	3620
Region: East													
Bihar	0	944	610	549	26	2184	21	19	0	13	219	174	4758
Odisha	0	477	615	220	62	2331	18	764	0	24	156	510	5177
West Bengal	450	1427	726	617	342	3096	63	394	0	69	208	114	7505
Jharkhand	0	250	375	171	33	1633	18	144	0	32	218	47	2921
Andaman & Nicobar	0	9	15	4	24	127	0	0	0	1	6	0	186
East Total	450	3107	2341	1560	486	9371	120	1320	0	140	807	846	20547
Region: West													
Goa	0	63	162	2	138	344	0	42	0	4	21	4	780
Gujarat	5879	971	1666	387	231	4994	24	776	1	99	461	3499	18988
Madhya Pradesh	0	839	1109	334	78	3212	13	110	0	38	277	954	6962
Maharashtra	401	2635	3025	413	1466	8071	98	858	27	307	500	1537	19337
Chhattisgarh	0	232	453	95	32	1495	27	177	0	19	142	238	2910
Dadra&Nagar Haveli	0	17	20	1	0	207	0	103	0	86	2	3	438
Daman & Diu	0	10	21	0	1	102	0	26	0	53	1	5	220
West Total	6281	4766	6455	1232	1945	18425	163	2092	27	605	1404	6240	49635
Region: South													
Andhra Pradesh	29	1014	945	151	76	3467	21	236	50	30	235	330	6585
Kerala	0	852	1238	80	426	2537	0	306	10	43	173	60	5724
Tamilnadu	249	1910	2255	282	475	6468	4	699	4	115	450	373	13284
Karnataka	316	1449	1799	206	479	5937	30	358	5	54	238	590	11459
Telangana	0	837	977	105	312	3295	19	112	6	40	243	189	6133
Lakshadweep	0	0	0	1	0	13	0	0	0	0	0	0	14
Puducherry	0	41	120	3	0	338	0	28	2	2	4	4	543
South Total	594	6104	7333	828	1767	22054	75	1739	77	283	1343	1546	43742
Total	10835	21179	23765	5397	6658	75980	449	6262	104	1339	4998	14280	171247
Pvt. Imports	2339	358	0	0	338	34	0	815	0	2014	941	15660	22498
Total Consumption	13174	21537	23765	5397	6995	76014	449	7077	104	3353	5939	29939	193745

Source: Petroleum Planning and Analysis Cell.

P: Provisional

Figure V.12: Region-wise Consumption of Petroleum Products in India during 2016-17 (%)



V.14 State-wise Per Capita Sales of Petroleum Products

(Unit: Kg)

State/UT	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17 (P)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Andhra Pradesh	116.6	124.5	129.5	126.3	127.0	125.2	133.3
Andaman & Nicobar	290.6	352.2	360.1	437.6	451.8	473.0	489.5
Arunachal Pradesh	110.8	104.9	114.5	123.8	128.5	144.5	162.7
Assam	56.8	56.7	54.1	60.3	61.1	68.0	71.7
Bihar	37.2	35.9	36.4	38.3	39.6	44.6	45.8
Chandigarh	231.7	291.5	259.1	335.9	384.1	417.4	367.9
Chhattisgarh	79.6	77.5	88.3	94.9	100.1	112.5	113.9
Dadra & Nagar Haveli	1332.3	832.1	706.4	870.3	1097.9	1198.5	1278.4
Daman & Diu	-	473.4	531.8	598.0	647.2	745.5	904.2
Delhi	227.5	256.3	247.1	256.1	269.6	298.3	291.4
Goa	631.9	724.9	659.9	446.5	470.8	500.7	534.8
Gujarat	275.8	270.1	285.3	282.0	291.9	314.3	314.5
Haryana	338.6	362.3	380.6	393.2	417.5	424.9	422.9
Himachal Pradesh	145.8	154.4	184.6	189.5	181.8	226.0	249.0
Jammu and Kashmir	96.1	96.1	98.2	98.3	95.7	106.9	100.3
Jharkhand	69.2	68.7	73.5	76.0	79.7	84.0	88.6
Karnataka	131.6	132.1	139.1	146.1	156.7	180.8	187.5
Kerala	143.1	147.9	158.4	158.5	161.4	166.3	171.5
Lakshadweep	*	219.2	198.1	206.0	228.9	232.7	213.8
Madhya Pradesh	70.9	71.6	80.4	83.6	88.6	96.5	95.9
Maharashtra	147.7	152.1	154.7	149.2	150.6	162.2	172.1
Manipur	42.5	49.4	57.4	60.3	63.7	66.0	59.9
Meghalaya	151.7	154.3	159.3	158.1	142.5	141.3	144.4
Mizoram	89.6	92.5	97.5	94.7	98.5	103.7	107.5
Nagaland	49.5	58.7	59.5	60.8	60.7	64.3	66.8
Odisha	81.2	79.9	81.5	87.6	93.6	106.4	123.4
Puducherry	419.2	441.0	414.6	362.1	369.0	418.5	436.0
Punjab	203.7	206.1	202.4	198.0	206.2	215.2	229.1
Rajasthan	108.2	126.3	147.0	154.9	158.5	163.5	160.1
Sikkim	160.3	154.6	149.9	156.8	152.9	164.9	171.7
Tamil Nadu	177.8	175.2	187.1	174.4	169.3	176.0	184.1
Telangana	-	-	-	-	136.5	161.7	173.8
Tripura	51.5	51.5	49.5	49.3	51.8	57.8	58.5
Uttar Pradesh	58.8	59.7	61.1	62.6	66.9	75.2	79.8
Uttarakhand	124.7	123.2	120.5	119.6	128.8	150.2	146.9
West Bengal	67.4	64.9	70.5	74.4	70.6	78.7	82.2
All India	115.8	116.3	122.0	122.8	126.6	136.9	141.5

P: Provisional

*:Included in Andaman & Nicobar

Source: Petroleum Planning and Analysis Cell.

V.15 Per Capita Sales of Selected Petroleum Products

(Unit: Kg)							
State/UT	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17 (P)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Naphtha	7.7	7.8	9.0	8.6	8.5	8.9	9.0
MS	12.2	12.4	13.0	14.2	15.8	18.1	19.6
SKO	7.7	6.8	6.2	5.9	5.9	5.6	4.5
HSDO	51.6	53.4	57.0	56.4	57.3	61.6	62.8
LDO	0.4	0.3	0.3	0.3	0.3	0.3	0.4
F.O (Regular)	7.3	5.7	4.7	4.2	4.1	4.9	5.2
LSHS/HHS	1.7	1.5	1.1	0.4	0.3	0.1	0.1
Total All India Sales	115.8	116.3	122.0	122.8	126.6	136.9	141.5

Note:

P : Provisional

1 : Population figures have been taken from Census of India, 2011

2 : Includes private sales by oil companies and excludes direct private imports.

Source: Petroleum Planning and Analysis Cell.

V.16 Average Compound Annual Growth Rates (CAGR) of Consumption of Petroleum Products

(in Percentage)							
Product	XI Plan	XII Plan	Annual	Annual	Annual	Annual	Annual
	2007-12	2012-17	2012-13	2013-14	2014-15	2015-16	2016-17 (P)
	(CAGR)	(CAGR)	(% Gr.)	(% Gr.)	(% Gr.)	(% Gr.)	(% Gr.)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
LPG	7.2	7.0	1.6	4.4	10.5	9.0	9.8
MS	10.1	9.7	5.0	8.8	11.4	14.5	8.8
Naphtha	-4.2	3.4	9.5	-8.0	-2.0	19.8	0.7
ATF	6.8	4.9	-4.8	4.4	4.0	9.4	11.8
SKO	-2.8	-8.1	-8.8	-4.5	-1.1	-3.7	-20.9
HSD	8.6	3.3	6.7	-1.0	1.5	7.5	1.8
LDO	-10.4	1.6	-3.9	-3.1	-5.4	11.5	10.3
Lubes	6.7	5.3	21.4	3.4	0.1	7.9	-6.1
FO/LSHS	-5.9	-5.0	-17.7	-18.6	-4.4	11.3	8.3
Bitumen	3.9	4.9	0.8	7.1	1.3	17.1	0.0
Others	-	22.3	41.4	13.2	15.3	25.6	16.7
Total Sales	4.2	5.6	6.0	0.9	4.5	11.6	4.9

Note: Growth rates are based on consumption including private parties imports .

P: Provisional

Source: Petroleum Planning & Analysis Cell.

V.17 Major End uses of Petroleum Products

Products	Major End-use
LPG	Domestic fuel. Also for Industrial application where technically essential. Now permitted as auto fuel.
NAPHTHA / NGL	Feedstock/ fuel for Fertilizer Units, feedstock for petro-chemical sector and fuel for Power Plants.
MS (Petrol)	Fuel for passenger cars, taxies, two & three wheelers
ATF	Fuel for aircrafts.
SKO (Kerosene)	Fuel for cooking & lighting.
HSD (Diesel)	Fuel for transport sector (Railways/Road), agriculture (tractors pump sets, threshers, etc.) and captive power generation.
LDO	Fuel for agricultural pump sets, small industrial units, start up fuel for power generation
FO/LSHS	Secondary fuel for Thermal Power Plants, Fuel/feedstock for fertilizer plants, industrial units.
BITUMEN	Surfacing of roads.
LUBES	Lubrication for automotive and industrial applications
PETROLEUM COKE	Fuel grade Petcoke is used as fuel for cement kilns and electric power plants, Calcined Petcoke is used to manufacture energy as well as in the aluminium, graphite electrode, steel, titanium dioxide and other carbon consuming industries.
OTHER MINOR PRODUCTS (Benzenes, Toluene, MTO, LABFS, CBFS, Paraffin Wax, etc.)	Feedstock for value added products.

Chapter VI

Trade

CHAPTER I

CHAPTER II

CHAPTER III

CHAPTER IV

CHAPTER V

CHAPTER VI

CHAPTER VII

CHAPTER VIII

CHAPTER IX

CHAPTER X

CHAPTER XI

APPENDIX



Chapter Highlights

- India's import bill on import of Crude Oil, LNG, and Petroleum Products increased by 10.40% in value terms from ₹ 526978 crore in 2015-16 to ₹ 581792 crore in 2016-17. Increase in import quantity of crude oil, LNG and petroleum products has been around 7.86% from 248.45 MMT in 2015-16 to 267.98 during 2016-17.
- Import of crude oil in the country during 2016-17 was 213.93 million metric tonnes (MMT) which marked a growth of 5.46% over the imports of crude oil of 202.850 MMT during 2015-16. However, the increase was 12.88% in value terms over the same period.
- Availability of Petroleum Products has increased by 6.51% from 200.84 MMT in 2015-16 to 213.45 MMT in 2016-17.
- India's trade deficit was lower by 6.31% at ₹ 725082 crore in 2016-17 from ₹ 773920 crore during 2015-16.
- India's trade deficit with OPEC Countries has increased by 34% from ₹ 285489 crore in 2015-16 to ₹ 382829 crore in 2016-17.
- Percentage of India's OPEC imports to India's total imports has reduced from 23.6% in 2015-16 to 27.6% in 2016-17.
- Import dependency in India during 2016-17 is 81.68%.
- Foreign Direct Investment inflow was received in oil & gas sector was ₹ 1197.06 crore contributing almost 0.41% of total FDI inflow in the economy during 2016-17.

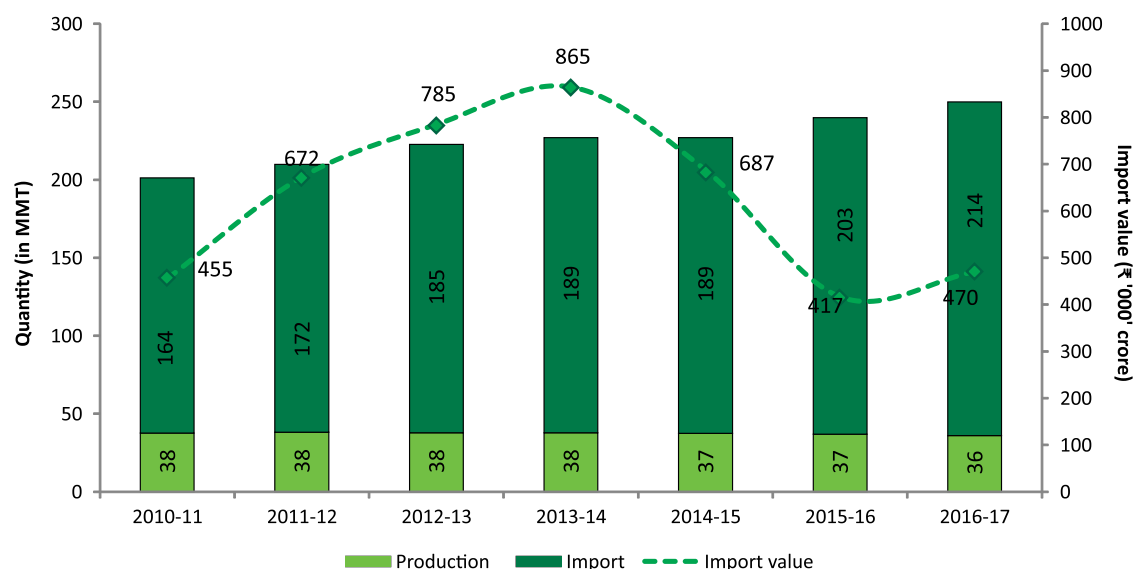
VI.1 Import/Export of Crude Oil, LNG and Petroleum Products

Year	Crude Oil		Petroleum Products		LNG		Total	
	Qty.	Value	Qty.	Value	Qty.	Value	Qty.	Value
	TMT	₹ Crore	TMT	₹ Crore	TMT	₹ Crore	TMT	₹ Crore
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Gross Imports								
2010-11	163595	455276	17379	55998	9931	14362	190906	525637
2011-12	171729	672220	15849	68091	13214	31718	200793	772029
2012-13	184795	784652	16354	68852	13136	41902	214285	895406
2013-14	189238	864875	16697	75896	12995	53123	218930	993894
2014-15	189435	687416	21301	74644	14092	57384	224828	819445
2015-16	202850	416579	29456	65361	16142	45038	248448	526978
2016-17 (P)	213932	470251	35413	70727	18631	40813	267976	581792
Exports								
2010-11	-	-	59077	196861	-	-	59077	196861
2011-12	-	-	60837	284644	-	-	60837	284644
2012-13	-	-	63408	320090	-	-	63408	320090
2013-14	-	-	67864	368279	-	-	67864	368279
2014-15	-	-	63932	288580	-	-	63932	288580
2015-16	-	-	60539	176780	-	-	60539	176780
2016-17 (P)	-	-	65513	194893	-	-	65513	194893
Net Imports								
2010-11	163595	455276	-41698	-140862	9931	14362	131829	328776
2011-12	171729	672220	-44988	-216553	13214	31718	139956	487384
2012-13	184795	784652	-47054	-251238	13136	41902	150877	575317
2013-14	189238	864875	-51167	-292383	12995	53123	151066	625615
2014-15	189435	687416	-42631	-213936	14092	57384	160896	530865
2015-16	202850	416579	-31083	-111419	16142	45038	187910	350198
2016-17 (P)	213932	470251	-30099	-124165	18631	40813	202463	386899

P: Provisional

Source: Petroleum Planning & Analysis Cell.

Figure VI.1: Production, Import and Import value of Crude Oil



VI.2 Availability of Crude Oil and Petroleum Products

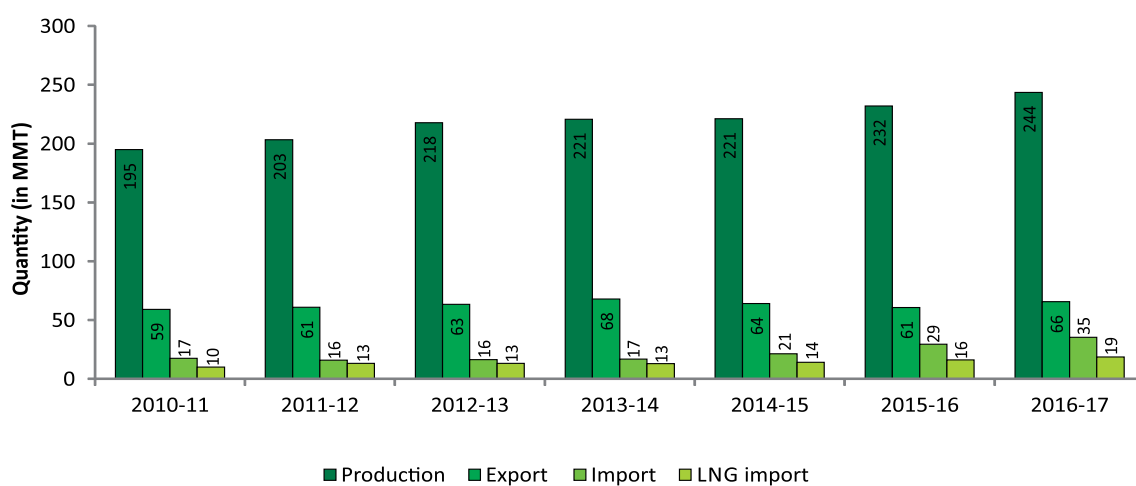
(in TMT)

Items	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17 (P)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
A. Crude Oil							
Production	37684	38090	37862	37788	37461	36942	36009
Imports	163595	171729	184795	189238	189435	202850	213932
Availability	201279	209819	222657	227027	226896	239792	249941
B. Petroleum Products							
Production	194821	203202	217736	220756	221136	231923	243551
Net Imports	-41698	-44988	-47054	-51167	-42631	-31083	-30100
Availability	153123	158214	170683	169589	178505	200840	213451

P: Provisional

Note: Excluding LNG imports.

Figure VI.2: Production, Export & Import of Petroleum Products and LNG



VI.3 Import / Export of Crude Oil and Petroleum Products

(Calendar Year-wise)

ITEM (1)	2011			2012			2013			2014			2015			2016 (P)		
	Qty.		Value	Qty.		Value	Qty.		Value	Qty.		Value	Qty.		Value	Qty.		Value
	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
Imports																		
Crude Oil Import	167813	613677	184173	783418	189351	845591	188772	798637	196490	446469	215376	415672						
Product Import																		
LPG	5535	23814	6556	33266	6016	32802	8050	41177	8901	27110	10143	25986						
MS/ Petrol	954	4632	147	891	235	1481	328	2115	984	4157	549	1854						
Naphtha/ NGL	2137	9720	1861	9731	1177	6789	623	3665	2797	9624	2857	8107						
Aviation Turbine Fuel	0	0	0	0	0	0	90	513	273	919	333	1009						
SKO/ Kerosene	905	4179	0	0	0	0	30	172	41	158	0	0						
HSD/ Diesel	1390	6330	783	4029	81	453	108	637	72	406	963	2650						
LOBS/ Lube oil	1401	7284	1885	10892	1927	11664	2329	14514	2086	9480	2163	8208						
Fuel Oil/LSHS	1150	3866	972	3939	1332	5622	1049	4546	948	2422	1167	2021						
Bitumen	60	142	100	263	171	528	433	1506	856	1979	891	1445						
Others ¹	2992	7688	4172	7898	4826	10308	7092	12206	10012	10664	16314	12086						
Product Import	16524	67655	16477	70909	15765	69648	20131	81050	26971	66918	35379	63366						
Total Import	184337	681331	200649	854328	205116	916239	208903	879687	223461	513387	250755	479039						
Product Export																		
LPG	165	856	195	1231	213	1393	239	1640	217	918	291	1023						
MS/ Petrol	14011	67059	16098	91260	15874	95263	15942	91334	15893	59681	16150	51224						
Naphtha/ NGL	10609	45544	9035	44765	8496	45965	7397	38299	6708	20160	8417	21683						
Aviation Turbine Fuel	5223	23996	4153	22225	5716	32482	5300	28108	5253	16792	7489	20813						
SKO/ Kerosene	33	176	29	173	16	98	14	90	12	50	15	48						
HSD/ Diesel	21430	102486	21294	111708	25997	142665	25756	130712	23160	71693	27892	73678						
LDO	89	328	26	115	22	102	14	63	0	0	20	52						
LOBS/ Lube Oil	30	167	75	470	19	150	12	93	19	130	13	110						
Fuel Oil/LSHS	7937	23768	6480	22583	6281	22573	5187	17378	3154	5592	2439	3786						
Bitumen	18	59	65	215	108	363	74	216	107	206	57	52						
Others ²	2897	10847	4097	16062	5953	23259	4402	19801	4087	10655	3158	7460						
Total Product Export	62440	275285	61548	310805	68696	364314	64337	327734	58611	185878	65941	179930						
Net Import	121897	406046	139102	543522	136419	551925	144566	551953	164850	327509	184814	299109						

1: Other imports include Pet coke, Paraffin Wax, Petroleum Jelly, LSWR, Aviation Gas, MTBE & Reformate.

2: Other exports include VGO, Benzene, MTO, Pet coke, CBFS & Sulphur.

Source: Petroleum Planning & Analysis Cell.

P: Provisional

VI.4 Import / Export of Crude Oil and Petroleum Products

(in TMT)

Import/Export	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17(P)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Imports							
Crude Oil Import	163595	171729	184795	189238	189435	202850	213932
Product Import							
LPG	4484	5790	6301	6567	8313	8959	11026
Petrol	1702	654	147	235	372	1012	476
Naphtha	2063	2091	1762	1020	1034	2931	2693
Aviation Turbine Fuel (ATF)	0	0	0	0	140	286	338
Kerosene	1381	564	0	0	30	41	0
Diesel	1996	1059	528	77	124	177	996
Lubes	1291	1434	1977	2090	2148	2264	2014
Fuel Oil	1013	1203	1038	1331	902	1170	956
Bitumen	98	78	102	246	517	879	955
Others ¹	3352	2977	4501	5130	7722	11735	15961
Total Product Import	17379	15849	16354	16697	21301	29456	35413
Total Import	180974	187579	201149	205935	210736	232306	249345
Product Export							
LPG	154	174	200	227	254	195	317
Petrol	13578	14524	16657	15247	16048	16817	15417
Naphtha	10655	10139	8647	8322	7008	7116	8727
Aviation Turbine Fuel (ATF)	4478	4561	4664	5745	5520	5686	7270
Kerosene	33	34	23	15	15	10	15
Diesel	20433	20491	22473	26499	25566	24037	27452
Lubes	29	27	59	20	11	17	13
Fuel Oil	6734	7895	5922	6159	4762	2806	2248
Bitumen	56	5	87	95	94	101	38
Others ²	2927	2988	4675	5535	4653	3753	4016
Total Export	59077	60837	63408	67864	63932	60539	65513
Net Import	121897	126741	137742	138071	146804	171768	183832
Net Product Export	41698	44988	47054	51167	42631	31083	30099

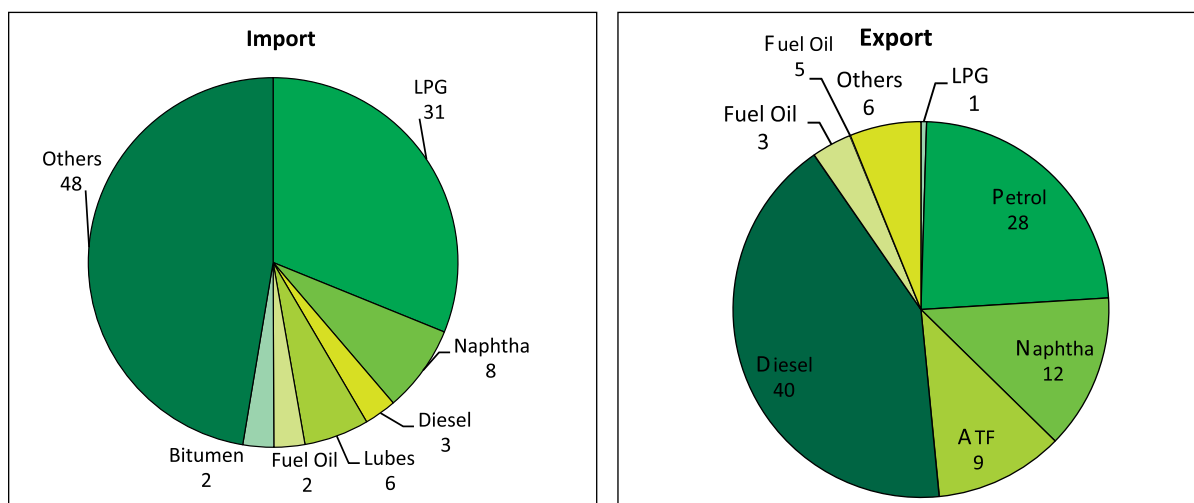
P: Provisional

1: Other imports include Pet coke, Paraffin Wax, Petroleum Jelly, LSWR, Aviation Gas, MTBE & Reformate.

2: Other exports include VGO, Benzene, MTO, Pet coke, CBFS & Sulphur.

Source: Petroleum Planning & Analysis Cell.

Figure VI.3: Import & Export of Petroleum Products during 2016-17 (%)



VI.5 Import / Export of Crude Oil and Petroleum Products

(in ₹ Crore)

Import/Export	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17(P)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Imports							
Crude Oil Import	455276	672220	784652	864875	687416	416579	470251
Product Import							
LPG	15888	27019	31674	37213	36571	25778	31914
Petrol	6427	3311	891	1481	2301	4207	1617
Naphtha	6853	9827	9272	6044	4592	9581	8195
Aviation Turbine Fuel (ATF)	0	0	0	0	706	889	1109
Kerosene	4939	2710	0	0	172	158	0
Diesel	6969	5039	2771	452	670	605	2924
Lubes	4093	8314	11339	12985	12702	9478	8109
Fuel Oil	2455	4392	4218	5759	3659	2380	1927
Bitumen	210	197	272	801	1623	1832	1640
Others ¹	8164	7282	8415	11162	11649	10454	13292
Total Product Import	55998	68091	68852	75896	74644	65361	70727
Total Import	511275	740311	853504	940771	762060	481940	540979
Product Export							
LPG	693	947	1294	1589	1455	785	1168
Petrol	49480	73982	95346	92977	81971	59575	52920
Naphtha	37138	45620	43533	46059	31619	20057	24616
Aviation Turbine Fuel (ATF)	16140	21857	25223	33246	25413	16007	22294
Kerosene	141	191	140	98	81	35	54
Diesel	69560	104903	115595	148273	115177	66492	80256
Lubes	154	181	381	138	100	127	104
Fuel Oil	15098	25576	20415	22407	14251	4471	3930
Bitumen	124	27	281	321	245	176	37
Others ²	8332	11361	17880	23169	18267	9054	9514
Total Export	196861	284644	320090	368279	288580	176780	194893
Net Import	314414	455667	533415	572492	473481	305160	346086
Net Product Export	140862	216553	251238	292383	213936	111419	124165

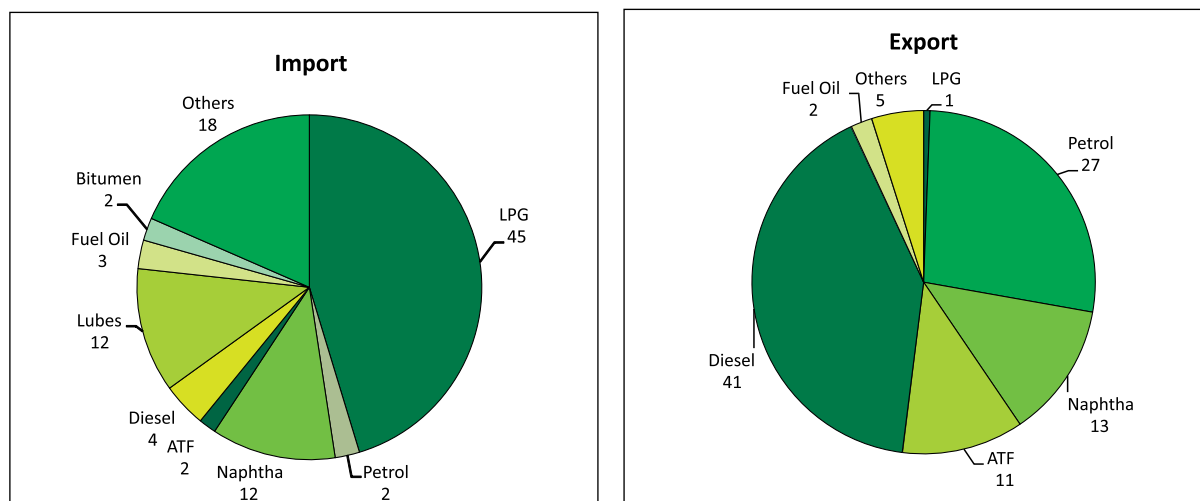
P: Provisional

1 : Other imports include Pet coke, Paraffin Wax, Petroleum Jelly, LSWR, Aviation Gas, MTBE & Reformate.

2 : Other exports include VGO, Benzene, MTO, Pet coke, CBFS & Sulphur.

Source: Petroleum Planning & Analysis Cell.

Figure VI.4: Value of Import & Export of Petroleum Products during 2016-17 (%)



VI.6 Import / Export of Crude Oil and Petroleum Products

(in Million US\$)

Import/Export	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17(P)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Import							
Crude Oil Import	100080	139690	144293	142962	112744	63972	70197
Product Import							
LPG	3469	5584	5803	6144	5955	3922	4743
Petrol	1403	716	160	248	375	648	239
Naphtha	1453	2022	1691	982	744	1463	1213
Aviation Turbine Fuel(ATF)	0	0	0	0	114	135	163
Kerosene	1081	597	0	0	29	25	0
Diesel	1505	1096	507	74	108	92	433
Lubes	855	1708	2068	2122	2067	1439	1199
Fuel Oil	527	912	778	942	599	363	285
Bitumen	43	40	50	132	262	279	243
Others ¹	1731	1514	1534	1822	1885	1586	1970
Total Product Import	12068	14189	12590	12466	12138	9952	10490
Total Import	112148	153879	156883	155427	124882	73924	80687
Product Export							
LPG	151	195	236	260	236	120	173
Petrol	10861	15478	17528	15397	13454	9120	7895
Naphtha	8161	9482	7992	7584	5176	3071	3666
Aviation Turbine Fuel(ATF)	3546	4568	4645	5487	4155	2440	3324
Kerosene	31	39	25	16	13	5	8
Diesel	15276	21815	21261	24358	18870	10180	11964
Lubes	34	36	65	27	16	20	15
Fuel Oil	3318	5312	3757	3671	2321	688	583
Bitumen	27	6	52	52	40	27	6
Others ²	1935	2387	3288	3814	2995	1390	1415
Total Export	43340	59319	58848	60664	47277	27059	29049
Net Import	68808	94560	98035	94763	77605	46865	51637
Net Product Export	31272	45130	46258	48199	35139	17107	18560

P: Provisional

1 : Other imports include Pet coke, Paraffin Wax, Petroleum Jelly, LSWR, Aviation Gas, MTBE & Reformate.

2 : Other exports include VGO, Benzene, MTO, Pet coke, CBFS & Sulphur.

Source: Petroleum Planning & Analysis Cell.

VI.7 Trends in India's overall Trade balance and Trade balance with OPEC Countries

Year	India's Overall Trade						India's Trade with OPEC Countries				% of India's trade with OPEC to India's total trade	
	Trade Balance			% variation over preceding year			Imports	Exports	Trade Balance	% variation over preceding year		(in ₹ Crore)
	(1)	(2)	(3)	(4)	(5)	(6)				Exports	Imports	
2010-11		1142922	1683467	-540545	35.2	23.4	565285	243769	-321516	36.5	29.0	33.6
2011-12		1465959	2345463	-879504	28.3	39.3	832230	278291	-553939	14.2	47.2	35.5
2012-13		1634318	2669162	-1034844	11.5	13.8	1021645	342219	-679426	23.0	22.8	38.3
2013-14		1905011	2715434	-810423	16.6	1.7	982126	355400	-626726	3.9	-3.9	36.2
2014-15		1896348	2737087	-840738	-0.5	0.8	836138	344479	-491660	-3.1	-14.9	30.5
2015-16		1716378	2490298	-773920	-9.5	-9.0	587977	302488	-285489	-12.2	-29.7	23.6
2016-17 (P)		1852340	2577422	-725082	7.9	3.5	710806	327977	-382829	8.4	20.9	27.6

P: Provisional

Source: Ministry of Commerce & Industry

Figure VI.5(a): India's Overall Trade

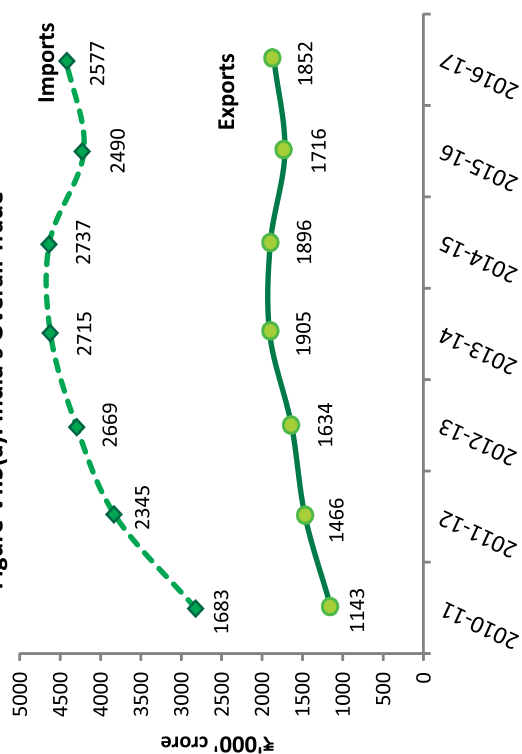
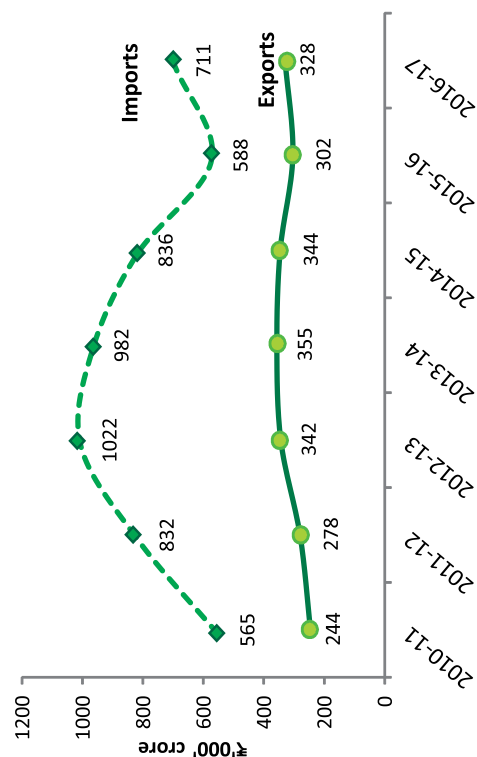


Figure VI.5(b): India's Trade with OPEC Countries



VI.8 Import Dependency										
Items		Unit	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17 (P)	
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
1	Indigenous Crude Oil Production	TMT	37684	38090	37862	37788	37461	36942	36009	
2	Indigenous Crude Oil Processing	TMT	33317	33736	34196	33853	34248	34099	33540	
3	Total Production from Indigenous Crude & Condensate	TMT	35589	36116	36423	35885	35948	35831	35587	
(i)	Products from Indigenous Crude ¹	TMT	31085	31476	31905	31585	31953	31814	31293	
(ii)	Products from Fractionators	TMT	4504	4640	4518	4300	3994	4016	4294	
4	Consumption of Petroleum Products	TMT	141040	148132	157057	158407	165520	184674	194214	
5	Import & Export									
(i)	Crude Oil Imports	₹ Crore	455276	672220	784652	864875	687416	416579	470251	
(ii)	Petroleum Products Imports	₹ Crore	55998	68091	68852	75896	74644	65361	70727	
(iii)	LNG Imports	₹ Crore	14362	31718	41902	53123	57384	45038	40813	
(iv)	Gross Petroleum Imports (Crude+POL+LNG)	₹ Crore	525637	772029	895406	993894	819445	526978	581792	
(v)	Petroleum Products Exports	₹ Crore	196861	284644	320090	368279	288580	176780	194893	
(vi)	India's Total Imports	₹ Crore	1683467	2345463	2669162	2715434	2737087	2490298	2577422	
(vii)	India's Total Exports	₹ Crore	1142922	1465959	1634318	1905011	1896348	1716378	1852340	
6	Petroleum Imports as % of India's Gross Imports	%	31.22	32.92	33.55	36.60	29.94	21.16	22.57	
7	Petroleum Exports as % of India's Gross Exports	%	17.22	19.42	19.59	19.33	15.22	10.30	10.52	
8	Self Sufficiency ²	%	25.23	24.38	23.19	22.65	21.72	19.40	18.32	
9	Import Dependency ²	%	74.77	75.62	76.81	77.35	78.28	80.60	81.68	

1: SION taken as 93.3% of crude oil processed for working out product output from indigenous crude oil.

2: Based on Consumption

P: Provisional

VI.9 Annual Growth of Foreign Direct Investment Equity Inflows						
Year	FDI Inflow		% of FDI in P&NG to Total FDI		Annual Growth (%)	
(1)	All Sectors	(2)	P&NG Sector	(3)	All Sectors	P&NG Sector
(in ₹ Million)						
2010-11	973203.93	25431.41	2.61	2.61	-20.95	96.09
2011-12	1651455.31	99551.66	6.03	6.03	69.69	291.45
2012-13	1219067.30	11925.66	0.98	0.98	-26.18	-88.02
2013-14	1475177.76	6783.90	0.46	0.46	21.01	-43.12
2014-15	1891071.26	64956.73	3.43	3.43	28.19	857.51
2015-16	2623215.61	6770.37	0.26	0.26	38.72	-89.58
2016-17 (P)	2916963.33	11970.57	0.41	0.41	11.20	76.81
(in US \$ Million)						
2010-11	21383.05	556.43	2.60	2.60	-17.23	109.55
2011-12	35120.80	2029.98	5.78	5.78	64.25	264.82
2012-13	22423.58	214.80	0.96	0.96	-36.15	-89.42
2013-14	24299.33	112.23	0.46	0.46	8.37	-47.75
2014-15	30930.50	1079.02	3.49	3.49	27.29	861.44
2015-16	40000.98	103.02	0.26	0.26	29.33	-90.45
2016-17 (P)	43478.27	180.40	0.41	0.41	8.69	75.11

Source: Foreign Direct Investment Cell, Department of Industrial Policy & Promotion

Chapter VII

Taxes and Duties

CHAPTER I

CHAPTER II

CHAPTER III

CHAPTER IV

CHAPTER V

CHAPTER VI

CHAPTER VII

CHAPTER VIII

CHAPTER IX

CHAPTER X

CHAPTER XI

APPENDIX

**Taxes
&
Duties**

**T A X E S
& D U T I E S**



Chapter Highlights

- Central excise collection from Petroleum sector (Crude oil & Petroleum Products) during 2016-17 was at ₹279005 crore which was 40% higher as compared to 2015-16 (₹198793 crore). More than half of the excise duty was contributed by refined diesel oil (54%) during 2016-17.
- Customs duties collected on crude petroleum & petroleum products for year 2016-17 at ₹21290 crore were 40% higher as compared to 2015-16 (₹15202).
- Oil Development Cess paid by upstream companies was marginally lower by around 14% in 2016-17 (₹12941 crore) as compared to 2015-16 (₹14578 crore).
- Sales Tax payments collected on crude oil, natural gas & petroleum products during the year 2016-17 at ₹174731 crore, was 17% higher than the sales tax collected during 2015-16 (₹14986 crore). Highest sales tax payment was from Maharashtra (13%) followed by Uttar Pradesh (10%) and Gujarat (9%).

