Snapshot of India's Oil & Gas data

Monthly Ready Reckoner

September 2023

G20 भारत 2023 INDIA
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Petroleum Planning & Analysis Cell

(Ministry of Petroleum & Natural Gas)

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Petroleum Planning & Analysis Cell (PPAC), an attached office of the Ministry of Petroleum & Natural Gas (MoPNG), Government of India, collects and analyses data on the Oil and Gas sector. It disseminates many reports on the Oil & Gas sector to the various stakeholders. The data is obtained from the Public Sector companies, Government agencies as well as the Private companies. Given the ever-increasing demand for energy and transition of energy demand to renewables and Biofuels, Policy makers and Analysts need to be well informed about the updated trends in the Oil & Gas industry.

The Snapshot of India's Oil & Gas data (Monthly Ready Reckoner), released by PPAC, provides monthly data/information in a single volume for the latest month and historical time series. The Snapshot of India's Oil & Gas data is also published on PPAC's website (www.ppac.gov.in) and is accessible on mobile app-PPACE.

This publication is a concerted effort by all divisions of PPAC. The cooperation of the Oil and Gas industry is acknowledged for their timely inputs.

Note: Reported data may undergo change on receipt of actuals

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Highlights for the month

- Indigenous crude oil and condensate production during September 2023 was 2.38 MMT. OIL registered a production of 0.27 MMT, ONGC registered a production of 1.55 MMT whereas PSC registered production of 0.56 MMT during September 2023.
- ‘Total Crude oil processed during September 2023 was 20.3 MMT which is 3.8% higher than September 2022. Where PSU/JV Refiners processed 13.8 MMT and PVT Refiners Processed 6.5 MMT of Crude Oil. Total Indigenous Crude Oil processed was 2.4 MMT and total Imported Crude oil processed was 17.9 by all Indian Refineries (PSU+JV+PVT). There was a growth of 2.8 % in Total Crude oil processed in April September FY 2023 – 24 as compared to same period of FY 2022 – 23.
- Crude oil imports increased by 6.1% and 0.4% during September 2023 and April-September 2023 respectively as compared to the corresponding period of the previous year.As compared to net import bill for Oil & Gas for September 2022 of $10.8 billion, the net import bill for Oil & Gas for September 2023 was $10.0 billion. Out of which, crude oil imports constitutes $10.6 billion, LNG imports $1.2 billion and the exports were $3.9 billion during September 2023.
- The price of Brent Crude averaged $94.00/bbl during September 2023 as against $86.22/bbl during August 2023 and $89.87/bbl during September 2022. The Indian basket crude price averaged $93.54/bbl during September 2023 as against $86.43/bbl during August 2023 and $90.71 /bbl during September 2022.
- ‘Production of petroleum products was 21.5 MMT during September 2023 which is 5.5% higher than September 2022. Out of 21.5 MMT, 21.2 MMT was from Refinery production & 0.3 MMT was from Fractionator. There was a growth of 3.8 % in Production of petroleum products in April September 2023–24 as compared to the corresponding period of the previous year. Out of total POL production, in September 2023, HSD has 41.6 %, MS has 16.6 %, Naphtha has 6.4 %, ATF has 6.0 %, Pet Coke has 5.4, % LPG has 4.1 % which are of major products and rest are shared by Bitumen, FO/LSHS, LDO, Lubes & others.
- POL products imports increased by 26.2% and 10.2% during September 2023 and April-September 2023 respectively as compared to the corresponding period of the previous year. Increase in POL products imports during April-September 2023 were mainly due to increase in imports of bitumen, petcoke, fuel oil (FO) and motor spirit (MS).

•	Exports of POL products increased by 0.9% and decreased by 2% during September 2023 and April-September 2023 respectively as compared to the corresponding period of the previous year. Decrease in POL products exports during April-September 2023 were mainly due to decrease in exports of high-speed diesel (HSD) and naphtha.
•	The consumption of petroleum products during April-September 2023, with a volume of 113.7 MMT, reported a growth of 5.9% compared to the volume of 107.4 MMT during the same period of the previous year. This growth was led by 6.3% growth in MS, 6.3% in HSD & 13.2% in ATF & 9.4% in Naptha consumption besides LPG, Lubes, Bitumen, Petcoke and LDO during the period. The consumption of petroleum products during September 2023 recorded a growth of 7.7% with a volume of 18.2 MMT compared to the same period of the previous year.
•	Ethanol blending with Petrol was 11.3% during August 2023 and cumulative ethanol blending during December 2022-August 2023 was 11.7%.
•	Total Natural Gas Consumption (including internal consumption) for the month of September 2023 was 5254 MMSCM which was 11 % higher than the corresponding month of the previous year. The cumulative consumption of 32614 MMSCM for the current financial year till September 2023 was higher by 6.6% compared with the corresponding period of the previous year.
•	Gross production of natural gas for the month of September 2023 (P) was 3027 MMSCM which was higher by 6.1% compared with the corresponding month of the previous year. The cumulative gross production of natural gas of 17879 MMSCM for the current financial year till September 2023 was higher by 4.0% compared with the corresponding period of the previous year.
•	LNG import for the month of September 2023 (P) was 2278 MMSCM which was 17.5% higher than the corresponding month of the previous year. The cumulative import of 15110 (P) MMSCM for the current financial year till September 2023 was higher by 9.4% compared with the corresponding period of the previous year.

PART-A

Economic Indicators

1. Selected indicators of the Indian economy								
Economic indicators		Unit/ Base	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
1	Population (basis RGI projections)	Billion	1.323	1.337	1.351	1.365	1.377	1.388
2	GDP at constant (2011-12 Prices)	Growth %	6.5 2nd RE	4.0 1st RE	-6.6 1st RE	9.1 1st RE	7.2 PE	7.8 Q1, 2023-24 (E)
3	Agricultural Production (Food grains)	MMT	285.2	297.5	310.7	315.7 4th AE	323.6 2nd AE	-
		Growth %	0.1	4.3	4.5	1.6	2.5	-
4	Gross Fiscal Deficit (as percent of GDP)	%	3.4	4.6	9.5 RE	6.7 RE	6.4 RE	7.8 (Q1) E

Economic indicators		Unit/ Base	2021-22	2022-23	September		April-September	
					2022-23	2023-24 (P)	2022-23	2023-24 (P)
5	Index of Industrial Production (Base: 2011-12)	Growth %	11.4	5.5#	-0.7*	10.3* QE	7.7#	6.1#
6	Imports^	$ Billion	611.9	714.2	63.4	53.8	372.6	327.0
7	Exports^	$ Billion	422.0	451.0	35.4	34.5	231.7	211.4
8	Trade Balance	$ Billion	-189.9	-263.2	-28.0	-19.4	-140.8	-115.6
9	Foreign Exchange Reserves @	$ Billion	617.6	578.4	532.7	586.9	-	-

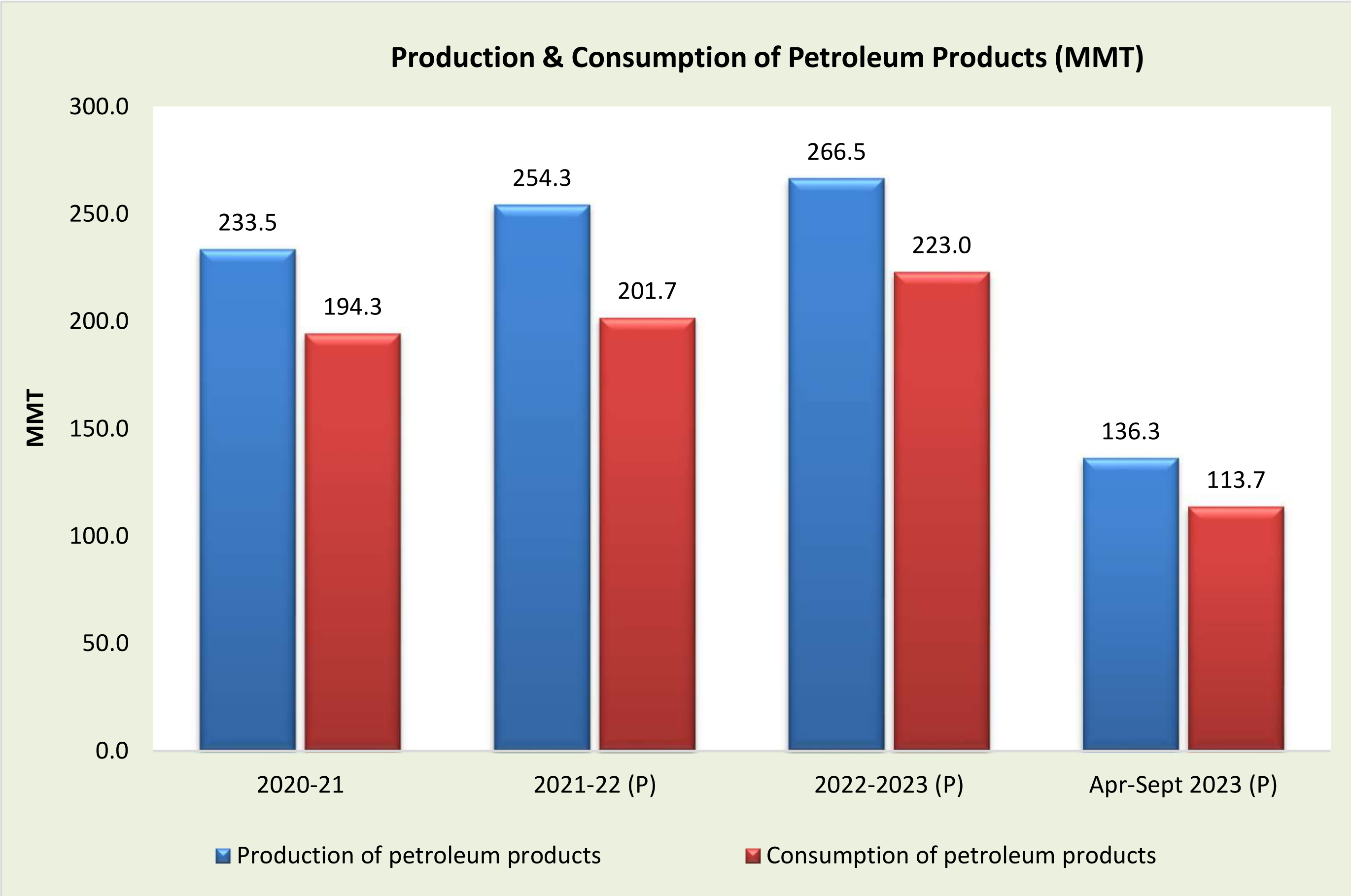
Population projection by RGI is taken as on 1st July for the year. IIP is for the month of *Aug'23 and #April-Aug'23; @2021, 2021-22 - as on March 26, 2022, Mar 2022 as on Mar 25, 2022, Mar 2023-as on Mar 31, 2023, September 2022 as on September 30, 2022 and September, 2023 as on September 29, 2023; ^Imports & Exports are for Merchandise for the month of September 23; E: Estimates; PE: Provisional Estimates; AE-Advanced Estimates; RE-Revised Estimates; QE-Quick Estimates.

Source: Registrar General India**,** Ministry of Commerce & Industry, Ministry of Statistics and Programme Implementation, Ministry of Agriculture & Farmer's Welfare, Ministry of Finance, Reserve Bank of India

2. Crude oil, LNG and petroleum products at a glance

	Details	Unit/ Base	2021-22 (P)	2022-23 (P)	September		April-September	
					2022-23 (P)	2023-24 (P)	2022-23 (P)	2023-24 (P)
1	Crude oil production in India#	MMT	29.7	29.2	2.4	2.4	14.7	14.7
2	Consumption of petroleum products*	MMT	201.7	223.0	16.9	18.2	107.4	113.7
3	Production of petroleum products	MMT	254.3	266.5	20.3	21.5	131.4	136.3
4	Gross natural gas production	MMSCM	34,024	34,450	2,852	3,027	17,184	17,879
5	Natural gas consumption	MMSCM	64,159	59,969	4,668	5,254	30,451	32,614
6	Imports & exports:							
	Crude oil imports	MMT	212.4	232.7	16.8	17.8	115.7	116.2
		$ Billion	120.7	157.6	11.8	10.6	89.3	63.4
	Petroleum products (POL) imports*	MMT	39.0	44.5	3.2	4.0	20.7	22.8
		$ Billion	23.7	26.8	1.8	2.0	14.0	10.7
	Gross petroleum imports (Crude + POL)	MMT	251.4	277.3	19.9	21.8	136.5	139.0
		$ Billion	144.3	184.4	13.7	12.7	103.2	74.1
	Petroleum products (POL) export	MMT	62.8	61.0	5.0	5.0	31.5	30.9
		$ Billion	44.4	57.3	4.4	3.9	33.0	23.2
	LNG imports*	MMSCM	31,028	26,304	1,878	2,278	13,680	15,110
		$ Billion	13.5	17.1	1.4	1.2	9.4	6.6
	Net oil & gas imports	$ Billion	113.4	144.2	10.7	10.0	79.7	57.4
7	Petroleum imports as percentage of India's gross imports (in value terms)	%	23.6	25.8	21.6	23.5	27.7	22.6
8	Petroleum exports as percentage of India's gross exports (in value terms)	%	10.5	12.7	12.5	11.3	14.2	11.0
9	Import dependency of crude oil (on POL consumption basis)	%	85.5	87.4	86.7	86.2	86.5	87.5

#Includes condensate; *Private direct imports are prorated for the period Aug'23 to Sept'23 for POL. RIL data prorated LNG Imports figure from DGCIS are prorated for August'23 to September 2023.Total may not tally due to rounding off.


Production & Consumption of Petroleum Products (MMT)
MMT
300.0
250.0
200.0
150.0
100.0
50.0
0.0
233.5
194.3
254.3
201.7
266.5
223.0
136.3
113.7
2020-21
2021-22 (P)
2022-2023 (P)
Apr-Sept 2023 (P)
Production of petroleum products
Consumption of petroleum products

PART-B

Crude Oil, Refining & Production

3. Indigenous crude oil production (Million Metric Tonnes)

Details	2021-22	2022-23 (P)	September			April-September		
			2022-23 (P)	2023-24 Target*	2023-24 (P)	2022-23 (P)	2023-24 Target*	2023-24 (P)
ONGC	18.5	18.4	1.5	1.6	1.5	9.3	9.7	9.1
Oil India Limited (OIL)	3.0	3.2	0.3	0.3	0.3	1.6	1.7	1.6
Private / Joint Ventures (JVs)	7.0	6.2	0.5	0.6	0.5	3.2	3.6	2.9
Total Crude Oil	**28.4**	**27.8**	**2.3**	**2.5**	**2.2**	**14.1**	**15.0**	**13.7**
ONGC condensate	0.9	1.0	0.09	0.0	0.08	0.5	0.0	0.5
PSC condensate	0.3	0.31	0.03	0.0	0.10	0.14	0.0	0.48
Total condensate	**1.2**	**1.4**	**0.12**	**0.0**	**0.2**	**0.6**	**0.0**	**1.0**
Total (Crude + Condensate) (MMT)	**29.7**	**29.2**	**2.4**	**2.5**	**2.4**	**14.7**	**15.0**	**14.7**
Total (Crude + Condensate) (Million Bbl/Day)	0.60	0.59	0.58	0.61	0.58	0.59	0.60	0.59

*Provisional targets inclusive of condensate.