VII.1 Realisation of Excise and Customs Duties from Crude Oil and Petroleum Products

(in ₹ crore)							
Products	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17 (P)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Excise Duties							
Motor Spirit	26771	28794	23710	22424	30826	53413	71196
Kerosene Oil	283	354	404	346	315	272	410
Refined Diesel Oil	30412	19132	22513	27146	42464	101177	151214
Diesel Oil (N.E.S.)	240	240	297	189	289	261	310
Furnace Oil	2596	3082	2774	2502	1875	1369	1734
Petroleum Gases	896	1375	1654	1613	1998	25825	39540
All others	6488	11368	17144	17049	11532	1898	2110
Cess on crude oil	8861	10357	16402	17331	21054	14578	12491
Total (A)	76546	74701	84898	88600	110354	198793	279005
Customs Duties							
Crude Petroleum	13370	5196	844	781	423	456	507
Petroleum Products	12912	15323	12860	14782	12149	14746	20783
Total (B)	26282	20520	13704	15563	12572	15202	21290
Grand Total (A+B)	102828	95220	98602	104163	122926	213995	300296
Composite Incidence of Excise & Customs Duties (₹)	7291	6428	6278	6576	7427	11588	15462

P: Provisional

N.E.S.: Not Elsewhere Specified

Source: Central Excise & Customs

Figure VII.1 (a): Realisation of Excise and Customs Duties from Crude Oil and Petroleum Products

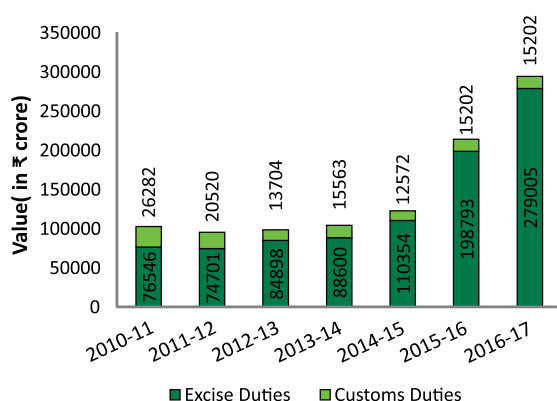
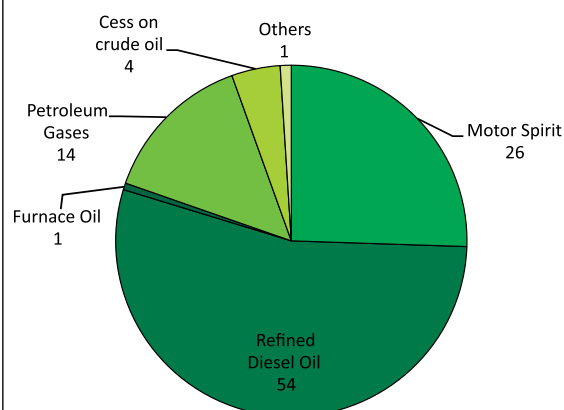


Figure VII.1 (b): Product-wise Distribution of Excise duty during 2016-17(%)



VII.3. Sales tax rates applicable on crude oil, natural gas and petroleum products

(As on 01.04.2017)

State/UT (1)	Crude Oil (2)	Natural Gas (3)	MS (Petrol) (4)	Branded Petrol (5)	HSD (Diesel) (6)	Branded Diesel (7)	Naphtha (8)
Andhra Pradesh	5.00%	5.00%	31% + Rs. 4/- per litre		22.25% + Rs. 4/- per litre		14.50%
Arunachal Pradesh	4.00%	20.00%	20.00%		12.50%		12.50%
Assam	5.00%	14.50%	29.00% or Rs 14.00/Ltr, whichever is higher (w.e.f. 04.07.2016)	27.50%	20% or Rs 8.75/Ltr, whichever is higher (w.e.f. 04.07.2016).	16.50%	14.5% (increased to 15% w.e.f. 10.08.2016)
Bihar	6.00%	20.00%	26% w.e.f. 10.08.2016 (Surcharge 30% on tax w.e.f. 02.02.16)		19% w.e.f. 10.08.2016 (Surcharge 30% on Tax w.e.f. 02.02.16)		15.00%
Chandigarh	4.00%	5.00%	24.74% + 10 Rs per kl		16.4% (MST:-Rs 10/- PER KL)		5.00%
Chhattisgarh	5.00%	25.00%	25% + Rs. 2 Per Ltr		25% + Re. 1 Per Ltr		14.00%
Delhi	5.00%	0.00%	27.00%		16.75% plus Rs. 250 per Kl Air Ambience Cess	16.75% plus Rs. 250 per kl	20.00%
Goa	5.00%	12.50%	15% (Sold by PSU OMC to Auth RO), others 20%		22.00% (HSD from bond sold to foreign going vessels:- 4.00%)		20.00%
Gujarat	4.00%, Add Tax-1.00% on TIO	12.50%, Add Tax-2.50% on TIO	24%, Cess-4% on Turnover				16%, Add Tax 2.50% on TIO
Haryana	5.00%	12.50%, Additional Tax on VAT 5%	25%, Additional Tax on VAT 5%	26.25%	16.40%, Additional Tax on VAT 5%	17.22%	12.50%, Additional Tax on VAT 5%
Himachal Pradesh	4.00%	4.00%	27.00%		16.00%		5.00%
J & K	5.00%	5.00%	MST 24.00%, CESS Rs 3/- Per Ltr		MST 16.00%, CESS Rs 1/- Per Ltr		14.50%
Jharkhand	5.00%	14.00%	22% on the sale price or Rs. 15.00 per litre, which ever is higher + Cess of Rs 1.00 per Ltr.		22% on the sale price or Rs. 8.37 per litre, which ever is higher + Cess of Rs 1.00 per Ltr.		14.50%
Karnataka	0.00%	14.50%	30.00%	30.00%	19%, 4% for captive power, 1% for foreign going vessel	19.00%	5.50%
Kerala	5.00%	14.5% w.e.f. 18.07.2016	31.80%, Additional Sales Tax Rs 1/- per litre, SSC 1% on total tax		24.52%, Additional Sales Tax Rs 1/- per litre, SSC 1% on total tax		5.00%
Madhya Pradesh	5.00%	14.00%	31% + Re. 4 per Ltr Additional Tax		27% + Re. 1.50 per Ltr additional Tax		14.00%
Maharashtra	5.00%	13.50%	**		***		13.50%
Manipur	5.00%	13.50%	25.00%		14.50%		13.50%
Meghalaya	4.00%	14.50%	22%, Surcharge 2% on Tax (15.03.2016), Partial Exemption of Rs. 0.56 per Ltr withdrawn (15.03.16)	20%, Surcharge 2% on Tax, Partial Exemption of Rs. 0.56 per Ltr	13.50%, Surcharge 2% on Tax		14.50%
Mizoram	5.00%	13.50%	20.00%		12.00%		13.50%
Nagaland	5.00%, surcharge on tax 5% (16.07.15)	5.00%, surcharge on tax 5% (16.07.15)	23.5%, Surcharge on tax 5%		13.5%, Surcharge on tax 5%		13.25%
Odisha	5.00%	14.50%	26.00%		26.00%		14.50%
Pondicherry	0.00%	14.50%	20.15%		16.65%		14.50%
Punjab	4.5%, Surcharge on Tax 10%	5.5%, Surcharge on Tax 10%	28%, Surcharge on tax 10.00%, Cess Rs.2000 per kl	15.00%	13.4% for Normal and 13% for Branded Fuel. (Surcharge on Tax:- 10.00%), Cess - Rs 1000 Per Kl	14.00%	5.50% Surcharge on Tax 10.00%
Rajasthan	5.00%	5.50%	30.00%, Cess Rs.1500/-per Kl OMC 5.50%		22.00%, Cess Rs.1750/-per Kl OMC 5.50%		5.50%
Sikkim	4.50%	4.50%	25%, Cess Rs.3000 per Kl, Sikkim Consumer Welfare Fund Rs 100 per Kl Effective from 01.10.2016		17.5% to others & 12.5% for retailers in Sikkim, Cess Rs.2500 per Kl, Sikkim Consumer Welfare Fund Rs 100 per Kl Effective from 01.10.2016		13.50%
Silvassa/DNH	5.00%	12.50%	20.00%		15.00%		20.00%
Tamil Nadu	5.00%	5.00%	34.00%		25.00%		5.00%
Telangana	5.00%	5.00%	35.20%		27.00%		14.50%
Tripura	5.00%	14.50%	20.00%		13.50%		14.50%
Uttar Pradesh	4.00%	21%, Additional Tax on Taxable Turnover 5.00%	26.8% or Rs. 16.74 per litre whichever is greater		17.48% or Rs. 9.41 per litre whichever is greater		21.00%
Uttarakhand	5.00%		25% or Rs 17.00 per litter whichever is greater PLUS 25 paise Cess per Ltr		21% or Rs 9.00 per litter whichever is greater PLUS 50 paise Cess per Ltr		14.50%
West Bengal	5.00%	5.00%	25% or Rs.13.12/Ltr whichever is higher, Cess Rs.1000 per Kl, Addl. Tax on tax 20%, Rebate Available Rs 17/Kl.		17% or Rs. 7.70/litre whichever is higher, Cess Rs.1000 per Kl, Additional Tax on tax 20%, Rebate Available Rs 290/Kl.		5.00%

**:-Within Municipal Limits of Thane, Mumbai, Navi Mumbai, Solapur, Amravati, Nagpur Aurangabad, Nandurbar 26.00%+Rs. 6/Ltr, Others 25%+Rs. 6/Ltr

***:-Within Municipal Limits of Thane, Mumbai, Navi Mumbai, Solapur, Amravati, Nagpur, Aurangabad, Nandurbar 24.00%+Rs. 2/Ltr, Others 21%+Rs. 2/Ltr.

Contd...

VII.3 Sales tax rates applicable on crude oil, natural gas and petroleum products (Contd...)											
(As on 01.04.2017)											
State/U.T (1)	LPG(Domestic) (9)	LPG (Non Dom) (10)	AUTO LPG (11)	SKO (PDS) (12)	SKO(IND) (13)	FO (14)	(in Percentage)				
							LSHS (15)				
Andhra Pradesh	5.00%	14.50%		5.00%	14.50%	14.5% & 5% (When used for Industrial Purpose)	14.50%				14.50%
Arunachal Pradesh	4.00%	12.50%	12.50%	4.00%	12.50%	12.50%	12.50%				12.50%
Assam	4.00%	9.00%	9.00%	2.00%	12.50%	5% (Increased to 6% w.e.f 10.08.2016)	12.50%				14.50%
Bihar	1.00%	15.00%	15.00%	6.00%	6.00%	15.00%	15.00%				15.00%
Chandigarh	0.00%	12.50%	12.50%	5.00%	12.50%	12.50%	12.50%				12.50%
Chhattisgarh	0.00%	5.00%	14.50%	4.00%	14.50%	5.00%	14.50%				14.50%
Delhi	0.00%	5.00%		5.00%	12.50%	20.00%	12.50%				12.50%
Goa	0.00%	12.50%	12.50%	5.00%	12.50%	12.50%. (FO from bond sold to foreign going vessels:-1.00%)	12.50%				12.50%
Gujarat	4.00%, Addl Tax-1.00% on taxable turnover	12.50%, Addl Tax 2.50% on taxable turnover	12.50%, Addl Tax 2.50% on TTO	0%*(25+2.5% for OMC transactions)	25.00%, Addl tax-2.50% on taxable turnover	4.00%, Addl Tax 1.00% on TTO	15.00%, Addl Tax 2.50% on TTO				
Haryana	0.00%	12.50%, Additional Tax on VAT 5%	12.50%, Additional Tax on VAT 5%	0.00%	12.50%, Additional Tax on VAT 5%	12.50%, Additional Tax on VAT 5%	12.50%, Additional Tax on VAT 5%				
Himachal Pradesh	4.00%	13.75%	13.75%	0.00%	13.75%	13.75%	13.75%				13.75%
J & K	0.00%	14.50%	14.50%	5.00%	14.50%	14.50%	14.50%				14.50%
Jharkhand	5.00%	14.50%	14.50%	2.00%	14.50%	14.00%	14.50%				14.50%
Karnataka	1.00%	14.50%	14.50%	5.50%	14.50%	14.5%, 1% for foreign going vessel	14.50%				14.50%
Kerala	5.00%	14.50%	14.50%	5.00%	14.50%	14.50%	14.50%				14.50%
Madhya Pradesh	5.00%	14.00%	14.00%	5.00%	14.00%	14.00%	14.00%				14.00%
Maharashtra	3.00%	13.50%	13.50%	3.00%	13.50%	13.50%	13.50%				13.50%
Manipur	5.00%	13.50%	13.50%	0.00%	5.00%	13.50%	13.50%				13.50%
Meghalaya	0.00%	14.50%	14.50%	0.00%	14.50%	14.50%	14.50%				5.00%
Mizoram	1.79%	8.00%	8.00%	Nil	Nil	13.50%	13.50%				13.50%
Nagaland	5.00%, surcharge on tax 5%	12%, surcharge on tax 5%	12%, surcharge on tax 5%	5%, Surcharge on tax 5%	15%, Surcharge on tax 5%	13.25%	4.75%				
Odisha	Exempted	14.50%	14.50%	Exempted	14.50%	14.50% FO & LUBES for INTNL Bunkering 5%	14.50%				
Puducherry	1.00%	14.50%	14.50%	0.00%	14.50%	14.50%	14.50%				14.50%
Punjab	4%, Surcharge 10.00%	13%, Surcharge on Tax 10.00%	13%, Surcharge on Tax 10.00%	5.50%, Surcharge on Tax 10.00%	13%, Surcharge on Tax 10.00%	5.50% Surcharge on Tax 10.00%	13%, Surcharge on Tax 10.00%				
Rajasthan	0.00%	14.50%	14.50%	0.00%	0.00%	5.50%	5.50%				5.50%
Sikkim	4.50%	13.50%	13.50%	4.50%	13.50%	13.50%	13.50%				13.50%
Silvassa/DNH	5.00%	12.50%	12.50%	5.00%	12.50%	20.00%	0.00%				0.00%
Tamil Nadu	0.00%	14.50%	14.50%	5.00%	25.00%	5.00%	14.50%				14.50%
Telangana	5.00%	14.50%	14.50%	5.00%	14.50%	14.5% & 5% (When used for Industrial Purpose)	14.50%				14.50%
Tripura	1.50%	14.50%	14.50%	Nil	14.50%	14.50%	14.50%				14.50%
Uttar Pradesh	0.00%	12.50% Additional Tax on Taxable Turnover 2.00%	12.50% Additional Tax on Taxable Turnover 2.00%	4.00% Additional Tax on Taxable Turnover 1.00%	12.50% Additional Tax on Taxable Turnover 2.00%	21.00%	21.00%				
Uttarakhand	5.00%	14.50%		0.00%	0.00%	14.50%	14.50%				14.50%
West Bengal	0.00%	5% Cess Rs 1000 per MT	14.50%	0.00%	14.50%	5.00%	14.50%				14.50%

Contd....

VII.3 Sales tax rates applicable on crude oil, natural gas and petroleum products (Contd...)

(As on 01.04.2017)

State/U.T	ATF (Duty Paid/ Bonded)	ATF Declared	ATF (When Sold to Aircraft having maximum take off mass of < 40000 Kgs, operated by scheduled airlines) i.e. declared goods under CST Act	BITUMEN	LDO	LUBE	SULPHUR	ASPHALT
(1)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)
Andhra Pradesh	1.00%	0.00%	1.00%	5.00%	22.25% + Rs. 4/-per litre	14.50%	5.00%	14.50%
Arunachal Pradesh	20.00%	Nil	4.00%	4.00%	12.50%	4.00%	4.00%	12.50%
Assam	22.00%	Nil	5.00%	5% (increased to 6% w.e.f 10.08.2016)	16.50%	14.5% (increased to 15% w.e.f. 10.08.2016)	5.00%	14.50%
Bihar	29.00% (ATF(Sch. Airlines):- 5% }		5.00%	6.00%	19% w.e.f 10.08.2016 (Surcharge 30% on Tax w.e.f 02.02.16)	15.00%	6.00%	15.00%
Chandigarh	20.00% (MST:-Rs 10/- Per KL)		4.00%	5.00%	16.4% (MST:-Rs 10/- Per KL)	12.50%	5.00%	5.00%
Chhattisgarh	5.00%		5.00%	5.00%	5.00%	14.50%	5.00%	5.00%
Delhi	25.00%	0.00%	5.00%	5.00%	16.75% plus Rs. 250 per KL Air Ambience Cess	20.00% *	5.00%	12.50%
Goa	18.00%		5.00%	5.00%	22.00%	12.50%	12.50%	12.50%
Gujarat	ATF duty paid:- 30% & 5%	38.00%	4% Addl Tax 1% on TTO	4% Addl Tax 1% on TTO	12.50%, Addl Tax 2.50% on TTO	12.5%/15%, Addl Tax 2.50% on TTO	4%, Addl Tax 1% on TTO	4%, Addl Tax 1% on TTO
Haryana	20%, Additional Tax on VAT 5%	0.00%	5.00%	5.00%, Additional Tax on VAT 5%	16.40 %, Additional Tax on VAT 5% (w.e.f. 16.07.2015)	12.50%, Additional Tax on VAT 5%	5.00%, Additional Tax on VAT 5%	12.50%, Additional Tax on VAT 5%
Himachal Pradesh	27.00%		1.00%	5.00%	16.00%	13.75%	5.00%	5%**
J & K	GST 25%, Surcharge on tax:-5%		GST 5%	5.00%	MST 16.00%, CESS RS 1/- PER LTR	14.50%	5.00%	5.00%
Jharkhand	4% for non-scheduled airlines & 5% for Sch. Airlines		5.00%	5.50%	22% on the sale price or Rs. 8.37 per litre , which ever is higher + Cess of Rs 1.00 per Ltr.	14.50%	5.50%	14.50%
Karnataka	28.00%	0.00%	5.00%	5.50%	19%, 1% for foreign going vessel	14.50%	14.50%	5.50%
Kerala	25%, Additional Tax 15% on tax, surcharge 1% on tax & Addl Tax		5.00%	5.00%	41%, Additional Tax 15% on tax, SSC 1% on tax+Addl Tax	14.50%	5.00%	5.00%
Madhya Pradesh	4.00%		4.00%	5.00%	14.00%	14.00%	14.00%	5.00%
Maharashtra	Mumbai & Pune:-25.00% except Mumbai & Pune 5.00%	30.00%	5.00%	13.50%	13.50%	13.50%	13.50%	13.50%
Manipur	20.00%	Nil	5.00%	5.00%	13.50%	13.50%	13.50%	13.50%

Contd...

VII.3 Sales tax rates applicable on crude oil, natural gas and petroleum products (Contd...)											
(As on 01.04.2017)											
State/U.T	ATF (Duty Paid/ Bonded)	ATF Declared	ATF (When Sold to Aircraft having maximum take off mass of < 40000 Kgs, operated by scheduled airlines) i.e. declared goods under CST Act	BITUMEN	LDO	LUBE	SULPHUR	(in Percentage)			
(1)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)			
Meghalaya	20.00% + 2% Surcharge	Nil	0.00%	5.00%	12.5%, Surcharge 2% on Tax	14.50%	5.00%	14.50%			
Mizoram	20.00%	Nil	4.00%	5.00%	12.00%	10.00%	5.00%	13.50%			
Nagaland	20%, Surcharge on tax 5%	Nil	5.00%, surcharge on tax 5% (16.07.15)	4.75%	12.00%, Surcharge on tax 5%	12%, surcharge on tax 5%	4.75%	13.25%			
Odisha	5.00%		5.00%	5.00%	20.00%	14.50%	14.50%	14.50%			
Puducherry	14.50%	5.00%	5.00%	14.50%	14.50%	14.50%	0.00%	14.50%			
Punjab	13% ((4% w.e.f 11.03.2015)for when sold at the Airport in Punjab to Scheduled & Non Scheduled Airlines carrying passengers ((SURCHARGE ON TAX:-10.00%))		4.5%, Surcharge on Tax 10%	5.5%, Surcharge on Tax 10%	13.4% (SURCHARGE ON TAX:- 10.00%)+ cess of Rs 1000 per kl	13%, Surcharge on Tax 10.00%	5.5%, Surcharge on Tax 10%	5.5%, Surcharge on Tax 10%			
Rajasthan	***	26.00%	5.00%	14.50%	22.00%	14.50%	5.50%	14.50%			
Sikkim	25%, Cess Rs.3000 per Kl, Sikkim Consumer Welfare Fund Rs 100 per Kl	NA	4.50%	4.50%	"17.5% to others & 12.5% for retailers in Sikkim, Cess Rs.2500 per Kl, Sikkim Consumer Welfare Fund Rs 100 per Kl Effective from 01.10.2016"	13.50%	4.50%	13.50%			
Silvassa/DNH	20.00%	20.00%	not available	5.00%	15.00%	12.50%	0.00%	0.00%			
Tamil Nadu	29.00%	500.00%	5.00%	5.00%	25.00%	14.50%	0.00%	5.00%			
Telangana	16.00%	0.00%	5.00%	5.00%	27.00%	14.50%	5.00%	14.50%			
Tripura	18.00%	Nil	5.00%	5.00%	14.50%	14.50%	5.00%	14.50%			
Uttar Pradesh	21%, In case of sale to CIVIL aircrafts at Agra & Varanasi - 5%	21.00%	4.00%	12.50% Additional Tax on Taxable Turnover 2.00%	17.48% or Rs. 9.41 per litre whichever is greater	21.00%	4.00% Additional Tax on Taxable Turnover 1.00%	12.50% Additional Tax on Taxable Turnover 2.00%			
Uttarakhand	1.00%	1.00%	5.00%	5.00%	21.00%	20.00%	14.50%	14.50%			
West Bengal	"25.00% + 20% Add. Tax on tax. For Bagdogra AFS- nil (No tax)"	NA	5.00%	14.50%	17% or Rs. 7.70/ Litre whichever is higher,Additional Tax on tax 20%, Rebate Available Rs 290/Kl.	14.50%	5.00%	14.50%			

*: Petroleum based lube taxable @ 20.00% and other lubes taxable @ 12.50%; **: CRMB & Polymer modified bitumen fall under residual category & hence taxable @13.75%
 ***:26% or 5.50% when airlines maintain hub or connect two cities of Rajasthan or 10.00% on Sale of ATF to any airline for use in aircraft which connects any city of Rajasthan (other than Jaipur) by a scheduled commercial flight

Source:IOCI

VII.4 Sales Tax Payments on Crude Oil, Natural Gas and Petroleum Products: State-wise details

(in ₹ Lakh)							
State/UTs	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17 (P)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Andhra Pradesh	828136	1015950	1136634	1264505	880417	784056	895755
Arunachal Pradesh	3172	4245	3934	5396	5724	5450	6241
Assam	147274	186488	197373	226108	233158	242419	281668
Bihar	222074	277753	312935	398250	395302	547042	588963
Chhattisgarh	140873	172423	199967	241499	266494	263732	332712
Delhi	191885	242782	258549	315035	283336	319515	362515
Goa	47027	57382	37848	38868	47814	53429	65067
Gujarat	678911	859125	929715	1106215	1224517	1476657	1594433
Haryana	282924	349512	395820	463888	511591	602169	705094
Himachal Pradesh	16697	14895	16410	20464	23475	26345	31858
Jammu & Kashmir	59026	74731	84522	95383	95387	100682	111391
Jharkhand	111613	125359	148890	183841	208836	249520	298511
Karnataka	572576	701865	809514	908367	1019404	1114681	1398848
Kerala	353718	410434	459857	518204	539872	613120	693170
Madhya Pradesh	400825	468797	469511	653451	596864	793568	947261
Maharashtra	1221808	1479753	1700240	1940410	2107129	1969036	2346577
Manipur	4166	7625	8238	10178	79244	11480	11734
Meghalaya	2582	401	197	277	221	162	243
Mizoram	3178	4422	6084	4440	5754	5323	4809
Nagaland	4187	5451	5914	6400	8270	8005	7782
Odisha	173444	199039	220775	269349	304673	322424	452184
Puducherry	937	1344	1871	2912	2483	1901	2248
Punjab	253422	281192	288978	398637	351343	493080	587636
Rajasthan	426228	527285	604086	742349	836785	929567	1066243
Sikkim	3639	4308	4788	6579	7366	9794	10487
Tamil Nadu	774306	933853	1138401	1241945	1242293	1109454	1267944
Telangana	-	-	-	-	453793	642344	759818
Tripura	9489	13908	16152	16253	18058	19728	16804
Uttar Pradesh	749586	1196694	1205121	1317505	1426177	1546180	1826295
Uttarakhand	64676	72630	81338	105268	116107	122507	141814
West Bengal	360869	411487	478612	550546	550603	580568	636704
Chandigarh	7556	6932	7030	7479	8436	7586	5499
Andaman & Nicobar	0	0	4063	5490	4845	0	0
Dadra & Nagar Haveli	479	829	822	6121	8643	9164	8728
Daman & Diu	#	#	#	5100	5200	5100	6100
Total	8117283	10108894	11234188	13076715	13869615	14985787	17473136

P: Provisional # : Included in Dadra & Nagar Haveli

Source : Oil Companies

VII.5 Central Excise and Customs Tariff as on 01.04.2017

Name of the Product	CUSTOMS			CENTRAL EXCISE		
	Basic Customs Duty	Additional Customs Duty (CVD)	Additional Customs Duty	Basic Cenvat Duty	Special Additional Excise Duty	Additional Excise Duty
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crude Petroleum	NIL + Rs. 50/MT as NCCD	Nil	-	Nil+ Cess @20% + Rs.50/ MT as NCCD	-	-
Motor Spirit	2.5%	Rs.9.48/Ltr. + Rs.6.00/Ltr SAD	Rs.6.00/ Ltr.	Rs.9.48/Ltr	Rs.6.00/Ltr	Rs.6.00/ Ltr.
Motor Spirit (branded)	-	-	-	Rs.10.66/Ltr	Rs.6.00/Ltr	Rs.6.00/ Ltr.
High Speed Diesel	2.5%	Rs.11.33/Ltr.	Rs.6.00/ Ltr.	Rs.11.33/Ltr.	Nil	Rs.6.00/ Ltr.
High Speed Diesel (branded)	-	-	-	Rs.13.69/Ltr	Nil	Rs.6.00/ Ltr.
LPG	Domestic	Nil	Nil	Nil	Nil	Nil
	Non - Domestic	5.0%	8.0%	8.0%	Nil	Nil
Kerosene	PDS	Nil	Nil	Nil	Nil	Nil
	Non PDS	5.0%	14.0%	14.0%	Nil	Nil
Aviation Turbine Fuel	Nil	14% *	Nil	14% *	Nil	Nil
Naphtha	Non- Fertilizer	5.0%	14.0%	14.0%	Nil	Nil
	Fertilizer	Nil	Nil	Nil	Nil	Nil
Bitumen & Asphalt	5.0%	14.0%	Nil	14.0%	Nil	Nil
Furnace Oil	Fertilizer	Nil	Nil	Nil	Nil	Nil
	Non- Fertilizer	5.0%	14.0%	14.0%	Nil	Nil
Light Diesel Oil		5.0%	14% + Rs. 2.50/ Ltr	14% + Rs. 2.50/ Ltr	Nil	Nil
Liquefied Natural Gas	2.5%	Nil	Nil	Nil	Nil	Nil
Low Sulphur Heavy Stock/ HPS & other Res.	Fertilizer	5.0%	Nil	Nil	Nil	Nil
	Non- Fertilizer	5.0%	14.0%	14.0%	Nil	Nil
Lube oil/greases	5.0%	14.0%	Nil	14.0%	Nil	Nil
Natural Gas (Gaseous state)	5.0%	Nil	Nil	Nil	Nil	Nil
Natural Gas (Compressed)	5.0%	14.0%	Nil	14.0%	Nil	Nil
Petroleum Coke	2.5%	14.0%	Nil	14.0%	Nil	Nil
Petroleum Jelly	5.0%	14.0%	Nil	14.0%	Nil	Nil
Transformer Oil	5.0%	14.0%	Nil	14.0%	Nil	Nil
Waxes all types	5.0%	14.0%	Nil	14.0%	Nil	Nil

Note:

- Additional Duty of Customs @4% would be levied in lieu of sales tax/VAT except on petrol, diesel, SKO(PDS), LPG(Dom), coal, coke and petroleum gases and fuels of Chapter 27 on direct imports for consumption.
- In addition to above, Education Cess @2% on aggregate duties is charged w.e.f. 9.7.2004 and additional 1% is charged w.e.f. 1.3.2007.
- Education cess has been removed on Excise duty effective 1st March 2015.
- *8% for supply to Scheduled Commuter Airlines (SCA) from the Regional Connectivity Scheme (RCS) airports.

Source: PPAC

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Manpower

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Chapter Highlights

- Total manpower employed in oil and gas sector CPSEs at 1,10,058 (as on 31.03.2017) has been almost stagnant over the years.
- Exploration & production vertical accounted for the highest manpower deployment (30%) followed by marketing (28%) and refinery (23%) as on 31.03.2017.
- Executive/Managerial categories employed the highest proportion of manpower (54%) followed by Workmen (31%), Supervisory (9%) and Clerical (6%) accounted for the balance during 2016-17.
- ONGC and IOCL in 2016-17 together accounted for over 61% of the total manpower employed in the oil & gas CPSEs.

VIII.1 Sector-wise manpower employed in oil & gas CPSEs in India

(in Number)

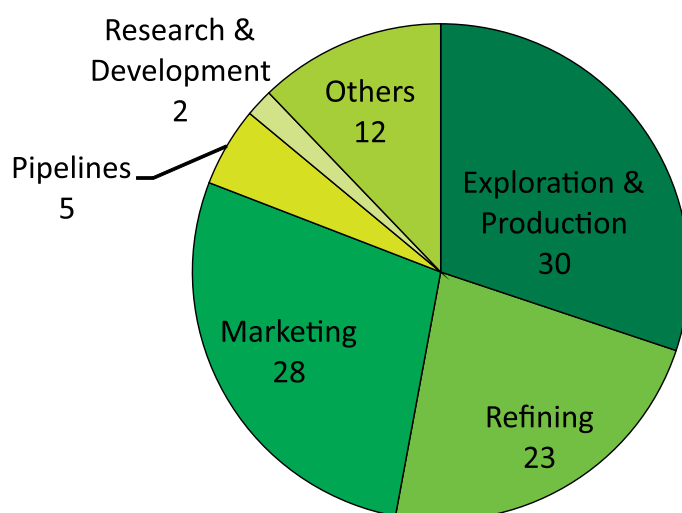
Category	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1. Exploration & Production	32170	31823	31701	32388	32850	33455	33152
2. Refining	26335	26174	25988	25689	25233	24693	25089
3. Marketing	32426	32492	32732	32220	31094	31260	30751
4. Pipelines	4713	4653	4438	4985	5087	5384	5689
5. Research & Development	1967	1959	1943	2015	2126	2101	1986
6. Others	16225	16095	15969	15751	14329	13720	13391
Grand Total	113836	113196	112771	113048	110719	110613	110058

Notes:

1. The figures are as on 31st March of each year.
2. Figures exclude 'Expatriates/Foreign Experts/on Contract' manpower

Source: Central Public Sector Enterprises

**Figure VIII.1: Sectoral manpower (in %) employed in oil & gas CPSEs
(as on 31.03.2017)**



VIII.2 Category-wise manpower employed in oil & gas CPSEs in India

(in Number)

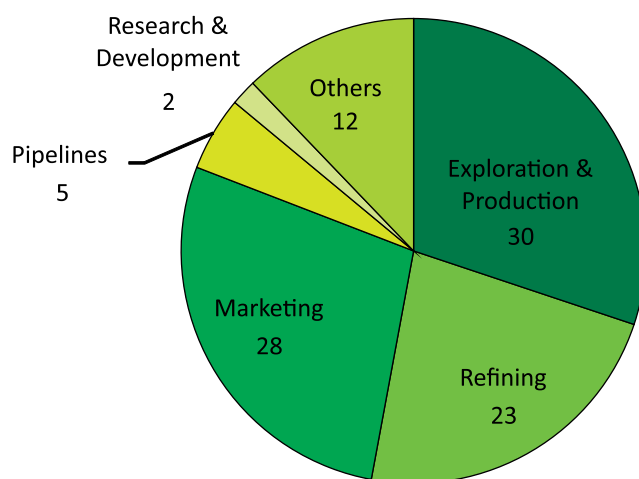
Category	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Executive/Managerial	58555	59187	59472	60571	59598	59707	59974
Supervisory	11422	11367	11162	10773	10407	10047	9988
Clerical	8122	8033	7684	7218	7036	5710	5350
Workmen	35737	34609	34453	34486	33678	35149	34746
Grand Total	113836	113196	112771	113048	110719	110613	110058

Notes:

1. The figures are as on 31st March of each year.
2. Figures exclude 'Expatriates/Foreign Experts/on Contract' manpower

Source: Central Public Sector Enterprises

**Figure VIII.1: Sectoral manpower (in %) employed in oil & gas CPSEs
(as on 31.03.2017)**



VIII.3 Category-wise manpower employed in select sectors of oil & gas CPSEs in India

(in Number)							
Category	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1.Exploration and Production							
1. Executive/Managerial	21777	21270	20991	20940	20785	20258	19399
2. Supervisory	2835	2826	2702	2540	2538	2321	2157
3. Clerical	727	1045	349	330	475	545	574
4. Workman	6831	6682	7659	8578	9052	10331	11022
Total	32170	31823	31701	32388	32850	33455	33152
2. Refining							
1. Executive/Managerial	9715	9735	9918	10028	10080	10075	10468
2. Supervisory	3638	3673	3596	3491	3371	3144	2958
3. Clerical	1792	1902	1813	1645	1580	700	679
4. Workman	11190	10864	10661	10525	10202	10774	10984
Total	26335	26174	25988	25689	25233	24693	25089
3. Marketing							
1. Executive/Managerial	13138	13875	13993	14762	14642	15202	15808
2. Supervisory	3061	3160	3168	3113	3101	3193	3515
3. Clerical	3929	3872	3720	3521	3334	3233	2869
4. Workman	12298	11585	11851	10824	10017	9632	8559
Total	32426	32492	32732	32220	31094	31260	30751
4. Pipelines							
1. Executive/Managerial	-	-	-	-	-	3777	4081
2. Supervisory	-	-	-	-	-	207	222
3. Clerical	-	-	-	-	-	164	162
4. Workman	-	-	-	-	-	1236	1224
Total	4713	4653	4438	4985	5087	5384	5689
5. Research & Development							
1. Executive/Managerial	-	-	-	-	-	1768	1672
2. Supervisory	-	-	-	-	-	101	91
3. Clerical	-	-	-	-	-	33	34
4. Workman	-	-	-	-	-	199	189
Total	1967	1959	1943	2015	2126	2101	1986
6. Others							
1. Executive/Masnagerial	-	-	-	-	-	8627	8546
2. Supervisory	-	-	-	-	-	1081	1045
3. Clerical	-	-	-	-	-	1035	1032
4. Workman	-	-	-	-	-	2977	2768
Total	16225	16095	15969	15751	14329	13720	13391
Grand Total	113836	113196	112771	113048	110719	110613	110058

Notes:

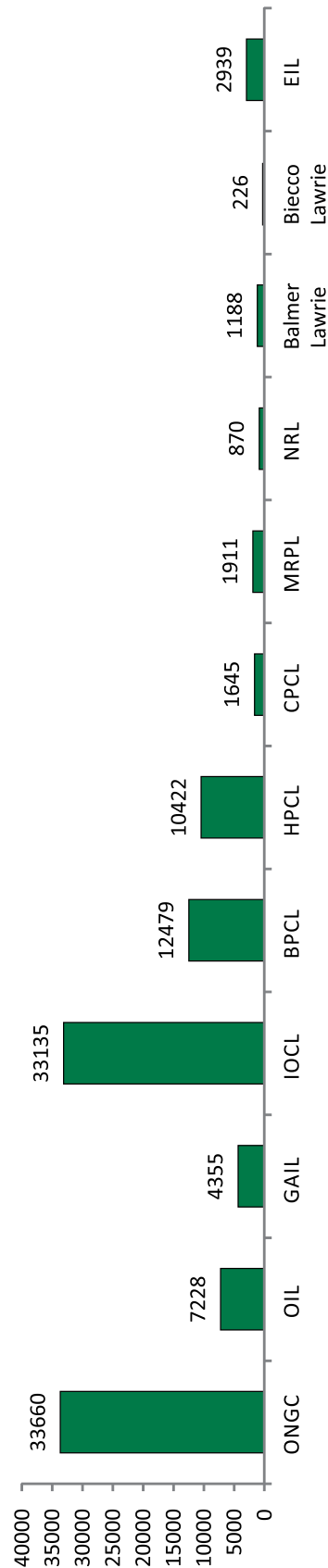
1. The figures are as on 31st March of each year.
2. Figures exclude 'Expatriates/Foreign Experts/on Contract' manpower

Source: Central Public Sector Enterprises

VIII.4: Sector-wise and category-wise manpower employed in oil & gas CPSEs as on 31.03.2017																		
Sector/Category/CPSE		ONGC	OIL	GAIL	IOCL	BPCL	HPCL	CPCL	MRPL	NRL	Balmer Lawrie	Biecco Lawrie	EIL	Total	(in Number)			
Sector-wise manpower																		
1.	Exploration & Production	29369	3510	44	0	48	18	0	0	0	0	163	0	33152				
2.	Refining	224	0	0	13663	4392	2678	1578	1812	742	0	0	0	25089				
3.	Marketing	31	0	525	15951	7528	6419	19	99	128	0	13	38	30751				
4.	Pipelines	111	409	1610	2986	212	361	0	0	0	0	0	0	5689				
5.	Research & Development	1315	53	12	384	71	58	15	0	0	17	6	55	1986				
6.	Others	2610	3256	2164	151	228	888	33	0	0	1171	44	2846	13391				
	Total	33660	7228	4355	33135	12479	10422	1645	1911	870	1188	226	2939	110058				
Category-wise manpower																		
1.	Executive/Managerial	21996	1506	3466	16545	5923	5858	196	815	429	488	55	2697	59974				
2.	Supervisory	1997	792	225	5932	0	0	609	99	0	222	0	112	9988				
3.	Clerical	584	659	149	809	1568	1292	60	0	0	88	14	127	5350				
4.	Workmen	9083	4271	515	9849	4988	3272	780	997	441	390	157	3	34746				
	Total	33660	7228	4355	33135	12479	10422	1645	1911	870	1188	226	2939	110058				

Notes: Figures exclude 'Expatriates/Foreign Experts/on Contract' manpower
Source: Central Public Sector Enterprises

Figure VIII.3: Regular Manpower employed in CPSEs as on 31.03.2017



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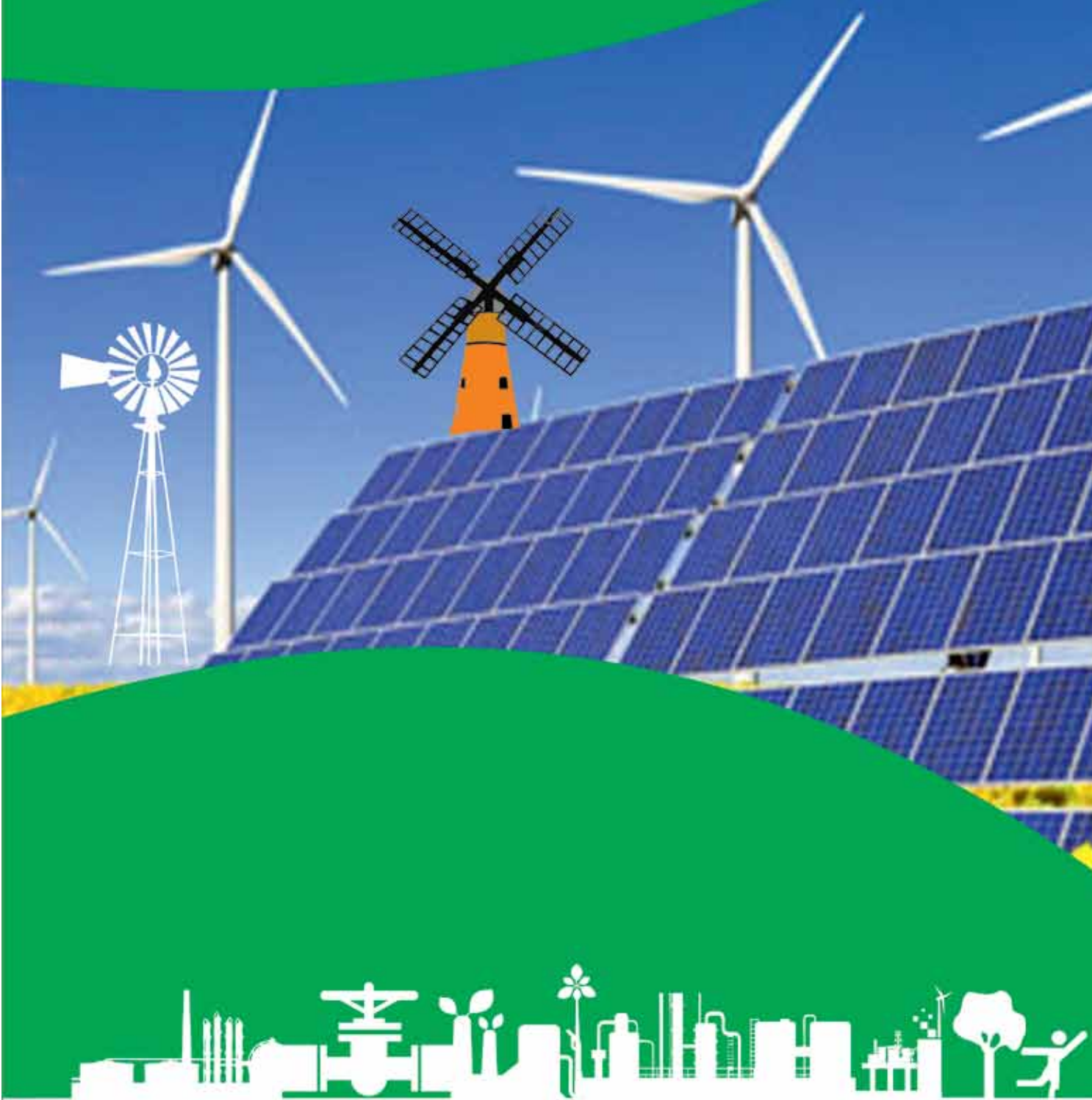
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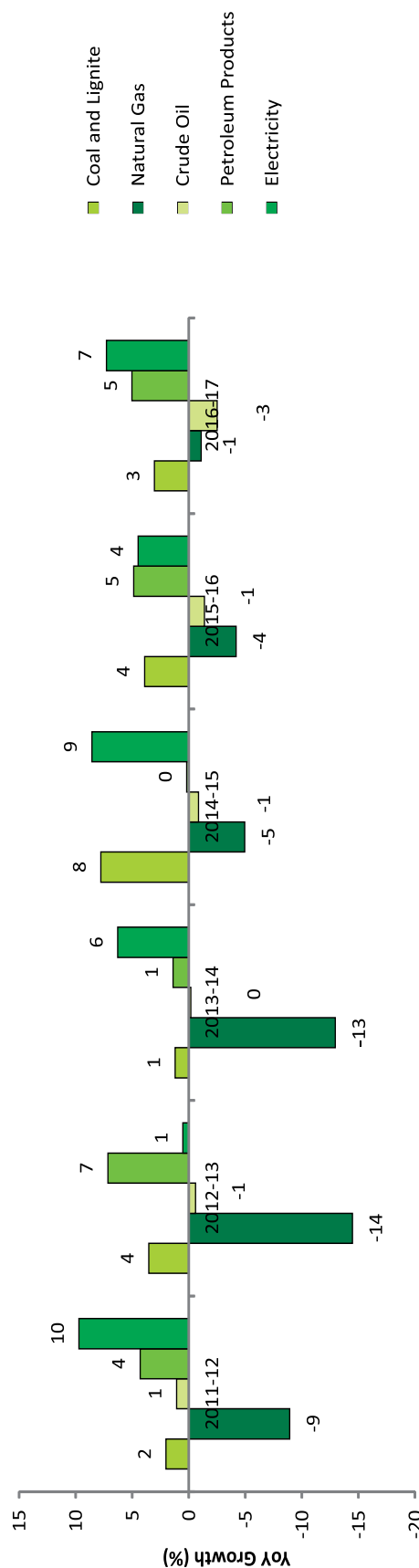
- Production of petroleum products was 243.55 MMT during 2016-17, which is 5.01% higher than the production in 2015-16 (231.92 MMT).
- Natural Gas Production during 2016-17 was 31.90 BCM, which is 1.09% less than the production in 2015-16 (32.25 BCM)
- Crude Oil Production during 2016-17 was 36.01 MMT, which is 2.53% less than the production in 2015-16 (36.94 BCM)
- Coal production in the country during the year 2016-17 was 659.27 MMT as compared to 639.23 MMT in 2015-16, registering a growth of 3.14%.
- Gross Electricity Generation which increased from 1.336 billion GWh in 2015-16 to 1.433 billion GWh in 2016-17, achieved a growth rate of 7.27%.
- Gross Value Added [at constant prices(2011-12)] by petroleum and natural gas in Economic activity was ₹4,04,040 crore in 2015-16 as compared to ₹3,25,746 crore in 2014-15, registering a growth of 24.04%.
- Contribution of petroleum and natural gas in total GVA at basic showed an increase from 3.35% in 2014-15 to 3.85 in 2015-16 [at constant prices (2011-12)].