4. Domestic and overseas oil & gas production (by Indian Companies)

Details	2021-22	2022-23 (P)	September		April-September	
			2022-23 (P)	2023-24 (P)	2022-23 (P)	2023-24 (P)
Total domestic production (MMTOE)	63.7	63.6	5.2	5.4	31.9	32.6
Overseas production (MMTOE)	21.8	19.5	1.5	1.6	9.7	9.9

Source: ONGC Videsh, GAIL, OIL , IOCL, HPCL & BPRL

5. High Sulphur (HS) & Low Sulphur (LS) crude oil processing (MMT)

	Details	2021-22	2022-23 (P)	September		April-September	
				2022-23 (P)	2023-24 (P)	2022-23 (P)	2023-24 (P)
1	High Sulphur crude	185.0	197.9	15.1	15.1	98.3	100.1
2	Low Sulphur crude	56.7	57.4	4.5	5.2	28.0	29.7
Total crude processed (MMT)		**241.7**	**255.2**	**19.5**	**20.3**	**126.3**	**129.8**
Total crude processed (Million Bbl/Day)		4.85	5.13	4.78	4.96	5.06	5.20
Percentage share of HS crude in total crude oil processing		**76.6%**	**77.5%**	**77.0%**	**74.5%**	**77.8%**	**77.1%**

6. Quantity and value of crude oil imports			
Year	**Quantity (MMT)**	**$ Million**	**Rs. Crore**
2021-22 (P)	212.4	120,675	9,01,262
2022-23 (P)	232.7	157,597	12,60,910
April-Sept 2023-24(P)	116.2	63,396	5,22,107

7. Self-sufficiency in petroleum products (Million Metric Tonnes)							
Particulars		**2021-22**	**2022-23 (P)**	**September**		**April-September**	
				2022-23 (P)	**2023-24 (P)**	**2022-23 (P)**	**2023-24 (P)**
1	Indigenous crude oil processing	27.0	26.4	2.1	2.4	13.6	13.3
2	Products from indigenous crude (93.3% of crude oil processed)	25.2	24.7	2.0	2.2	12.7	12.4
3	Products from fractionators (Including LPG and Gas)	4.1	3.5	0.3	0.3	1.8	1.7
4	Total production from indigenous crude & condensate **(2 + 3)**	29.3	28.2	2.2	2.5	14.5	14.2
5	Total domestic consumption	201.7	223.0	16.9	18.2	107.4	113.7
% Self-sufficiency (4 / 5)		**14.5%**	**12.6%**	**13.3%**	**13.8%**	**13.5%**	**12.5%**

8. Refineries: Installed capacity and crude oil processing (MMTPA / MMT)											
Sl. no.	Refinery	Installed capacity (01.04.2023) MMTPA	Crude oil processing (MMT)								
			2021-22	2022-23 (P)	September			April-September			
					2022-23 (P)	2023-24 (Target)	2023-24 (P)	2022-23 (P)	2023-24 (Target)	2023-24 (P)	
1	Barauni (1964)	6.0	5.6	6.8	0.5	0.5	0.5	3.4	3.3	3.3	
2	Koyali (1965)	13.7	13.5	15.6	1.3	1.3	1.2	7.8	6.7	7.5	
3	Haldia (1975)	8.0	7.3	8.5	0.7	0.4	0.3	4.2	3.3	3.8	
4	Mathura (1982)	8.0	9.1	9.6	0.8	0.7	0.7	4.6	4.3	4.3	
5	Panipat (1998)	15.0	14.8	13.8	1.2	1.3	1.2	7.2	7.6	7.4	
6	Guwahati (1962)	1.0	0.7	1.1	0.09	0.1	0.1	0.55	0.5	0.6	
7	Digboi (1901)	0.65	0.7	0.7	0.04	0.06	0.05	0.3	0.3	0.3	
8	Bongaigaon(1979)	2.70	2.6	2.8	0.2	0.2	0.3	1.3	1.5	1.5	
9	Paradip (2016)	15.0	13.2	13.6	0.3	1.3	1.2	5.6	7.6	7.8	
	IOCL-TOTAL	**70.1**	**67.7**	**72.4**	**5.1**	**5.9**	**5.5**	**35.0**	**35.2**	**36.5**	
10	Manali (1969)	10.5	9.0	11.3	1.0	0.5	1.0	5.8	4.7	5.7	
11	CBR (1993)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	CPCL-TOTAL	**10.5**	**9.0**	**11.3**	**1.0**	**0.5**	**1.0**	**5.8**	**4.7**	**5.7**	
12	Mumbai (1955)	12.0	14.4	14.5	1.3	0.9	1.4	6.6	7.2	8.1	
13	Kochi (1966)	15.5	15.4	16.0	1.2	1.3	1.3	8.1	7.8	8.4	
14	Bina (2011)	7.8	7.4	7.8	0.7	0.7	0.7	3.7	3.1	3.0	
	BPCL-TOTAL	**35.3**	**37.2**	**38.4**	**3.1**	**2.9**	**3.3**	**18.4**	**18.1**	**19.5**	
15	Numaligarh (1999)	3.0	2.6	3.1	0.2	0.3	0.3	1.6	1.2	0.8	