IX.1 Gross Production of Energy by Various Sources in India												
Year	Coal & Lignite			Hydro-Carbon			Power					
	Coal	Lignite	Total	Natural Gas	Crude Oil	Petroleum Products	Utilities				Non-Utilities	Gross Electricity Generation
							Thermal	Hydro	Nuclear	RES		
	(Million Tonnes)			(MMSCM)	(TMT)			(GWh)				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
2010-11	532.70	37.73	570.81	52219	37684	194821	704300	114416	26266	39245	120917	1005143
2011-12	539.95	42.33	582.28	47559	38090	203202	759400	130510	33300	51226	128200	1102636
2012-13	556.40	46.45	602.85	40679	37862	217736	760454	113720	32866	57449	144010	1108499
2013-14	565.77	44.27	610.04	35407	37788	220756	792477	134848	34228	59615	156843	1178010
2014-15	609.18	48.27	657.45	33657	37461	221136	877941	129244	36102	73563	162057	1278907
2015-16	639.23	43.84	683.07	32249	36942	231924	943013	121377	37414	65781	168372	1335956
2016-17 (P)	659.27	44.47	703.74	31897	36009	243551	994215	122313	37664	81869	197081	1433141

P: Provisional

Source : Economic Survey, M/o Coal, M/o Power and CEA.

Figure IX.1: YoY growth in energy production by various sources in India



IX.2 Gross Value Added at basic prices by Economic Activity											
Sectors		at Current Prices					at Constant Prices (2011-12)				
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		(in ₹ crore)									
		2011-12	2012-13	2013-14	2014-15	2015-16 (P)	2011-12	2012-13	2013-14	2014-15	2015-16 (P)
1.	(a) Petroleum & Natural Gas	94476	111426	120334	116900	103786	94476	101834	101298	114433	136435
	(b) Manufacture of coke and refined petroleum products	78462	148584	168740	226768	260100	78462	136011	142692	211313	267605
	(c) Total	172938	260010	289074	343668	363886	172938	237845	243990	325746	404040
2.	Railways	61150	72296	78724	91946	101596	61150	69162	73685	80647	86294
3.	Transport by other means	337347	388023	427352	478018	517606	337347	360142	382631	408696	436297
4.	Storage	5108	6165	6026	6557	7162	5108	5715	5209	5544	6142
5.	Communication & Services related to broadcasting	125930	142969	177804	207298	242075	125930	134504	156030	176738	205068
6.	Electricity	145194	168197	204852	217683	251850	145194	148517	152873	163380	168302
7.	Gas	14666	15652	16868	15317	14548	14666	14269	14131	12829	13172
8.	Water Supply	14710	17512	22062	28129	35425	14710	15934	18343	22079	26506
9.	Other Utility Services	12098	13989	16373	18502	19829	12098	12915	14253	15455	16468
10.	GVA at basic prices	8106946	9202692	10363153	11481794	12458642	8106946	8546275	9063649	9719023	10490514.37
11. Contribution of P& NG in total GVA at basic prices (%)		2.13	2.83	2.79	2.99	2.92	2.13	2.78	2.69	3.35	3.85
Growth Rate (%)											
1.	(a) Petroleum & Natural Gas	-	17.94	7.99	-2.85	-11.22	-	7.79	-0.53	12.97	19.23
	(b) Manufacture of coke and Refined Petroleum products	-	89.37	13.57	34.39	14.70	-	73.35	4.91	48.09	26.64
	(c) Total	-	50.35	11.18	18.89	5.88	-	37.53	2.58	33.51	24.04
2.	Railways	-	18.23	8.89	16.80	10.50	-	13.10	6.54	9.45	7.00
3.	Transport by other means	-	15.02	10.14	11.86	8.28	-	6.76	6.24	6.81	6.75
4.	Storage	-	20.69	-2.25	8.81	9.23	-	11.88	-8.85	6.43	10.79
5.	Communication & Services related to broadcasting	-	13.53	24.37	16.59	16.78	-	6.81	16.00	13.27	16.03
6.	Electricity	-	15.84	21.79	6.26	15.70	-	2.29	2.93	6.87	3.01
7.	Gas	-	6.72	7.77	-9.19	-5.02	-	-2.71	-0.97	-9.22	2.67
8.	Water Supply	-	19.04	25.98	27.50	25.94	-	8.32	15.12	20.37	20.05
9.	Other Utility Services	-	15.63	17.04	13.00	7.17	-	6.75	10.36	8.43	6.55
10.	GVA at basic prices	-	13.52	12.61	10.79	8.51	-	5.42	6.05	7.23	7.94

P: Provisional

Source: Central Statistics Office, MoSPI

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Plan Performance

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Chapter Highlights

- Total Outlay from Internal and Extra Budgetary Resources (Budget Estimate) for petroleum and natural gas sector is at ₹86027.29 crore in 2017-18, which is 10.8% higher than that for the year 2016-17 (₹77600.42 crore).
- The dividend paid/payable by Oil & gas CPSEs under the Ministry of Petroleum and Natural Gas for the year 2016-17 (₹30330 crore), registered an increase of 84% over the dividend paid in 2015-16 (₹16506 crore).
- Net Profit earned by CPSEs during the year 2016-17 was ₹64264.30 crore which was substantially higher by 47% as compared to 2015-16 (₹43779.65 crore). IOCL earned highest profit (₹19106.40 crore) followed by ONGC (₹17900 crore) and BPCL (₹8039 crore).

X.1 12th Five Year Plan Outlay & Actual Expenditure for P&NG Sector

CPSes (1)	2012-13			2013-14			2014-15			2015-16			2016-17			Total Outlay (Actual)		2017-18	
	BE	RE	Actual	BE	RE	Actual	BE	RE	Actual	BE	RE	Actual	BE	RE	Actual	(17)	(18)	(19)	(20)
	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)				
OVL	7909.90	13140	10891.41	9491.88	36117.46	35357	14792	10147	7171.55	10402	8488	6782.96	14843.00	19450.00	17616.99	77819.91	29967.82		
ONGC	33065.31	33577	29507.91	35049.23	35049.06	32469.54	36059.07	34813.22	29997.46	36249.37	31467.45	30110.43	29307.20	28881.68	28006.41	150091.75	7088.00		
OIL	3378.29	3069.52	2890.03	3580.99	10439	9350.97	3632	3529.44	3773.76	3917.64	3537.27	3622.25	4019.71	10403.11	11083.24	30720.25	9252.34		
GAIL	9447.27	6738.77	5962	7511.50	5481.93	4069.78	3104.62	2131.52	1632.18	2704.51	1799.17	1511.75	1637.03	2098.00	1624.65	14800.36	2053.00		
IOCL	10000	10000	9378.11	11276.76	11826.00	16660.61	11375	9367	14313.68	10540	11502.91	11484.74	13772.87	17801.86	18217.31	70054.45	20161.79		
HPCL	3467.43	3354	2883.65	4081.44	2754.67	2641.87	3773.33	1801.64	2669.61	1791.85	1539.78	1430.09	1974.26	1212.23	929.76	10554.98	7110.00		
BPCL	4479	3546	3829.59	4747.74	3618	4373.58	5250	5793.50	6874.75	6501.32	7250	8287	10597.00	8843.80	12914.08	36279.00	7100.64		
MRPL	6817	2847.47	2248.55	2524.48	1542.84	1448.74	1300.15	1880	2747.36	1564.00	1213.77	1502.03	169.35	396.59	412.41	8359.09	1137.75		
CPCL	785.68	279.38	260.56	299.27	192	228.60	1102	617	465.90	1300.03	1250	1272	1073.00	1150.00	1134	3361.06	845.00		
NRL	272	225	160.60	368.88	293	372.14	177.65	111	102.77	115	104	70.27	157.00	230.00	289.69	995.47	1260.95		
BALMER LAWRIE	55	55	67.28	70	70	119.55	62	158	79.79	100	100	45.37	50.00	50.00	73.75	385.74	50.00		
BIECO LAWRIE	8.00	8.00	0.00	7.00	7.00	0.00	7.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Total (I&EBR)	79684.88	76840.14	68079.69	79009.17	107390.96	107092.38	80634.82	70349.32	69828.81	75185.72	68252.35	66118.89	77600.42	90517.77	92302.29	403422.06	86027.29		
Gross Budgetary Support Schemes (GBS)																			
1. Rajiv Gandhi Instt. of Petroleum Technology (RGPT)	41.00	10.00	0.00	0.00	15.00	0.00	42.00	1.00	0.00	48.00	48.00	48.00	47.00	100.00	100.00	148.00	135.10		
2. Strategic Storage Programme for Storage of Crude Oil by ISPR	1.00	0.00	0.00	1.00	0.00	0.00	1.00	2400.00	0.00	1.00	1153.00	1153.00	1.00	2001.00	2001.00	3154.00	2499.00		
3. ISPLR Phase-II (Construction of caverns)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00		
4. Setting up Petroleum University in Andhra Pradesh	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	2.00	32.00	32.00	32.00	145.20		
5. LPG Connections to BPL Households**	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
6. Scheme for LPG Connection to Poor Households - PMUY (Ujjwala)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2000.00	2500.00	2500.00	2500.00	2500.00		
7. Establishment of RGPT Centre, Assam	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00		
8. Establishment of Centre of Excellence for Energy, Bangalore	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00		
Total (GBS)	43.00	10.00	0.00	43.00	15.00	0.00	43.00	2402.00	0.00	50.00	1202.00	1201.00	2051.00	4633.00	4633.00	5834.00	5282.30		
Total (I&EBR & GBS)	79727.88	76850.14	68079.69	79052.17	107405.96	107092.38	80677.82	72751.32	69828.81	75235.72	69454.35	67319.89	79651.42	95150.77	96935.29	409256.06	91309.59		

Note:

1. Due to printing typographic error, Plan outlay for CPCL for 2015-16 was printed as ₹2230.90 crore in Budget Document - 2015-16 against their proposal of ₹1300 crore.
2. RE for OVL for 2014-15 proposed to M/o PNG was 1014.7 crore instead of ₹12387 crore, printed in Budget Document for 2015-16.
3. ** It has since been decided (at RE stage in 2013-14) that the scheme on LPG Connections to BPL Families would not be taken from the GBS and funds would be provided from CSR funds of CPSEs in the P&NG Sector.
4. GAIL for 2016-17, total Capex target for RE 2016-17 is Rs. 2098 crore which included ₹900 crore proposed as GBS for JHDBP. However, ₹450 crore has been granted which included in actual expenditure.
5. BPCL for 2016-17 = BPCL reported ₹423.79 crore utilised for Petrochemicals sector. However, there is no provision made in BE & RE for the sector. Therefore, it is included in Marketing & Refinery Sector.
6. BPCL for 2016-17 = BE & RE and actual represent only Plan Budget. Non-Plan of ₹2500 crore for BE & ₹3464 crore for RE is not included in the above amount.
7. GAIL for 2017-18 = Excludes ₹1200 crore GBS with this, the total outlay of GAIL is ₹3253.00 crore
8. OIL for 2017-18 = Out of total IEBR of ₹9252.34 crore, total CAPEX (including JV/Subsidiaries) investment is ₹4289.56 crore.
9. BPCL for 2017-18 = Due to printing error ₹700 crore proposed for petrochemicals has not been accounted for in BE 2017-18. Necessary rectification will be taken at the RE stage 2017-18.
10. During the current financial year 2017-18, the distinction between Plan and Non-Plan has been done away with.

Source: Ministry of Petroleum and Natural Gas

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APPENDIX

X.2 Performance of CPSEs under the Ministry of Petroleum and Natural Gas during 2016-17

Performance Parameters	Unit	ONGC ¹	OVL	IOCL ²	GAIL ³	HPCL ⁴	OIL ⁵	BPCL ⁶	CPCL ⁷	MRPL	NRL ⁸	EIL ⁹	Balmer Lawrie ¹⁰	Biecco Lawrie ¹¹
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Authorised Capital	₹ crore	15000.00	25000.00	6000.00	2000.00	2500.00	2000.00	2500.00	400.00	3000.00	1000.00	400.00	120.00	75.00
Paid up Capital	₹ crore	6417.00	15000.00	4739.34	1691.00	1015.88	801.51	1446.17	149.00	1752.66	735.63	336.94	114.00	74.76
Govt. equity in the CPSE	%	68.07	Nil	57.34	54.43	51.11	66.60	54.93	Nil	Nil	Nil	57.02	Nil	32.23
Gross Turnover	₹ crore	77908.00	10195.94	440350.92	48789.00	213488.95	9510.39	241859.48	40586.00	59415.10	13946.92	1448.64	1901.17	22.88
PAT	₹ crore	17900.00	700.99	19106.40	3503.00	6208.80	1548.68	8039.30	1030.00	3643.69	2100.57	325.04	170.42	-12.59
Debt equity ratio	Ratio	Nil	0.98:1	0.55:1	0.16:1	0.51:1	0.39:1	0.78:1	1.66:1	0.66:1	0.09:1	Nil	Nil	0.38:1
Reserves & Surpluses	₹ crore	179121.00	31024.67	94989.38	30658.00	19298.03	28288.98	28357.13	3165.00	8317.81	4445.00	2439.02	1051.99	-135.50
Net worth	₹ crore	185538.00	46024.67	99728.72	32350.00	20347.40	23201.74	29561.81	3314.00	10070.50	5180.64	2775.96	1165.99	-60.74
Dividend paid / payable	₹ crore	7764.00	0.00	9226.22	1459.00	3047.65	1120.80	4700.00	313.00	1051.56	1368.27	200.00	80.00	Nil
Dividend as a %age of Equity	%	121.00	0.50	190.00	91.00	300.00	142.50	325.00	210.07	60.00	186.00	59.36	70.18	N.A.
Dividend as a %age of PAT	%	43.37	0.00	48.29	44.00	49.09	72.37	53.01	30.39	28.86	65.14	61.53	46.94	N.A.
EPS	₹	13.95	4.95	40.31	20.71	61.12	19.32	61.31	69.15	20.79	28.55	4.82	14.95	-1.69
Payout Ratio	%	43.37	30.00	48.29	44.00	49.09	72.37	53.01	30.00	28.86	65.10	62.19	46.83	N.A.
Total outstanding loan	₹ crore	Nil	44971.77	54819.50	5062.00	21249.71	8947.53	23159.21	5501.00	6723.67	504.93	Nil	Nil	28.37

Note:

- (i) Net worth including reserve for equity instruments through other comprehensive income of ₹ 24,669 crore (ii) Dividend excludes Dividend Distribution tax of ₹1579 crore. (iii) Out of the dividend ₹5326 crore pertains to Govt. of India. (iv) ONGC has issued bonus shares in the ratio 1:2 during FY 2016-17.
- Paid up share capital gross of shared held under IOC Share Trust is ₹ 4885.90 crore; (iii) Includes dividend on shares held under IOC Share Trust
- In March 2017, GAIL has issued Bonus share in ratio of one equity share of ₹ 10 each for every three equity shares of ₹ 10 each held as result the Paid-up Equity Capital has increased from ₹ 1268.48 crore to ₹ 1691.30 crore by capitalising the General Reserves for ₹ 422.82 crore. (iii) Rs. 381 crore is final dividend of 2015-16 paid in 2016-17; and (iii) Rs. 457 crore is final dividend of 2016-17 paid in 2017-18
- (i) Paid up capital (₹ 1016.26 crore) Less Forfeiture (₹ 0.38 crore). (ii) Dividend excluding dividend tax declared for the year 2016-17.
- OIL has declared dividend for 2016-17: Interim dividend of 95% on pre buy back equity share capital of ₹ 801.51 crore and Final dividend of 47.5% on post buy back equity share capital of ₹ 756.60 crore. (ii) OIL also has a bridge loan of ₹ 5236.30 crore raised at the level of wholly owned subsidiary (Wos) at Singapore for acquisition of Russian assets. Therefore total loan on consolidated level as on 31.03.2017 is ₹ 14183.83 crore and the consolidated Debt Equity ratio as on 31.03.2017 is 0.61:1.
- (i) Paid up capital represents gross paid up share capital including BPCL trust shares. (ii) Dividend excludes dividend tax declared for the year 2016-17 after netting off dividend on BPCL trust shares. (iii) Dividend as a % equity refers to total dividend (Interim and final) per share declared by the company for FY 2016-17 of ₹ 32.5 per share dividend by face value of equity share of ₹ 10 per share dividend.
- Govt. Of India transferred its entire shareholding of 7,72,65,200 Equity shares of ₹ 10/- each (51.89%) in favour of Indian Oil Corporation Ltd. Effective 29.03.2001.
- (i) Govt. Of India does not hold any shares in the company directly. Govt. Of Assam holds 12.35% share in the company. Other shareholders are BPCL - 62.65% and OIL - 12.35%. (ii) For FY 2016-17, Interim dividend of ₹ 735.63 crore was paid in FY 2016-17 and Final dividend of ₹ 632.64 crore for the year has been recommended by the Board for approval of the shareholders.
- Includes proposed Dividend amounting ₹ 33.69 crore in addition to Interim Dividend of ₹ 168.47 crores paid during the year.
- (i) There is no direct holding by Govt. Of India in Balmer & Co. Ltd. (BL). Balmer Lawrie Investments Ltd. (BLIL), a Government Company holds 61.8% of equity shares in BL. Govt. of India holds 59.67% in BLIL. (ii) Dividend is proposed dividend for the year 2016-17.
- Oil Industry Development Board holds 67.33% of equity capital.

Source: CPSEs and Ministry of Petroleum and Natural Gas

X.3 : Dividend paid/payable by CPSEs under the Ministry of Petroleum and Natural Gas

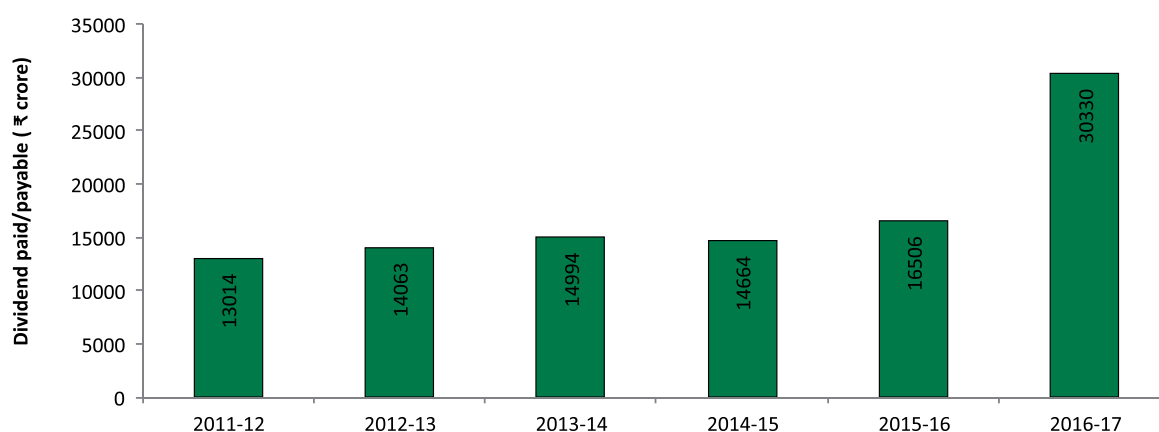
(in ₹ crore)						
Name of Company	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Oil & Natural Gas Corp. Ltd.	8342	8128	8128	8128	7272	7764
Indian Oil Corp. Ltd.	1214	1505	2112	1602	3399	9226
GAIL India Ltd.	1104	1217	1319	761	697	1459
Hindustan Petroleum Corp. Ltd.	288	288	525	830	1168	3048
Oil India Ltd.	1142	1803	1292	1202	962	1121
Bharat Petroleum Corp. Ltd.	398	795	1229	1627	2242	4700
Chennai Petroleum Corp. Ltd.	30	0	0	0	60	313
Mangalore Refinery & Petrochemicals Ltd.	175	0	0	0	0	1052
Numaligarh Refinery Ltd.	74	74	118	294	515	1368
Engineers India Ltd.	202	202	219	168	135	200
Balmer Lawrie Ltd.	46	50	51	51	57	80
Total	13014	14063	14994	14664	16506	30330

Note:

1. There is no direct holding of Government of India (GoI) in Balmer Lawrie & Co. Limited (BLL). Balmer Lawrie Investment Ltd. (BLIL), a Government Company, holds 61.8% of share in BLL. GoI holds 59.57% in BLIL
2. Dividend excludes distribution tax

Source: Central Public Sector Enterprises

Figure X.1: Dividend paid/payable by CPSEs under the Ministry of Petroleum and Natural Gas



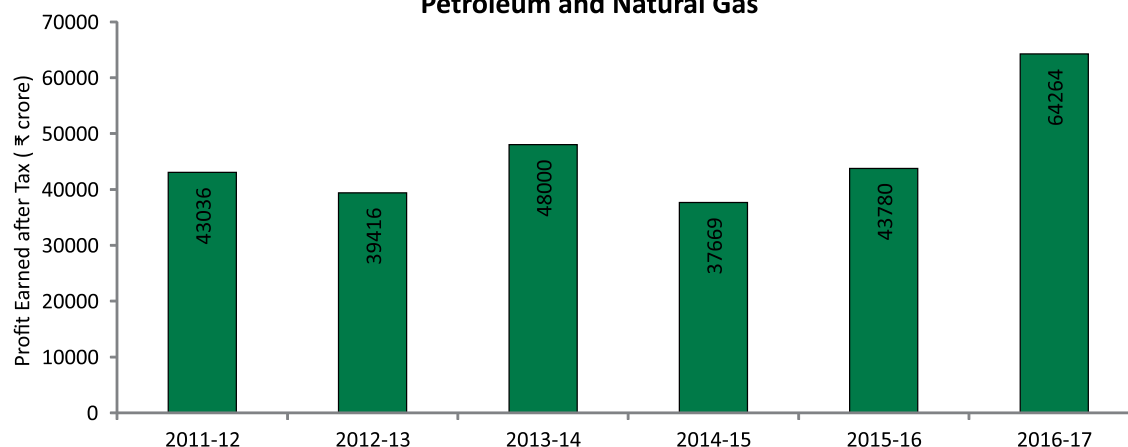
X.4 Profit earned after tax by CPSEs under the Ministry of Petroleum and Natural Gas

(in ₹ crore)

Name of CPSEs	Profit after tax during					
	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Oil & Natural Gas Corporation Ltd.	25123.00	20926.00	22094.81	17733.00	16003.65	17900.00
ONGC (Videsh) Ltd.	2721.15	3929.14	4445.32	1904.22	-2093.55	700.99
Indian Oil Corporation Ltd.	3954.62	5005.17	7019.09	5273.03	10399.03	19106.40
GAIL (India) Ltd.	3654.00	4022.00	4375.27	3039.00	2299.00	3503.00
Hindustan Petroleum Corporation Ltd.	911.43	904.71	1733.77	2733.26	3862.74	6208.80
Oil India Ltd.	3446.92	3589.34	2981.30	2510.20	2330.11	1548.68
Bharat Petroleum Corporation Ltd.	1311.27	2642.90	4060.88	5085.00	7431.88	8039.30
Chennai Petroleum Corporation Ltd.	61.83	-1766.84	-303.85	-38.99	770.68	1030.00
Mangalore Refinery & Petrochemicals Ltd.	908.58	-756.91	601.18	-1712.23	1148.16	3643.69
Numaligarh Refineries Ltd.	183.70	144.26	371.09	718.31	1222.34	2100.57
Engineers India Ltd.	636.32	628.58	479.76	307.98	258.31	325.04
Balmer Lawrie Ltd.	138.07	162.77	156.67	132.00	163.20	170.42
Biecco Lawrie Ltd.	-15.27	-14.74	-15.08	-15.70	-15.90	-12.59
Total	43035.62	39416.38	48000.21	37669.08	43779.65	64264.30

Source: Ministry of Petroleum and Natural Gas

Figure X.2: Profit Earned after tax by CPSEs under the Ministry of Petroleum and Natural Gas



X.5 Projection of Crude Oil Production in 12th Plan (2012-17)

Company	Projected Crude Oil Production in 12 th Plan						Actual Crude Oil Production					
	2012-13	2013-14	2014-15	2015-16	2016-17	Total	2012-13	2013-14	2014-15	2015-16	2016-17	Total
	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
ONGC	25.045	28.270	28.002	26.286	25.456	133.059	22.561	22.246	22.264	22.360	22.218	111.648
OIL	3.920	4.000	4.060	4.160	4.200	20.340	3.661	3.466	3.412	3.226	3.258	17.023
Pvt/JV	13.340	13.300	12.700	12.100	11.500	62.940	11.640	12.076	11.785	11.356	10.533	57.391
Total	42.305	45.570	44.762	42.546	41.156	216.339	37.862	37.788	37.461	36.942	36.009	186.062

Source: Report of the Working Group on Petroleum and Natural Gas Sector for the 12th Five Year Plan; ONGC, OIL & DGH

X.6 Projection of Natural Gas Production in 12th Plan (2012-17)

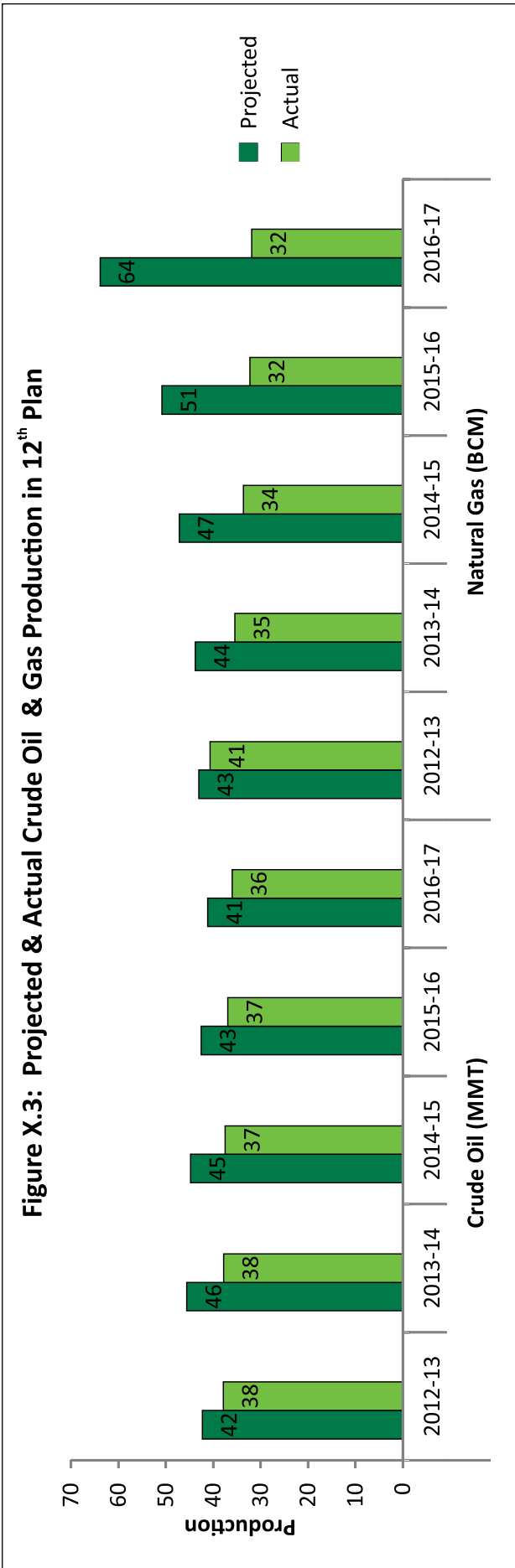
Company	Projected Natural Gas Production in 12 th Plan						Actual Natural Gas Production					
	2012-13	2013-14	2014-15	2015-16	2016-17	Total	2012-13	2013-14	2014-15	2015-16	2016-17	Total
	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
ONGC	24.877	25.472	26.669	28.215	38.676	143.909	23.549	23.284	22.023	21.177	22.088	112.121
OIL	3.140	3.800	4.000	4.100	4.200	19.240	2.639	2.626	2.722	2.838	2.937	13.762
Pvt/JV	15.000	14.500	16.500	18.500	21.000	85.500	14.491	9.497	8.912	8.235	6.872	48.007
Total (BCM)	43.017	43.772	47.169	50.815	63.876	248.649	40.679	35.407	33.657	32.249	31.897	173.889
Total (MMSCMD)	117.800	119.900	129.200	138.800	175.000	136.140	111.450	97.005	92.212	88.113	87.388	95.234

Source: Report of the Working Group on Petroleum and Natural Gas Sector for the 12th Five Year Plan; ONGC, OIL & DGH

X.7 Projection of Total Gas Availability during 12th Plan (2012-17)

(in MMSCMD)												
Source	Projected Gas Availability during 12 th Plan					Actual Gas Availability						
	2012-13	2013-14	2014-15	2015-16	2016-17	Total	2012-13	2013-14	2014-15	2015-16	2016-17 (P)	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Domestic Sources	124.00	149.00	170.00	177.00	209.00	829.00	108.98	94.90	89.84	85.60	84.71	464.03
Imports-LNG	63.00	87.00	87.00	129.00	150.00	516.00	47.82	47.25	51.11	58.81	68.13	273.13
Total Availability	187.00	236.00	257.00	306.00	359.00	269.00	156.80	142.15	140.96	144.41	152.84	147.43

Source: Report of the Working Group on Petroleum and Natural Gas Sector for the 12th Five Year Plan; ONGC, OIL & DGH



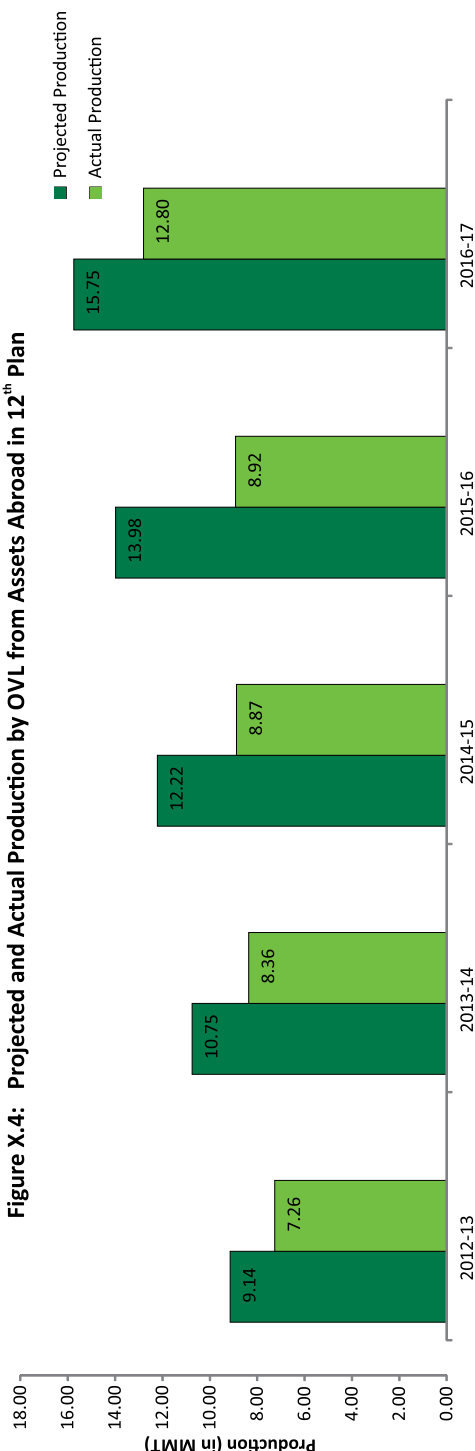
X.8 Oil and Natural Gas Projection & Actual Production Target of OVL from Assets abroad in 12th Plan

Projects	Particulars	Projected Production					Actual Production						
		2012-13 (3)	2013-14 (4)	2014-15 (5)	2015-16 (6)	2016-17 (7)	Total (8)	2012-13 (9)	2013-14 (10)	2014-15 (11)	2015-16 (12)	2016-17 (13)	Total (14)
Producing Assets	Oil (MMT)	6.470	6.362	6.346	6.567	6.555	32.300	4.330	4.513	4.250	4.263	3.891	21.247
	Gas (BCM)	2.580	2.600	2.183	2.196	2.573	12.132	2.918	2.568	2.521	2.372	2.142	12.521
	Oil and Gas (MMTOE)	9.050	8.962	8.529	8.763	9.129	44.433	7.248	7.081	6.771	6.635	6.033	33.768
Development Assets (Carabobo-1 Venezuela and A1&A3 Myanmar)	Oil (MMT)	0.031	0.255	0.670	1.052	1.419	3.428	0.001	0.021	0.063	0.112	0.140	0.337
	Gas (BCM)	0.000	0.410	0.810	0.910	0.910	3.030	0.000	0.202	0.665	0.898	0.854	2.619
	Oil and Gas (MMTOE)	0.031	0.664	1.484	1.957	2.324	6.461	0.001	0.223	0.728	1.010	0.994	2.956
Exploratory Asset (Block 24, Syria)	Oil (MMT)	0.062	0.193	0.214	0.210	0.183	0.863	0.001	0.000	0.000	0.000	0.000	0.001
	Gas (BCM)	--	--	--	--	--	--	0.000	0.000	0.000	0.000	0.000	0.000
	Oil and Gas (MMTOE)	0.062	0.193	0.214	0.210	0.183	0.863	0.001	0.000	0.000	0.000	0.000	0.001
Existing Assets	Total Oil (MMT)	6.564	6.810	7.230	7.829	8.157	36.591	4.332	4.534	4.313	4.375	4.031	21.585
	Total Gas (BCM)	2.580	3.009	2.997	3.101	3.478	15.165	2.918	2.770	3.186	3.270	2.996	15.140
	Total Oil & Gas (MMTOE)	9.144	9.819	10.228	10.930	11.636	51.757	7.250	7.304	7.499	7.645	7.027	36.725
New Ventures** (ACG, Azerbaijan + Addnl 12% from BC-10)	Oil & Gas (MMTOE)	0.000	0.930	1.990	3.050	4.110	10.080	0.011	1.053	1.375	1.271	5.776	9.486
Grand Total	Existing + NV (MMTOE)	9.144	10.749	12.218	13.980	15.746	61.837	7.260	8.357	8.874	8.916	12.803	46.210

** ACG (PI: 2.7213%) acquired on 28th March 2013 & Additional 12% BC-10 acquired on 30th December 2013.

Source: OVL and Report of the Working Group on Petroleum and Natural Gas Sector for the 12th Five Year Plan.