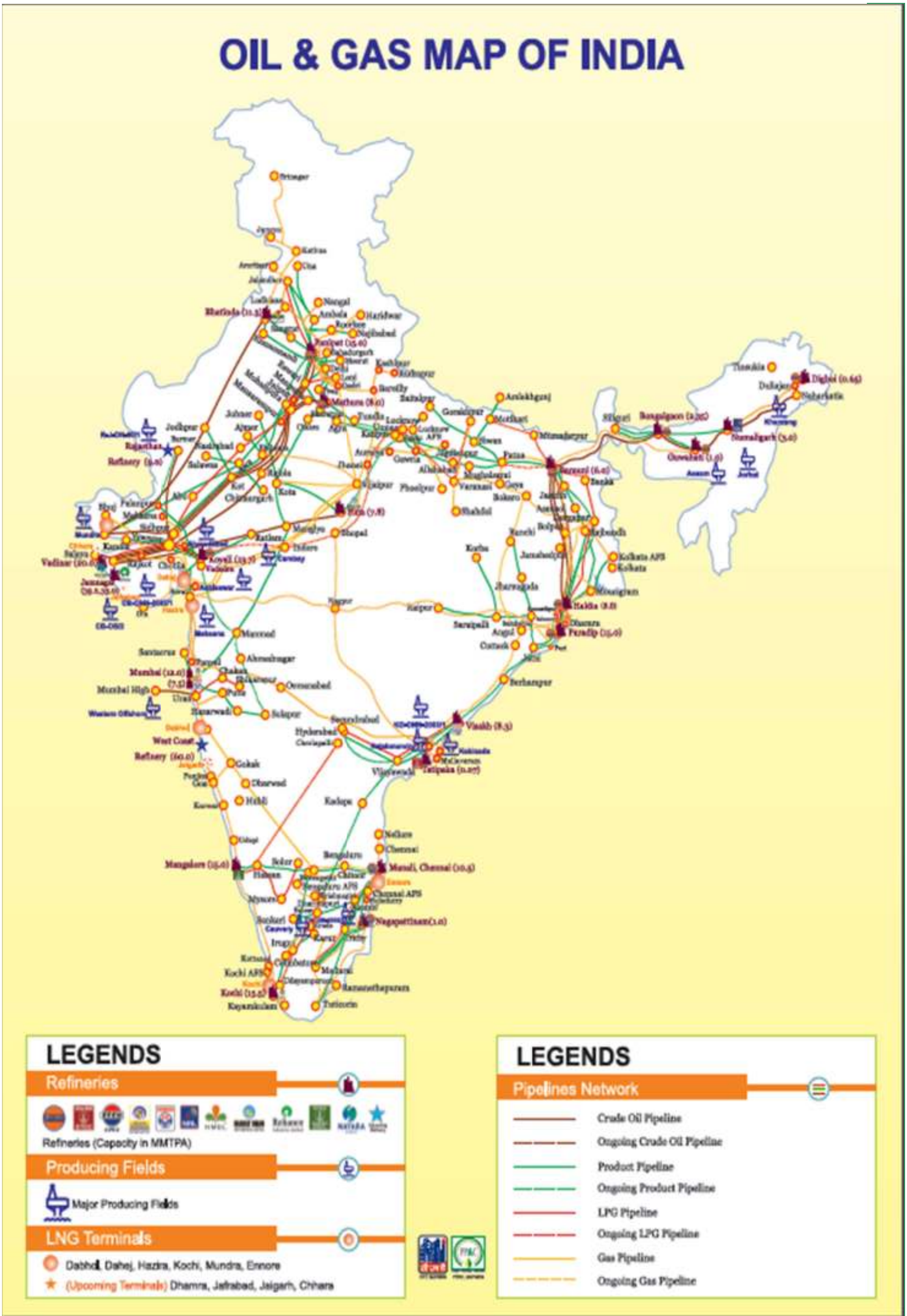
Sl. no.	Refinery	Installed capacity (01.04.2023) MMTPA	Crude oil processing (MMT)							
			2021-22	2022-23	September			April-September		
					2022-23	2023-24 (Target)	2023-24 (P)	2022-23	2023-24 (Target)	2023-24 (P)
16	Tatipaka (2001)	0.066	0.075	0.073	0.007	0.005	0.004	0.035	0.030	0.033
17	MRPL-Mangalore (1996)	15.0	14.9	17.1	1.3	0.8	0.8	8.3	7.4	7.6
	ONGC-TOTAL	**15.1**	**14.9**	**17.2**	**1.3**	**0.9**	**0.8**	**8.3**	**7.4**	**7.6**
18	Mumbai (1954)	9.5	5.6	9.8	0.8	0.8	0.8	4.9	4.7	5.0
19	Visakh (1957)	11.0	8.4	9.3	0.8	1.0	1.0	4.4	5.5	6.2
20	HMEL-Bathinda (2012)	11.3	13.0	12.7	0.9	0.6	1.1	6.3	5.5	6.5
	HPCL- TOTAL	**31.8**	**27.0**	**31.8**	**2.5**	**2.3**	**2.9**	**15.6**	**15.8**	**17.7**
21	RIL-Jamnagar (DTA) (1999)	33.0	34.8	34.4	2.8	2.8	2.8	17.9	17.9	17.2
22	RIL-Jamnagar (SEZ) (2008)	35.2	28.3	27.9	1.8	1.8	2.0	13.6	13.6	14.6
23	NEL-Vadinar (2006)	20.0	20.2	18.7	1.7	1.7	1.7	10.2	10.2	10.1
All India (MMT)		**253.9**	**241.7**	**255.2**	**19.5**	**19.1**	**20.3**	**126.3**	**124.0**	**129.8**
All India (Million Bbl/Day)		**5.02**	**4.85**	**5.13**	**4.78**	**4.66**	**4.96**	**5.06**	**4.97**	**5.20**

Note: Provisional Targets; Some sub-totals/ totals may not add up due to rounding off at individual levels. The Inputs to Refinery includes both Crude Oil and Other Inputs (OI), however Other Inputs (OI) do not form part of the above data.

9. Major crude oil and product pipeline network (as on 01.10.2023)

Details		ONGC	OIL	Cairn	HMEL	IOCL	BPCL	HPCL	Others*	Total
Crude Oil	Length (KM)	1,284	1,193	688	1,017	5,819	937			**10,938**
	Cap (MMTPA)	60.6	9.0	10.7	11.3	53.8	7.8			**153.1**
Products	Length (KM)		654			12,200	2,599	5,123	2,399	**22,975**
	Cap (MMTPA)		1.7			70.6	22.6	37.4	10.2	**142.5**

*Others include GAIL and Petronet India. HPCL and BPCL lubes pipeline included in products pipeline data



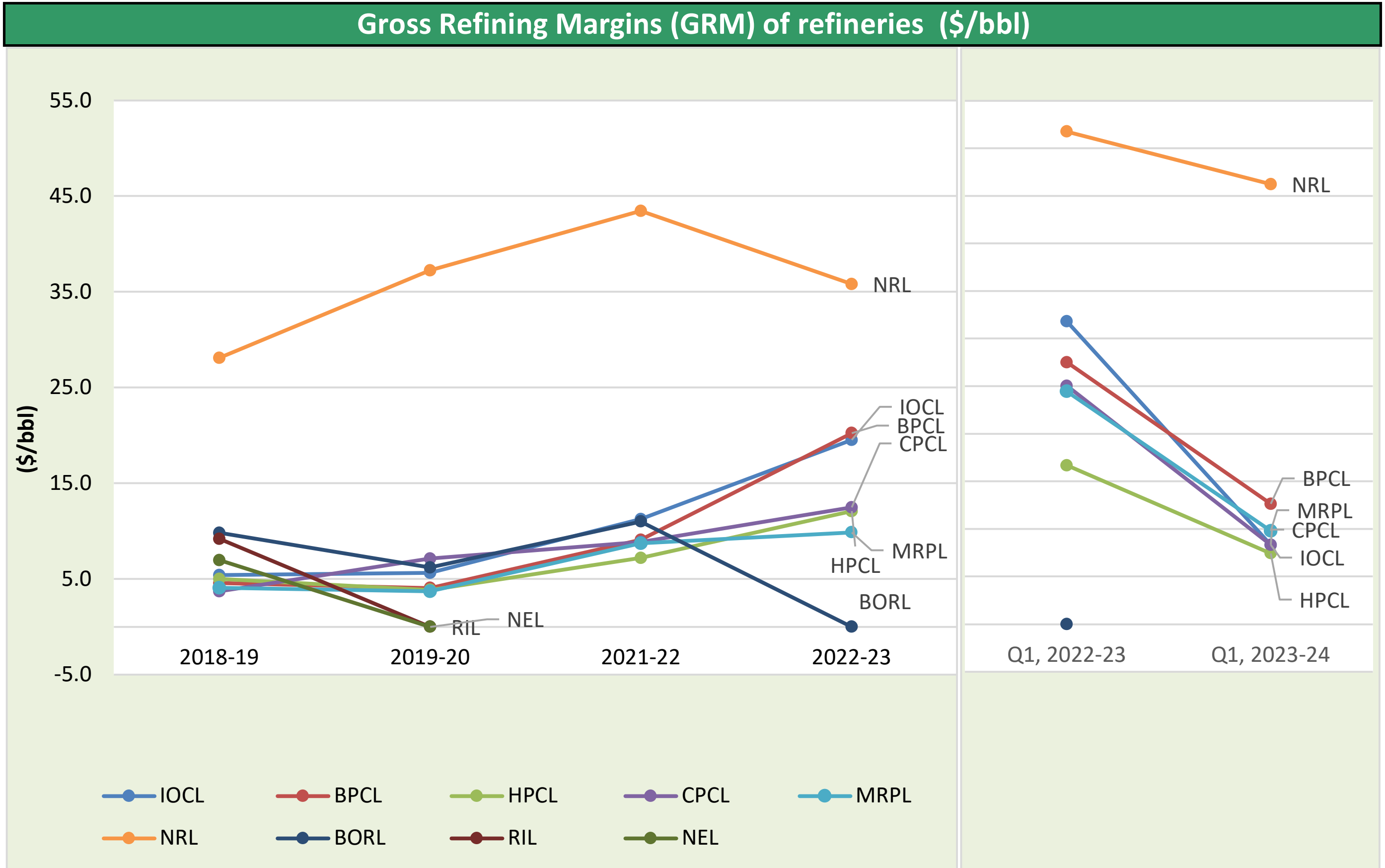
OIL & GAS MAP OF INDIA
LEGENDS
Refineries
Refineries (Capacity in MMTPA)
Producing Fields
Major Producing Fields
LNG Terminals
Dabhol, Dahej, Hazira, Kochi, Mundra, Ennore
(Upcoming Terminals) Dhamra, Jafrabad, Jaigarh, Chhara
LEGENDS
Pipelines Network
Crude Oil Pipeline
Ongoing Crude Oil Pipeline
Product Pipeline
Ongoing Product Pipeline
LPG Pipeline
Ongoing LPG Pipeline
Gas Pipeline
Ongoing Gas Pipeline

10. Gross Refining Margins (GRM) of refineries ($/bbl)					
Company	2020-21	2021-22	2022-23	Apr - June	
				2022-23	2023-24
IOCL	5.64	11.25	19.52	31.81	8.34
BPCL	4.06	9.09	20.24	27.51	12.64
HPCL	3.86	7.19	12.09	16.69	7.44
CPCL	7.14	8.85	12.48	25.04	8.33
MRPL	3.71	8.72	9.88	24.45	9.81
NRL	37.23	43.46	35.82	51.76	46.23
BORL	6.20	11.00	#	#	#
RIL	*	*	*	*	*
NEL	*	*	*	*	*

GRM of North Eastern refineries are including excise duty benefit

BPCL figures effective 2022-23 includes BORL also after its merger with BPCL

*Not available



GRM of North Eastern refineries are including excise duty benefit

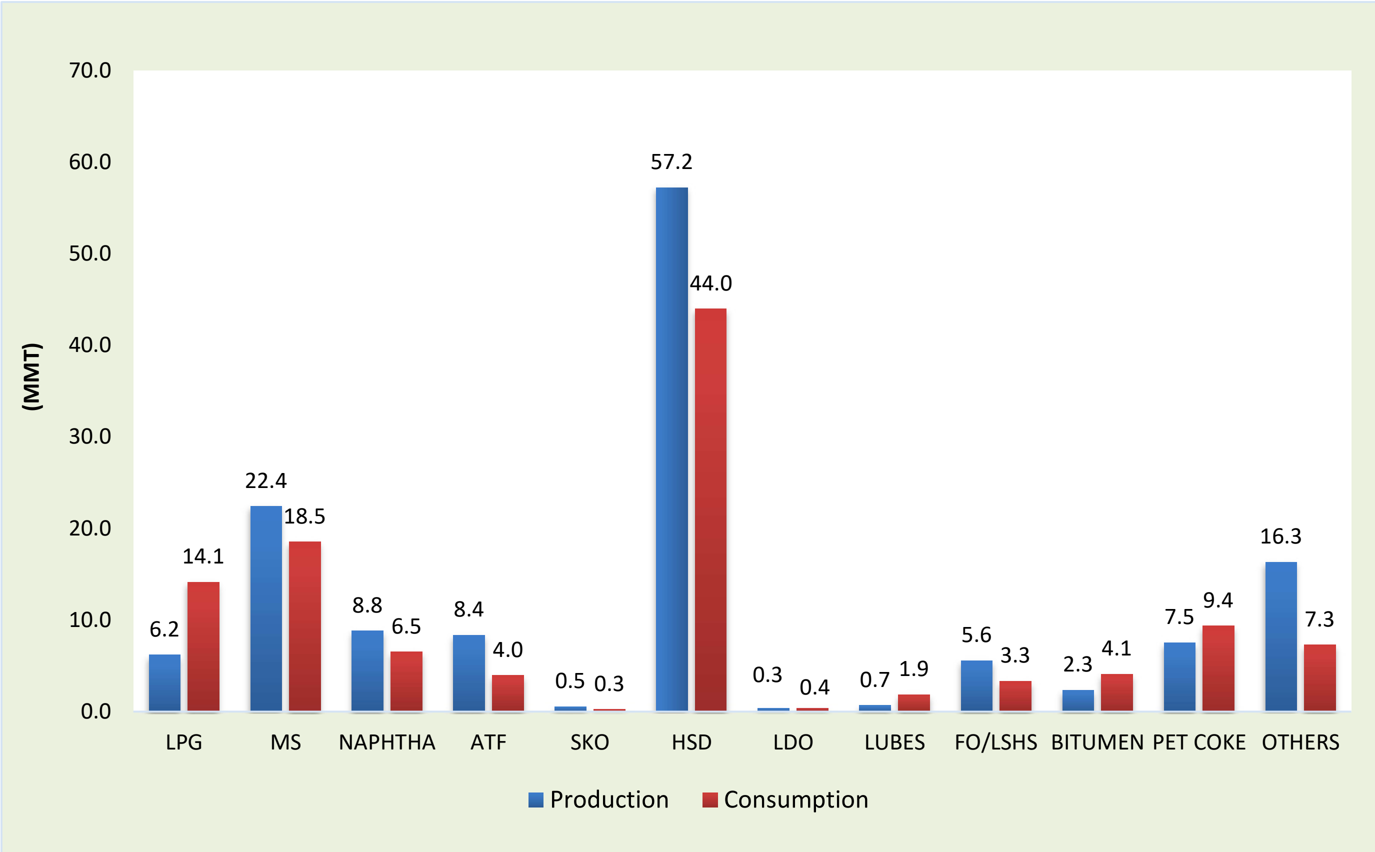
PART-C

Consumption

11. Production and consumption of petroleum products (Million Metric Tonnes)												
Products	**2021-22**		**2022-23 (P)**		**September 2022**		**Sept-2023 (P)**		**Apr-Sept 2022**		**Apr-Sept 2023 (P)**	
	Prod	**Cons**	**Prod**	**Cons**	**Prod**	**Cons**	**Prod**	**Cons**	**Prod**	**Cons**	**Prod**	**Cons**
LPG	12.2	28.3	12.8	28.5	1.0	2.4	0.9	2.6	6.4	13.8	6.2	14.1
MS	40.2	30.8	42.8	35.0	3.1	2.8	3.6	3.1	21.1	17.4	22.4	18.5
NAPHTHA	20.0	13.2	17.0	12.2	1.4	1.0	1.4	1.0	8.8	6.0	8.8	6.5
ATF	10.3	5.0	15.0	7.4	1.3	0.6	1.3	0.7	7.0	3.5	8.4	4.0
SKO	1.9	1.5	0.9	0.5	0.1	0.0	0.1	0.0	0.5	0.3	0.5	0.3
HSD	107.2	76.7	113.8	85.9	8.8	6.3	8.9	6.5	56.5	41.4	57.2	44.0
LDO	0.8	1.0	0.6	0.7	0.05	0.1	0.07	0.1	0.3	0.4	0.3	0.4
LUBES	1.2	4.5	1.3	3.7	0.1	0.3	0.1	0.3	0.6	1.7	0.7	1.9
FO/LSHS	8.9	6.3	10.4	7.0	0.8	0.6	0.8	0.5	5.2	3.4	5.6	3.3
BITUMEN	5.1	7.8	4.9	8.0	0.3	0.4	0.3	0.5	2.2	3.2	2.3	4.1
PET COKE	15.5	14.3	15.4	18.3	1.2	1.4	1.1	1.5	7.7	8.8	7.5	9.4
OTHERS	30.9	12.3	31.5	15.8	2.2	1.1	3.0	1.5	15.1	7.6	16.3	7.3
ALL INDIA	**254.3**	**201.7**	**266.5**	**223.0**	**20.3**	**16.9**	**21.5**	**18.2**	**131.4**	**107.4**	**136.3**	**113.7**
Growth (%)	**-3.1%**	**-5.4%**	**4.8%**	**10.6%**	**6.6%**	**8.2%**	**5.5%**	**7.7%**	**10.1%**	**14.6%**	**3.8%**	**5.9%**

Note: Prod - Production; Cons - Consumption

Petroleum Products: April-September 2023 (P) (MMT)



12. Kerosene allocation vs upliftment (Kilo Litres)

Product	2020-21		2021-22		2022-23		2023-24 (P)*	
	Allocation	Upliftment	Allocation	Upliftment	Allocation	Upliftment	Allocation	Upliftment
PDS Kerosene	23,15,008	20,38,790	17,83,344	16,59,906	12,43,644	3,96,115	5,29,572	2,19,786

* Allocation is for H1, 2023-24 and upliftment is for Apr-Sept' 2023

13. Ethanol blending programme

Particulars	Ethanol Supply Year *				
	2019-20	2020-21	2021-22	2022-23 (P)	
				Aug-23	Dec'22-Aug'23
Ethanol received by PSU OMCs under EBP Program (in Cr. Litrs)	173.0	296.1	408.1	31.1	419.4
Ethanol blended under EBP Program (in Cr. Litrs)	170.5	302.3	433.6	45.7	411.8
Average Percentage of Blending Sales (EBP%)	5.0%	8.1%	10.0%	11.3%	11.7%

***Ethanol Supply Year :** Ethanol supplies take place between 1st December of the present year to 30th November of the following year.