Figure X.4: Projected and Actual Production by OVL from Assets Abroad in 12th Plan



X.9 Projection of Refining Capacity in 12th Plan (2012-17)

(in MMTPA)

Company	Refinery Location	Projected Refining Capacity					Current Capacity as on 01.04.2017
		2011-12	2012-13	2013-14	2014-15	2015-16	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
IOCL	Digboi	0.650	0.650	0.650	0.650	0.650	0.650
	Guwahati	1.000	1.000	1.000	1.000	1.000	1.000
	Barauni	6.000	6.000	6.000	6.000	6.000	6.000
	Koyali	13.700	13.700	13.700	18.000	18.000	13.700
	Haldia	7.500	7.500	7.500	8.000	8.000	7.500
	Bongaigaon	2.350	2.350	2.350	2.350	2.350	2.350
	Mathura	8.000	8.000	8.000	8.000	11.000	8.000
	Panipat	15.000	15.000	15.000	15.000	15.000	15.000
	Paradip	0.000	15.000	15.000	15.000	15.000	15.000
	Sub-total	54.200	69.200	69.200	74.000	77.000	69.200
CPCL	Manali	11.100	11.100	11.100	11.100	11.100	10.500
	Nagapattinam	1.000	1.000	1.000	1.000	1.000	1.000
	Sub-total	12.100	12.100	12.100	12.100	12.100	11.500
HPCL	Mumbai	7.500	8.200	8.200	8.200	8.200	7.500
	Visakh	9.000	9.000	9.000	9.000	15.000	8.300
	New Refinery	-	-	-	-	9.000	-
	Sub-total	16.500	17.200	17.200	17.200	32.200	15.800
BPCL	Mumbai	12.000	12.000	13.500	13.500	13.500	12.000
	Kochi	9.500	9.500	9.500	15.500	15.500	12.400
	Sub-total	21.500	21.500	23.000	29.000	29.000	24.400
NRL	Numaligarh	3.000	3.000	3.000	3.000	8.000	3.000
BORL	Bina	6.000	6.000	7.200	7.200	9.000	6.000
HMEL	Bhatinda	9.000	9.000	9.000	9.000	9.000	9.000
MRPL	Mangalore	15.000	15.500	16.000	16.500	18.000	15.000
ONGC	Tatipaka	0.066	0.066	0.066	0.066	0.066	0.066
	Sub-total	33.066	33.566	35.266	35.766	44.066	33.066
Total CPSE/JV refineries		137.366	153.566	156.766	168.066	194.366	153.966
Reliance	DTA, Jamnagar	33.000	33.000	33.000	33.000	33.000	33.000
	SEZ, Jamnagar	27.000	27.000	27.000	27.000	27.000	27.000
	Sub-total	60.000	60.000	60.000	60.000	60.000	60.000
ESSAR	Jamnagar	19.000	20.000	20.000	30.800	38.000	20.000
Nagarjuna	Cuddalore	2.000	6.000	6.000	6.100	15.000	0.000
Total Private Refineries		81.000	86.000	86.000	96.900	113.000	80.000
GRAND TOTAL		218.366	239.566	242.766	264.966	307.366	233.966

Source: Report of the Working Group on Petroleum and Natural Gas Sector for the 12th Five Year Plan and Oil Companies.

X.10 Projection of Demand for Petroleum Products in 12th Plan (2012-17)

Projects		Projected Demand of Petroleum Products						Actual Demand of Petroleum Products						(in MMT)	
		Projected Demand of Petroleum Products						Actual Demand of Petroleum Products							
		2012-13 (2)	2013-14 (3)	2014-15 (4)	2015-16 (5)	2016-17 (6)	Total (7)	2012-13 (8)	2013-14 (9)	2014-15 (10)	2015-16 (11)	2016-17 (P) (12)	Total (13)		
1. Petroleum Products															
LPG		16.986	18.363	19.675	20.857	21.831	97.712	15.601	16.294	18.000	19.623	21.537	91.055		
MS		16.091	17.527	19.083	20.766	22.588	96.055	15.744	17.128	19.075	21.847	23.765	97.559		
NAPHTHA		12.353	11.417	11.417	11.022	11.022	57.231	12.289	11.305	11.082	13.271	13.174	61.121		
ATF		6.009	6.587	7.202	7.849	8.54	36.187	5.271	5.505	5.723	6.262	6.998	29.759		
SKO		7.949	7.631	7.326	7.033	6.751	36.690	7.502	7.165	7.087	6.826	5.397	33.976		
HSDO		65.040	68.654	72.589	76.904	81.599	364.786	69.080	68.364	69.416	74.647	76.015	357.522		
LDO		0.40	0.40	0.400	0.40	0.40	2.000	0.399	0.386	0.365	0.407	0.449	2.006		
LUBES		2.691	2.772	2.857	2.945	3.036	14.301	3.196	3.305	3.310	3.571	3.353	16.735		
FO/LSHS		7.954	7.902	7.899	7.872	7.872	39.499	7.656	6.236	5.961	6.632	7.182	33.667		
BITUMEN		5.254	5.541	5.732	5.971	6.114	28.612	4.676	5.007	5.073	5.938	5.939	26.633		
PET COKE		6.765	7.514	8.345	9.268	10.294	42.186	10.135	11.756	14.557	19.297	23.254	78.999		
OTHERS		5.445	6.127	6.109	6.085	6.162	29.928	5.509	5.956	5.871	6.353	6.682	30.371		
Total (Petroleum Products)		152.937	160.436	168.635	176.972	186.209	845.189	157.057	158.407	165.520	184.674	193.745	859.403		
2. Natural Gas (MMSCMD) ¹		293.000	371.000	405.000	446.000	473.000	397.600	147.711	134.230	128.643	130.737	139.117	136.088		

1: Including LNG

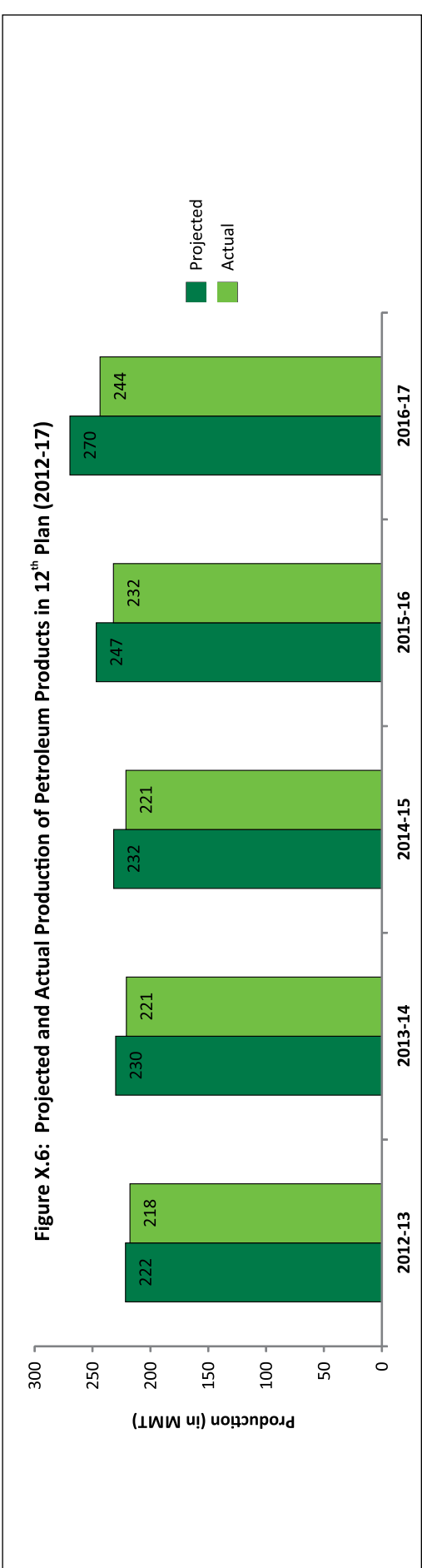
Source: Report of the Working Group on Petroleum and Natural Gas Sector for the 12th Five Year Plan; PPA-C.

Figure X.5: Projected and Actual Demand for Petroleum Products in 12th Plan (2012-17)



X.11 Projection for Production of Petroleum Products in 12th Plan (2012-17)														
Projects	Projected Production						Actual Production							(in MMT)
	2012-13 (2)	2013-14 (3)	2014-15 (4)	2015-16 (5)	2016-17 (6)	Total (7)	2012-13 (8)	2013-14 (9)	2014-15 (10)	2015-16 (11)	2016-17 (P) (12)	Total (13)		
1. Crude Processing	236.478	245.308	247.008	261.828	286.618	1277.240								
2. Petroleum Products														
LPG	9.255	10.345	10.659	11.358	13.087	54.704	9.825	10.030	9.84	10.568	11.326		51.589	
Naphtha	18.147	18.772	18.695	20.088	22.713	98.415	19.018	18.505	17.391	17.861	19.946		92.721	
MS	30.071	31.620	32.679	36.003	38.763	169.136	30.118	30.275	32.325	35.321	36.593		164.632	
ATF	11.984	12.643	12.843	14.316	16.037	67.823	10.088	11.220	11.103	11.789	13.831		58.031	
SKO	8.376	8.697	8.98	9.40	9.743	45.196	7.971	7.418	7.559	7.503	6.041		36.492	
HSD	95.638	97.570	100.178	106.222	116.520	516.128	91.103	93.759	94.428	98.588	102.484		480.361	
LDO	0.480	0.338	0.338	0.163	0.218	1.537	0.400	0.423	0.358	0.429	0.629		2.238	
FO/LSHS	16.147	15.557	11.408	11.186	10.084	64.382	15.054	13.405	11.919	9.727	9.962		60.068	
BITUMEN	5.209	5.482	5.595	5.446	5.620	27.352	4.670	4.785	4.632	5.157	5.185		24.429	
LUBES & GREASES	0.792	0.871	0.883	0.895	1.302	4.743	0.896	0.941	0.946	1.037	1.029		4.849	
OTHERS	25.489	28.028	29.538	31.699	35.525	150.279	28.594	29.995	30.635	33.943	36.525		159.692	
OTHERS	5.445	6.127	6.109	6.085	6.162	29.928	5.509	5.956	5.871	6.353	6.682		30.371	
Total (Petroleum Products)	221.588	229.923	231.797	246.776	269.611	1199.695	217.736	220.756	221.136	231.923	243.551		1135.102	

Source: Report of the Working Group on Petroleum and Natural Gas Sector for the 12th Five Year Plan, oil companies.



Chapter XI

International Petroleum Statistics

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Chapter Highlights

- World's Proven Crude Oil reserves at end of 2016 are 1706.7 Thousand Million Barrels. Middle East with reserves of 813.5 Thousand Million Barrels has the highest share (47.7%), followed by Central & South America (19.2%). Asia Pacific region constitute a mere 2.8% of the total basket.
- Middle East with reserves of 79.4 Trillion cubic metres of Natural Gas has the highest share region wise (42.5%) in Proved Reserve of Natural Gas in world (186.6 Trillion cubic metres). Europe & Eurasia (56.7 Trillion cubic metres) followed by Asia Pacific (17.5 Trillion cubic metre) is having the second and third largest share region wise in World Natural gas reserves.
- World Production of Crude Oil was 4382.4 Million Tonnes during 2016, which is 0.5% higher than the Crude Oil production in 2015 (4359.58 Million Tonnes).
- Saudi Arabia had the largest share in crude oil production with 585.7 million tonnes (31.4%) for OPEC countries in 2016, followed by Iraq & Iran at 218.9 million tonnes (11.7%) and 216.4 million tonnes (11.6%) respectively.
- World Natural gas production in 2016 was 3212.9 Million Tonnes Oil Equivalent (MTOE) as compared to 3195 MTOE in 2015, registering a growth of 0.56%.
- Europe & Eurasia region accounted for 28.9% share (926.6 MTOE) in global consumption of natural gas at 3204.1 MTOE followed by North America at 27.7% (886.8 MTOE).
- World Oil Refining capacity at end of 2016 was 97430 thousand barrels/day registering a growth of over 0.4% over 2015. India with refining capacity of 4620 thousand barrels per day had a share of 4.7% in world refining capacity.
- India with a consumption of 212.75 Million tonnes is having the third largest share country wise in World Oil consumption (4418.2 Million tonnes).
- OPEC Countries are having a share of 57 % in world crude oil export for 2016.
- China is having the largest share (23%) in Global Primary energy consumption. India with consumption of 724 Million tonnes oil equivalent of primary energy is the third largest consumer of primary energy.

XI.1 (a) World Proven Oil Reserves

(in Thousand million barrels)

Country/ Region	2010	2011	2012	2013	2014	2015	2016	% share in 2016
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
US	35.0	39.8	44.2	48.5	55.0	48.0	48.0	2.8
Canada	174.8	174.2	173.7	173.0	172.2	171.5	171.5	10.0
Mexico	11.7	11.4	11.4	11.1	10.8	8.0	8.0	0.5
Total North America	221.5	225.3	229.3	232.6	237.9	227.5	227.5	13.3
Argentina	2.5	2.5	2.4	2.3	2.4	2.4	2.4	0.1
Brazil	14.2	15.0	15.3	15.6	16.2	13.0	12.6	0.7
Colombia	1.9	2.0	2.2	2.4	2.4	2.3	2.0	0.1
Ecuador	6.2	7.2	8.4	8.2	8.0	8.0	8.0	0.5
Peru	1.2	1.2	1.4	1.6	1.4	1.2	1.2	0.1
Trinidad & Tobago	0.8	0.8	0.8	0.8	0.8	0.7	0.2	*
Venezuela	296.5	297.6	297.7	298.3	300.0	300.9	300.9	17.6
Other S. & Cent. America	0.8	0.5	0.5	0.5	0.5	0.5	0.5	0.03
Total S. & Cent. America	324.2	326.9	328.8	329.8	331.7	329.0	327.9	19.2
Azerbaijan	7.0	7.0	7.0	7.0	7.0	7.0	7.0	0.4
Denmark	0.9	0.8	0.7	0.7	0.6	0.5	0.4	*
Italy	0.6	0.6	0.6	0.6	0.6	0.6	0.5	*
Kazakhstan	30.0	30.0	30.0	30.0	30.0	30.0	30.0	1.8
Norway	6.8	6.9	7.5	7.0	6.5	8.0	7.6	0.4
Romania	0.6	0.6	0.6	0.6	0.6	0.6	0.6	*
Russian Federation	105.8	105.7	105.5	105.0	103.2	102.4	109.5	6.4
Turkmenistan	0.6	0.6	0.6	0.6	0.6	0.6	0.6	*
United Kingdom	2.8	3.1	3.0	3.0	2.8	2.5	2.5	0.1
Uzbekistan	0.6	0.6	0.6	0.6	0.6	0.6	0.6	*
Other Europe & Eurasia	2.2	2.2	2.0	2.0	2.1	2.1	2.1	0.1
Total Europe & Eurasia	157.9	158.0	158.2	157.2	154.6	154.9	161.5	9.5
Iran	151.2	154.6	157.3	157.8	157.8	158.4	158.4	9.3
Iraq	115.0	143.1	140.3	144.2	143.1	142.5	153.0	9.0
Kuwait	101.5	101.5	101.5	101.5	101.5	101.5	101.5	5.9
Oman	5.5	5.5	5.5	5.0	5.2	5.3	5.4	0.3
Qatar	24.7	23.9	25.2	25.1	25.7	25.2	25.2	1.5
Saudi Arabia	264.5	265.4	265.9	265.9	267.0	266.6	266.5	15.6
Syria	2.5	2.5	2.5	2.5	2.5	2.5	2.5	0.1
United Arab Emirates	97.8	97.8	97.8	97.8	97.8	97.8	97.8	5.7
Yemen	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.2
Other Middle East	0.3	0.7	0.3	0.3	0.2	0.2	0.2	*
Total Middle East	765.9	797.9	799.3	803.0	803.8	803.0	813.5	47.7
Algeria	12.2	12.2	12.2	12.2	12.2	12.2	12.2	0.7
Angola	9.5	9.1	12.7	12.7	12.6	11.8	11.6	0.7
Chad	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0.1
Rep. of Congo (Brazzaville)	1.6	1.6	1.6	1.6	1.6	1.6	1.6	0.1
Egypt	4.5	4.3	4.2	3.9	3.7	3.5	3.5	0.2
Equatorial Guinea	1.7	1.7	1.7	1.7	1.1	1.1	1.1	0.1
Gabon	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.1
Libya	47.1	48.0	48.5	48.4	48.4	48.4	48.4	2.8
Nigeria	37.2	37.2	37.1	37.1	37.1	37.1	37.1	2.2
South Sudan	na	na	3.5	3.5	3.5	3.5	3.5	0.2

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XI.1 (a) World Proven Oil Reserves (Contd...)

(in Thousand million barrels)

Country/ Region	2010	2011	2012	2013	2014	2015	2016	% share in 2016
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Sudan	5.0	5.0	1.5	1.5	1.5	1.5	1.5	0.1
Tunisia	0.4	0.4	0.4	0.4	0.4	0.4	0.4	*
Other Africa	2.3	2.2	3.7	3.7	3.7	3.7	3.7	0.2
Total Africa	125.0	125.2	130.6	130.1	129.2	128.2	128.0	7.5
Australia	3.8	3.9	3.9	4.0	4.0	4.0	4.0	0.2
Brunei	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.1
China	23.2	23.7	24.4	24.7	25.1	25.7	25.7	1.5
India	5.8	5.7	5.7	5.7	5.7	4.8	4.7	0.3
Indonesia	4.2	3.7	3.7	3.7	3.6	3.6	3.3	0.2
Malaysia	3.7	3.7	3.7	3.8	3.6	3.6	3.6	0.2
Thailand	0.4	0.5	0.4	0.5	0.4	0.4	0.4	*
Vietnam	4.4	4.4	4.4	4.4	4.4	4.4	4.4	0.3
Other Asia Pacific	1.1	1.1	1.1	1.3	1.3	1.3	1.3	0.1
Total Asia Pacific	47.9	47.9	48.5	49.1	49.3	48.8	48.4	2.8
Total World	1642.4	1681.3	1694.6	1701.8	1706.5	1691.5	1706.7	100

Notes:

*: Less than 0.05

na: not available

1. 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.
2. Source of data - The estimates in this table have been compiled using a combination of primary official sources, third party data from the OPEC Secretariat, World Oil, Oil & Gas Journal and an independent estimate of Russia and announcements. Chinese reserves based on information in the public domain. Canadian oil sands 'under active development' are an official estimate. Venezuelan Orinoco Belt reserves are based on the OPEC Secretariat and Government announcements. development' are an official estimate. Venezuelan Orinoco Belt reserves are based on the OPEC Secretariat and Government announcements.
3. Reserves include gas condensate and natural gas liquids (NGLs) as well as crude oil.
4. Total may not add up due to rounding off.

Source: BP Statistical Review of World Energy, June 2017.

Figure XI.1 (a): Trends in World Proven Crude Oil Reserves

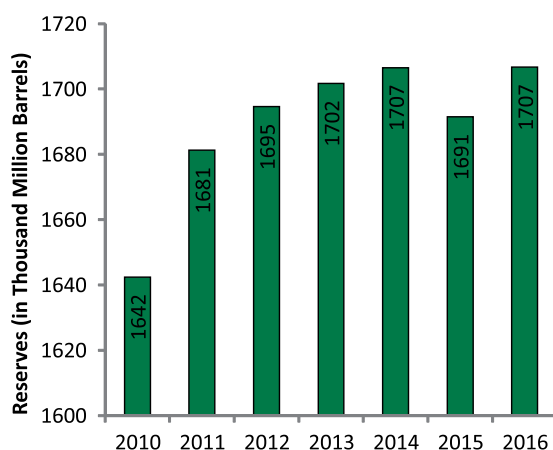
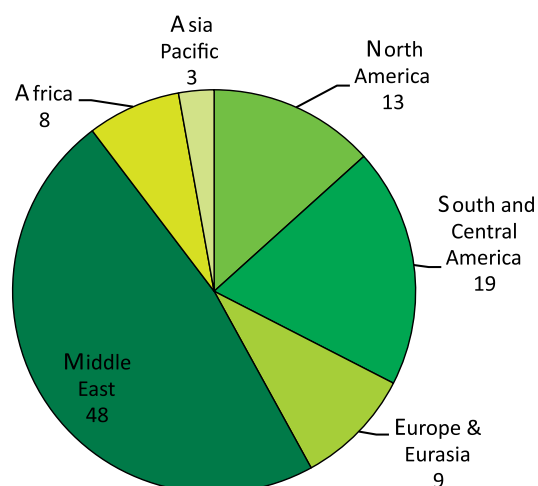


Figure XI.1(b): Region-wise Distribution of Proven Crude Oil Reserves-2016 (%)



XI.1 (b) World Proven Natural Gas Reserves								
(in Trillion cubic metres)								
Country/ Region	2010	2011	2012	2013	2014	2015	2016	% share in 2016
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
US	8.6	9.5	8.7	9.6	10.4	8.7	8.7	4.7
Canada	2.0	1.9	2.0	2.0	2.0	2.2	2.2	1.2
Mexico	0.4	0.4	0.4	0.3	0.3	0.2	0.2	0.1
Total North America	11.0	11.7	11.1	12.0	12.8	11.1	11.1	6.0
Argentina	0.4	0.3	0.3	0.3	0.3	0.4	0.4	0.2
Bolivia	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2
Brazil	0.4	0.5	0.5	0.5	0.5	0.4	0.4	0.2
Colombia	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1
Peru	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.2
Trinidad & Tobago	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.2
Venezuela	5.5	5.5	5.6	5.6	5.6	5.7	5.7	3.1
Other S. & Cent. America	0.1	0.1	0.1	0.1	0.1	0.1	0.1	*
Total S. & Cent. America	7.5	7.5	7.7	7.6	7.6	7.7	7.6	4.1
Azerbaijan	0.9	0.9	0.9	0.9	1.2	1.1	1.1	0.6
Denmark	0.1	0.04	0.04	0.04	0.04	0.02	0.01	*
Germany	0.1	0.07	0.06	0.05	0.04	0.04	0.04	*
Italy	0.1	0.06	0.05	0.05	0.05	0.05	0.03	*
Kazakhstan	1.3	1.2	0.8	0.9	0.9	1.0	1.0	0.5
Netherlands	1.1	1.0	0.8	0.8	0.7	0.7	0.7	0.4
Norway	2.0	2.1	2.1	2.0	1.9	1.9	1.8	0.9
Poland	0.1	0.1	0.1	0.1	0.1	0.1	0.1	*
Romania	0.6	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Russian Federation	31.5	31.8	32.0	32.3	32.4	32.3	32.3	17.3
Turkmenistan	10.2	17.5	17.5	17.5	17.5	17.5	17.5	9.4
Ukraine	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.3
United Kingdom	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.1
Uzbekistan	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.6
Other Europe & Eurasia	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1
Total Europe & Eurasia	50.1	57.1	56.6	56.9	57.0	56.8	56.7	30.4
Bahrain	0.22	0.22	0.20	0.19	0.18	0.17	0.16	0.1
Iran	33.09	33.62	33.78	34.02	34.02	33.50	33.50	18.0
Iraq	3.17	3.59	3.59	3.59	3.69	3.69	3.69	2.0
Israel	0.20	0.20	0.20	0.19	0.19	0.18	0.16	0.1
Kuwait	1.78	1.78	1.78	1.78	1.78	1.78	1.78	1.0
Oman	0.52	0.51	0.50	0.71	0.69	0.70	0.70	0.4
Qatar	25.05	25.05	24.89	24.68	24.53	24.30	24.30	13.0
Saudi Arabia	7.90	8.00	8.06	8.17	8.33	8.43	8.43	4.5
Syria	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.2
United Arab Emirates	6.09	6.09	6.09	6.09	6.09	6.09	6.09	3.3
Yemen	0.32	0.30	0.29	0.28	0.27	0.27	0.27	0.1
Other Middle East	0.01	0.01	0.01	0.01	0.01	0.01	0.01	*
Total Middle East	78.6	79.7	79.7	80.0	80.1	79.4	79.4	42.5
Algeria	4.5	4.5	4.5	4.5	4.5	4.5	4.5	2.4
Egypt	2.2	2.2	2.0	1.8	1.8	1.8	1.8	1.0
Libya	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0.8
Nigeria	5.2	5.2	5.1	5.1	5.3	5.3	5.3	2.8

Contd...

XI.1 (b) World Proven Natural Gas Reserves (Contd...)

(in Trillion cubic metres)

Country/ Region	2010	2011	2012	2013	2014	2015	2016	% share in 2016
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Other Africa	1.2	1.2	1.2	1.2	1.2	1.1	1.1	0.6
Total Africa	14.6	14.7	14.4	14.2	14.3	14.2	14.3	7.6
Australia	3.5	3.5	3.5	3.5	3.5	3.5	3.5	1.9
Bangladesh	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.1
Brunei	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.1
China	2.8	3.0	3.2	3.5	3.7	4.8	5.4	2.9
India	1.1	1.3	1.3	1.4	1.4	1.3	1.2	0.7
Indonesia	3.0	3.0	2.9	2.9	2.8	2.8	2.9	1.5
Malaysia	1.1	1.1	1.1	1.1	1.2	1.2	1.2	0.6
Myanmar	0.2	0.2	0.3	0.5	0.5	0.5	1.2	0.6
Pakistan	0.7	0.7	0.6	0.6	0.5	0.5	0.5	0.2
Papua New Guinea	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.1
Thailand	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.1
Vietnam	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.3
Other Asia Pacific	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.1
Total Asia Pacific	14.4	14.7	14.8	15.2	15.4	16.2	17.5	9.4
Total World	176.3	185.4	184.3	185.8	187.2	185.4	186.6	100

Notes:

*: Less than 0.05

1. Proved reserves of gas - 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.
2. Source of data - The estimates in this table have been compiled using a combination of primary official sources and third-party data from Cedigaz and the OPEC Secretariat.
3. Total may not add up due to rounding off.

Source: BP Statistical Review of World Energy, June 2017.

Figure XI.2 (a) Trends in World Proven Natural Gas Reserves

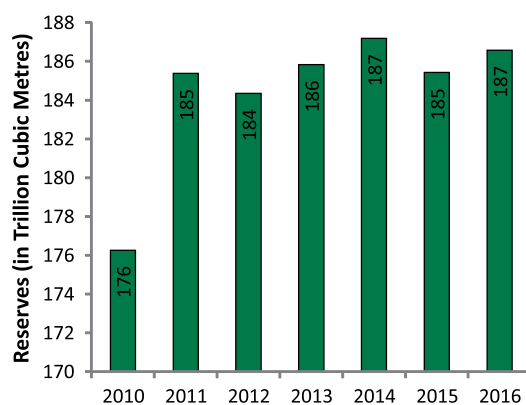
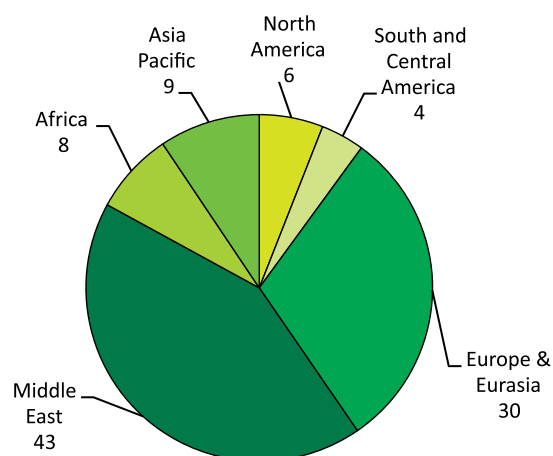


Figure XI.2(b): Region-wise Distribution of Proven Natural Gas Reserves-2016(%)



XI.2 World Crude Oil Production								
(in Million Tonnes)								
Country/ Region	2010	2011	2012	2013	2014	2015	2016	% share in 2016
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
US	332.7	344.9	393.2	446.9	522.7	565.1	543.0	12.4
Canada	160.3	169.8	182.6	195.1	209.4	215.6	218.2	5.0
Mexico	145.6	144.5	143.9	141.8	137.1	127.5	121.4	2.8
Total North America	638.6	659.2	719.6	783.8	869.2	908.3	882.6	20.1
Argentina	33.3	30.9	31.1	30.5	29.9	29.8	28.8	0.7
Brazil	111.6	114.0	112.4	110.2	122.5	132.2	136.7	3.1
Colombia	41.4	48.2	49.9	52.9	52.2	53.0	48.8	1.1
Ecuador	26.1	26.8	27.1	28.2	29.8	29.1	29.3	0.7
Peru	7.0	6.7	6.7	7.1	7.3	6.2	5.6	0.1
Trinidad & Tobago	6.2	5.9	5.2	5.1	5.1	4.8	4.3	0.1
Venezuela	145.8	141.5	139.3	137.8	138.5	135.9	124.1	2.8
Other S. & Cent. America	6.9	7.0	7.3	7.5	7.7	7.5	7.0	0.2
Total S. & Cent. America	378.4	381.1	378.9	379.2	392.9	398.6	384.5	8.8
Azerbaijan	50.8	45.6	43.4	43.5	42.1	41.6	41.0	0.9
Denmark	12.2	10.9	10.0	8.7	8.1	7.7	6.9	0.2
Italy	5.1	5.3	5.4	5.6	5.8	5.5	3.8	0.1
Kazakhstan	79.7	80.1	79.3	82.3	81.1	80.2	79.3	1.8
Norway	98.8	93.8	87.3	83.2	85.3	88.0	90.4	2.1
Romania	4.3	4.2	4.0	4.1	4.1	4.0	3.8	0.1
Russian Federation	511.8	518.8	526.2	531.1	534.1	540.7	554.3	12.6
Turkmenistan	10.8	10.8	11.2	11.7	12.1	12.7	12.7	0.3
United Kingdom	63.2	52.1	44.7	40.7	40.0	45.4	47.5	1.1
Uzbekistan	3.6	3.6	3.2	2.9	2.8	2.7	2.6	0.1
Other Europe & Eurasia	19.2	19.2	19.2	19.6	19.2	18.8	18.2	0.4
Total Europe & Eurasia	859.5	844.5	833.6	833.3	834.7	847.3	860.6	19.6
Iran	211.7	212.7	180.7	169.8	174.2	181.6	216.4	4.9
Iraq	121.5	136.7	152.5	153.2	160.3	197.0	218.9	5.0
Kuwait	123.3	140.8	153.9	151.3	150.1	148.2	152.7	3.5
Oman	42.2	43.2	45.0	46.1	46.2	48.0	49.3	1.1
Qatar	71.1	78.0	82.2	80.3	79.4	79.1	79.4	1.8
Saudi Arabia	473.8	525.9	549.8	538.4	543.4	567.8	585.7	13.4
Syria	18.5	16.9	8.1	2.7	1.5	1.2	1.1	*
United Arab Emirates	133.3	151.3	154.8	165.1	166.2	176.2	182.4	4.2
Yemen	14.3	10.1	8.0	8.9	6.7	2.0	0.8	*
Other Middle East	9.4	9.9	9.0	10.3	10.5	10.5	10.1	0.2
Total Middle East	1219.2	1325.6	1344.0	1326.1	1338.7	1411.6	1496.9	34.2
Algeria	73.8	71.7	67.2	64.8	68.8	67.2	68.5	1.6
Angola	90.5	83.8	86.9	87.3	83.0	88.7	87.9	2.0
Chad	6.4	6.0	5.3	4.4	4.3	3.8	3.8	0.1
Rep. of Congo (Brazzaville)	16.0	15.3	14.3	12.6	13.4	12.9	11.9	0.3
Egypt	35.0	34.6	34.7	34.4	35.1	35.4	33.8	0.8
Equatorial Guinea	12.6	11.6	12.7	12.4	13.1	13.5	13.1	0.3
Gabon	12.4	12.5	12.7	11.6	11.6	11.5	11.4	0.3
Libya	77.8	22.5	71.2	46.5	23.4	20.3	20.0	0.5
Nigeria	119.1	115.9	114.4	109.2	112.8	112.0	98.8	2.3
South Sudan	na	na	1.5	4.9	7.7	7.3	5.8	0.1

Contd...

XI.2 World Crude Oil Production (Contd...)

(in Million Tonnes)

Country/ Region	2010	2011	2012	2013	2014	2015	2016	% share in 2016
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Sudan	22.8	14.3	5.1	5.8	5.9	5.4	5.1	0.1
Tunisia	4.0	3.7	3.9	3.6	3.4	3.0	2.9	0.1
Other Africa	7.6	10.3	10.2	11.5	11.7	12.6	11.6	0.3
Total Africa	478.2	402.3	440.1	408.9	394.2	393.7	374.8	8.6
Australia	24.5	21.5	21.4	17.8	19.1	17.4	15.5	0.4
Brunei	8.5	8.1	7.8	6.6	6.2	6.2	5.9	0.1
China	203.0	202.9	207.5	210.0	211.4	214.6	199.7	4.6
India	41.3	42.9	42.5	42.5	41.6	41.2	40.2	0.9
Indonesia	48.6	46.3	44.6	42.7	41.2	40.7	43.0	1.0
Malaysia	32.6	29.4	29.8	28.5	29.7	32.3	32.7	0.7
Thailand	14.9	15.4	16.6	16.5	16.2	17.0	17.6	0.4
Vietnam	15.6	15.8	17.3	17.4	18.1	17.4	16.0	0.4
Other Asia Pacific	13.8	13.0	12.6	12.0	13.0	13.2	12.4	0.3
Total Asia Pacific	402.7	395.2	400.2	393.9	396.5	400.0	383.0	8.7
Total World	3976.5	4007.9	4116.4	4125.3	4226.2	4359.5	4382.4	100.0

na: Not available

*: Less than 0.05

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

Source: BP Statistical Review of World Energy, June 2017.

Figure XI.3(a): Trends in World Crude Oil Production

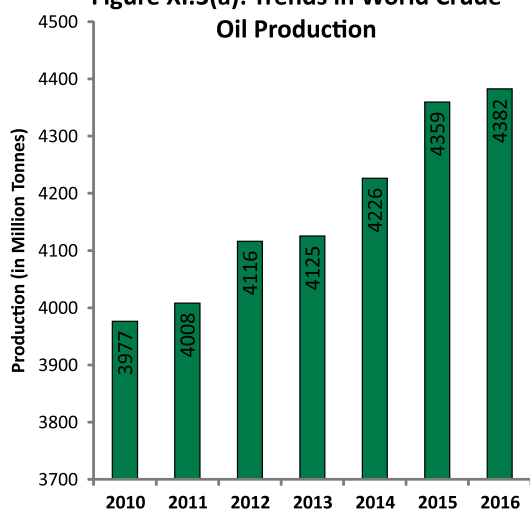
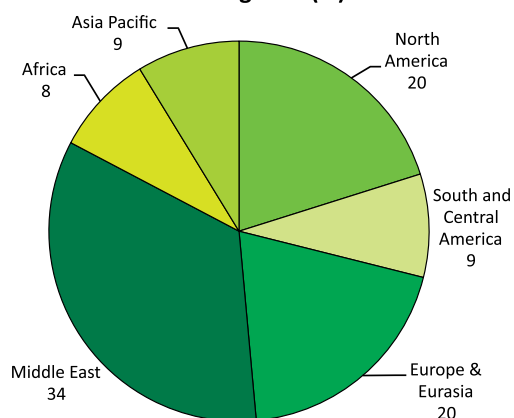


Figure XI.3(b): Region-wise Distribution of Crude Oil Production during 2016(%)



XI.3 Crude Oil Production by OPEC Member Countries

OPEC Countries (1)	2010 (2)	2011 (3)	2012 (4)	2013 (5)	2014 (6)	2015 (7)	2016 (8)	(in Million Tonnes) % share in 2016 (9)	
Ecuador	26.1	26.8	27.1	28.2	29.8	29.1	29.3	1.6	
Venezuela	145.8	141.5	139.3	137.8	138.5	135.9	124.1	6.7	
Iran	211.7	212.7	180.7	169.8	174.2	181.6	216.4	11.6	
Iraq	121.5	136.7	152.5	153.2	160.3	197.0	218.9	11.7	
Kuwait	123.3	140.8	153.9	151.3	150.1	148.2	152.7	8.2	
Qatar	71.1	78.0	82.2	80.3	79.4	79.1	79.4	4.3	
Saudi Arabia	473.8	525.9	549.8	538.4	543.4	567.8	585.7	31.4	
United Arab Emirates	133.3	151.3	154.8	165.1	166.2	176.2	182.4	9.8	
Algeria	73.8	71.7	67.2	64.8	68.8	67.2	68.5	3.7	
Angola	90.5	83.8	86.9	87.3	83.0	88.7	87.9	4.7	
Libya	77.8	22.5	71.2	46.5	23.4	20.3	20.0	1.1	
Nigeria	119.1	115.9	114.4	109.2	112.8	112.0	98.8	5.3	
Total OPEC	1668.0	1707.6	1780.0	1732.0	1730.1	1803.2	1864.2	100	

Note: Indonesia suspended its membership as on 01.01.2009 and reactivated as of 1.1.2016

Source: BP Statistical Review of World Energy, June 2017.

Figure XI.4(a): Trends in Crude Oil Production by OPEC

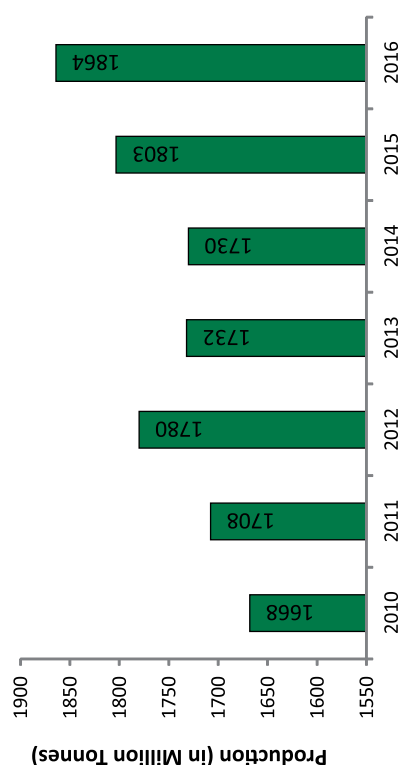
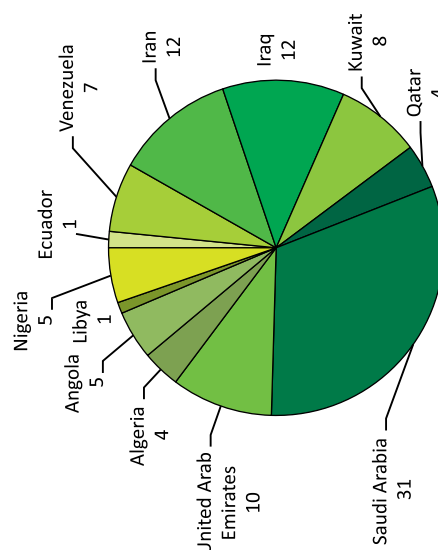


Figure XI.4(b): Country-wise Crude Oil Production by OPEC during 2016(%)



XI.4 World Production of Natural Gas

(in Million Tonnes Oil Equivalent)

Country/ Region	2010	2011	2012	2013	2014	2015	2016	% share in 2016
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
US	549.5	589.8	620.2	626.4	673.3	707.1	690.8	21.5
Canada	130.1	130.0	127.0	127.3	132.4	134.2	136.8	4.3
Mexico	51.8	52.4	51.5	52.4	51.4	48.7	42.5	1.3
Total North America	731.4	772.2	798.7	806.1	857.1	890.0	870.1	27.1
Argentina	36.1	34.9	34.0	32.0	31.9	32.8	34.4	1.1
Bolivia	12.8	14.0	16.0	18.3	18.9	18.2	17.8	0.6
Brazil	13.1	15.1	17.3	19.2	20.4	20.8	21.1	0.7
Colombia	10.1	9.9	10.8	11.4	10.6	10.0	9.4	0.3
Peru	6.5	10.2	10.7	11.0	11.6	11.2	12.6	0.4
Trinidad & Tobago	40.3	38.8	38.4	38.6	37.9	35.7	31.0	1.0
Venezuela	27.6	24.8	26.5	25.6	25.8	29.2	30.9	1.0
Other S. & Cent. America	3.1	2.5	2.4	2.2	2.1	2.2	2.1	0.1
Total S. & Cent. America	149.6	150.2	156.1	158.1	159.2	160.2	159.3	5.0
Azerbaijan	13.6	13.3	14.0	14.6	15.8	16.2	15.7	0.5
Denmark	7.3	5.9	5.2	4.3	4.1	4.1	4.0	0.1
Germany	9.6	9.0	8.1	7.4	7.0	6.5	6.0	0.2
Italy	6.9	6.9	7.0	6.3	5.9	5.5	4.7	0.1
Kazakhstan	15.8	15.6	15.5	16.6	16.9	17.1	17.9	0.6
Netherlands	63.4	57.7	57.4	61.8	52.1	39.0	36.1	1.1
Norway	96.5	91.1	103.3	97.9	97.9	105.4	105.0	3.3
Poland	3.7	3.8	3.9	3.8	3.7	3.7	3.6	0.1
Romania	8.6	8.7	9.0	8.6	8.8	8.8	8.2	0.3
Russian Federation	530.0	546.3	533.0	544.2	523.6	517.6	521.5	16.2
Turkmenistan	38.1	53.6	56.1	56.1	60.4	62.6	60.1	1.9
Ukraine	16.7	16.9	16.7	17.3	16.4	16.1	16.0	0.5
United Kingdom	51.4	40.7	35.0	32.8	33.1	35.6	36.9	1.1
Uzbekistan	49.0	51.3	51.2	51.2	51.6	52.0	56.5	1.8
Other Europe & Eurasia	8.4	8.3	7.5	6.5	5.7	5.6	7.9	0.2
Total Europe & Eurasia	919.0	929.2	923.0	929.4	902.9	895.9	900.1	28.0
Bahrain	11.8	12.0	12.4	13.2	13.9	14.0	13.9	0.4
Iran	137.1	143.9	149.5	150.1	167.3	170.4	182.2	5.7
Iraq	1.2	0.8	0.6	1.1	0.8	0.9	1.0	*
Kuwait	10.6	12.2	14.0	14.7	13.5	15.2	15.4	0.5
Oman	26.4	27.8	29.0	31.3	30.0	31.3	31.9	1.0
Qatar	118.0	130.7	141.3	159.8	156.7	160.6	163.1	5.1
Saudi Arabia	78.9	83.0	89.4	90.0	92.1	94.0	98.4	3.1
Syria	7.2	6.4	5.2	4.3	4.0	3.7	3.2	0.1
United Arab Emirates	46.2	47.1	48.9	49.1	48.8	54.2	55.7	1.7
Yemen	5.4	8.1	6.5	8.9	8.4	2.5	0.7	*
Other Middle East	3.1	4.0	2.4	5.9	6.9	7.6	8.5	0.3
Total Middle East	445.8	475.9	499.2	528.5	542.4	554.3	574.0	17.9

Contd...

XI.4 World Production of Natural Gas (Contd...)

(in Million Tonnes Oil Equivalent)

Country/ Region	2010	2011	2012	2013	2014	2015	2016	% share in 2016
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Algeria	72.4	74.4	73.4	74.2	75.0	76.1	82.2	2.6
Egypt	55.2	55.3	54.8	50.5	43.9	39.8	37.6	1.2
Libya	15.1	7.1	10.0	10.5	10.2	10.6	9.1	0.3
Nigeria	33.6	36.5	39.0	32.6	40.5	45.1	40.4	1.3
Other Africa	15.6	15.1	15.9	18.0	16.8	17.4	18.2	0.6
Total Africa	191.9	188.4	192.9	185.7	186.3	189.0	187.5	5.8
Australia	45.4	47.9	51.2	53.1	57.3	65.4	82.0	2.6
Bangladesh	18.0	18.3	20.0	20.5	21.5	24.2	24.8	0.8
Brunei	11.1	11.5	11.3	11.0	10.7	10.5	10.1	0.3
China	89.2	98.1	100.7	110.0	118.4	122.5	124.6	3.9
India	44.3	40.1	35.0	28.9	27.5	26.4	24.9	0.8
Indonesia	77.1	73.3	69.4	68.8	67.7	67.5	62.7	2.0
Malaysia	50.6	56.0	55.4	60.5	61.5	64.1	66.5	2.1
Myanmar	11.2	11.5	11.5	11.8	15.2	17.6	17.0	0.5
Pakistan	38.1	38.1	39.4	38.4	37.7	37.8	37.4	1.2
Thailand	32.2	32.9	36.9	37.2	37.5	35.4	34.7	1.1
Vietnam	8.5	7.6	8.4	8.8	9.2	9.6	9.6	0.3
Other Asia Pacific	15.9	16.0	15.8	16.3	20.8	24.8	27.7	0.9
Total Asia Pacific	441.5	451.2	454.9	465.3	484.9	505.7	521.9	16.2
Total World	2879.2	2967.3	3024.7	3073.1	3132.8	3195.0	3212.9	100.0

Note: Production includes gas flared or recycled and natural gas produced for Gas-to-Liquids transformation.

*: Less than 0.05

Source: BP Statistical Review of World Energy, June 2017.

Figure XI.5(a): Trends in World Production of Natural Gas

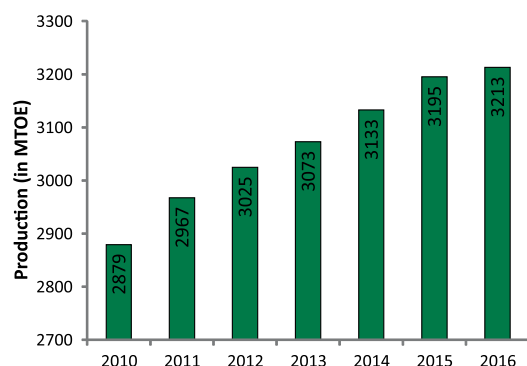
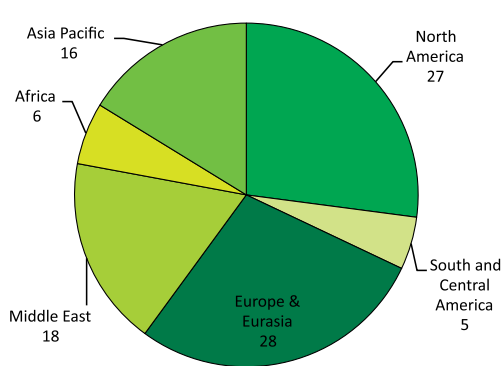


Figure XI.5(b): Region-wise Distribution of Natural Gas Production during 2016 (%)



XI.5 World Consumption of Natural Gas

(in Million Tonnes Oil Equivalent)

Country/ Region	2010	2011	2012	2013	2014	2015	2016	% share in 2016
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
US	619.3	628.8	657.4	675.5	690.0	710.5	716.3	22.4
Canada	85.5	90.8	90.2	93.5	93.8	92.2	89.9	2.8
Mexico	65.2	68.9	71.9	74.9	78.1	78.4	80.6	2.5
Total North America	770.03	788.56	819.53	843.93	861.99	881.15	886.78	27.7
Argentina	39.0	40.6	42.1	42.1	42.5	43.4	44.6	1.4
Brazil	24.1	24.0	28.5	33.6	35.6	37.5	32.9	1.0
Chile	4.4	4.5	4.1	4.1	3.4	3.7	4.1	0.1
Colombia	8.2	8.0	8.9	9.0	9.8	9.6	9.5	0.3
Ecuador	0.4	0.4	0.5	0.6	0.6	0.6	0.6	*
Peru	4.4	5.0	5.5	5.4	6.1	6.4	7.1	0.2
Trinidad & Tobago	20.9	21.0	20.0	20.2	19.8	19.4	17.2	0.5
Venezuela	29.0	26.7	28.3	27.5	27.7	31.1	32.0	1.0
Other S. & Cent. America	4.8	5.3	5.8	6.3	6.6	6.6	6.7	0.2
Total S. & Cent. America	135.22	135.42	143.63	148.66	151.99	158.25	154.73	4.8
Austria	9.0	8.4	8.1	7.7	7.1	7.5	7.9	0.2
Azerbaijan	6.7	7.3	7.7	7.7	8.5	9.6	9.4	0.3
Belarus	17.8	16.5	16.7	16.7	16.5	14.0	15.3	0.5
Belgium	17.0	14.2	14.4	14.2	12.4	13.6	13.9	0.4
Bulgaria	2.3	2.6	2.5	2.4	2.4	2.6	2.7	0.1
Czech Republic	7.6	6.9	6.9	6.9	6.2	6.5	7.0	0.2
Denmark	4.5	3.7	3.5	3.3	2.8	2.8	2.9	0.1
Finland	3.6	3.1	2.7	2.6	2.3	2.0	1.8	0.1
France	42.6	37.0	38.2	38.8	32.6	35.1	38.3	1.2
Germany	75.7	69.5	69.7	73.1	63.5	66.2	72.4	2.3
Greece	3.2	4.0	3.6	3.2	2.4	2.5	2.6	0.1
Hungary	9.8	9.4	8.4	7.8	7.0	7.5	8.0	0.3
Republic of Ireland	4.7	4.1	4.0	3.8	3.7	3.8	4.3	0.1
Italy	68.1	63.8	61.4	57.4	50.7	55.3	58.1	1.8
Kazakhstan	8.0	9.0	9.7	10.1	11.3	11.6	12.0	0.4
Lithuania	2.5	2.7	2.7	2.2	2.1	2.1	1.8	0.1
Netherlands	39.2	34.3	32.4	32.8	28.6	28.3	30.2	0.9
Norway	3.7	4.0	3.9	4.0	4.2	4.4	4.4	0.1
Poland	14.0	14.1	15.0	15.0	14.6	14.7	15.6	0.5
Portugal	4.6	4.7	4.0	3.8	3.7	4.3	4.6	0.1
Romania	10.8	11.0	11.2	10.2	9.5	9.0	9.5	0.3
Russian Federation	372.7	382.1	374.6	372.1	368.7	362.5	351.8	11.0
Slovakia	5.0	4.6	4.4	4.8	3.8	3.9	4.0	0.1
Spain	31.1	28.9	28.6	26.1	23.7	24.6	25.2	0.8
Sweden	1.3	1.1	0.9	0.9	0.8	0.8	0.8	*
Switzerland	2.7	2.4	2.6	2.8	2.4	2.6	2.7	0.1
Turkey	35.1	36.8	37.3	37.8	40.1	39.2	37.9	1.2
Turkmenistan	20.4	21.2	23.7	20.6	23.0	26.5	26.6	0.8
Ukraine	47.0	48.3	44.6	38.9	33.1	25.9	26.1	0.8
United Kingdom	84.8	70.3	66.5	65.7	60.0	61.3	69.0	2.2
Uzbekistan	36.8	42.9	42.5	42.2	43.9	45.2	46.2	1.4
Other Europe & Eurasia	14.4	14.6	14.4	13.4	13.4	13.6	13.9	0.4
Total Europe & Eurasia	1006.54	983.54	966.63	948.99	905.02	909.20	926.95	28.9
Iran	137.6	146.0	145.4	146.6	165.3	171.7	180.7	5.6
Israel	4.8	4.5	2.3	6.2	6.8	7.6	8.7	0.3
Kuwait	13.1	15.0	16.6	16.8	16.6	19.2	19.7	0.6
Qatar	26.9	17.7	21.1	34.1	32.8	39.5	37.5	1.2
Saudi Arabia	78.9	83.0	89.4	90.0	92.1	94.0	98.4	3.1

Contd...

XI.5 World Consumption of Natural Gas (Contd...)

(in Million Tonnes Oil Equivalent)

Country/ Region	2010	2011	2012	2013	2014	2015	2016	% share in 2016
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
United Arab Emirates	54.7	56.9	59.0	60.2	59.3	66.4	69.0	2.2
Other Middle East	41.0	39.9	39.8	42.2	41.7	45.9	47.1	1.5
Total Middle East	356.87	363.03	373.54	396.29	414.71	444.28	461.10	14.4
Algeria	23.7	25.1	27.9	30.0	33.7	35.5	36.0	1.1
Egypt	40.6	44.7	47.3	46.3	43.2	43.0	46.1	1.4
South Africa	3.5	3.7	4.0	4.1	4.5	4.6	4.6	0.1
Other Africa	28.0	28.5	29.3	30.4	32.9	39.2	37.6	1.2
Total Africa	95.80	101.94	108.58	110.88	114.33	122.24	124.34	3.9
Australia	28.0	30.3	30.4	32.0	34.4	38.6	37.0	1.2
Bangladesh	18.0	18.3	20.0	20.5	21.5	24.2	24.8	0.8
China	100.1	123.4	135.8	154.7	169.6	175.3	189.3	5.9
China Hong Kong SAR	3.4	2.7	2.5	2.4	2.3	2.9	3.0	0.1
India	54.3	55.0	64.0	44.4	43.9	41.2	45.1	1.4
Indonesia	39.1	37.9	38.0	36.7	36.8	36.4	33.9	1.1
Japan	85.1	95.0	105.2	105.2	106.2	102.1	100.1	3.1
Malaysia	26.6	31.3	31.9	36.3	38.0	37.6	38.7	1.2
New Zealand	3.9	3.5	3.8	4.0	4.4	4.0	4.2	0.1
Pakistan	38.1	38.1	39.4	38.4	37.7	39.2	40.9	1.3
Philippines	3.2	3.5	3.3	3.0	3.2	3.0	3.4	0.1
Singapore	7.9	7.9	8.5	9.5	9.8	11.0	11.3	0.4
South Korea	38.7	41.7	45.2	47.3	43.0	39.3	40.9	1.3
Taiwan	12.7	14.0	14.7	14.7	15.5	16.5	17.2	0.5
Thailand	37.2	38.1	41.8	42.0	42.9	43.8	43.5	1.4
Vietnam	8.5	7.6	8.4	8.8	9.2	9.6	9.6	0.3
Other Asia Pacific	5.2	5.6	5.6	5.8	6.5	7.0	7.2	0.2
Total Asia Pacific	509.8	553.8	598.6	605.6	624.9	631.6	650.3	20.3
Total World	2874.2	2926.3	3010.5	3054.4	3073.0	3146.7	3204.1	100

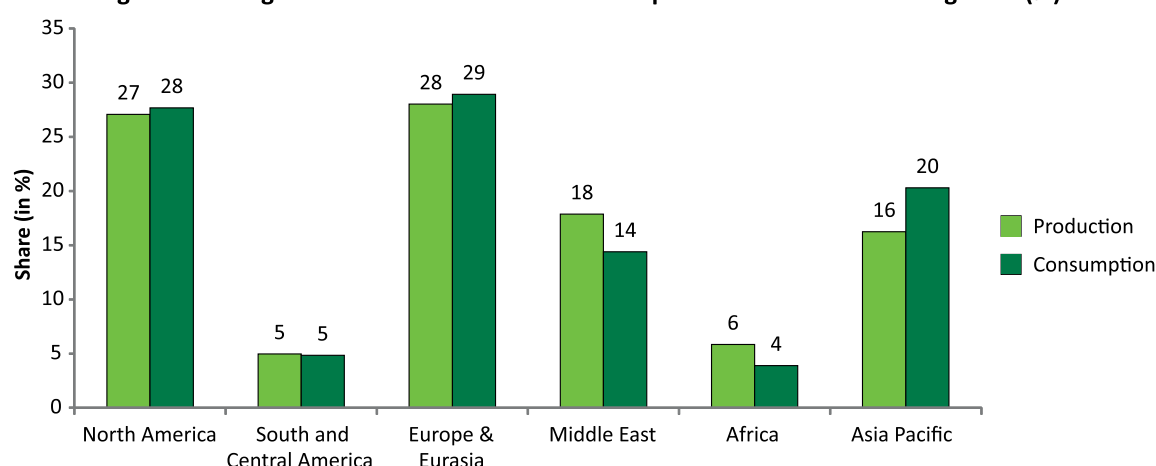
Notes:

*:Less than 0.05

- The difference between these world consumption figures and the world production statistics is due to variations in stocks at storage facilities and liquefaction plants, together with unavoidable disparities in the definition, measurement or conversion of gas supply and demand data.
- Excludes natural gas converted to liquid fuels but includes derivatives of coal as well as natural gas consumed in Gas-to-Liquids transformation

Source: BP Statistical Review of World Energy, June 2017

Figure XI.6: Region-wise Production and Consumption of Natural Gas during 2016 (%)



XI.6 Productivity of Producing Wells in OPEC Member Countries

Country	2015			2016		
	Wells	Average Daily Production ('000' bbl)	t/w/d	Wells	Average Daily Production ('000' bbl)	t/w/d
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Algeria	1968	1157.00	80.0	1936	1146.30	80.5
Angola	1593	1767.10	150.9	1572	1721.60	148.9
Ecuador	3483	543.1	21.2	3496	549	21.4
Gabon	397	-	-	396	220.2	75.6
Iran	2339	3151.60	183.2	2886	3651.30	172.1
Iraq	2361	3504.10	201.8	2629	4647.80	240.4
Kuwait*	1731	2858.70	224.6	1780	2954.30	225.7
Libya	540	403.9	101.7	521	390.2	101.9
Nigeria	1947	1748.20	122.1	1668	1427.30	116.4
Qatar	467	656	191.0	460	651.5	192.6
Saudi Arabia*	3555	10192.60	389.9	3648	10460.20	390.0
U.A.E	1792	2988.90	226.8	1835	3088.30	228.9
Venezuela	14685	2653.90	24.6	13395	2372.50	24.1
Total OPEC	36858	31625	116.7	36222	33281	125.0

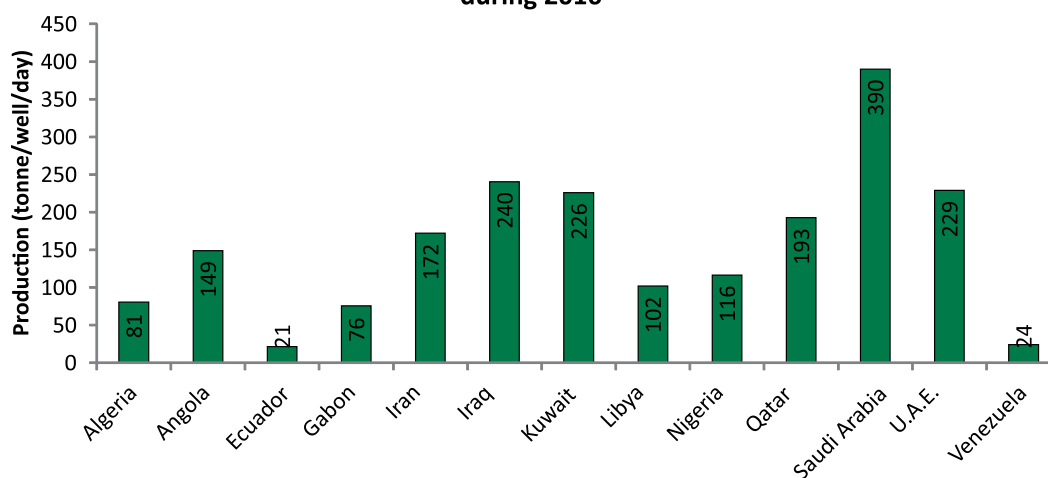
*: Figures include share of production and producing wells from Neutral Zone.

Note: Excluding shut-in wells. Figures as at year-end.

t/w/d: tonne/well/day

Source : OPEC Annual Statistical Bulletin, 2017

Figure XI.7: Productivity of producing wells in OPEC member countries during 2016



XI.7 World Oil Refining Capacity								
(in '000' barrels daily^)								
Country/Region/ Year	2010	2011	2012	2013	2014	2015	2016	% share in 2016
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
US	17736	17322	17824	17925	17889	18315	18621	19.1
Canada	1913	2040	2050	1965	1965	1966	1967	2.0
Mexico	1463	1606	1606	1606	1522	1522	1522	1.6
Total North America	21113	20967	21479	21495	21375	21803	22110	22.7
Argentina	625	625	657	657	657	657	657	0.7
Brazil	1988	2010	2001	2093	2235	2278	2289	2.3
Chile	242	250	254	254	258	258	258	0.3
Colombia	336	336	336	336	336	421	421	0.4
Curacao	320	320	320	320	320	320	320	0.3
Ecuador	175	175	175	175	175	175	210	0.2
Peru	252	252	252	253	253	253	253	0.3
Trinidad & Tobago	165	165	165	165	165	165	165	0.2
Venezuela	1303	1303	1303	1303	1303	1303	1303	1.3
Other S. & Cent. America	901	1013	356	361	376	384	384	0.4
Total S. & Cent. America	6307	6449	5819	5917	6078	6214	6259	6.4
Austria	201	193	193	193	193	193	193	0.2
Azerbaijan	205	205	205	205	205	205	205	0.2
Belarus	460	460	460	460	460	460	460	0.5
Belgium	787	788	753	776	776	776	776	0.8
Bulgaria	195	195	195	195	195	195	195	0.2
Czech Republic	193	193	178	178	178	178	178	0.2
Denmark	189	181	181	181	180	180	180	0.2
Finland	261	261	261	261	261	261	261	0.3
France	1702	1610	1513	1375	1375	1375	1224	1.3
Germany	2091	2077	2097	2061	2077	2049	2024	2.1
Greece	490	495	498	498	498	498	498	0.5
Hungary	165	165	165	165	165	165	165	0.2
Ireland	75	75	75	75	75	75	75	0.1
Italy	2396	2276	2113	1876	1915	1915	1915	2.0
Kazakhstan	330	330	330	350	350	350	350	0.4
Lithuania	241	241	241	241	241	241	241	0.2
Netherlands	1274	1276	1274	1274	1274	1293	1293	1.3
Norway	316	316	316	316	316	316	316	0.3
Poland	560	580	582	582	582	581	581	0.6
Portugal	306	306	306	306	306	306	306	0.3
Romania	247	229	214	235	228	239	256	0.3
Russian Federation	5573	5731	5826	6245	6347	6408	6418	6.6
Slovakia	122	122	122	122	122	122	122	0.1
Spain	1421	1542	1546	1546	1546	1562	1562	1.6

Contd...

XI.7 World Oil Refining Capacity (Contd...)

(in '000' barrels daily[^])

Country/Region/ Year	2010	2011	2012	2013	2014	2015	2016	% share in 2016
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Sweden	436	436	436	436	436	436	436	0.4
Switzerland	140	140	106	140	140	68	68	0.1
Turkey	613	613	613	613	613	613	613	0.6
Turkmenistan	251	251	251	251	251	271	271	0.3
Ukraine	474	474	248	262	248	248	248	0.3
United Kingdom	1757	1787	1526	1498	1337	1337	1227	1.3
Uzbekistan	232	232	232	232	232	232	232	0.2
Other Europe & Eurasia	434	414	436	387	404	413	413	0.4
Total Europe & Eurasia	24139	24195	23492	23536	23528	23563	23304	23.9
Iran	1860	1860	1952	1985	1985	1985	1985	2.0
Iraq	914	935	971	823	931	903	919	0.9
Israel	280	292	292	294	301	301	301	0.3
Kuwait	936	936	936	936	936	936	936	1.0
Qatar	283	283	283	283	283	283	429	0.4
Saudi Arabia	2109	2107	2107	2507	2899	2899	2899	3.0
United Arab Emirates	700	705	710	710	1143	1143	1143	1.2
Other Middle East	978	978	978	864	864	864	864	0.9
Total Middle East	8060	8096	8229	8402	9342	9314	9476	9.7
Algeria	554	652	652	647	651	651	651	0.7
Egypt	810	810	810	810	810	810	810	0.8
South Africa	520	520	520	520	520	520	520	0.5
Other Africa	1301	1247	1453	1473	1476	1476	1476	1.5
Total Africa	3185	3229	3435	3449	3457	3457	3457	3.5
Australia	740	742	663	662	536	443	452	0.5
Bangladesh	39	39	40	43	43	43	43	*
China	11604	12296	12962	13594	14534	14306	14177	14.6
India	3703	3795	4279	4319	4319	4319	4620	4.7
Indonesia	1141	1141	1141	1152	1155	1155	1155	1.2
Japan	4291	4274	4254	4123	3749	3721	3600	3.7
Malaysia	582	601	606	612	612	612	612	0.6
New Zealand	136	136	136	136	136	136	136	0.1
Pakistan	277	277	275	390	390	392	392	0.4
Philippines	264	261	261	270	271	271	271	0.3
Singapore	1427	1427	1422	1414	1514	1514	1514	1.6
South Korea	2774	2864	2878	2878	3110	3110	3234	3.3
Taiwan	1197	1197	1197	1197	1197	988	988	1.0
Thailand	1230	1230	1230	1237	1252	1252	1235	1.3
Vietnam	159	159	159	159	159	159	163	0.2
Other Asia Pacific	219	220	220	226	233	233	233	0.2
Total Asia Pacific	29782	30659	31723	32410	33210	32654	32824	33.6
Total World	92586	93596	94176	95210	96990	97004	97430	100

[^]: Atmospheric distillation capacity on a calendar-day basis.

*: Less than 0.05

Note: Annual changes and shares of total are calculated using thousand barrels daily figures.

Source: BP Statistical Review of World Energy, June 2017

XI.8: World Refinery Crude Throughput								
(in '000' barrels daily [^])								
Country/Region/ Year	2010	2011	2012	2013	2014	2015	2016	% share in 2016
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
US	14724	14806	14999	15312	15848	16188	16202	20.1
Canada	1774	1680	1751	1719	1640	1635	1594	2.0
Mexico	1184	1166	1199	1224	1155	1064	933	1.2
Total North America	17682	17652	17949	18255	18643	18887	18729	23.3
Argentina	531	516	530	527	526	536	511	0.6
Brazil	1787	1813	1889	2035	2085	1972	1831	2.3
Chile	159	173	164	174	174	165	163	0.2
Colombia	300	306	305	284	247	244	339	0.4
Curacao	64	164	165	170	189	178	173	0.2
Ecuador	137	156	152	141	125	121	150	0.2
Peru	195	189	189	183	185	182	185	0.2
Trinidad & Tobago	126	137	107	132	105	125	148	0.2
Venezuela	969	991	936	952	920	863	698	0.9
Other S. & Cent. America	709	720	335	301	295	316	291	0.4
Total S. & Cent. America	4977	5165	4771	4899	4851	4702	4490	5.6
Austria	158	168	170	174	173	179	164	0.2
Azerbaijan	124	127	124	132	135	130	117	0.1
Belarus	330	411	434	425	448	462	392	0.5
Belgium	668	598	634	555	645	644	640	0.8
Bulgaria	110	102	118	113	104	121	125	0.2
Czech Republic	159	143	145	134	151	145	109	0.1
Denmark	146	137	153	144	139	147	140	0.2
Finland	211	225	215	227	225	197	226	0.3
France	1314	1313	1138	1117	1096	1152	1111	1.4
Germany	1915	1876	1901	1857	1833	1875	1887	2.3
Greece	393	331	410	399	416	436	464	0.6
Hungary	128	132	122	120	131	130	133	0.2
Ireland	60	59	61	57	55	68	64	0.1
Italy	1673	1570	1475	1259	1198	1347	1300	1.6
Kazakhstan	257	326	331	341	361	342	339	0.4
Lithuania	190	189	181	192	160	170	185	0.2
Netherlands	1189	1144	1144	1044	1067	1138	1147	1.4
Norway	259	289	287	292	274	293	230	0.3
Poland	458	482	505	488	486	532	517	0.6
Portugal	227	206	221	239	217	278	273	0.3
Romania	217	194	182	189	194	208	228	0.3
Russian Federation	5018	5185	5438	5636	5926	5773	5709	7.1
Slovakia	110	120	108	116	105	119	116	0.1
Spain	1060	1051	1186	1168	1185	1304	1303	1.6
Sweden	406	374	417	332	380	401	395	0.5
Switzerland	90	87	68	97	98	56	59	0.1
Turkey	392	394	398	421	406	526	532	0.7

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XI.8: World Refinery Crude Throughput (Contd...)

(in '000' barrels daily[^])

Country/Region/ Year	2010	2011	2012	2013	2014	2015	2016	% share in 2016
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Turkmenistan	170	165	157	160	163	157	153	0.2
Ukraine	249	206	108	85	69	64	65	0.1
United Kingdom	1395	1433	1348	1197	1125	1118	1069	1.3
Uzbekistan	73	69	62	58	62	63	70	0.1
Other Europe & Eurasia	186	160	134	140	132	148	158	0.2
Total Europe & Eurasia	19335	19269	19376	18908	19158	19724	19420	24.1
Iran	1829	1873	1932	1999	1932	1867	1891	2.3
Iraq	520	543	579	598	487	409	440	0.5
Israel	226	218	219	238	245	250	232	0.3
Kuwait	892	852	916	873	879	913	830	1.0
Qatar	294	278	292	270	261	253	280	0.3
Saudi Arabia	1922	1884	1953	1876	2201	2479	2750	3.4
United Arab Emirates	571	635	638	650	659	929	1000	1.2
Other Middle East	809	805	719	685	671	629	605	0.8
Total Middle East	7063	7087	7248	7189	7335	7728	8028	10.0
Algeria	548	520	478	492	615	591	584	0.7
Egypt	580	523	534	523	525	535	508	0.6
South Africa	384	384	401	411	461	441	477	0.6
Other Africa	910	726	797	827	625	532	533	0.7
Total Africa	2422	2154	2210	2254	2226	2099	2102	2.6
Australia	606	627	600	588	538	427	433	0.5
Bangladesh	26	27	24	27	24	25	23	*
China	8408	8686	9199	9599	10155	10684	11023	13.7
India	3899	4085	4302	4462	4475	4561	4931	6.1
Indonesia	853	880	820	822	848	836	885	1.1
Japan	3619	3410	3400	3453	3289	3258	3280	4.1
Malaysia	470	516	575	558	553	508	537	0.7
New Zealand	99	108	109	105	101	109	108	0.1
Pakistan	190	193	192	223	232	257	242	0.3
Philippines	181	190	170	158	168	212	216	0.3
Singapore	979	1035	1020	936	871	897	965	1.2
South Korea	2390	2533	2582	2484	2516	2784	2928	3.6
Taiwan	876	809	897	847	850	838	861	1.1
Thailand	963	937	978	1078	1029	1132	1096	1.4
Vietnam	123	124	142	145	125	145	148	0.2
Other Asia Pacific	97	100	89	97	96	92	107	0.1
Total Asia Pacific	23778	24258	25098	25581	25869	26765	27781	34.5
Total World	75257	75586	76653	77086	78083	79905	80550	100

Note:

*: Less than 0.05

1. Atmospheric distillation capacity on a calendar-day basis.

2. Total may not add up due to rounding off.

Source: BP Statistical Review of World Energy, June 2017

XI.9 Country-wise World Oil Consumption*

(in Million Tonnes)

Country/Region/ Year	2010	2011	2012	2013	2014	2015	2016	% share in 2016
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
US	850.1	834.9	817.0	832.1	838.1	856.5	863.1	19.5
Canada	101.0	104.2	102.3	103.5	103.1	99.1	100.9	2.3
Mexico	88.6	90.3	92.3	89.8	85.4	84.4	82.8	1.9
Total North America	1039.7	1029.5	1011.6	1025.4	1026.6	1040.0	1046.9	23.7
Argentina	28.1	28.3	29.6	31.9	31.3	32.2	31.9	0.7
Brazil	126.8	131.9	134.3	144.2	150.6	146.6	138.8	3.1
Chile	16.0	17.6	17.5	16.8	17.4	17.6	17.8	0.4
Colombia	11.9	12.8	13.9	13.9	14.8	15.6	15.9	0.4
Ecuador	10.3	10.5	10.9	11.6	12.2	11.8	11.0	0.2
Peru	8.6	9.5	9.6	10.1	10.0	10.7	11.4	0.3
Trinidad & Tobago	2.2	2.1	2.0	2.3	2.1	2.2	2.2	0.1
Venezuela	34.1	34.6	37.2	36.7	33.6	30.2	28.7	0.6
Other S. & Cent. America	65.5	66.9	66.1	64.5	64.7	67.5	68.5	1.6
Total S. & Cent. America	303.6	314.0	321.0	332.0	336.5	334.4	326.2	7.4
Austria	13.4	12.7	12.5	12.7	12.5	12.5	12.7	0.3
Azerbaijan	3.2	4.0	4.2	4.5	4.4	4.5	4.6	0.1
Belarus	7.5	8.6	10.4	7.1	8.1	7.7	7.5	0.2
Belgium	32.7	30.5	29.6	30.1	29.7	31.0	31.8	0.7
Bulgaria	3.9	3.8	3.9	3.6	3.9	4.4	4.5	0.1
Czech Republic	9.2	9.0	9.0	8.5	9.1	8.9	8.4	0.2
Denmark	8.4	8.3	7.8	7.7	7.8	8.0	8.0	0.2
Finland	10.6	9.7	9.1	9.0	8.6	8.7	9.0	0.2
France	84.5	83.0	80.3	79.3	76.9	76.8	76.4	1.7
Germany	115.4	112.0	111.4	113.4	110.4	110.0	113.0	2.6
Greece	18.1	17.0	15.3	14.5	14.4	14.9	15.4	0.3
Hungary	6.7	6.4	5.9	5.9	6.6	7.0	7.1	0.2
Ireland	7.6	6.8	6.5	6.5	6.5	6.8	7.0	0.2
Italy	73.1	70.5	64.2	59.4	55.8	57.6	58.1	1.3
Kazakhstan	9.9	11.5	11.5	12.1	12.3	13.2	13.2	0.3
Lithuania	2.7	2.6	2.7	2.6	2.6	2.8	3.0	0.1
Netherlands	45.9	46.1	43.7	41.4	39.6	38.7	39.9	0.9
Norway	10.8	10.6	10.5	10.8	10.2	10.3	10.4	0.2
Poland	26.7	26.6	25.7	23.8	23.9	24.9	27.2	0.6
Portugal	13.0	12.1	11.0	11.3	11.1	11.5	11.2	0.3
Romania	8.8	9.1	9.2	8.4	9.0	9.2	9.5	0.2
Russian Federation	133.3	142.2	144.6	144.3	152.3	144.2	148.0	3.3
Slovakia	3.9	3.9	3.6	3.6	3.4	3.7	4.0	0.1
Spain	72.1	68.8	64.7	59.3	59.0	61.2	62.5	1.4
Sweden	16.2	14.8	14.6	14.4	14.5	14.1	14.7	0.3
Switzerland	11.4	11.0	11.2	11.8	10.6	10.7	10.2	0.2
Turkey	31.8	31.1	31.6	33.5	34.3	38.9	41.2	0.9
Turkmenistan	5.5	5.8	6.0	6.2	6.5	6.6	6.7	0.2
Ukraine	12.6	13.1	12.5	11.9	10.3	9.2	9.1	0.2
United Kingdom	74.9	73.6	71.4	70.3	69.8	71.8	73.1	1.7
Uzbekistan	3.6	3.4	3.0	2.9	2.7	2.7	2.8	0.1
Other Europe & Eurasia	35.3	35.0	34.1	33.4	32.2	33.3	34.5	0.8
Total Europe & Eurasia	912.3	903.7	882.1	864.3	858.8	865.9	884.6	20.0
Iran	83.6	84.7	85.7	93.6	90.4	84.5	83.8	1.9
Israel	11.2	11.8	13.9	11.5	10.6	11.4	11.6	0.3
Kuwait	20.9	20.4	24.4	22.7	21.0	22.3	22.0	0.5

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CHAPTER I

CHAPTER II

CHAPTER III

CHAPTER IV

CHAPTER V

CHAPTER VI

CHAPTER VII

CHAPTER VIII

CHAPTER IX

CHAPTER X

CHAPTER XI

APPENDIX

XI.9 Country-wise World Oil Consumption* (Contd...)

(in Million Tonnes)

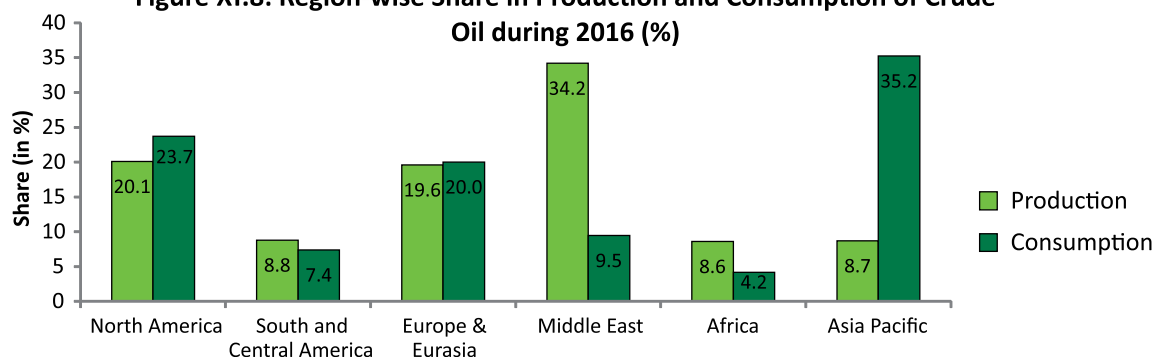
Country/Region/ Year	2010	2011	2012	2013	2014	2015	2016	% share in 2016
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Qatar	6.5	8.0	8.2	9.3	9.7	10.7	11.7	0.3
Saudi Arabia	137.1	139.1	146.2	147.3	159.8	166.6	167.9	3.8
United Arab Emirates	30.7	33.2	35.0	35.5	38.6	40.9	43.5	1.0
Other Middle East	73.1	74.4	76.0	78.8	78.2	76.5	77.3	1.7
Total Middle East	363.1	371.7	389.5	398.6	408.4	412.8	417.8	9.5
Algeria	14.8	15.8	16.8	17.6	17.7	19.5	18.9	0.4
Egypt	36.3	33.7	35.3	35.8	38.3	39.6	40.6	0.9
South Africa	25.6	25.7	26.5	27.3	27.0	27.9	26.9	0.6
Other Africa	87.7	84.2	90.0	94.8	94.5	95.1	98.9	2.2
Total Africa	164.5	159.4	168.6	175.4	177.5	182.1	185.4	4.2
Australia	43.7	46.3	47.9	48.2	48.1	47.9	47.8	1.1
Bangladesh	3.9	5.1	5.4	5.3	5.8	6.2	6.6	0.1
China	448.5	465.1	487.1	508.1	528.0	561.8	578.7	13.1
China Hong Kong SAR	17.8	18.0	17.2	17.6	16.6	18.3	18.9	0.4
India	155.4	163.0	173.6	175.3	180.8	195.8	212.7	4.8
Indonesia	64.7	73.1	74.4	74.5	75.3	71.8	72.6	1.6
Japan	202.7	203.7	217.7	207.4	197.0	189.0	184.3	4.2
Malaysia	29.3	31.5	32.9	34.9	34.9	35.5	36.3	0.8
New Zealand	7.0	7.0	7.0	7.1	7.2	7.5	7.7	0.2
Pakistan	20.5	20.7	20.0	21.9	22.6	24.6	27.5	0.6
Philippines	14.6	13.8	14.4	14.9	16.1	18.3	19.9	0.5
Singapore	60.9	63.7	63.4	64.2	65.8	69.4	72.2	1.6
South Korea	105.0	105.8	108.8	108.3	107.9	113.8	122.1	2.8
Taiwan	47.2	44.5	44.6	45.1	46.1	46.5	46.7	1.1
Thailand	47.7	49.7	52.3	54.5	55.0	57.3	59.0	1.3
Vietnam	15.6	16.9	17.1	17.3	18.0	18.8	20.1	0.5
Other Asia Pacific	17.5	19.4	19.7	20.6	21.7	23.2	24.4	0.6
Total Asia Pacific	1302.2	1347.4	1403.4	1425.2	1447.0	1505.8	1557.3	35.2
Total World	4085.4	4125.7	4176.2	4220.9	4254.8	4341.0	4418.2	100

* Inland demand plus international aviation and marine bunkers and refinery fuel and loss. Consumption of fuel ethanol and biodiesel is also included.