Note: With effect from 01.04.2019, EBP Programme has been extended to whole of India except UTs of Andaman and Nicobar Islands and Lakshadweep.

14. Industry marketing infrastructure (as on 01.10.2023) (Provisional)

Particulars	IOCL	BPCL	HPCL	RIL/RBML/RSIL	NEL	SHELL	MRPL & Others	Total
POL Terminal/ Depots **(Nos.)**$	126	83	81	18	3		6	**317**
Aviation Fuel Stations **(Nos.)**@	132	65	54	30			2	**283**
Retail Outlets (total) **(Nos.)**,^	36,693	21,330	21,339	1,633	6,454	349	72	**87,870**
out of which Rural ROs	11,898	5,348	5,297	130	2,090	89	25	**24,877**
SKO/LDO agencies **(Nos.)**	3,849	927	1,638					**6,414**
LPG Distributors (total) **(Nos.) (PSUs only)**	12,868	6,245	6,312					**25,425**
LPG Bottling plants **(Nos.) (PSUs only)**#	98	53	56				3	**210**
LPG Bottling capacity **(TMTPA) (PSUs only)**&	10,782	4,890	6,530				203	**22,405**
LPG active domestic consumers **(Nos. crore) (PSUs only)**	14.7	8.1	8.7					**31.5**

$(Others=4 MRPL & 2 NRL); @(Others=ShellMRPL); ^(Others=MRPL); #(Others=NRL-1, OIL-1, CPCL-1); &(Others=NRL-60, OIL-23, CPCL-120); RBML- Reliance BP Mobility Limited; RSIL-RBML Solutions India Ltd.

Industry Alternate fuel infrastructure at Retail outlets (Nos. of ROs as on 01.10.2023) (Provisional)

Alternate fuel	IOCL	BPCL	HPCL	RBML/RSIL	NEL	SHELL	MRPL	Total
CNG_LNG	1899	1640	1527	24	36	0	1	**5127**
EV Charging	5981	822	2308	42	185	232	6	**9576**
Auto LPG	325	44	126	61	52	0	0	**608**
Compressed Bio-Gas outlets	77	45	30	1	0	0	0	**153**
Total Retail outlets with at least one	7656	2257	3623	117	271	232	7	**14163**
Solarization at Retail outlets	21262	4949	11190	74	963	0	0	**38438**

PART-D

LPG

15. LPG consumption (Thousand Metric Tonne)

LPG category	2021-22	2022-23	September			April-September		
			2022-23	2023-24 (P)	Growth (%)	2022-23	2023-24 (P)	Growth (%)
1. PSU Sales :								
LPG-Packed Domestic	25,501.6	25,381.5	2,167.7	2,222.3	2.5%	12,392.0	12,443.9	0.4%
LPG-Packed Non-Domestic	2,238.8	2,606.0	232.0	243.5	4.9%	1,147.9	1,359.6	18.4%
LPG-Bulk	390.9	408.9	32.2	77.6	141.0%	179.0	284.1	58.7%
Auto LPG	122.0	106.7	8.8	7.9	-10.5%	55.2	47.7	-13.6%
Sub-Total (PSU Sales)	28,253.3	28,503.1	**2,440.8**	**2,551.3**	**4.5%**	**13,774.1**	**14,135.3**	**2.6%**
2. Direct Private Imports*	0.1	0.1	0.00	0.01	2240.9%	0.02	0.06	206.0%
Total (1+2)	28,253.4	28,503.2	**2,440.8**	**2,551.3**	**4.5%**	**13,774.1**	**14,135.4**	**2.6%**

*Aug-Sept'23 DGCIS data is prorated

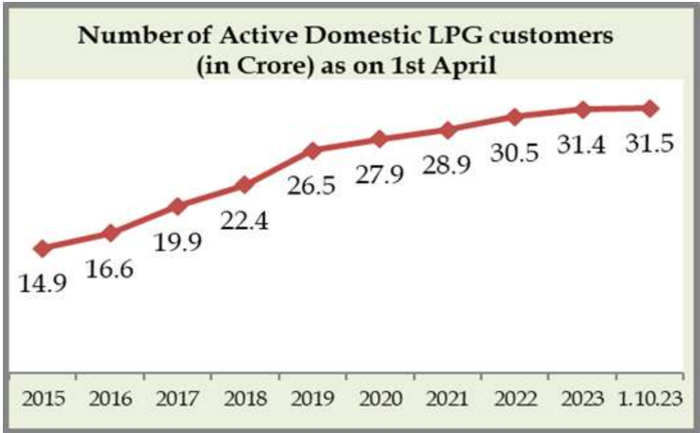
16. LPG marketing at a glance

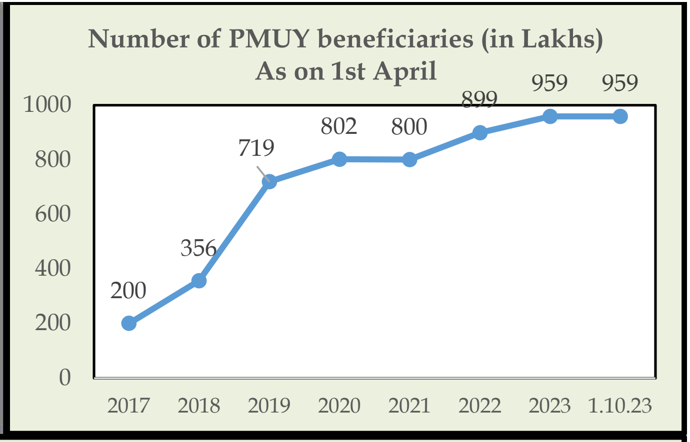
Particulars (As on 1st of April)	Unit	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	1.10.23 (P)
LPG Active Domestic Customers	(Lakh)				1486	1663	1988	2243	2654	2787	2895	3053	3140	3154
	Growth					11.9%	19.6%	12.8%	18.3%	5.0%	3.9%	5.5%	2.9%	1.0%
LPG Coverage (Estimated)	(Percent)				56.2	61.9	72.8	80.9	94.3	97.5	99.8	-	-	-
	Growth					10.1%	17.6%	11.1%	16.5%	3.4%	2.3%	-	-	-
PMUY Beneficiaries	(Lakh)						200.3	356	719	802	800	899.0	958.6	958.5
	Growth							77.7%	101.9%	11.5%	-0.2%	12.2%	6.6%	-100.0%
LPG Distributors	(No.)	11489	12610	13896	15930	17916	18786	20146	23737	24670	25083	25269	25386	25425
	Growth	9.0%	9.8%	10.2%	14.6%	12.5%	4.9%	7.2%	17.8%	3.9%	1.7%	0.7%	0.5%	0.4%
Auto LPG Dispensing Stations	(No.)	652	667	678	681	676	675	672	661	657	651	601	526	496
	Growth	7.9%	2.3%	1.6%	0.4%	-0.7%	-0.1%	-0.4%	-1.6%	-0.6%	-0.9%	-8.5%	-12.5%	-13.0%
Bottling Plants	(No.)	184	185	187	187	188	189	190	192	196	200	202	208	210
	Growth	0.5%	0.5%	1.1%	0.0%	0.5%	0.5%	0.5%	1.1%	2.1%	2.0%	1.0%	4.5%	2.4%

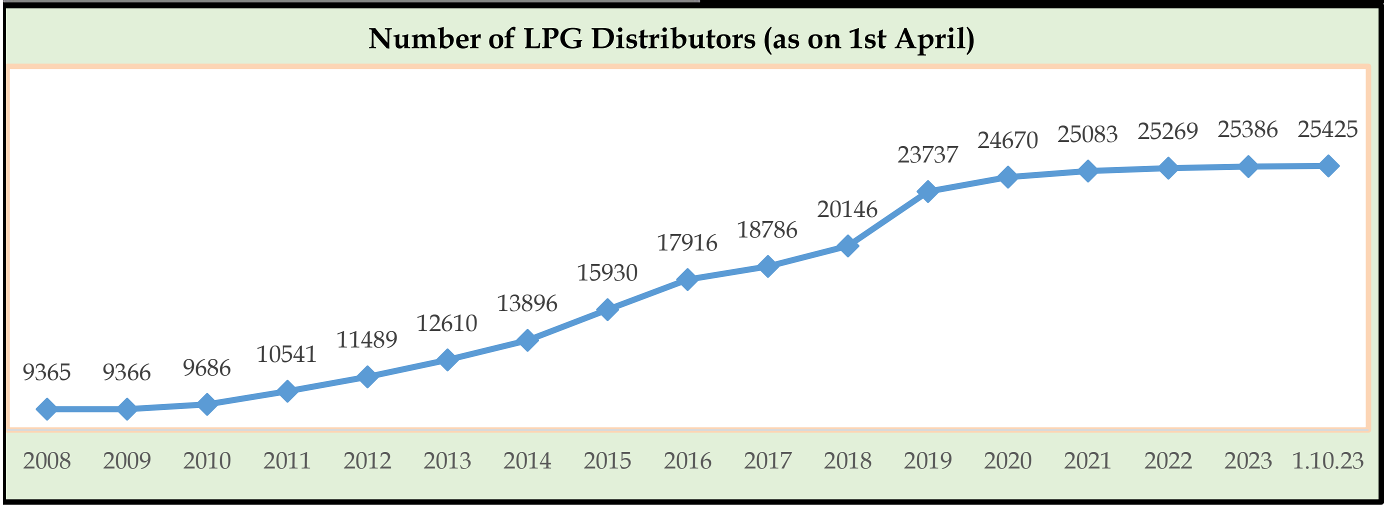
Source: PSU OMCs (IOCL,BPCL and HPCL)

1.Growth rates as on 01.10.2023 are with respect to figs as on 01.10.2022. Growth rates as on 1 April of any year are with respect to figs as on 1 April of previous year.

2. The LPG coverage is calculated by PSU OMCs based upon the active LPG domestic connections and the estimated number of households. The number of households has been projected by PSU OMCs based on 2011 census data. Factors like increasing nuclearization of families, migration of individuals/ families due to urbanization and reduction in average size of households etc. impact the growth of number of households. Due to these factors, the estimated no. of households through projection of 2011 census data may slightly differ from the actual no. of households in a State/UT. Further, this methodology does not include PNG (domestic) connections.


Number of Active Domestic LPG customers (in Crore) as on 1st April
14.9
16.6
19.9
22.4
26.5
27.9
28.9
30.5
31.4
31.5
2015
2016
2017
2018
2019
2020
2021
2022
2023
1.10.23

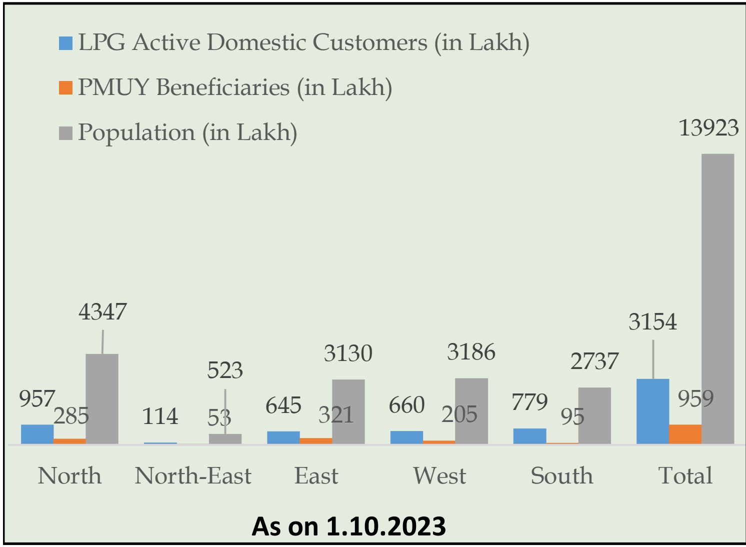

Number of PMUY beneficiaries (in Lakhs)
As on 1st April
1000
800
600
400
200
0
200
356
719
802
800
899
959
959
2017
2018
2019
2020
2021
2022
2023
1.10.23

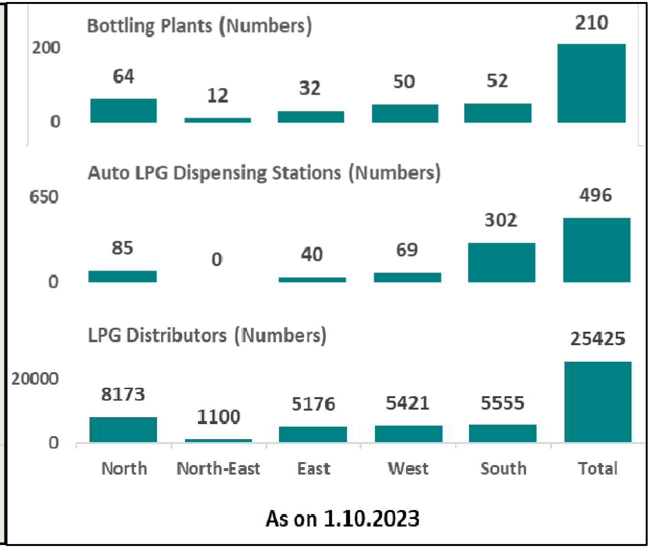

Number of LPG Distributors (as on 1st April)
9365
9366
9686
10541
11489
12610
13896
15930
17916
18786
20146
23737
24670
25083
25269
25386
25425
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
1.10.23

17-Region-wise data on LPG marketing (As on 01.10.2023)

Particulars	North	North-East	East	West	South	Total
LPG Active Domestic Customers (in Lakh)	956.6	114.5	644.7	659.9	778.8	3154.5
Population^ (in Lakh)	4347.5	523.0	3130.2	3185.9	2736.7	13923.3
PMUY Beneficiaries (in Lakh)	285.1	53.0	320.9	204.7	94.8	958.5
LPG Distributors (Numbers)	8173	1100	5176	5421	5555	25425
Auto LPG Dispensing Stations (Numbers)	85	0	40	69	302	496
Bottling Plants* (Numbers)	64	12	32	50	52	210

*Includes Numaligarh BP, Duliajan BP and CPCL BP. ^Population as on 1st July 2023 taken from RGI POPULATION PROJECTIONS 2011 – 2036