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

Source: BP Statistical Review of World Energy, June 2017

Figure XI.8: Region-wise Share in Production and Consumption of Crude Oil during 2016 (%)



XI.10 Product-wise Regional Consumption of Main Petroleum Products

(in '000' barrels daily)

Country/Region/ Year	2010	2011	2012	2013	2014	2015	2016	% share in 2016
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
North America								
Light distillates	10950	10697	10572	10778	10841	11088	11312	11.72
Middle distillates	6567	6694	6409	6519	6801	6812	6750	6.99
Fuel oil	810	745	662	576	447	419	505	0.52
Others	5172	5169	5251	5492	5332	5435	5276	5.46
Total North America	23499	23305	22894	23364	23421	23753	23843	24.69
of which: US								
Light distillates	9263	9022	8932	9125	9164	9413	9556	9.90
Middle distillates	5464	5518	5278	5371	5632	5657	5594	5.79
Fuel oil	532	459	367	317	256	258	356	0.37
Others	3921	3883	3913	4147	4054	4203	4125	4.27
Total US	19180	18882	18490	18961	19106	19531	19631	20.33
South and Central America								
Light distillates	1890	1969	2019	2118	2178	2231	2214	2.29
Middle distillates	2392	2513	2635	2760	2774	2749	2696	2.79
Fuel oil	763	741	740	715	734	730	663	0.69
Others	1379	1443	1432	1481	1484	1429	1403	1.45
Total S. & Cent. America	6424	6666	6826	7073	7171	7139	6976	7.22
Europe & Eurasia								
Light distillates	4661	4448	4325	4272	4208	4143	4144	4.29
Middle distillates	8970	8954	8839	8859	8787	9071	9269	9.60
Fuel oil	1655	1631	1499	1387	1369	1235	1306	1.35
Others	3958	4031	3932	3852	3924	4000	4074	4.22
Total Europe & Eurasia	19244	19064	18594	18370	18287	18450	18793	19.46
Middle East								
Light distillates	1681	1758	1839	1908	1944	2009	2053	2.13
Middle distillates	2412	2537	2656	2753	2749	2672	2661	2.76
Fuel oil	1939	1972	2042	2080	2211	2235	2192	2.27
Others	2070	2115	2223	2209	2276	2384	2525	2.61
Total Middle East	8102	8382	8760	8950	9180	9300	9431	9.77
Africa								
Light distillates	835	815	867	883	902	954	1038	1.08
Middle distillates	1613	1615	1680	1805	1846	1872	1843	1.91
Fuel oil	460	394	440	438	437	431	421	0.44
Others	576	568	583	595	586	609	634	0.66
Total Africa	3483	3393	3571	3720	3771	3866	3937	4.08
Asia Pacific								
Light distillates	8320	8526	8944	9449	9759	10519	10955	11.35
Middle distillates	9917	10345	10788	10991	11085	11368	11414	11.82

Contd...

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APPENDIX

XI.10 Product-wise Regional Consumption of Main Petroleum Products (Contd...)

(in '000' barrels daily)

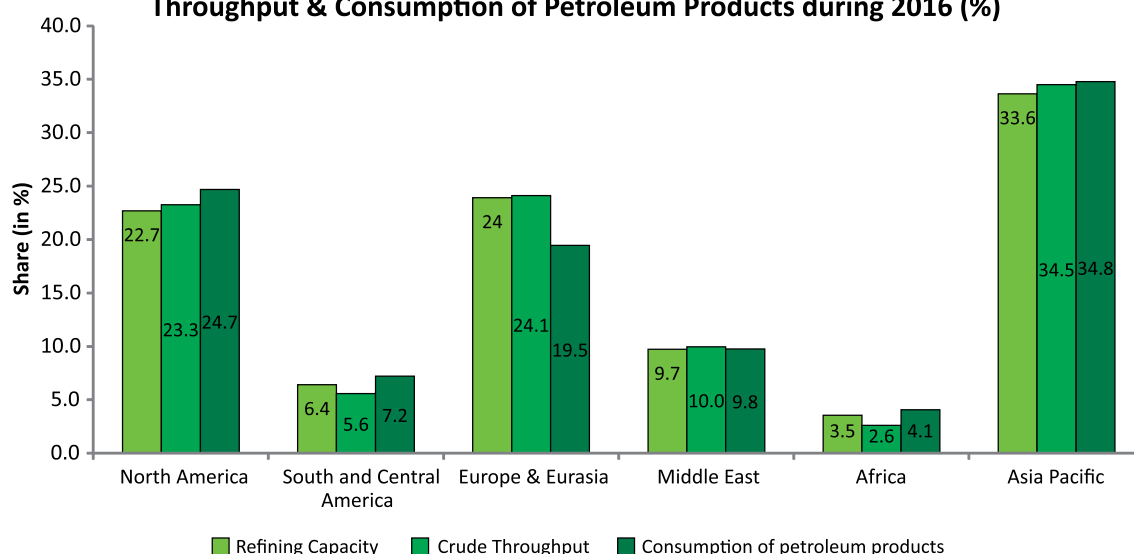
Country/Region/ Year	2010	2011	2012	2013	2014	2015	2016	% share in 2016
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Fuel oil	3045	3112	3216	2987	2828	2808	2898	3.00
Others	6688	6937	7083	7209	7523	7799	8310	8.61
Total Asia Pacific	27969	28920	30031	30636	31195	32494	33577	34.77
World								
Light distillates	28337	28213	28565	29408	29831	30943	31718	32.85
Middle distillates	31871	32658	33007	33686	34041	34545	34632	35.87
Fuel oil	8672	8595	8598	8182	8027	7858	7986	8.27
Others	19842	20264	20505	20837	21125	21656	22223	23.01
Total World	88722	89729	90675	92114	93025	95003	96558	100

Note:

1. 'Light distillates' consists of aviation and motor gasolines and light distillate feedstock (LDF).
2. 'Middle distillates' consists of jet and heating kerosene, and gas and diesel oils (including marine bunkers).
3. 'Fuel oil' includes marine bunkers and crude oil used directly as fuel.
4. 'Others' consists of refinery gas, liquified petroleum gas (LPG), solvents, petroleum coke, lubricants, bitumen, wax, other refined products and refinery fuel and loss.

Source: BP Statistical Review of World Energy, June 2017

Figure XI.9: Region-wise Share in Refining Capacity, Crude Throughput & Consumption of Petroleum Products during 2016 (%)



XI.11 World Oil Production, Consumption and Relative Deficit/Surplus in each Country/Region

Country/Region/Year	2015					2016 (P)				
	(1)	(2)	(3)	(4)	% extent of deficit/surplus (5)	Production (6)	Consumption (7)	Deficit/ Surplus (8)	% extent of deficit/surplus (9)	(in Million Tonnes)
North America		908.30	1040.00	-131.70	-12.66	882.60	1046.90	-164.30	-15.69	
South & Central America		398.60	334.40	64.20	19.20	384.50	326.20	58.30	17.87	
Middle East		1411.60	412.80	998.80	241.96	1496.9	417.80	1079.10	258.28	
Africa		393.70	182.10	211.60	116.20	374.80	185.40	189.40	102.16	
Asia Pacific		400.00	1505.80	-1105.80	-73.44	383.00	1557.3	-1174.30	-75.41	
of which India		41.20	195.80	-154.60	-78.96	40.20	212.70	-172.50	-81.10	
Japan		-	189.00	-	-	-	184.30	-	-	
China		214.60	561.80	-347.20	-61.80	199.7	578.70	-379.00	-65.49	
Australia		17.40	47.90	-30.50	-63.67	15.50	47.80	-32.30	-67.57	
Europe & Eurasia		847.30	865.90	-18.60	-2.15	860.60	884.60	-24.00	-2.71	
Total World		4359.50	4341.00	18.50	0.43	4382.40	4418.20	-35.80	-0.81	

P: Provisional
Source : BP Statistical Review of World Energy, June 2017

XI.12 World Crude Oil and Petroleum Products Imports and Exports

Region/Country	2015					2016 (P)				
	(1)	(2)	(3)	(4)	% extent of deficit/surplus (5)	Crude (6)	Imports (7)	Exports (8)	Product (9)	(in Million Tonnes)
US		366.7	99.8	25.3	191.9	393.3	104.5	24.4	203.1	
Canada		32.3	29.4	159.3	30.7	29.2	31.6	164.4	29.4	
Mexico		27.0	35.2	57.6	8.1	24.6	38.2	60.8	8.8	
S. & Cent. America		499.9	187.6	173.4	30.4	499.4	200.8	177.4	29.6	
Europe		2.9	2.0	11.8	131.7	0.8	1.7	17.6	132.2	
Russia		23.1	12.8	261.9	152.9	18.3	12.2	274.0	151.0	
Other CIS		0.0	1.7	88.5	11.8	0.8	1.2	81.7	8.7	
Iraq		0.1	0.7	161.2	0.8	0.8	0.8	177.5	1.5	
Kuwait		0.1	0.7	96.6	26.4	0.8	0.8	103.3	25.0	
Saudi Arabia		0.4	7.3	359.2	38.4	1.2	7.3	375.3	48.4	
United Arab Emirates		26.2	16.4	125.4	54.2	23.9	24.4	123.2	60.8	
Other Middle East		8.4	35.2	157.5	42.4	4.4	21.4	203.2	48.6	
North Africa		0.8	31.3	60.6	23.9	0.7	34.4	58.2	24.8	
West Africa		20.0	31.3	236.7	7.3	21.2	32.9	216.5	7.3	
East & S. Africa		24.8	31.3	8.8	2.7	20.4	25.1	6.9	2.3	
Australasia		336.2	75.7	10.5	3.9	382.6	74.5	9.4	3.9	
China		193.3	22.8	0.2	36.2	212.3	30.0	2.9	46.0	
India		168.9	44.9	0.3	56.6	168.0	39.1	+	61.9	
Japan		45.9	125.8	0.1	87.7	48.1	121.4	0.1	93.7	
Singapore		259.1	164.2	39.1	104.0	269.5	185.8	41.0	103.5	
Other Asia Pacific		2035.9	1056.7	2035.9	1056.7	2117.8	1105.2	2117.8	1105.2	
Total World		2035.9	1056.7	2035.9	1056.7	2117.8	1105.2	2117.8	1105.2	

+ Less than 0.05.

Note: Bunkers are not included as exports. Intra-area movements (for example, between countries in Europe) are excluded. CIS: Commonwealth of Independent States.

Source : BP Statistical Review of World Energy, June 2017

‡ : Less than 0.5

XI.13 Export of Crude Oil and Refined Petroleum Products from OPEC

(in '000' barrels/day)

Country / Year	2010	2011	2012	2013	2014	2015	2016
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crude Oil							
Algeria	709	843	809	744	623	642	668
Angola	1683	1546	1663	1669	1608	1711	1670
Ecuador	340	334	358	388	422	433	415
Gabon	225	235	224	208	207	206	205
Iran	2583	2537	2102	1215	1109	1081	1922
Iraq	1890	2166	2423	2390	2516	3005	3804
Kuwait	1430	1816	2070	2059	1995	1964	2128
Libya	1118	300	962	589	319	262	255
Nigeria	2464	2377	2368	2193	2120	2114	1738
Qatar	588	588	588	599	596	491	503
Saudi Arabia	6644	7218	7557	7571	7154	7163	7463
UAE	2103	2457	2445	2701	2497	2442	2408
Venezuela	1562	1553	1725	1528	1965	1974	1835
Total	23339	23970	25294	23854	23130	23488	25014
Refined Petroleum Products							
Algeria	314	492	449	453	583	605	541
Angola	8	31	30	32	31	37	54
Ecuador	28	29	27	20	8	16	31
Gabon	-	-	5	6	6	6	6
Iran	371	441	456	394	470	514	898
Iraq	5	1	2	12	9	14	37
Kuwait	632	759	804	805	751	739	707
Libya	48	21	53	83	38	32	34
Nigeria	23	24	21	23	49	18	18
Qatar	322	510	466	511	522	521	568
Saudi Arabia	951	902	862	794	988	1155	1503
UAE	188	604	276	280	256	415	630
Venezuela	751	786	675	713	312	318	263
Total	3641	4601	4126	4127	4023	4390	5290

Note:

1. Includes changes in the quantity of oil in transit, movements not otherwise shown, unspecified use, etc.
2. Indonesia suspended its membership as on 01.01.2009 and reactivated as of 1.1.2016

Source: OPEC Annual Statistical Bulletins, 2017

Figure XI.10(a): Export of Crude Oil and Refining Petroleum Products by OPEC

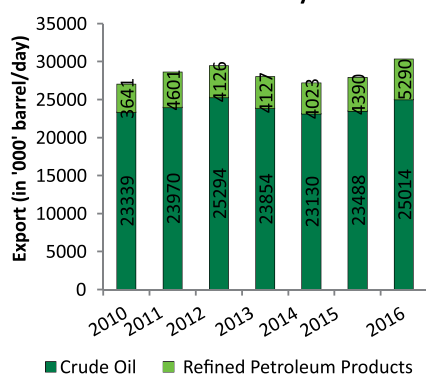
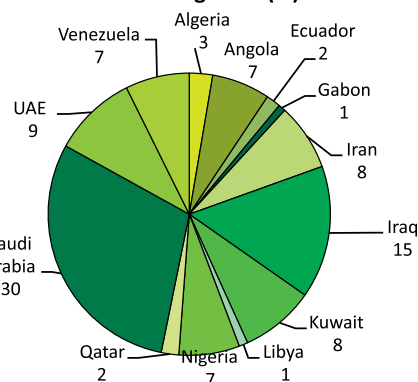


Figure XI.10(b): Country-wise Export of Crude Oil by OPEC during 2016 (%)



XI.14 World Imports of Natural Gas by Country							
(in Million Standard Cubic Metres)							
Country/Region/Year	2010	2011	2012	2013	2014	2015	2016 (P)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
North America	128562	127975	118033	108349	98218	96592	105702
Canada	22622	29740	29180	26699	21890	19627	20988
United States	105940	98235	88853	81650	76328	76965	84714
Latin America	37868	43529	52664	54988	55985	57687	60663
Argentina	3610	7560	8700	11200	11312	10660	10649
Brazil	12600	10480	13730	16770	17480	19960	19561
Chile	3410	3920	3830	3778	3715	3494	4380
Mexico	15150	18060	21827	18529	19698	20393	24519
Venezuela	1446	1797	1877	1821	950	400	-
Others	na	1712	2700	2890	2830	2780	1554
Eastern Europe & Eurasia	145874	155380	137130	130121	116405	106859	105101
Armania	1750	1950	2070	1960	2080	2050	2050
Belarus	21600	21850	20252	20260	20052	18790	18640
Bulgaria	2160	2640	2370	2590	2600	285	279
Czech Republic	11140	11280	10220	9970	7950	8200	8610
Estonia	360	650	na	na	na	na	na
Georgia	200	200	na	na	na	na	na
Hungary	7510	6910	6060	6130	6536	7259	7526
Kazakhstan	6690	6590	3930	5280	4840	4700	4615
Kyrgyzstan	190	250	na	na	na	na	na
Latvia	660	1550	1050	1060	1150	1210	1150
Lithuania	2630	3000	3110	2530	2640	2620	2628
Maldova	2920	2910	2910	2250	2630	2720	2924
Poland	10150	11170	11270	12690	11754	12115	13069
Romania	2150	2650	2040	1300	1040	728	1494
Russia	34389	33110	33770	28010	27730	24957	24458
Slovakia	6425	5830	5030	5080	3740	4527	4477
Tajikistan	700	180	188	150	150	120	120
Ukraine	34250	42000	30890	28023	19133	14185	10602
Others	0	660	1970	2838	2380	2393	2459
Western Europe	428413	420478	414350	416273	399367	425335	441023
Austria	7530	9780	7810	6390	7800	6000	8226
Belgium	31330	29920	28580	31850	28500	34100	35464
Bosnia/Herzegovina	210	260	240	240	240	240	240
Croatia	1170	820	1280	1370	1040	1072	1328
Denmark	150	370	na	na	na	na	na
Finland	4782	3940	3661	3340	3057	2709	2488
France	46199	47400	44940	47990	45134	44711	46444
Germany	93980	89310	90530	96200	92550	103040	109222
Greece	3815	4640	4340	3700	2928	3161	3319
Ireland	5261	5290	5290	4880	4500	4690	2341
Italy	75348	69930	67802	61953	55758	61200	65285
Luxembourg	1366	1250	1206	1028	973	877	802
Macedonia	77	100	na	na	na	na	na
Netherlands	16970	14300	15390	15560	15900	25000	26250
Portugal	5109	5120	4610	4840	4453	5127	5369
Serbia	1933	1850	2240	2195	1900	1815	1815

Contd...

XI.14 World Imports of Natural Gas by Country (Contd...)

(in Million Standard Cubic Metres)

Country/Region/Year	2010	2011	2012	2013	2014	2015	2016 (P)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Slovenia	880	770	na	na	na	na	na
Spain	36716	35520	36754	35399	36383	32391	32405
Sweden	1642	1300	1130	1120	891	809	888
Switzerland	3165	3190	3420	3650	3255	3381	3419
Turkey	36930	42560	44300	43710	49262	48427	46332
United Kingdom	53850	52838	49100	48944	43405	45062	47906
Others	1107	20	1727	1914	1438	1523	1480
Middle East	41048	44674	38596	41510	35643	44270	45426
Iran, I.R.	7243	11659	6720	5329	4422	9015	9246
Jordan	2520	830	587	867	221	2210	2210
Kuwait	890	688	688	3517	3025	3852	4311
Oman	1900	1950	1950	1950	1970	1988	1974
Syrian Arab Republic	690	552	350	250	125	25	25
United Arab Emirates	25705	28275	28201	29047	25800	27100	27479
Others	2100	720	100	550	80	80	180
Africa	4790	6296	6580	7160	7420	11150	12578
Morocco	500	786	660	580	500	500	500
South Africa	3040	3300	3600	3720	3456	3749	3942
Tunisia	1250	1380	1890	2260	2864	2711	2986
Others	na	830	430	600	600	4190	5150
Asia Pacific	212122	241180	272823	293769	297313	297986	305717
China	16350	30490	39700	51800	55944	59169	64494
India	12150	16390	17920	17380	13709	17074	21455
Japan	98015	104000	122243	122489	127521	122534	120073
South Korea	43579	48780	48120	52980	49086	43428	44001
Malaysia	2938	1990	2340	na	na	na	na
Singapore	8553	8460	8310	na	na	na	na
Chinese Taipei	15890	15930	16694	na	na	na	na
Thailand	8810	9580	9760	10360	10592	13329	12978
Others	5837	5560	7736	38760	40461	42452	42716
Total World	998677	1039512	1040176	1052170	1010351	1039878	1076209

P: Provisional

Source: OPEC Annual Statistical Bulletins, 2015, 2016 & 2017

XI.15 World Imports of Petroleum Products by Country							
(in '000' Barrels/ Day)							
Country / Year	2010	2011	2012	2013	2014	2015	2016 (P)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
NORTH AMERICA	2005	2818	2288	2347	2139	2327	2427
Canada	251	317	217	218	242	241	246
United States	1748	2501	2071	2129	1897	2086	2181
LATIN AMERICA	2235	2424	2341	2306	2465	2670	2539
Brazil	501	683	568	544	611	556	551
Chile	na	na	138	140	135	154	156
Ecuador	119	104	118	133	157	152	123
Mexico	654	660	647	560	616	712	745
Panama	64	51	61	59	62	58	66
Venezuela	72	68	145	133	158	187	160
Others	825	859	665	737	725	851	738
Eastern Europe and Eurasia	792	868	814	811	865	902	983
Bulgaria	37	26	31	32	34	38	39
Russia	57	92	41	45	48	57	66
Hungary	57	46	104	108	121	127	170
Poland	138	130	176	153	169	163	196
Others	503	575	463	473	495	517	512
WESTERN EUROPE	7433	6742	6707	7039	7026	7319	7661
Belgium	450	428	389	546	490	547	553
France	839	815	900	881	897	857	824
Germany	757	702	689	802	792	800	806
Italy	390	233	206	260	253	262	325
Netherlands	1766	1753	1871	1843	1793	1901	1932
Spain	na	na	329	284	330	322	364
Turkey	na	na	445	461	480	498	528
United Kingdom	677	495	538	595	608	652	734
Others	2554	2317	1341	1366	1384	1480	1596
MIDDLE EAST	1063	981	1475	1556	1665	1844	1849
Iran	107	30	6	15	40	53	62
Iraq	48	63	103	84	99	81	92
Qatar	na	na	0	6	5	33	21
Saudi Arabia	170	197	320	482	465	588	591
United Arab Emirates	na	na	290	292	350	358	340
Others	738	691	756	677	706	732	743
AFRICA	1493	1552	1682	1614	1633	1896	1886
Algeria	18	43	94	102	55	83	73
Angola	57	64	92	89	99	135	76
Egypt	183	186	240	178	186	367	351
Gabon	na	na	8	8	9	10	11
Libya	na	93	86	152	99	90	90
Morocco	160	163	161	166	163	161	257
Nigeria	197	412	352	331	439	441	423
Tunisia	80	73	61	61	68	81	75
Others	798	518	589	527	516	528	531
Asia and Pacific	7861	8446	8417	8900	9159	9808	10027
Australia	323	337	379	423	430	546	553
China	997	1011	1018	1093	958	1151	1220
India	390	394	405	372	488	637	814
Indonesia	na	435	467	461	555	506	499
Japan	1053	1026	1089	1003	993	973	869
Malaysia	na	na	382	517	543	588	662
Singapore	2021	2513	2168	2310	2389	2576	2516
South Korea	na	763	853	899	886	844	901
Others	3077	1967	1657	1821	1918	1988	1994
TOTAL WORLD	22882	23831	23723	24573	24952	26765	27371

Source : OPEC Annual Statistical Bulletins, 2016, 2016 & 2017

P: Provisional

na: not available

XI.16 World Crude Oil Export by Country

(in '000' Barrels/ Day)

Country / Year	2010	2011	2012	2013	2014	2015	2016 (P)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
NORTH AMERICA	1520	1731	1824	2193	2627	2766	3262
Canada	1478	1684	1757	2059	2276	2301	2742
United States	42	47	67	134	351	465	520
LATIN AMERICA	4624	4600	4579	4383	4945	5213	5122
Brazil	na	na	488	366	517	736	891
Columbia	484	558	555	703	722	736	614
Ecuador	340	334	358	388	422	433	415
Mexico	1460	1420	1333	1271	1220	1247	1274
Trinidad and Tobago	75	40	31	38	34	29	28
Venezuela	1562	1553	1725	1528	1965	1974	1835
Others	703	695	89	89	65	58	65
EASTERN EUROPE & EURASIA	7273	7011	6968	6944	6800	7197	7382
Azerbaijan	na	na	698	692	669	663	655
Kazakhstan	na	na	1365	1378	1390	1393	1386
Russia	4978	4786	4757	4689	4489	4898	5081
Others	2295	2225	147	184	252	243	260
WESTERN EUROPE	2555	2176	2038	1969	1892	1949	2096
Norway	1602	1423	1303	1199	1203	1235	1373
United Kingdom	747	563	576	614	571	595	620
Others	206	190	159	156	118	120	103
MIDDLE EAST	16323	17772	18077	17497	16793	17037	19211
Iran	2583	2537	2102	1215	1109	1081	1922
Iraq	1890	2166	2423	2390	2516	3005	3804
Kuwait	1430	1816	2070	2059	1995	1964	2128
Oman	749	742	768	838	804	788	888
Qatar	588	588	588	599	596	491	503
Saudi Arabia	6644	7218	7557	7571	7153	7163	7463
United Arab Emirates	2103	2457	2445	2701	2497	2442	2408
Others	336	248	123	124	123	104	96
AFRICA	7608	6636	6994	6522	6054	6202	5747
Algeria	709	843	809	744	623	642	668
Angola	1683	1546	1663	1669	1608	1711	1670
Congo	288	264	252	241	261	227	254
Egypt	85	83	91	97	117	156	165
Gabon	225	235	224	208	207	206	205
Libia	1118	300	962	589	319	262	255
Nigeria	2464	2377	2368	2193	2120	2114	1738
Sudan	389	363	60	133	168	166	162
Others	647	625	565	649	631	717	629
ASIA AND PACIFIC	1565	1291	1239	1131	1200	1324	1356
Australia	314	272	261	206	244	222	200
Brunei	162	154	139	115	108	112	105
China	61	51	49	32	12	57	58
Indonesia	356	257	229	229	256	315	335
Malaysia	370	280	268	263	278	366	390
Vietnam	161	165	185	170	173	144	146
Others	141	113	109	117	128	109	123
TOTAL WORLD	41468	41218	41718	40639	40311	41688	44175
OPEC	23339	23970	25294	23854	23130	23488	25014
OPEC (%)	56	58	61	59	57	56	57

Note:

P: Provisional

- Revision have been made throughout the time series. Data includes re-exports.
- Figures of World crude oil exports of OPEC and BP Statistical Review may not tally due to difference in coverage and methodology used.

Source : OPEC Annual Statistical Bulletins, 2015, 2016 & 2017

XI.17 World Exports of Refined Products by Country

(in '000' Barrels/ Day)

Country / Year	2010	2011	2012	2013	2014	2015	2016 (P)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
NORTH AMERICA	2738	3329	3605	3992	4288	4757	5104
Canada	427	390	468	505	464	484	436
United States	2311	2939	3137	3487	3824	4273	4668
LATIN AMERICA	2321	1856	1627	1673	1202	1198	1240
Brazil	158	140	163	154	160	130	134
Ecuador	28	29	27	20	8	16	31
Mexico	190	198	143	183	201	196	183
Trinidad and Tobago	107	114	70	92	70	92	121
Venezuela	751	786	675	713	312	318	263
Others	1087	589	549	511	451	447	508
EASTERN EUROPE & EURASIA	3343	3137	3195	3224	3325	3530	3265
Romania	75	68	67	69	89	90	97
Russia	2230	1927	2259	2469	2611	2726	2502
Others	1038	1142	869	686	626	714	666
WESTERN EUROPE	6223	6026	6358	6355	6359	6935	7059
Belgium	441	386	390	494	524	532	538
France	482	440	426	406	411	440	427
Germany	375	371	384	414	434	453	448
Italy	601	544	586	490	418	565	582
Netherlands	2137	2033	2113	2079	2081	2245	2304
Norway	na	na	378	360	372	402	352
Spain	na	na	349	369	385	412	423
Sweden	na	na	266	192	246	298	313
United Kingdom	560	584	569	553	484	485	523
Others	1627	1668	897	998	1005	1104	1150
MIDDLE EAST	2876	3669	3271	3159	3370	3713	4709
Bahrain	223	242	246	248	248	249	230
Iran	371	441	456	394	470	514	898
Iraq	5	1	2	12	9	14	37
Kuwait	632	759	804	805	751	739	707
Qatar	322	510	466	511	522	521	568
Saudi Arabia	951	902	862	794	988	1155	1503
United Arab Emirates	188	604	276	280	256	415	630
Others	184	209	158	116	126	106	136
AFRICA	643	786	774	841	931	905	842
Algeria	314	492	449	453	583	605	541
Angola	8	31	30	32	31	37	54
Egypt	90	70	57	47	48	49	51
Gabon	8	6	5	6	6	6	6
Libya	48	21	53	83	38	32	34
Nigeria	23	24	21	23	49	18	18
Others	152	142	159	196	176	158	138
ASIA AND PACIFIC	5745	6372	6380	6841	6810	7068	7674
Australia	72	56	64	57	56	47	51
China	623	610	570	666	693	836	1089
India	1224	1267	1289	1475	1374	1245	1402
Indonesia	101	84	71	87	88	89	83
Japan	351	476	440	513	509	560	595
Malaysia	304	310	402	492	487	460	521
Singapore	1755	1964	1731	1743	1772	1885	2009
South Korea	na	1101	1193	1162	1206	1280	1313
Others	1315	504	622	646	625	667	613
TOTAL WORLD	23889	25174	25209	26085	26284	28107	29893

Note: Revisions have been made throughout the time series. Data includes re-exports of petroleum products from gas plants.

P: Provisional

Source : OPEC Annual Statistical Bulletins, 2015, 2016 & 2017

XI.18 International Petroleum Crude Price Index

(in '000' Barrels/ Day)

Petroleum Spot	2010	2011	2012	2013	2014	2015	2016
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
U.K. BRENT 38.0/0.26	381.04	533.08	534.32	519.96	474.29	250.89	209.48
USA WEST TAXAS INTERMEDIATE, 40.0/0.4	324.69	388.35	384.71	400.49	381.28	199.22	176.90
UAE DUBAI FATEH 32.5/1.43	383.22	521.15	535.18	517.42	474.53	249.95	203.09
IRAN LIGHT 33.9/1.4	378.78	524.66	531.93	519.33	471.22	249.03	201.84
IRAN HEAVY 31.0/1.6	385.43	532.95	547.76	531.04	483.07	245.10	198.74
INDONESIA MINAS 33.0/0.1	353.74	493.51	501.29	461.78	424.25	211.39	176.74
NIGERIA BONNY LIGHT, 36.7/0.1	335.55	472.48	470.45	460.93	417.43	219.16	182.20
MEXICO ISTHUMAS, 31.8/1.51	353.11	479.09	483.22	476.92	424.72	231.93	192.15
RUSSIA URALS 36.1/2.52	347.78	484.43	490.20	479.15	435.14	230.26	187.05
MALAYSIA TAPIS 44.3/0.2	307.47	435.34	434.71	425.08	383.31	207.17	169.79
AUSTRALIA Gippsland GIPPSLAND, 46.0/0.13	346.02	482.26	476.25	457.83	413.12	221.08	na
SAUDI ARABIA ARAB HEAVY, 28.0/3.0	402.56	554.40	577.09	553.49	499.09	250.45	204.85

na: not available

Note : The number adjacent to the crude names show the API gravities and percentage of sulphur by weight.

Base year (1990 =100)

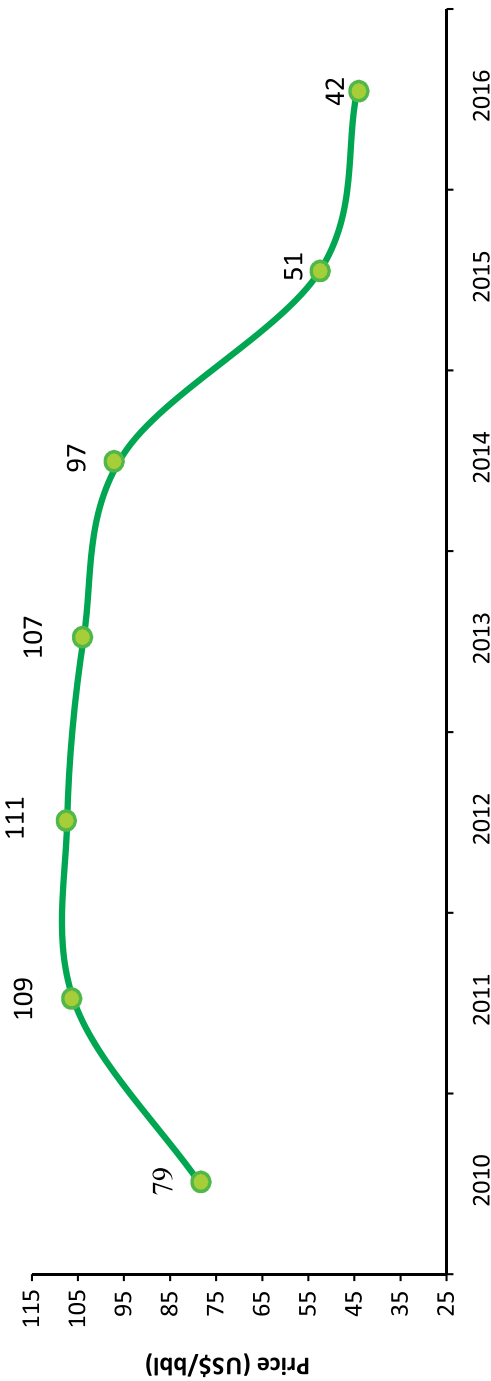
Source: OPEC Annual Statistical Bulletins, 2015, 2016 & 2017

XI.19 Spot prices of key OPEC crude

Period	Country/Crude Name													(US \$/bbl)
	Kuwait	Libya	Nigeria	Qatar	Saudi Arabia		UAE	Indonesia	Iran		Iraq		Oman	
	Kuwait	Brega	Forcados	Dukhan	Arab	Murban	Minas	Iran	Heavy	Basrah	Light	Oman		
	Export				Heavy			Light						
	(1)				(2)			(3)		(4)			(5)	
2010	76.32	79.67	81.06	79.36	75.56	79.94	81.78	78.18	76.74	76.79	78.34	78.34		
2011	105.63	112.89	113.65	108.86	104.06	109.77	115.50	108.29	106.11	106.17	106.63	106.63		
2012	108.93	111.45	114.21	110.34	108.32	111.76	116.60	109.79	109.06	107.96	109.35	109.35		
2013	105.04	108.88	111.95	107.05	103.89	108.21	107.41	107.19	105.73	103.60	105.51	105.51		
2014	95.32	98.79	101.35	98.44	93.68	99.45	98.68	97.26	96.18	94.45	97.04	97.04		
2015	48.13	52.08	54.41	52.87	47.01	53.87	49.17	51.40	48.80	47.87	51.21	51.21		
2016	39.30	43.73	43.70	43.69	38.45	44.83	41.11	41.66	39.57	39.53	41.96	41.96		

Source : OPEC Annual & Monthly Statistical Bulletins 2017

Figure XI.11: Trends in average international crude oil spot price



XI.20 Crude Oil Spot Prices

(Average Unit Value, FOB) (in US \$/bbl)

Crude	Country	2010	2011	2012	2013	2014	2015	2016
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Brent	UK(North Sea)	79.51	111.21	111.68	108.68	98.94	52.37	43.72
WTI	U.S.A	79.48	95.04	94.12	98.03	93.28	48.71	43.33
WTS	U.S.A	77.32	92.99	88.71	95.41	87.33	48.97	42.49
Light Lui.	Louisiana	82.83	112.38	111.69	107.39	96.90	52.35	45.02
Dubai	UAE	78.13	106.33	109.02	105.44	96.52	50.84	41.46
Iran Light	Iran	77.88	109.08	109.81	107.40	96.87	51.12	41.66
Iran Heavy	Iran	76.85	107.11	108.19	105.63	95.02	49.72	40.02
Urals	Russia	78.17	109.61	110.85	108.39	97.97	51.50	42.11
Minas	Indonesia	82.22	114.41	116.26	110.08	100.30	52.52	41.20
Tapis	Malaysia	82.72	119.30	117.00	115.10	102.83	54.50	45.77

Source : Energy Prices and Taxes, Second Quarter of 2017, International Energy Agency Publication.

XI.21 Petroleum Products Spot Prices

(in US \$/bbl)

Product	2010	2011	2012	2013	2014	2015	2016
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
NW EUROPE							
Gasoline	87.32	116.42	122.89	116.69	108.16	67.03	54.02
Gas Oil	89.75	125.02	128.03	123.40	112.63	65.48	52.37
Jet/Kerosene	90.63	127.42	129.00	124.12	113.87	65.32	53.00
Naphtha	80.11	104.56	105.37	101.44	93.95	51.79	42.90
LSFO	72.28	100.38	105.12	96.43	86.96	41.01	34.24
HSFO	67.99	94.51	97.65	91.47	81.04	37.85	30.62
U.S.A							
Gasoline	91.29	123.86	131.91	127.42	117.36	77.29	62.75
Gas Oil	88.24	122.41	125.43	120.40	109.09	60.84	49.72
Jet/Kerosene	90.31	125.92	128.22	122.67	113.30	63.86	52.43
Naphtha	78.12	100.48	98.05	94.47	87.61	47.66	41.29
LSFO	72.28	100.38	na	na	na	na	na
HSFO	69.70	95.72	99.32	92.96	82.82	40.73	32.12
SINGAPORE							
Gasoline	88.48	119.81	123.44	118.98	110.75	69.09	56.20
Gas Oil	90.39	126.25	128.08	123.24	112.63	64.47	52.24
Jet/Kerosene	90.28	125.70	126.81	122.87	112.40	64.69	53.00
Naphtha	79.41	102.75	103.73	101.20	94.43	52.88	42.81
LSFO	80.83	109.75	115.43	106.16	98.55	48.07	39.64
HSFO	73.23	114.76	118.22	111.96	104.93	56.38	na

na: not available

Source : Energy Prices and Taxes, Second Quarter of 2017, International Energy Agency Publication.

XI. 22 Natural Gas Prices for Industry and Household Use

USD/MWh (GCV basis) (using PPPs)

Country/Year	2010	2011	2012	2013	2014	2015	2016
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
FOR INDUSTRIAL USE							
Austria	na	na	45.4	45.8	42.8	46.2	42.3
Belgium	28.6	32.4	34.7	36.8	32.8	35.6	29.7
Canada	11.6	12.3	9.6	11.6	14.3	10.4	14.7
Czech Republic	62.4	67.0	71.3	71.7	68.4	62.9	56.7
Estonia	52.5	54.4	67.6	66.9	66.2	54.6	42.3
Finland	30.1	41.9	45.9	45.9	43.6	40.0	38.5
France	40.1	44.0	48.0	50.7	48.2	46.1	39.9
Germany	42.8	46.1	44.2	48.3	43.3	39.1	33.5
Greece	47.9	57.5	77.9	74.7	70.0	54.6	41.9
Hungary	60.9	70.1	84.6	80.7	91.4	71.4	58.8
Ireland	33.2	37.9	42.9	47.5	44.2	38.2	36.2
Italy	40.2	46.0	56.4	57.0	51.2	50.2	44.1
Japan	42.9	52.2	58.9	68.4	73.0	54.8	na
Korea	66.2	76.4	81.0	83.2	86.3	63.1	54.2
Luxembourg	34.5	40.3	42.7	45.2	37.9	42.5	31.5
Netherlands	30.6	33.4	36.2	38.9	37.9	34.5	30.0
New Zealand	19.3	18.4	18.8	20.5	18.9	17.3	15.3
Poland	64.8	68.9	78.8	75.2	77.2	66.6	51.7
Portugal	48.2	58.1	69.4	72.0	75.1	67.0	51.6
Slovak Republic	68.1	69.6	79.6	74.7	67.6	65.6	61.2
Slovenia	60.8	66.5	81.6	72.8	65.5	57.0	48.3
Spain	35.4	38.5	49.5	51.2	50.3	44.4	35.4
Sweden	44.9	49.6	49.2	47.7	42.2	41.0	36.4
Switzerland	39.3	44.9	49.3	50.6	51.1	49.6	48.1
Turkey	55.8	56.9	71.9	76.9	72.9	70.1	66.4
U.K	26.5	31.7	34.9	38.7	34.8	31.4	26.7
U.S.A	17.8	16.9	12.8	15.3	18.3	12.9	11.6
OECD Total	28.9	31.0	31.2	34.2	34.4	28.5	23.9
FOR HOUSEHOLD USE							
Austria	71.6	79.4	89.5	93.0	90.4	86.5	82.2
Belgium	66.4	81.3	85.7	81.4	79.6	75.7	66.2
Canada	31.3	29.6	27.6	28.6	31.4	27.5	28.7
Chile	168.4	191.5	175.0	152.3	156.0	145.3	154.6
Czech Republic	93.8	109.3	127.9	127.2	123.1	125.0	120.2
Denmark	90.4	99.4	93.7	98.4	88.6	78.5	na
Estonia	74.2	82.6	97.5	94.1	89.7	74.7	58.5
France	65.5	74.1	80.4	88.1	92.7	90.9	84.5
Germany	79.9	84.9	89.4	91.7	92.0	89.8	86.9
Greece	100.4	110.9	161.2	185.6	173.2	166.6	149.5
Hungary	92.0	102.4	106.9	101.7	87.6	83.1	82.6
Ireland	66.2	69.7	81.6	89.1	91.6	85.7	84.5
Italy	91.2	99.9	110.3	117.8	114.9	110.3	104.4
Japan	111.7	122.9	129.8	138.8	144.6	130.2	na
Korea	79.5	90.1	95.6	99.1	102.7	80.8	74.7
Luxembourg	47.3	59.5	64.2	66.5	58.4	54.0	48.7
Mexico	65.0	59.3	50.7	55.0	59.4	52.2	55.5
Netherlands	76.6	83.8	92.6	96.7	94.9	89.5	91.5
New Zealand	79.9	88.4	88.9	96.6	93.4	90.6	95.9
Poland	110.1	117.8	126.7	121.0	127.9	124.7	110.2
Portugal	96.8	108.8	134.8	151.8	179.2	165.0	145.6
Slovak Republic	89.6	95.5	103.7	106.9	108.3	104.9	94.4
Slovenia	97.5	112.7	124.8	114.9	112.2	104.5	96.7
Spain	77.8	91.1	114.6	124.9	134.5	131.4	118.9
Sweden	109.5	119.9	121.9	121.7	118.4	118.0	118.8
Switzerland	60.4	66.5	73.4	76.0	78.2	75.9	75.9
Turkey	72.2	71.3	87.7	92.9	89.5	87.7	86.2
U.K	53.1	60.0	65.5	69.9	73.5	69.9	65.8
U.S.A	37.0	36.4	35.3	34.0	36.1	34.2	33.2
OECD Total	58.1	60.9	66.4	65.9	64.9	61.2	56.2

GCV: Gross Calorific Value. MWh: megawatt hour PPP: Purchasing Power Parity na: not available

Source : Energy Prices and Taxes, 2nd Quarter of 2017, International Energy Agency Publication.

XI. 23 Crude Oil Import Costs

(Average Unit Value, CIF)(in US \$/bbl)

Country	2010	2011	2012	2013	2014	2015	2016
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
IEA ¹	78.13	107.61	109.15	105.84	97.43	50.88	40.86
IEA Europe ¹	79.05	110.54	111.58	108.93	98.89	51.83	42.18
Australia	82.60	115.66	117.78	114.19	107.05	57.90	46.87
Austria	80.00	110.92	112.50	110.63	103.81	55.52	42.89
Belgium	79.65	110.50	110.83	108.45	98.49	51.65	42.06
Canada	79.14	110.80	110.61	108.60	98.60	53.48	43.57
France	79.78	111.78	112.01	109.56	99.40	53.14	43.48
Germany	78.49	110.63	112.21	109.62	99.76	52.65	42.80
Greece	78.97	109.41	111.92	107.61	95.55	49.32	40.08
Italy	79.29	110.23	112.18	109.98	99.09	52.06	42.33
Japan	79.43	109.30	114.75	110.61	104.16	54.20	41.79
Korea	78.72	108.63	113.24	108.59	101.24	53.32	41.00
Netherlands	78.55	109.19	111.54	108.55	99.22	51.66	41.62
New Zealand	80.62	112.38	117.70	113.43	105.96	57.99	44.91
Spain	77.84	108.50	109.48	106.77	97.07	49.51	40.08
Sweden	79.00	110.67	112.36	109.10	97.75	51.19	42.41
U.K	80.60	113.49	112.62	110.27	100.07	53.81	44.62
U.S.A	76.02	102.43	101.16	97.25	89.43	45.83	37.94

Note: Computed across the countries of the region using import volumes as current weights. Poland is included since Jan. 2008; the Slovak Republic is included since Jan. 2007; Korea and Czech Republic are included since January 2001; Hungary is not included. For reasons like confidentiality, data for some countries is not listed separately.

Source: International Energy Agency's "Energy Prices and Taxes" Second Quarter of 2017.

XI.24 Spot Prices of Key OPEC Crude Oils						
(in US \$/bbl)						
Year/Month/Country	Iran	Kuwait	Nigeria Bonny	Saudi Arabia		UAE
	Light 33.9	Export 31.4	Light 36.7	Light 34.2	Heavy 28.0	Dubai 32.4
(1)	(2)	(3)	(4)	(5)	(6)	(7)
2010						
January	75.62	75.69	77.39	76.46	75.60	76.69
March	77.70	76.29	80.40	77.24	75.87	77.31
June	73.13	72.30	76.00	73.84	71.19	73.99
September	76.82	72.92	79.65	74.55	71.88	75.13
December	90.60	87.25	93.08	89.59	86.11	89.17
2011						
January	94.90	91.45	98.10	93.59	90.26	92.33
March	111.44	107.66	116.75	110.37	105.80	108.71
June	110.45	106.65	117.27	109.37	104.34	107.77
September	108.47	105.16	115.63	107.72	103.18	106.31
December	107.06	107.06	110.71	107.96	106.61	106.43
2012						
January	109.76	112.00	113.08	112.82	111.73	109.86
March	122.83	122.32	127.98	123.43	121.84	122.47
June	93.35	93.32	97.19	94.51	92.67	94.44
September	112.24	110.02	114.06	111.32	109.76	111.22
December	107.61	106.19	111.19	108.35	104.79	106.34
2013						
January	105.33	103.79	115.41	110.64	102.21	107.94
March	105.63	103.08	110.57	107.61	101.63	105.55
June	110.27	106.56	106.12	101.30	104.50	100.32
September	96.41	95.30	114.30	109.48	99.73	108.28
December	61.32	58.25	113.11	108.07	56.65	107.80
2014						
January	105.33	103.79	110.26	105.74	102.21	104.01
March	105.63	103.05	109.50	104.80	101.63	104.32
June	110.27	106.56	114.36	108.61	104.50	108.03
September	96.41	95.30	98.07	97.23	93.73	96.47
December	61.32	58.25	63.81	60.13	56.65	60.25
2015						
January	47.42	42.31	48.51	44.47	40.25	45.57
February	55.97	52.25	58.46	53.78	51.07	55.85
March	54.79	50.52	56.75	52.20	49.34	54.66
April	59.34	55.96	60.65	57.73	54.26	58.55
May	63.97	60.92	65.31	62.62	59.42	63.54
June	62.28	59.29	62.19	60.94	58.01	61.76
July	55.76	53.85	56.77	54.94	53.55	56.15
August	45.74	45.28	47.07	46.52	44.82	47.87
September	46.16	43.96	48.01	45.56	43.37	45.38
October	47.05	43.61	49.16	45.37	43.01	45.84
November	43.17	38.39	44.81	40.64	37.00	41.79
December	35.98	31.49	38.16	33.70	30.15	34.59
2016						
January	28.34	23.92	30.40	26.35	22.50	26.81
February	30.16	26.77	32.24	28.77	26.15	29.44
March	36.08	32.99	38.53	34.74	32.76	35.15
April	39.09	36.33	41.51	38.22	35.92	39.00
May	44.65	41.60	46.85	43.48	40.69	44.29
June	46.38	44.50	48.48	46.28	43.68	46.25
July	43.54	41.37	45.30	43.14	40.40	42.64
August	43.66	41.88	46.35	43.47	41.00	43.58
September	44.23	41.22	47.77	42.70	40.34	43.67
October	47.99	47.04	50.83	48.26	46.26	48.94
November	43.45	42.14	45.20	43.32	40.96	43.98
December	51.85	50.93	53.91	51.92	49.70	52.08

Source: OPEC Bulletin 2017

XI.26 World Survey of Selected Petroleum Products Prices in 2016					
Country	US \$ Exchange Rate in National Currencies	Automotive Diesel Oil Non-commercial use (US\$/Ltr)	Heavy/High Sulphur Fuel Oil (for Industry) (US\$/tonne)	Light Fuel Oil	
				For Household Use	For Industry Use
				(US\$/1000 Ltr)	
(1)	(2)	(3)	(4)	(5)	(6)
Australia	1.345	0.875	..	..	..
Austria	0.902	1.142	..	678.600	474.300
Belgium	0.902	1.317	..	535.300	442.400
Canada	1.325	0.737	256.500	723.800	450.200
Chile	676.960	0.639	..	826.100	..
Czech Republic	24.441	1.120	c	618.500	438.100
Denmark	6.731	1.287	..	1199.300	666.600
Estonia	0.904	1.144	..	694.400	578.700
Finland	0.902	1.316	..	845.300	681.700
France	0.902	1.224	..	704.500	544.700
Germany	0.902	1.219	..	545.700	425.900
Greece	0.902	1.178	..	877.700	711.400
Hungary	281.500	1.181	..	x	..
Ireland	0.902	1.277	625.700	637.500	561.700
Israel	3.841	1.507	c	1497.300	c
Italy	0.902	1.422	..	1214.200	995.200
Japan	108.800	0.937	..	589.800	505.700
Korea	1161.000	1.019	343.600	675.900	x
Latvia	0.904	1.053	..	644.600	532.700
Luxembourg	0.902	1.025	x	512.400	461.700
Mexico	18.627	0.752	150.700	x	188.100
Netherlands	0.902	1.265	x	1006.000	831.400
New Zealand	1.437	0.705	299.400	..	359.100
Norway	8.400	1.388	x	1114.900	891.900
Poland	3.944	1.048	230.800	663.200	539.300
Portugal	0.902	1.252	x	1069.600	..
Slovak Republic	0.904	1.166	x	..	500.800
Slovenia	0.904	1.191	x	806.700	661.200
Spain	0.902	1.124	..	626.900	518.100
Sweden	8.556	1.554	x	..	712.700
Switzerland	0.985	1.474	x	710.300	615.000
Turkey	3.022	1.279	518.500	1004.600	..
U.K	0.740	1.486	x	574.900	546.700
U.S.A	1.000	0.611	263.800	582.800	327.400

.. : not available

x : not applicable

c : confidential

Source : International Energy Agency's "Energy Prices and Taxes" 2nd Quarter of 2017.

XI.27 Airfield Prices of Jet A-1 Fuel at Major International Airports								
(U.S.C./U.S GALLON)(as on 1 st April)								
Countries / Ports	2010	2011	2012	2013	2014	2015	2016	2017
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
France								
Paris	226.11	337.38	341.81	314.42	303.58	183.00	125.31	160.03
Germany								
Frankfurt	223.24	330.00	341.02	303.55	298.08	178.60	121.17	157.83
Italy								
Rome	na	na	na	na	na	190.71	127.15	162.60
Kenya								
Nairobi	234.05	339.44	347.24	na	na	na	na	na
Malaysia								
Kualalampur	213.35	319.36	330.97	293.61	290.47	170.00	117.39	151.96
Singapore								
Paya Lebar/Changi	212.18	321.68	326.91	289.58	285.65	165.17	115.15	147.34
U.A.E								
Abu Dhabi	228.97	334.64	343.83	307.63	300.99	178.37	133.35	163.53
Dubai	227.56	332.90	333.84	301.75	292.99	170.37	127.15	157.33
U.K								
London(Heathrow)	226.29	337.55	342.35	304.94	303.29	183.49	127.39	160.76
Kuwait								
	206.23	300.75	309.81	280.94	274.67	166.90	120.45	152.26
New York								
	219.92	324.55	356.19	303.13	304.34	172.75	117.86	158.27
Japan								
Tokyo	221.71	327.36	346.63	314.95	303.54	180.31	126.26	162.11
India								
Mumbai	252.83	374.67	392.82	323.15	316.85	207.25	164.18	202.54
Delhi	254.66	378.02	392.40	322.80	315.32	205.06	129.84	165.94
Madras	253.91	358.89	390.71	324.01	317.61	208.31	142.64	178.95

Note: Prices are Air India Contract prices, barring Italy

na : not available

Source : Air India

XI.28 Tanker Fleet Development in OPEC Members

(in '000' DWT)

Country/Year	2010		2011		2012		2013		2014		2015		2016	
(1)	Number	DWT	Number	DWT	Number	DWT	Number	DWT	Number	DWT	Number	DWT	Number	DWT
	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Algeria	1	160	1	160	1	160	1	160	1	160	1	160	1	160
Angola	na	na	8	1186	31	2363	31	2363	27	2498	27	2498	26	2085
Ecuador	8	269	10	579	14	957	18	1231	20	1457	9	638	9	638
Gabon	na	na	na	na	1	0	1	0	1	0	1	0	1	0
Iran	47	10994	47	10994	47	10994	47	10994	46	10982	46	10982	47	10982
Iraq	4	53	4	53	4	53	4	50	4	53	4	53	4	53
Kuwait	16	2223	16	2223	21	3404	19	3547	26	4825	26	4825	25	4703
Libya	8	627	5	548	5	548	5	548	5	548	5	548	5	548
Nigeria	2	409	2	409	2	409	2	409	2	409	2	409	-	-
Qatar	6	528	6	528	6	528	6	528	5	397	5	397	5	397
Saudi Arabia	35	6993	32	5766	20	5051	23	6004	23	6004	23	6004	23	6004
UAE	13	660	13	660	13	660	13	660	19	1139	19	1139	19	1139
Venezuela	16	1091	18	1348	19	1452	22	2066	26	3346	26	3346	26	3346
Total OPEC	156	24007	162	24454	184	26579	192	28560	205	31819	194	31000	191	30057
Total World	4167	385828	4494	422849	4734	453168	4912	472169	5153	482975	5359	499922	5607	527651
OPEC(%)		6.2		5.8	4.7	5.9		6.0		6.6		6.2		5.7

na: not available

Notes: Figures as at year-end DWT: Dead Weight Tonnage
Source :OPEC Annual Statistical Bulletins, 2017

XI.29 Oil Trade Movements											
Country/Year	2010	2011	2012	2013	2014	2015	2016	(in 000 Barrels daily)			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	% share in 2016			
								(10)			
Imports											
US	11689	11338	10587	9859	9241	9450	10056			15.4	
Europe	12201	12272	12569	12815	12855	13959	14188			21.7	
China	5886	6295	6675	6978	7398	8333	9216			14.1	
India	3749	3823	4168	4370	4155	4357	4877			7.5	
Japan	4567	4494	4743	4637	4383	4332	4179			6.4	
Rest of World	17143	17717	17862	20085	21261	22543	22939			35.0	
Total World	55234	55938	56604	58744	59293	62974	65454			100	
Exports											
US	2154	2495	2682	3563	4033	4521	4723			7.2	
Canada	2599	2798	3056	3296	3536	3841	3906			6.0	
Mexico	1539	1487	1366	1347	1293	1326	1400			2.1	
South & Central America	3568	3755	3830	3790	3939	4117	4170			6.4	
Europe	1949	2106	2193	2578	2512	2990	3110			4.8	
Russia	7397	7448	7457	7948	7792	8455	8634			13.2	
Other CIS	1944	2080	1848	2102	2012	2024	1817			2.8	
Saudi Arabia	7595	8120	8468	8365	7911	8017	8526			13.0	
Middle East (ex Saudi Arabia)	11976	12188	11742	12242	12699	13446	14992			22.9	
North Africa	2878	1951	2602	2127	1743	1717	1683			2.6	
West Africa	4755	4759	4724	4590	4849	4906	4486			6.9	
Asia Pacific (ex Japan)	6226	6088	6299	6307	6450	7068	7514			11.5	
Rest of World	653	663	338	491	524	546	493			0.8	
Total World	55234	55938	56604	58744	59293	62974	65454			100	

Note: 1. Annual changes and shares of total are calculated using thousand barrels daily figures. North and West African exports exclude intra-Africa trade

2. Bunkers are not included as exports.

Source: BP Statistical Review of World Energy, June 2017

XI.30 World Primary Energy Consumption by Fuel during 2016							
(in Million Tonnes Oil Equivalent)							
Country	Oil	Natural Gas	Coal	Nuclear Energy	Hydro electricity	Renewables	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
US	863.1	716.3	358.4	191.8	59.2	83.8	2272.7
Canada	100.9	89.9	18.7	23.2	87.8	9.2	329.7
Mexico	82.8	80.6	9.8	2.4	6.8	4.1	186.5
Total North America	1046.9	886.8	386.9	217.4	153.9	97.1	2788.9
Argentina	31.9	44.6	1.1	1.9	8.7	0.7	88.9
Brazil	138.8	32.9	16.5	3.6	86.9	19.0	297.8
Chile	17.8	4.1	8.2	-	4.4	2.3	36.8
Colombia	15.9	9.5	4.6	-	10.6	0.5	41.1
Ecuador	11.0	0.6	-	-	3.5	0.1	15.3
Peru	11.4	7.1	0.8	-	5.4	0.6	25.3
Trinidad & Tobago	2.2	17.2	-	-	-	^	19.4
Venezuela	28.7	32.0	0.1	-	13.9	^	74.6
Other S. & Cent. America	68.5	6.7	3.4	-	22.5	5.1	106.2
Total S. & Cent. America	326.2	154.7	34.7	5.5	156.0	28.2	705.3
Austria	12.7	7.9	3.2	-	9.0	2.4	35.1
Azerbaijan	4.6	9.4	^	-	0.4	^	14.5
Belarus	7.5	15.3	0.8	-	^	0.1	23.7
Belgium	31.8	13.9	3.0	9.8	0.1	3.2	61.7
Bulgaria	4.5	2.7	5.7	3.6	0.9	0.7	18.1
Czech Republic	8.4	7.0	16.9	5.5	0.5	1.7	39.9
Denmark	8.0	2.9	2.1	-	^	4.1	17.1
Finland	9.0	1.8	4.1	5.3	3.6	3.4	27.1
France	76.4	38.3	8.3	91.2	13.5	8.2	235.9
Germany	113.0	72.4	75.3	19.1	4.8	37.9	322.5
Greece	15.4	2.6	4.7	-	1.2	2.1	25.9
Hungary	7.1	8.0	2.3	3.6	0.1	0.8	21.9
Ireland	7.0	4.3	2.2	-	0.2	1.5	15.2
Italy	58.1	58.1	10.9	-	9.3	15.0	151.3
Kazakhstan	13.2	12.0	35.6	-	2.1	0.1	63.0
Lithuania	3.0	1.8	0.2	-	0.1	0.4	5.5
Netherlands	39.9	30.2	10.3	0.9	^	3.1	84.5
Norway	10.4	4.4	0.8	-	32.4	0.5	48.6
Poland	27.2	15.6	48.8	-	0.5	4.6	96.7
Portugal	11.2	4.6	2.9	-	3.6	3.7	26.0
Romania	9.5	9.5	5.4	2.6	4.1	2.0	33.1
Russian Federation	148.0	351.8	87.3	44.5	42.2	0.2	673.9
Slovakia	4.0	4.0	3.1	3.3	1.0	0.5	15.9
Spain	62.5	25.2	10.4	13.3	8.1	15.5	135.0
Sweden	14.7	0.8	2.2	14.2	14.1	6.1	52.2
Switzerland	10.2	2.7	0.1	4.8	7.8	0.8	26.4
Turkey	41.2	37.9	38.4	-	15.2	5.2	137.9
Turkmenistan	6.7	26.6	-	-	-	^	33.2
Ukraine	9.1	26.1	31.5	18.3	1.6	0.3	87.0
United Kingdom	73.1	69.0	11.0	16.2	1.2	17.5	188.1
Uzbekistan	2.8	46.2	1.0	-	2.7	^	52.7
Other Europe & Eurasia	34.5	13.9	23.0	1.8	21.7	2.5	97.6
Total Europe & Eurasia	884.6	926.9	451.6	258.2	201.8	144.0	2867.1
Iran	83.8	180.7	1.7	1.4	2.9	0.1	270.7
Israel	11.6	8.7	5.7	-	^	0.4	26.4
Kuwait	22.0	19.7	-	-	-	^	41.7

Contd...

XI.30 World Primary Energy Consumption by Fuel during 2016 (Contd...)

(in Million Tonnes Oil Equivalent)

Country	Oil	Natural Gas	Coal	Nuclear Energy	Hydro electricity	Renewables	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Qatar	11.7	37.5	-	-	-	^	49.2
Saudi Arabia	167.9	98.4	0.1	-	-	^	266.5
United Arab Emirates	43.5	69.0	1.3	-	-	0.1	113.8
Other Middle East	77.3	47.1	0.5	-	1.8	0.2	126.8
Total Middle East	417.8	461.1	9.3	1.4	4.7	0.7	895.1
Algeria	18.9	36.0	0.1	-	^	0.1	55.1
Egypt	40.6	46.1	0.4	-	3.2	0.6	91.0
South Africa	26.9	4.6	85.1	3.6	0.2	1.8	122.3
Other Africa	98.9	37.6	10.3	-	22.4	2.6	171.8
Total Africa	185.4	124.3	95.9	3.6	25.8	5.0	440.1
Australia	47.8	37.0	43.8	-	4.0	5.4	138.0
Bangladesh	6.6	24.8	0.8	-	0.2	^	32.4
China	578.7	189.3	1887.6	48.2	263.1	86.1	3053.0
China Hong Kong SAR	18.9	3.0	6.7	-	-	^	28.6
India	212.7	45.1	411.9	8.6	29.1	16.5	723.9
Indonesia	72.6	33.9	62.7	-	3.3	2.6	175.0
Japan	184.3	100.1	119.9	4.0	18.1	18.8	445.3
Malaysia	36.3	38.7	19.9	-	4.2	0.3	99.5
New Zealand	7.7	4.2	1.2	-	5.9	2.4	21.4
Pakistan	27.5	40.9	5.4	1.3	7.7	0.4	83.2
Philippines	19.9	3.4	13.5	-	2.1	3.1	42.1
Singapore	72.2	11.3	0.4	-	-	0.2	84.1
South Korea	122.1	40.9	81.6	36.7	0.6	4.3	286.2
Taiwan	46.7	17.2	38.6	7.2	1.5	1.0	112.1
Thailand	59.0	43.5	17.7	-	0.8	2.8	123.8
Vietnam	20.1	9.6	21.3	-	13.7	0.1	64.8
Other Asia Pacific	24.4	7.2	20.6	-	13.8	0.3	66.3
Total Asia Pacific	1557.3	650.3	2753.6	105.9	368.1	144.5	5579.7
Total World	4418.2	3204.1	3732.0	592.1	910.3	419.6	13276.3

^: less than 0.05

Note: 1. Oil consumption is measured in million tonnes; other fuels in million tonnes of oil equivalent.

2. Primary energy comprises commercially traded fuels including modern Renewables used to generate electricity.

Source: BP Statistical Review of World Energy, June 2017

Figure XI.12 (a): Region-wise Primar Energy Consumption during 2016 (%)

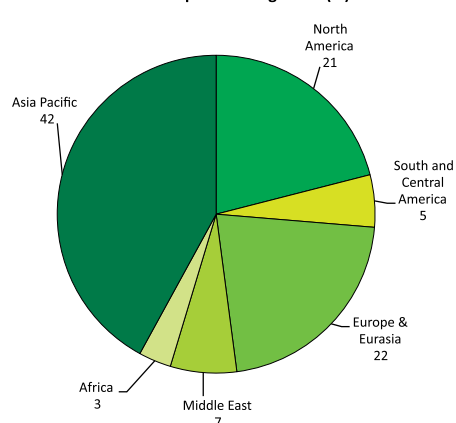
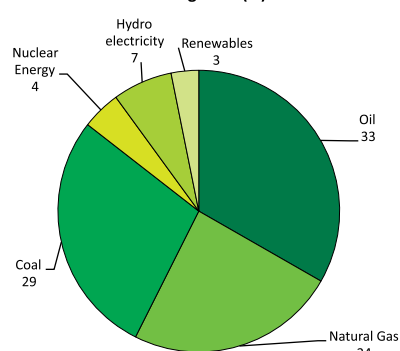


Figure XI.12 (b): Share of various energy sources in world primary energy consumption during 2016 (%)



XI.31 Per Capita Primary Energy Consumption-some International Comparisons during 2016

(in Kg. Oil Equivalent)

Country	Oil	Natural Gas	Coal	Nuclear Energy	Hydro electricity	Renewables	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
US	2664.8	2211.5	1106.6	592.2	182.9	258.6	7016.6
Canada	2788.0	2482.5	515.9	641.2	2426.8	253.7	9108.0
Mexico	644.2	626.7	76.3	18.6	52.7	32.0	1450.5
Total North America	2142.2	1814.6	791.7	444.9	314.8	198.6	5706.8
Argentina	731.8	1024.0	24.2	43.7	199.1	15.1	2037.9
Brazil	673.6	159.8	80.1	17.4	421.9	92.2	1445.0
Chile	975.5	224.2	452.4	0.0	242.7	125.7	2020.3
Colombia	326.0	194.9	93.9	0.0	218.0	9.9	842.8
Ecuador	669.3	35.3	0.0	0.0	213.8	8.4	926.8
Peru	363.2	225.0	25.8	0.0	171.2	17.8	802.9
Trinidad & Tobago	1538.7	12284.3	0.0	0.0	0.0	0.8	13823.7
Venezuela	926.0	1032.6	2.2	0.0	447.0	0.1	2407.9
Other S. & Cent. America	616.1	60.0	30.4	0.0	202.8	45.6	954.9
Total S. & Cent. America	641.8	304.4	68.2	10.8	306.9	55.5	1387.6
Austria	1438.3	894.0	360.9	0.0	1020.3	278.4	3991.9
Azerbaijan	470.8	959.0	0.0	0.0	45.2	3.9	1478.9
Belarus	793.3	1611.8	81.9	0.0	2.6	7.2	2496.9
Belgium	2811.4	1228.8	263.6	871.7	7.8	279.4	5462.7
Bulgaria	636.1	378.5	809.1	502.8	122.8	100.7	2550.0
Czech Republic	792.6	661.9	1594.4	514.5	42.7	157.5	3763.6
Denmark	1410.2	507.7	367.4	0.0	0.7	711.4	2997.4
Finland	1636.1	325.7	745.1	964.9	648.9	612.0	4932.8
France	1182.3	593.1	128.7	1412.3	208.4	126.3	3651.2
Germany	1367.9	876.8	911.4	231.8	57.5	458.4	3903.9
Greece	1423.8	237.1	433.5	0.0	112.3	192.5	2399.1
Hungary	724.7	819.5	233.1	370.7	6.0	79.8	2233.9
Republic of Ireland	1498.1	914.8	463.0	0.0	32.8	320.6	3229.2
Italy	958.8	958.4	179.4	0.0	153.0	247.5	2497.1
Kazakhstan	741.3	676.5	2000.6	0.0	118.2	4.5	3541.0
Lithuania	1031.3	635.2	66.1	0.0	35.5	124.9	1893.1
Netherlands	2349.7	1777.3	604.1	54.8	1.4	182.9	4970.3
Norway	2002.4	843.1	157.8	0.0	6238.2	101.5	9343.0
Poland	708.4	405.8	1271.0	0.0	12.6	121.0	2518.8
Portugal	1084.5	450.9	279.5	0.0	347.1	361.4	2523.4
Romania	479.4	481.3	272.9	129.0	204.6	103.1	1670.3
Russian Federation	1025.5	2437.7	605.1	308.3	292.6	1.1	4670.4
Slovakia	740.7	731.9	578.0	619.1	187.8	93.0	2950.4
Spain	1443.0	581.1	241.2	306.7	186.0	358.9	3116.7
Sweden	1484.1	85.4	227.2	1434.7	1425.1	616.7	5273.2
Switzerland	1211.6	321.1	15.4	573.8	926.7	93.7	3142.2
Turkey	517.9	476.7	483.5	0.0	191.2	65.0	1734.3
Turkmenistan	1238.8	4917.3	0.0	0.0	0.0	0.2	6156.3
Ukraine	213.6	610.6	738.1	429.0	37.9	7.9	2037.2

Contd...

XI.31 Per Capita Primary Energy Consumption-some International Comparisons during 2016 (Contd...)							
(in Kg. Oil Equivalent)							
Country	Oil	Natural Gas	Coal	Nuclear Energy	Hydro electricity	Renewables	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
United Kingdom	1114.9	1052.2	167.3	247.4	18.5	266.9	2867.3
Uzbekistan	86.4	1449.1	31.4	0.0	84.1	0.0	1651.0
Other Europe & Eurasia	643.5	260.2	429.5	34.2	405.6	47.1	1820.0
Total Europe & Eurasia	979.9	1026.7	500.2	286.0	223.5	159.6	3175.8
Iran	W1054.4	2273.2	21.5	17.7	36.5	1.3	3404.7
Israel	1417.1	1060.2	697.3	0.0	0.7	47.5	3222.7
Kuwait	5498.2	4933.1	0.0	0.0	0.0	1.6	10432.8
Qatar	4681.5	14995.5	0.0	0.0	0.0	0.8	19677.8
Saudi Arabia	5297.6	3105.3	3.1	0.0	0.0	0.6	8406.7
United Arab Emirates	4673.9	7415.9	136.3	0.0	0.0	7.7	12233.8
Other Middle East	717.0	436.5	4.4	0.0	16.8	1.4	1176.2
Total Middle East	1719.5	1897.5	38.2	5.8	19.4	3.1	3683.5
Algeria	463.1	882.4	3.5	0.0	0.4	1.2	1350.6
Egypt	434.7	493.6	4.6	0.0	33.9	6.3	973.1
South Africa	420.9	72.4	1329.8	56.3	3.7	27.4	1910.5
Other Africa	98.5	37.4	10.2	0.0	22.3	2.6	171.0
Total Africa	154.1	103.4	79.8	3.0	21.5	4.2	365.9
Australia	1984.8	1535.5	1817.7	0.0	167.6	222.5	5728.2
Bangladesh	40.4	152.0	5.0	0.0	1.2	0.3	199.0
China	419.9	137.4	1369.8	35.0	190.9	62.5	2215.5
China Hong Kong SAR	2553.0	405.2	905.1	0.0	0.0	3.0	3866.3
India	160.0	33.9	310.0	6.5	21.9	12.4	544.7
Indonesia	279.8	130.8	241.7	0.0	12.6	9.9	674.8
Japan	1470.9	798.9	957.2	31.9	144.4	150.2	3553.6
Malaysia	1178.2	1257.9	646.1	0.0	136.1	10.9	3229.2
New Zealand	1628.1	900.0	259.4	0.0	1251.2	521.1	4559.8
Pakistan	135.1	201.3	26.5	6.2	37.9	2.2	409.0
Philippines	194.1	33.6	131.6	0.0	20.5	30.1	409.8
Singapore	12889.6	2013.5	68.0	0.0	0.0	40.6	15011.8
South Korea	2404.5	805.5	1606.0	722.4	10.9	84.8	5634.1
Taiwan	1986.0	731.4	1641.2	304.9	63.1	44.5	4771.0
Thailand	902.9	665.8	271.7	0.0	12.3	43.1	1895.8
Vietnam	216.5	104.0	230.1	0.0	147.7	0.8	699.0
Other Asia Pacific	123.0	36.4	103.8	0.0	69.9	1.6	334.6
Total Asia Pacific	383.2	160.0	677.7	26.1	90.6	35.6	1373.1
Total World	595.6	431.9	503.1	79.8	122.7	56.6	1789.7

na: not available

- Notes: 1. Oil consumption is measured in million tonnes; other fuels in million tonnes of oil equivalent.
2. Primary energy comprises commercially traded fuels including modern Renewables used to generate electricity.
3. Population 2016 data have been taken from "Population Reference Bureau".

Source : BP Statistical Review of World Energy, June 2017

XI.32 Per Capita Consumption of Main Petroleum Products Some International Comparisons during 2016

(in Kg. Oil Per Capita)

Country/Area	Light Distillates	Middle Distillates	Fuel Oil	Others	Total
(1)	(2)	(3)	(4)	(5)	(6)
USA	1464.5	857.3	54.6	632.2	3008.6
Europe	386.5	864.4	121.8	379.9	1752.6
Middle East	419.4	543.6	447.8	515.8	1926.6
China	145.4	145.7	22.2	132.7	446.0
Japan	618.0	511.5	145.8	323.7	1598.9
OECD	677.7	666.7	77.6	367.1	1789.2

Note: Population 2016 data have been taken from "Population Reference Bureau".

Source : B.P Statistical Review of World Energy, June 2017

XI.33 Trends in World Primary Energy Consumption

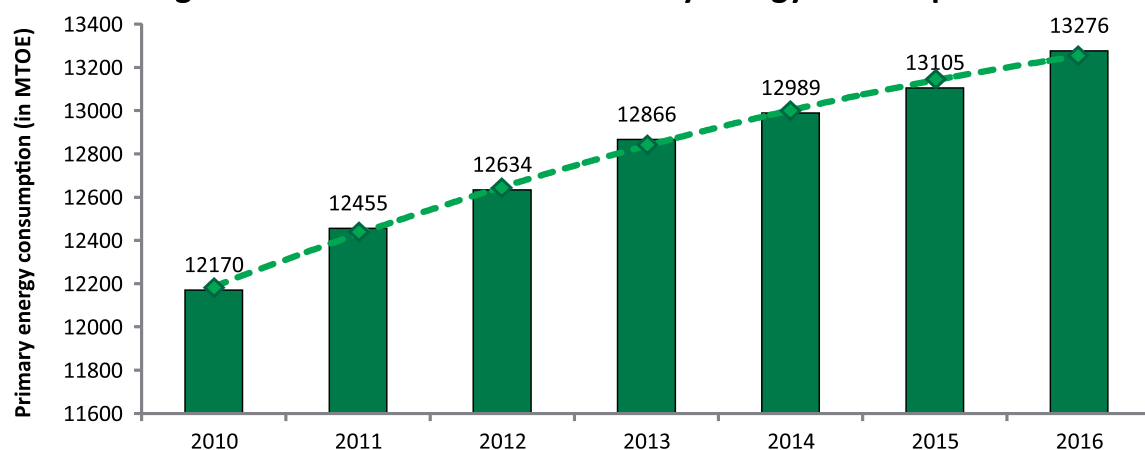
(in Million Tonnes Oil Equivalent)

Year	Oil	Natural Gas	Coal	Nuclear Energy	Hydro electricity	Renewables	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
2010	4085.4	2874.2	3635.6	625.9	778.7	170.1	12170.0
2011	4125.7	2926.3	3807.2	600.1	792.3	203.6	12455.3
2012	4176.2	3010.5	3817.3	559.2	832.1	238.5	12633.8
2013	4220.9	3054.4	3887.0	563.9	859.2	280.7	12866.0
2014	4254.8	3073.0	3889.4	575.0	879.3	317.3	12988.8
2015	4341.0	3146.7	3784.7	582.7	883.2	366.7	13105.0
2016 (P)	4418.2	3204.1	3732.0	592.1	910.3	419.6	13276.3

Source : BP Statistical Review of World Energy, June 2017

P: Provisional

Figure XI.13: Trends in World Primary Energy Consumption



XI.34 Primary Energy Consumption in Select Countries of the World								
(in Million Tonnes Oil Equivalent)								
Country/Year	2010	2011	2012	2013	2014	2015	2016	% share in 2016
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
US	2284	2265	2209	2271	2297	2276	2273	17.1
Canada	315	328	327	336	334	328	330	2.5
Mexico	178	186	189	189	190	189	187	1.4
Total North America	2778	2779	2724	2796	2821	2792	2789	21.0
Argentina	80	81	83	87	87	89	89	0.7
Brazil	268	280	285	297	305	303	298	2.2
Chile	30	34	34	34	35	36	37	0.3
Colombia	34	36	38	38	40	41	41	0.3
Ecuador	13	14	14	15	15	15	15	0.1
Peru	19	20	21	22	22	24	25	0.2
Trinidad & Tobago	23	23	22	22	22	22	19	0.1
Venezuela	81	80	84	83	78	79	75	0.6
Other S.&Cent. America	95	98	99	99	99	103	106	0.8
Total S.&Cent. America	642	665	681	697	704	710	705	5.3
Austria	36	34	35	35	34	34	35	0.3
Azerbaijan	11	12	12	13	13	15	14	0.1
Belarus	26	26	28	25	25	22	24	0.2
Belgium	66	61	59	60	56	57	62	0.5
Bulgaria	18	19	18	17	18	19	18	0.1
Czech Republic	43	42	42	42	40	40	40	0.3
Denmark	19	18	17	18	17	17	17	0.1
Finland	32	29	28	28	27	27	27	0.2
France	253	245	245	247	238	239	236	1.8
Germany	324	312	316	326	312	318	322	2.4
Greece	32	31	29	28	26	26	26	0.2
Hungary	23	23	21	20	20	21	22	0.2
Republic of Ireland	15	14	14	14	14	15	15	0.1
Italy	172	168	162	156	147	150	151	1.1
Kazakhstan	53	59	59	60	66	63	63	0.5
Lithuania	6	6	6	5	5	5	5	0.04
Netherlands	96	92	88	86	81	82	84	0.6
Norway	42	43	48	45	46	47	49	0.4
Poland	98	99	96	96	92	93	97	0.7
Portugal	26	24	22	24	25	25	26	0.2
Romania	34	35	34	31	32	33	33	0.2
Russian Federation	673	695	695	687	689	682	674	5.1
Slovakia	17	17	16	17	16	16	16	0.1
Spain	146	143	142	134	132	134	135	1.0
Sweden	52	51	55	51	51	53	52	0.4
Switzerland	29	27	29	30	28	28	26	0.2
Turkey	111	115	120	119	123	132	138	1.0
Turkmenistan	26	27	30	27	29	33	33	0.3
Ukraine	121	126	123	115	101	84	87	0.7
United Kingdom	211	199	202	201	189	191	188	1.4

Contd...

XI.34 Primary Energy Consumption in Select Countries of the World (Contd...)

(in Million Tonnes Oil Equivalent)

Country/Year	2010	2011	2012	2013	2014	2015	2016	% share in 2016
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Uzbekistan	44	50	49	49	50	52	53	0.4
Other Europe & Eurasia	99	97	95	97	94	95	98	0.7
Total Europe & Eurasia	2953	2938	2936	2901	2838	2847	2867	21.6
Iran	225	235	235	246	262	263	271	2.0
Israel	24	24	25	25	24	26	26	0.2
Kuwait	34	35	41	40	38	41	42	0.3
Qatar	33	26	29	43	43	50	49	0.4
Saudi Arabia	216	222	236	237	252	261	266	2.0
United Arab Emirates	86	91	96	97	99	109	114	0.9
Other Middle East	116	117	119	124	122	125	127	1.0
Total Middle East	734	750	781	812	840	875	895	6.7
Algeria	39	41	45	48	52	55	55	0.4
Egypt	81	82	87	86	85	87	91	0.7
South Africa	125	124	122	124	125	120	122	0.9
Other Africa	144	141	149	158	166	172	172	1.3
Total Africa	389	388	403	415	428	434	440	3.3
Australia	126	132	130	131	133	138	138	1.0
Bangladesh	23	24	26	27	28	31	32	0.2
China	2491	2690	2797	2905	2971	3006	3053	23.0
China Hong Kong SAR	27	28	27	28	27	28	29	0.2
India	537	569	612	621	664	685	724	5.5
Indonesia	149	163	171	174	163	165	175	1.3
Japan	496	470	468	464	452	446	445	3.4
Malaysia	72	80	83	89	92	94	99	0.7
New Zealand	20	20	20	20	21	21	21	0.2
Pakistan	70	71	71	72	74	77	83	0.6
Philippines	29	30	30	32	34	38	42	0.3
Singapore	69	72	72	74	76	81	84	0.6
South Korea	255	269	272	272	275	280	286	2.2
Taiwan	109	109	108	110	112	111	112	0.8
Thailand	102	106	114	116	119	122	124	0.9
Vietnam	44	50	53	55	60	64	65	0.5
Other Asia Pacific	54	53	54	54	58	61	66	0.5
Total Asia Pacific	4675	4935	5109	5245	5357	5447	5580	42.0
Total World	12170	12455	12634	12866	12989	13105	13276	100

Notes: 1. Oil consumption is measured in million tonnes; other fuels in million tonnes of oil equivalent.

2. Primary energy comprises commercially traded fuels including modern Renewables used to generate electricity.

Source: BP Statistical Review of World Energy, June 2017

XI. 35 Economic Indicators of OPEC nations during 2016											
Country	Population (Million)	GDP at market prices (Mn. \$)	Per capita GDP (US \$)	Petroleum Exports (Mn. \$)	Total Export (Mn. \$)	Petroleum Exports as % of total	Proven crude oil reserves (Bn.bbls)	Gas Reserves (Bn. CM)	Producing Oil wells Nos.	Crude Refining Capacity (000' b/cd)	Exports of Refined Products (000' b/d)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Algeria	41	161104	3949	18638	29054	64	12	4504	1936	651	541
Angola	27	95821	3486	25935	25935	100	10	308	1572	65	54
Ecuador	17	96690	5853	5442	16744	33	8	11	3496	191	31
Gabon	2	14273	7588	4198	5871	72	2	26	396	24	6
Iran	80	409823	5120	41123	97386	42	157	33721	2886	1901	898
Iraq	38	166274	4389	43753	43890	100	149	3820	2629	900	37
Kuwait	4	110572	25067	41461	46261	90	102	1784	1780	936	707
Libya	6	33157	5193	9313	11986	78	48	1505	521	380	34
Nigeria	177	400571	2262	27788	34704	80	37	5475	1668	446	18
Qatar	2	152509	61258	22958	72459	32	25	24073	460	429	568
Saudi Arabia	32	639617	19902	134373	179575	75	266	8619	3648	2899	1503
U.A.E	10	371353	37678	45559	298653	15	98	6091	1835	1124	630
Venezuela	31	287274	9257	25142	26473	95	302	5740	13395	1891	263
Total	468	2939039	6280	445684	888990	50	1217	95676	36222	11836	5290

Note: Totals may not add up due to independent rounding.
Source : OPEC Annual Statistical Bulletin, 2017

Appendix

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Abbreviations

(I) Companies/Organisations

AFPC, Syria	Al Furat Petroleum Company, Syria.
AGC	Assam Gas Company
BL	Balmer Lawrie & Co. Ltd.
BLIL	Balmer Lawrie Investments Ltd.
BORL	Bharat Oman Refinery Ltd.
BP	British Petroleum
BPCL	Bharat Petroleum Corporation Ltd.
CAIRN	Cairn India Limited
CPCL	Chennai Petroleum Corporation Ltd.
DGCIS	Directorate General of Commercial Intelligence and Statistics
DGH	Directorate General of Hydrocarbons
DNPL	Duliajan Numaligarh Pipeline Limited
EIL	Engineers India Ltd
Essar	Essar Oil Ltd.
GAIL	Gail (India) Limited
GOI	Government of India
GPOC, South Sudan	Greater Pioneer Operating Company, South Sudan
HMEL	HPCL Mittal Energy Ltd.
HPCL	Hindustan Petroleum Corporation Ltd.
IEC, Russia.	Imperial Energy Corporation, Russia.
IOCL	Indian Oil Corporation Ltd.
ISPRL	Indian Strategic Petroleum Reserves Limited.
MECL	Mansarovar Energy Colombia Ltd.
MoPNG	Ministry of Petroleum & Natural Gas
MoSPI	Ministry of Statistics And Programme Implementation
MRPL	Mangalore Refinery & Petrochemical Ltd.
NRL	Numaligarh Refinery Ltd.
OIL	Oil India Limited
OMC	Oil Marketing Company.
ONGC	Oil & Natural Gas Corporation Ltd.
OPEC	Organization of the Petroleum Exporting Countries
OVL	ONGC Videsh Ltd
P&NG	Petroleum & Natural Gas
PPAC	Petroleum Planning & Analysis Cell.
RBI	Reserve Bank of India.
RIL	Reliance Industries Ltd.

(II) Petroleum Products

ATF	Aviation Turbine Fuel.
CBFS	Carbon Black Feed Stock
CBM	Coal bed Methane
CNG	Compressed Natural Gas.
EBP	Ethanol Blended Petrol
FO	Furnace Oil
HHS	Hot Heavy Stock
HSD	High Speed Diesel.
HSDO	High Speed Diesel Oil
HSFO	Heavy/High Sulphur Fuel Oil
LABFS	Linear Alkyl Benzene Feed Stock
LDF	Light Distillate Feedstock
LDO	Light Diesel Oil
LNG	Liquefied Natural Gas
LO	Lubricating Oil
LOBS	Lube Oil Base Stocks.
LPG	Liquefied Petroleum Gas.
LSHS	Low Sulphur Heavy Stock
LSWR	Low Sulphur Waxy Residue.
Mogas	Motor Gasoline.
Motor Spirit	Petrol
MS	Motor Spirit/Petrol
MTBE	Methyl Tertiary Butyl Ether
MTO	Mineral Turpentine Oil
NGL	Natural Gas Liquids
Pet-coke	Petroleum Coke.
PNG	Piped Natural Gas
RFO	Residual Fuel Oil
RPO	Rubber Process Oil.
SKO	Superior Kerosene Oil
VGO	Vacuum Gas Oil

(III) Prefixes Used in Metric Tables

Prefix	Meaning
Centi	One Hundredth ($1/100=0.01$)
Deci	One Tenth ($1/10=0.1$)
Deka	Ten(10)
Hecto	One Hundred (100)
Kilo	One Thousand (1,000)
Mega	One Million (1,000,000)
Milli	One Thousandth ($1/1000=0.001$)
Unit	One (1)

(IV) Others	
A&AA	Assam & Assam Arakan
A.N Islands	Andaman Nicobar Islands
ACG, Azerbaijan	Azeri-Chirag-Deepwater Gunashli, Azerbaijan
Addl.	Additional
bbl.	Barrel
BCM	Billion Cubic Meter
BE	Budgetary Estimates.
BMC	Bombay Municipal Corporation.
Bn.Cu.Mtr.	Billion Cubic Meters
BPA	Bassein Platform A
BPB	Bassein Platform B
CAGR	Compound Annual Growth Rate
CEA.	Chief Economic Advisor
CGD	City Gas Distribution
China Hong Kong SAR	China Hong Kong Special Administrative Region
CIF	Cost Insurance Freight
CIS	Commonwealth of Independent States
CPSEs	Central Public Sector Enterprises
CRBC	Central Region Basin Coast
CSR	Corporate Social Responsibility
CST	Central Sales Tax
Cyl.	Cylinder
DBTL	Direct Benefit Transfer of LPG
Dom.	Domestic
DVPL	Dahej-Vijaipur Pipeline
DWT	Dead Weight Tonnage
EPS	Earning per share
ERBC	Eastern Region Basin cost
FDI	Foreign Direct Investment
FDZ	Free Delivery Zone
FOB	Free on Board
FPC	Federal Power Commission
GBS	Gross Budgetary Support
GCV	Gross Calorific Value
GDP	Gross Domestic Product
GNOP	Greater Nile Oil Project
GREP	Gas Rehabilitation and Expansion
GVA	Gross Value Added
HELP	Hydrocarbon Exploration Licensing Policy
HVJ	Hazira-Vijaipur-Jagdishpur
I&EBR	Internal and Extra Budgetary Resources
Int. Con.	Internal Consumption
JV	Joint Venture
K.Cal	Kilocalories
K.g	Kilogram.
KG - D6	Krishna Godavari Dhirubhai 6
KI	Kilo litre
KM	Kilometer

Contd...

(IV) Others (Contd...)

LK	Line kilometer
ltr	Litre.
M.Sq.Km	Million square kilometer
MMSCMD	Million Metric Standard Cubic Meter per day
MMT	Million Metric Tonnes
MMTOE	Million Metric Ton of Oil Equivalent
MMTPA	Million Metric Tonnes Per Annum
Mn. Tonne	Million Tonne.
MST	Manufacturers' Sales Tax
MT	Metric Ton
MUT	Mumbai-Uran Trunk
MWh	Megawatt Hour
n.a	Not Available
NCV	Net Calorific Value
NE	North East.
NELP	New Exploration Licensing Policy
NNI	Net National Income
NRBC	Northern Region Basin Coast
OEG	Oil Equivalent of Gas
PAT	Profit after Tax.
PDS	Public Distribution System
PMUY	Pradhan Mantri Ujjwala Yojana.
PPP	Purchasing Power Parity
PSC	Production Sharing Contract
R.E.S.	Renewable Energy Source
R/P ratio	Reserves-to-Production Ratio
RBF	Refinery Boiler Fuel and Losses
RE	Revised Estimate
RON	Research Octane Number
RSP	Retail Selling Price
S.& Cent. America	South & Central America
S.E.Z	Special Economic Zone
SAD	Special Additional Duty
SCM	Standard Cubic Meter.
SDR	Special Drawing Right
SION	Standard Input Output Norms
SKM	Square Kilometer
SRBC	Southern Region Basin Coast
t/w/d	Tonne/Well/Day
TCF	Trillion Cubic Feet
TMT	Thousand Metric Tonnes
TMTPA	Thousand Metric Tonnes per Annum.
Tr.Cu.ft.	Trillion Cubic Feet
VAT	Value Added Tax
Vol.	Volume
WPI	Wholesale Price Index
WRBC	Western Region Basin Coast

Conversion Factors

(V) Metric Units

Linear

10 Millimetres	1 Centimetre.
10 Centimetres	1 Decimetre
10 Decimetres	1 Metre
10 Metres	1 Decametre
10 Decametres	1 Hectometre
10 Hectometres	1 Kilometre

Area

100 Sq. Millimetres	1 Sq. Centimetre
100 Sq. Centimetres	1 Sq. Decimetre
100 Sq. Decimetres	1 Sq. Metre
100 Sq. Metres	1 Sq. Decametre-1 Acre.
100 Sq. Acres	1 Sq. Hectometre-1 Hectare.
100 Hectares	1 Sq. Kilometre.

Weight

10 Milligrams	1 Centigram
10 Centigrams	1 Decigram
10 Decigrams	1 Gram
10 Grams	1 Decagram
10 Decagrams	1 Hectogram
10 Hectograms	1 Kilogram.
100 Kilograms	1 Quintal
1000 Kilograms	1 Metric Tonne.

Capacity

10 Millilitres	1 Centilitre
10 Centilitres	1 Decilitre
10 Decilitres	1 Litre
10 Litres	1 Decalitre
10 Decalitres	1 Hectolitre
10 Hectolitres	1 Kilolitre

Volume

1000 Cubic Millimetres	1 Cubic Centimetre
1000 Cubic Centimetres	C
1000 Cubic Decimetres	1 Cubic Metre

(VI) Linear and Square Measures**Length**

1 Inch	25.4 Millimetres (mm)
	0.0254 Metres.
1 Foot	12 Inches.
	0.333333 Yard
	0.3048 Metre (m).
1 Yard	36 Inches.
	3 Feet
	0.9144 Metre (m)
1 Metre	39.3701 Inches.
	3.28084 Feet
	1.09361 Yards
	0.001 Kilometre (km.)
1 Kilometre	1000 Metre (m)
	0.621371 Mile
1 Mile	1760 Yard
	1.60934 Kilometre (km.)
1 International	6076.12 Feet
1 Nautical Mile	1.852 Kilometre (km)
	1.5152 Statute mile

Area

1 Square Inch	645.16 Square Millimetres (mm ²).
1 Square Foot	0.0929030 Square Metre (m ²).
1 Square Yard	9 Square Feet.
	0.836127 Square Metre (m ²).
1 Square Metre	10.7639 Square Feet.
	1.19599 Square Yards.
1 Acre	4840 Square Yards
	4046.86 Sq. Metres (m ²)
	0.404686 Hectares.
1 Hectare	10,000 Square Metres (m ²).
	2.47105 Acres.
	0.01 Square Kilometre (km ²)
1 Square Kilometre	100 Hectares.
	0.386102 Square Mile.
1 Square Mile	640 Acres.
	258.999 Hectares
	2.58999 Square Kilometre (km ²).

(VII) Mass and Weights

1 Ounce	28.3495 Grams (g).
1 Pound	0.453592 Kilogram (Kg.)
	0.00892857 Hundred Weight
1 Kilogram	2.20462 Pounds.
	0.01 Quintal
1 Hundred Weight (Cwt)	112 Pounds.
	50.8023 Kilograms (Kg.)
1 American (Short) Ton	2000 Pounds.
	0.892857 Long Ton
	0.97185 Tonnes
1 Tonne (Metric Ton)	2204.62 Pounds
	1000 Kilograms (Kg.)
	1.10231 Short tons
	0.984207 Long Ton
1 Imperial (Long) Ton	2240 Pounds
	1.12 Short Tons.
	1.01605 Tonnes.

(VIII) Energy and Power

1 International Table (IT) Calorie	4.1868 Joules (J).
115 C calorie	4.1855 Joules (J)
1 Thermochemical Calorie	4.184 Joules (J)
1 Kilo Calories (IT)	1000 Calories
	3.96832 British Thermal Units
	1.163 Watt Hours
	1 Thermie
1 Kilowatt Hour	3412.14 British Thermal Units
	859.845 Kilo Calories
	3.6 Megajoules (MJ)
	1.34102 Horse Power Hours.
1 Therm	100,000 British Thermal Units (BTU).
	105.506 Megajoules (MJ)
	29.3071 Kilowatt Hours
	25.1996 Thermies
	25200 Kilocalories
1 Metric Horsepower (Pferdestaerke or Cheval Vapeur)	735.499 watts (W).
	542.476 Foot Pounds Force/Second.
	0.986320 Imperial Horse Power
1 Imperial Horsepower	745.700 Watts (W)
	550 Foot Pounds Force/Second
	1.01387 Metric Horse Power.
1 Kilowatt	737.562 Foot Pounds Force/Second
	1.35962 Metric Horsepower
	1.34102 Imperial Horsepower.
	1000 Watts.
1 BTU	0.252 Kilocalories
	1.055 Kilojoules

(IX) Cubic Measures Volume	
1 Cubic Inch	16.3871 Cubic Centimetres (cm ³)
1 Pint	0.568261 Cubic Decimetres (dm ³) or Litres.
1 Litre	61.024 Cubic Inches
	1.75975 Pints
	1 Cubic Decimeter (dm ³)
	0.264172 American Gallons
	0.219963 Imperial Gallons
1 Hectolitre	0.0353147 Cubic Foot
	100 Cubic Decimetres (dm ³) or 100 Litres
1 American Gallon	231 Cubic Inches
	3.78541 Cubic Decimetres or Litres
	0.832674 Imperial Gallon.
	0.133681 Cubic Foot.
	0.0238095 American Barrel.
1 Imperial Gallon	0.00378541 Cubic Metre (M ³)
	277.420 Cubic Inches
	4.54609 Cubic Decimetres (dm ³) or Litres
	1.20095 American Gallon
	0.160544 Cubic Foot
1 Cubic Foot	0.02894 American Barrel
	0.00454609 Cubic Metre (m ³)
	28.3168 Cubic Decimetres (dm ³) or Litres
	7.48052 American Gallons
	6.22883 Imperial Gallons
1 Americal Barrel	0.17811 American Barrel
	0.0283168 Cubic Metre (m ³)
	9702 Cubic Inches
	158.987 Cubic Decimetres (dm ³) or Litres
	42 American Gallons
1 Cubic Metres	34.9726 Imperial Gallons
	5.6146 Cubic Feet
	0.158987 Cubic Metre (M ³)
	1000 Litres.
1 Kilolitre	264.172 American Gallons
	219.969 Imperial Gallons
	35.3147 Cubic Feet
	1000 Cubic Decimetres (dm ³) or Litres
1 Gross Ton (Shipping)	6.28981 Americal Barrels.
	2.83168 Cubic Metres or 100 Cubic Feet or Permanently Enclosed Space
1 Ton of Liquefied Methane	Approx. 16 Barrels
	Approx. 1400 Cubic Metres of Natural
	Gas depending upon Methane Content

(X) Product Conversion Factor (Conversion Factor from Volume to Tonnes at Natural Temp.)			
Product	Litres to Metric Tonnes	Tonnes per K.L	American Barrels to Metric Tonnes
Aviation Spirit 100/130	1421	0.7034	8.94
Aviation Spirit 144/145	1449	0.6901	9.11
Aviation Spirit 73 ON	1432	0.6983	9.01
Motor Spirit 79 ON	1427	0.7008	8.98
Motor Spirit 80 ON	1427	0.7008	8.98
Motor Spirit 93 ON	1386	0.7215	8.72
Motor Spirit 95 ON	1359	0.7358	8.55
Motor Spirit 83 ON/87 ON	1411	0.7087	8.88
JP-4	1384	0.7225	8.71
JP-5	1273	0.7855	8.01
Aviation Turbine Fuel	1288	0.7764	8.10
Naphtha	1467	0.6817	9.23
Power Alcohol	1286	0.7776	8.09
Benzol	1154	0.8666	7.26
SBP Spirit/Hexane	1457	0.6863	9.16
Mineral Turpentine (Laws 140/205)	1302	0.7680	8.19
Liquefied Petroleum Gas	1785	0.5602	11.23
Superior Kerosene	1285	0.7782	8.08
Inferior Kerosene	1265	0.7905	7.96
Power Kerosene (Vap. Oil)	1251	0.7994	7.87
High Speed Diesel	1210	0.8263	7.61
Light Diesel Oil	1172	0.8532	7.37
Malarial Oil	1172	0.8532	7.37
Special Larvicides	1175	0.8511	7.39
Furnace Oil	1071	0.9337	6.74
Tea Drier Oil	1071	0.9337	6.74
Hot Heavy Stock/LSHS	1017	0.9833	6.40
Refinery Gas/Ref. Boiler Fuel	1071	0.9337	6.74
Lubricants/Greases	1114	0.8977	7.01
Jute Batching Oil/Wash Oils	1167	C	7.34
Bitumen	1002	0.9980	6.30
SBP/Alcohol Mixture	1414	0.7072	8.89
Methanol Mixture	1106	0.9042	6.96
Carbon Black Feed Stock	1134	0.8818	7.13
Carburetor Testing Fluid	1388	0.7205	8.73
Benzene	1131	0.8812	7.05
Toluene	1148	0.8711	7.19
Demineralised Water	1002	0.9930	6.30
S. Glass Kleanzit	1003	0.9970	6.31
Miscellaneous	1114	0.8977	7.01
Wax/P. Coke/Chemicals	1114	0.8977	7.01
Aromex	1221	0.8190	7.68
Linear Alkyl Benzene Feed Stock	1205	0.8239	7.88

(XI) Volume per Metric Ton of Petroleum Products

Products	Kilolitre	Imperial Gallon	U.S. Gallon	Barrel
Liquefied Petroleum Gas	1.8519	407.365	489.213	11.648
Aviation Spirit	1.3699	301.332	361.873	8.613
Natural Gasoline	1.3514	297.265	356.990	8.496
Motor Spirit	1.3514	297.265	356.990	8.496
Kerosene	1.2346	271.569	326.137	7.764
Jet Fuel	1.2346	271.569	326.137	7.764
Distillate Fuel Oil	1.1494	252.415	293.522	6.988
Lubricating Oil	1.1111	252.845	303.647	7.231
Fuel Oil N.O.S.	1.0939	241.727	290.301	6.911
Residual Fuel Oils	1.0526	231.551	278.071	6.623
Asphalt and Bitumen	0.9615	211.515	254.013	6.050
Crude Oil	1.1856	260.910	313.340	7.441

(XII) Conversion Factors for Duty Reduction from 15° C to 29.5 C

Products	Conversion Factor
Aviation Spirit 100/130	0.9827
Aviation Spirit 114/145	0.982
Aviation Spirit 73 Clear	0.9824
Aviation Turbine Fuel	0.9862
Motor Spirit 83	0.983
Motor Spirit 93	0.9836
High Speed Diesel Oil	0.9879
Kerosene	0.9864
Light Diesel Oil	0.9877
Furnace Oil	0.9899
Special Boiling Point Spirit 55/115	0.9820
Special Boiling Point Spirit 64/69	0.9806
Solvent 1425	0.9820
Hexane	0.9806

(XIII) Crude Oil Conversions*

To convert the following into	Metric Tonnes	Barrels	Kilolitres	1000 Imp. Gallon	1000 U.S Gallon
Metric Tons	1	7.33	1.16	0.256	0.308
Barrels	0.136	1	0.159	0.035	0.042
Kilolitres	0.863	6.29	1	0.220	0.264
1,000 Imp. Gallons	3.91	28.6	4.55	1	1.201
1,000 U.S. Gallons	3.25	23.8	3.79	0.833	

* Based on World Average Gravity (Excluding Natural Gas liquids)

(XIV) Natural Gas Conversions		
1 SCM (Standard Cubic Meter)	= 1 cubic metre @ 1 atmosphere pressure and 15.56 ° C	365 Days a Year
1 Cubic Metre	= 35.31 Cubic feet	
1 BCM(Billion Cubic Metre) / Year of gas (consumption or production)	= 2.74 MMSCMD	
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	=4128 SCM per Day	@50% efficiency of Combined Cycle Operation; at a station heat rate of 860 Kcal/Kwh~ 1720 Kcal/ Kwh@50% Thermal Efficiency)
Power Generation from 1 MMSCMD Gas	=242 MW	@50% efficiency of Combined Cycle Operation; at a station heat rate of 860 Kcal/Kwh~ 1720 Kcal/ Kwh@50% Thermal Efficiency)

Source : PPAC

(XV) Other Conversion

Crude oil*						
From	To convert					
	tonnes (metric)	kilolitres	barrels	US gallons	tonnes/year	
	Multiply by					
Tonnes (metric)	1	1.165	7.33	307.86	—	
Kilolitres	0.8581	1	6.2898	264.17	—	
Barrels	0.1364	0.159	1	42	—	
US gallons	0.00325	0.0038	0.0238	1	—	
Barrels/day	—	—	—	—	49.8	
Products						
From	To convert					
	barrels	tonnes	kilolitres	tonnes		
	to tonnes	to barrels	to tonnes	to kilolitres		
	Multiply by					
Liquefied petroleum gas (LPG)	0.086	11.60	0.542	1.844		
Gasoline	0.120	8.35	0.753	1.328		
Kerosene	0.127	7.88	0.798	1.253		
Gas oil/ diesel	0.134	7.46	0.843	1.186		
Residual fuel oil	0.157	6.35	0.991	1.010		
Product basket	0.125	7.98	0.788	1.269		
Natural Gas (NG) and Liquefied Natural Gas (LNG)						
From	To					
	billion cubic	billion cubic	million tonnes	million tonnes	trillion British	million barrels
	metres NG	feet NG	oil equivalent	LNG	thermal units	oil equivalent
	Multiply by					
1 billion cubic metres NG	1	35.3	0.90	0.74	35.7	6.60
1 billion cubic feet NG	0.028	1	0.025	0.021	1.01	0.19
1 million tonnes oil equivalent	1.11	39.2	1	0.82	39.7	7.33
1 million tonnes LNG	1.36	48.0	1.22	1	48.6	8.97
1 trillion British thermal units	0.028	C	0.025	0.021	1	0.18
1 million barrels oil equivalent	0.15	5.35	0.14	0.11	5.41	1

Units	
1 metric tonne	1.1023 short tons
	2204.62 lb.
1 kilolitre	6.2898 barrels
	1 cubic metre
1 kilocalorie (kcal)	4.187 kJ
	3.968 Btu
1 kilojoule (kJ)	0.239 kcal
	0.948 Btu
1 British thermal unit (Btu)	0.252 kcal
	1.055 kJ
1 kilowatt-hour (kWh)	860 kcal
	3412 Btu
	3600 kJ
1 barrel of ethanol	0.57 barrel of oil
1 barrel of biodiesel	0.88 barrel of oil

*Based on worldwide average gravity.

Source: BP Statistical Review of World Energy 2016

Calorific equivalents	
One tonne of oil equivalent equals approximately:	
Heat units	10 million kilocalories
	42 gigajoules
	40 million Btu
Solid fuels	1.5 tonnes of hard coal
	3 tonnes of lignite
Electricity	12 megawatt-hours

One million tonnes of oil or oil equivalent produces about 4400 gigawatt-hours (=4.4 terawatt hours) of electricity in a modern power station.

(XVI) Petroleum Specific Gravities

Degrees A.P.I.	Specific Gravity	Barrels per tonne*	Long Ton*
25	0.9042	6.98	7.09
26	0.8984	7.02	7.13
27	0.8927	7.06	7.18
28	0.8871	7.10	7.22
29	0.8816	7.15	7.27
30	0.8762	7.19	7.31
31	0.8708	7.24	7.36
32	0.8654	7.28	7.40
33	0.8602	7.33	7.45
34	0.8550	7.37	7.49
35	0.8499	7.42	7.54
36	0.8448	7.46	7.58
37	0.8398	7.51	7.63
38	0.8348	7.55	7.67
39	0.8299	7.60	7.72
40	0.8251	7.64	7.76
41	0.8203	7.69	7.81
42	0.8156	7.73	7.85

*Approximate figure at 15.6 degrees C or 60 degrees F.

(XVII) Petroleum Specific Gravity Ranges

Products	Specific Gravity	Barrels Per tonne
Crude Oils	0.80-0.97	8.0-6.6
Aviation gasolines	0.70-0.78	9.1-8.2
Motor Gasolines	0.71-0.79	9.0-8.1
Kerosene	0.78- 0.84	8.2-7.6
Gas Oil	0.82-0.90	7.8-7.1
Diesel Oils	0.82-0.92	7.8-6.9
Lubricating Oils	0.85-0.95	7.5-6.7
Fuel Oils	0.92-0.99	6.9-6.5
Asphaltic Bitumen	1.00-1.10	6.4-5.8

(XVIII) Multiplier for Conversion of one Metric Tonne of Petroleum Products to one Tonne of Oil Equivalent

Product	Multiplier
L.P.G.	1.130
Naphtha	1.075
Aviation Gasoline	1.070
Motor Gasoline	1.070
Jet Fuel	1.065
Kerosene	1.045
Gas/diesel	1.035
Residual Fuel Oils	0.985
Others	0.960

(XIX) Average International Calorific Value of different Fuels		
Products	K Cals./Kg. (M. Cals/Tonne)	BTUs/Kg.
A. Oil Equivalence:		
Average Crude Oil/NGLS(a)	10300	40870
United Nations	10175	40375
B. Oil Products:		
NGL	12135	48150
Motor Gasoline	11135	44190
Kerosene	10638	42210
Jet Fuel	11790	46790
Gas Oil	10790	42820
Fuel Oil	10440	41430
C. Coal Equivalence:		
Average Hard Coal (b)	7000	27775
D. INDIA		
Hard Coal	5000	19840
Lignite-Brown Coal	2310	916
Firewood@	4750	18848
Charcoal@	6900	27379
E. Natural Gas-Production: (Average) India		K cals/Cu. Metre
		8000-9480
F. Electricity:		
Output Basis(c)		860
Fuel Input basis(d)		2500-2700

Note:

- Represent average global factor for crude Oil/NGL production. For a specific crude oil, relevant conversion factors may have to be used.
- Factor used by United Nations to represent average calorific value of hard coals for purposes of standardising coal production to hard coal equivalent base.
- Calorific value of 1kwh of electricity.
- Represents K cals of hydro-carbon energies required to produce 1 kwh of electricity.

@ : As per Report of Fuel Policy Committee 1974

Conversion Factor: 1 K Cal=4.19 KJoules.

(XX) Coefficients used to Convert from Original Units into Standard Coal Equivalents

Products	Hard Coal	Lignite Brown Coal	Fuel Wood
A. Primary Solids			
Standard Factor	1	0.385	0.333
India	0.714	0.330	
B. Other Hydrocarbons			
Petroleum Crude		1.454	
Natural Gas Liquids (wt.av.)		1.542	
Gasoline		1.500	
Kerosene & Jet Fuel		1.474	
Gas-Diesel Oil		1.450	
Residual Fuel Oil		1.416	
Liquefied Petroleum Gases		1.554	
Natural Gasoline		1.532	
Condensate		1.512	
Other Natural Gas Liquids		1.512	
Natural Gas (in Tera joules)*		34.121	
Other Gases(in Tera joules)*		34.121	
Hydro, Nuclear and Geothermal Electricity (In 1,000 kwh)		0.123	

Note:

The average calorific value of gas is measured in Kcal/m³ (st.) i.e. in Kcal per cubic metre of gas under standard conditions at 150 C, 013.25 mbar, dry.

(XXI) Coal Replacement and Equivalents of different Fuels

Fuels	Original	Unit	Unit
	Unit	million tonnes of coal equivalent (mtce)	million tonnes of coal replacement (mtcr)
Coal coking (6640 K cal/Kg), Non Cooking coal used in steam generation (500 Kcal/kg)	1mt	1.0	1.0
Hard Coke	1mt	1.3	1.3
Soft Coke	1mt	1.5	1.3
Firewood (4750 Kcal/Kg.)	1mt	0.95	0.95
Char Coal (6900 Kcal/Kg.)	1mt	1.0	1.0
Oil Products: 10,000 Kcal/Kg.			
Black Products:(Fuel Oil, FO, Refinery Fuel, LSHS & HHS)	1mt	2.0	2.0
Kerosene & LPG	1mt	2.0	8.0
HSDO & LDO	1mt	2.0	9.0
Motor Spirit & Jet Fuel	1mt	2.0	7.5
Natural Gas(9000k CAL/kg)	109m ³	1.8	3.6
Electricity	109 kwh	1.0	1.0

m : Million mt: Million Tonnes

Source : Fuel Policy Committee 1974

(XXII) Approximate Calorific Equivalents(Oil =10000 Kcal/Kg.)

Items	Million Tonnes of Oil equals
Heat Units	40 million BTU 397 million therms 10,000 Tera calories
Solid Fuels	1.5 million tonnes of Coal 3.0 million tonnes of lignite
Natural Gas (1 cub.ft.=1000 BTU)	1 Cub metre = 9000 K cal. 1.111 thousand million cub metres 39.2 thousand million cubic feet 107 million cubic feet per day of a year
Electricity (1 Kwh=3412 BTU)	12 thousand million KWH
(1 Kwh=860 KCal)	

(XXIII) Heat Units & others expressed in terms of Million Tonnes of Oil

Items	Million Tonnes of Oil equals
Heat Units	
10 million BTU	0.25
100 million therms	0.25
10000 Tera calories	1
Solid Fuels	
1 million tonne of coal	0.67
1 million tonne of lignite approximates to	0.33
Natural Gas	
1 thousand million cubic metres(BCM)	0.9
Town Gas	
1 thousand million cubic Metres (BCM)	0.42
Electricity	
12 thousand million KWH	0.86

Note: One Million tonne of oil produces about 4000 million units(KWH) of electricity in a modern power station.

Source: BP Statistical Review of World Energy

(XXIV) Exchange Rates

Year	Calendar Years					Financial Years	
	1st Qr.	2nd Qr.	3rd Qr.	4th Qr.	Average for the year	Year	Average for the year
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
2010	45.93	45.63	46.49	44.86	45.73	2010-11	45.58
2011	45.27	44.71	45.78	50.93	46.67	2011-12	47.95
2012	50.31	54.22	55.24	54.14	53.48	2012-13	54.45
2013	54.17	56.50	62.13	62.03	58.71	2013-14	60.50
2014	66.75	59.80	60.61	61.93	62.27	2014-15	61.15
2015	62.24	63.50	64.91	65.92	64.14	2015-16	65.46
2016	67.50	66.93	66.96	67.46	67.21	2016-17	67.09
2017	67.01	64.46	-	-	-	2017-18	-

Source: RBI

DEFINITIONS

Crude Oil: Crude oil is a mineral oil consisting of a mixture of hydrocarbons of natural origin and associated impurities, such as sulphur. It exists in the liquid phase under normal surface temperature and pressure and its physical characteristics (density, viscosity, etc.) are highly variable.

Natural Gas: It comprises gases, occurring in underground deposits, whether liquefied or gaseous, consisting mainly of methane. It includes both “non associated” gas originating from fields producing hydrocarbons only in gaseous form, and “associated” gas produced in association with crude oil as well as methane recovered from coal mines (colliery gas).

Condensate: Condensate means low vapour pressure hydrocarbons obtained from Natural Gas through condensation or extraction and refer solely to those hydrocarbons that are liquid at normal surface temperature and pressure conditions.

Reservoir: Reservoir means a naturally occurring discrete accumulation of Petroleum.

Oil Field: Oil Field means, within the Contract Area, an Oil Reservoir or a group of Oil Reservoirs within a common geological structure or feature.

Gas Field: Gas Field means, within the Contract Area, a Natural Gas Reservoir or a group of Natural Gas Reservoirs within a common geological structure or feature.

Reserves: Amount of crude oil (or gas) expected to be recovered profitably from a given reservoir by known techniques under known or assumed economic conditions.

Discovery: Discovery means the finding, during Petroleum Operations, of a deposit of Petroleum not previously known to have existed, which can be recovered at the surface in a flow measurable by petroleum industry testing methods.

Exploration Well: Well drilled for the purpose of searching for undiscovered Petroleum accumulations on any geological entity (be it of structural, stratigraphic, facies or pressure nature) to at least a depth or stratigraphic level specified in the Work Programme.

Development Well: Well means a Well drilled, deepened or completed after the date of approval of the Development Plan pursuant to Development Operations or Production Operations for the purposes of producing Petroleum, increasing production, sustaining production or accelerating extraction of Petroleum including production Wells, injection Wells and dry Wells.

Oil Refinery: It converts crude oil into high-octane motor fuel (gasoline/petrol), diesel oil, liquefied petroleum gases (LPG), jet aircraft fuel, kerosene, heating fuel oils, lubricating oils, asphalt and petroleum coke, etc.

Refinery feedstock: Refinery feedstock is product or a combination of products derived from crude oil and destined for further processing other than blending in the refining industry. It is transformed into one or more components and/or finished products.

Petroleum Products: Petroleum products are any oil based products which can be obtained by distillation and are normally used outside the refining industry. The exceptions to this are those finished products which are classified as refinery feedstocks

Distillate: Any product obtained by condensation of the vapours of a petroleum product when it is distilled under atmospheric pressure or under reduced pressure.

Light distillate: Naphthas and gasolines boiling below 230°C) at normal atmospheric pressure, and with a closedcup flash point below ambient temperature.

Middle Distillate: Kerosenes and gas oils boiling between approximately 150°C and 400°C at normal atmospheric pressure and having a closed-cup flash point above 38°C.

Heavy Distillate: Distillate boiling predominately above 350°C at normal atmospheric pressure, it includes the heaviest fractions from atmospheric distillation, together with the distillate fractions obtained by vacuum distillation.

Motor gasoline: Motor gasoline consists of a mixture of light hydrocarbons distilling between 35°C and 215°C. It is used as a fuel for land-based spark ignition engines. Motor gasoline may include additives, oxygenates and octane enhancers, including lead compounds such as TEL (Tetraethyl lead) and TML (tetramethyl lead). Motor gasoline can be divided into two groups:

- **Unleaded motor gasoline:** motor gasoline where lead compounds have not been added to enhance octane rating. It may contain traces of organic lead.
- **Leaded motor gasoline:** motor gasoline with TEL (tetraethyl lead) and/or TML (tetramethyl lead) added to enhance octane rating. This category includes motor gasoline blending components (excluding additives/oxygenates), e.g. alkylates, isomerate, reformate, cracked gasoline destined for use as finished motor gasoline.

Diesel/Gasoil : Petroleum derived diesel (called as petrodiesel) is a mixture of straight run product (150°C and 350°C) with varying amount of selected cracked distillates and is composed of saturated hydrocarbons (primarily paraffins including n, iso, and cycloparaffins), and aromatic hydrocarbons (including naphthalenes and alkylbenzenes). Diesel is used in diesel engines, a type of internal combustion engine.

Automotive diesel fuel serves to power trains, buses, trucks, and automobiles, to run construction, petroleum drilling and other off-road equipment and to be the prime mover in a wide range of power generation & pumping applications. The diesel engine is high compression, self-ignition engine. Fuel is ignited by the heat of high compression and no spark plug is used.

Kerosene : Kerosenes are distillate fractions of crude oil in the boiling range of 150-250°C. They are treated mainly for reducing aromatic content to increase their smoke point (height of a smokeless flame)

and hydrofining to reduce sulphur content and to improve odour, colour & burning qualities (char value). Kerosene is used as a domestic fuel for heating / lighting and also for manufacture of insecticides/ herbicides/fungicides to control pest, weeds and fungi. Since kerosene is less volatile than gasoline, increase in its evaporation rate in domestic burners is achieved by increasing surface area of the oil to be burned and by increasing its temperature. The two types of burners which achieve this fall into two categories namely vaporisers & atomizers

Liquefied Petroleum Gas (LPG): LPG is light paraffinic hydrocarbons derived from the refinery processes, crude oil stabilisation and natural gas processing plants. This consists mainly of propane (C_3H_8) and butane (C_4H_{10}) or a combination of the two. It could also include propylene, butylene, isobutene and isobutylene. LPG is normally liquefied under pressure for transportation and storage.

Lubricants: Lubricants are hydrocarbons produced from distillate by-products; they are mainly used to reduce friction between bearing surfaces. This category includes all finished grades of lubricating

oil, from spindle oil to cylinder oil, and those used in greases, including motor oils and all grades of lubricating oil base stocks.

Fuel oil: This covers all residual (heavy) fuel oils (including those obtained by blending). Kinematic viscosity is above 10 cSt at 80°C. The flash point is always above 50°C and density is always more than 0.90 kg/l.

- Low sulphur content: heavy fuel oil with sulphur content lower than 1%.
- High sulphur content: heavy fuel oil with sulphur content of 1% or higher.

Liquefied Natural Gas (LNG): Natural gas cooled to approximately –160°C under atmospheric pressure condenses to its liquid form called LNG. LNG is odourless, colourless, noncorrosive and non-toxic.

Compressed Natural Gas (CNG): CNG is natural gas for use in special CNG vehicles, where it is stored in high-pressure fuel cylinders. CNG's use stems in part from its clean burning properties, as it produces fewer exhaust and greenhouse gas emissions than motor gasoline or diesel oil. It is used most frequently in light-duty passenger vehicles and pickup trucks, medium-duty delivery trucks, and in transit and school buses.

Natural Gas Liquids (NGL): Natural gas liquids are liquid or liquefied hydrocarbons recovered from natural gas in separation facilities or gas processing plants. Natural gas liquids include ethane, propane, butane (normal and iso-), (iso)pentane and pentanes plus (sometimes referred to as natural gasoline or plant condensate).

The natural gas may be extracted with crude oil (associated gas) or from a gas field without crude oil. The NGL may be removed from the natural gas stream close to the well-head or transported to a distant gas processing plant. Where gas processing and crude oil production are both occurring, it is common for some of the condensate fraction of the NGL to be injected into the crude oil stream.

Petroleum coke: Petroleum coke is a black solid by-product, obtained mainly by cracking and carbonising petroleum-derived feedstock, vacuum bottoms, tar and pitches in processes such as delayed coking or fluid coking. It consists mainly of carbon (90% to 95%) and has a low ash content. It is used as a feedstock in coke ovens for the steel industry, for heating purposes, for electrode manufacture and for production of chemicals. The two most important qualities are “green coke” and “calcinated coke”. This category also includes “catalyst coke” deposited on the catalyst during refining processes; this coke is not recoverable and is usually burned as refinery fuel.

Refinery gas (not liquefied): Refinery gas includes a mixture of non-condensable gases mainly consisting of hydrogen, methane, ethane and olefins obtained during distillation of crude oil or treatment of oil products (e.g. cracking) in refineries. This also includes gases which are returned from the petrochemical industry.

Flared Gas: Flared Gas at oil production rigs and in refineries is gas burnt at the site. Its primary purpose is to act as a safety device to protect vessels or pipes from over-pressuring or due to insufficient capacity in the domestic market to absorb such gas, and there are few opportunities for its safe re-injection into reservoirs.

Percentage Gas flared: Gas flared as percentage of total output of gas, excluding re-inject gas.

Source: Bureau of Indian Standards, Manual on Infrastructure Statistics (CSO), Director General of Hydrocarbons, oil & gas CPSEs.





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