PART-E

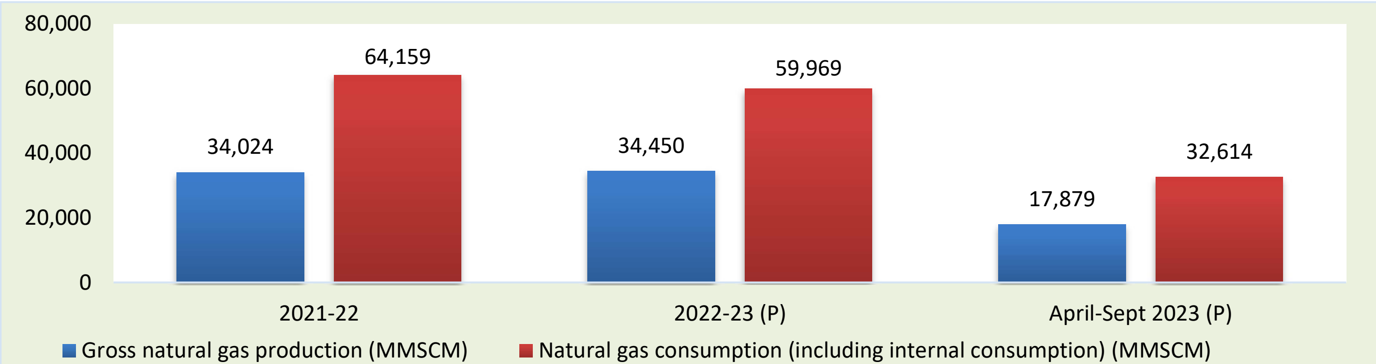
Natural Gas

18. Natural gas at a glance

(MMSCM)

Details	2021-22 (P)	2022-23 (P)	September			April-September		
			2022-23 (P)	2023-24 (Target)	2023-24 (P)	2022-23 (P)	2023-24 (Target)	2023-24 (P)
(a) Gross production	34,024	34,450	2,852	3,269	3,027	17,184	18,498	17,879
- ONGC	20,629	19,969	1,665	1,733	1,578	10,076	10,331	9,751
- Oil India Limited (OIL)	2,893	3,041	256	265	256	1,527	1,557	1,517
- Private / Joint Ventures (JVs)	10,502	11,440	931	1,271	1,192	5,582	6,610	6,611
(b) Net production (excluding flare gas and loss)	33,131	33,664	2,791		2,976	16,771		17,504
(c) LNG import#	31,028	26,304	1,878		2,278	13,680		15,110
(d) Total consumption including internal consumption (b+c)	64,159	59,969	4,668		5,254	30,451		32,614
(e) Total consumption **(in BCM)**	64.2	60.0	4.7		5.3	30.5		32.6
(f) Import dependency based on consumption (%), {c/d*100}	48.4	43.9	40.2		43.4	44.9		46.3

July 2023 DGCIS data prorated.



19. Coal Bed Methane (CBM) gas development in India

Prognosticated CBM resources		91.8	TCF
Established CBM resources		10.4	TCF
CBM Resources (33 Blocks)		62.8	TCF
Total available coal bearing areas (India)		32760	Sq. KM
Total available coal bearing areas with MoPNG/DGH		12254*	Sq. KM
Area awarded		20,460**	Sq. KM
Blocks awarded*		36	Nos.
Exploration initiated (Area considered if any boreholes were drilled in the awarded block)		10670	Sq. KM
Production of CBM gas	April-Sept 2023 (P)	324.70	MMSCM
Production of CBM gas	Sept 2023 (P)	53.27	MMSCM

*ST CBM Block awarded & relinquished twice- in CBM Round II and Round IV -Area considered if any boreholes were drilled in the awarded block. **MoPNG awarded 04 new CBM Blocks (Area 3862 sq. km) under Special CBM Bid Round 2021 in September 2022. ***Area considered if any boreholes were drilled in the awarded block.

19a. Status of Compressed Bio Gas (CBG) projects under SATAT (as on 01.10.2023) (Provisional)

Particulars	Units	IOCL	HPCL	BPCL	GAIL	IGL	Total
No. of CBG plants commissioned and initiated sale of CBG	No. of plants	22	6	3	10	4	**45**
Start of CBG sale from retail outlet(s)	Nos.	52	30	45	1	2	**130**
Sale of CBG in 2022-23	Tons	5,822	77	6	5322#		**11,227**
Sale of CBG in 2023-24 (up to July, 2023)	Tons	3203	73	27	3829#		**7,132**
Sale of CBG in CGD network	GA Nos.				18		**18**

Sale of CBG sourced under CBG-CGD synchronization scheme through its own marketing channels as well as other CGDs/OMCs.

20. Common Carrier Natural Gas pipeline network as on 31.03.2023

Nature of pipeline		GAIL	GSPL	PIL	IOCL	AGCL	RGPL	GGL	DFPCL	ONGC	GIGL	GITL	Others*	Total
Operational	Length	10,932	2,716	1,479	143	107	304	73	42	24				**15,820**
	Capacity	43.0	85.0	20.0	2.4	3.5	5.1	0.7	6.0					**-**
Partially commissioned#	Length	4,342			386						1,279		365	**6,006**
	Capacity													**-**
Total operational length		**15,273**	**2,716**	**1,479**	**529**	**107**	**304**	**73**	**42**	**24**	**1,279**	**0**	**365**	**22,191**
Under construction	Length	4,327	100		1,110						1,053	220	4,361	**11,172**
	Capacity	-	3.0								-	-	-	**-**
Total length		**19,601**	**2,816**	**1,479**	**1,639**	**107**	**304**	**73**	**42**	**24**	**2,332**	**220**	**4,726**	**33,141**

Source: PNGRB; Length in KMs ; Authorized Capacity in MMSCMD (Arithmetic sum taken for each entity -capacity may vary from pipeline to pipeline); *Others-APGDC, , IGGL, IMC,GTIL,HPPL Consortium of H-Energy. Total authorized Natural Gas pipelines including Tie-in connectivity, dedicated & STPL is 33,515 Kms (P)

21. Existing LNG terminals

Location	Promoters	Capacity as on 01.10.2023	% Capacity utilisation (April-Sept 2023)
Dahej	Petronet LNG Ltd (PLL)	17.5 MMTPA	94.3
Hazira	Shell Energy India Pvt. Ltd.	5.2 MMTPA	39.2
Dabhol	Konkan LNG Limited	*5 MMTPA	32.3
Kochi	Petronet LNG Ltd (PLL)	5 MMTPA	19.6
Ennore	Indian Oil LNG Pvt Ltd	5 MMTPA	15.1
Mundra	GSPC LNG Limited	5 MMTPA	12.5
Dhamra	Adani Total Private Limited	5 MMTPA	24.0
Total Capacity		**47.7 MMTPA**	

* To increase to 5 MMTPA with breakwater. Only HP stream of capacity of 2.9 MMTPA is commissioned

22. Status of PNG connections and CNG stations across India (Nos.), as on 31.08.2023(P)				
State/UT (State/UTs are clubbed based on the GAs authorised by PNGRB)	CNG Stations	PNG connections		
		Domestic	Commercial	Industrial
Andhra Pradesh	166	261,259	448	36
Andhra Pradesh, Karnataka & Tamil Nadu	40	1,749	0	6
Assam	6	52,346	1,366	449
Bihar	109	113,042	92	4
Bihar & Jharkhand	4	7,624	2	0
Bihar & Uttar Pradesh	14	0	0	0
Chandigarh (UT), Haryana, Punjab & Himachal Pradesh	26	26,194	129	29
Chhattisgarh	10	0	0	0
Dadra & Nagar Haveli (UT)	7	11,532	56	60
Daman & Diu (UT)	5	5,162	56	45
Daman and Diu & Gujarat	15	3,010	15	0
Goa	12	11,335	19	34
Gujarat	996	3,106,477	22,813	5,745
Haryana	354	360,775	897	1,954
Haryana & Himachal Pradesh	10	4	0	0
Haryana & Punjab	25	468	0	0
Himachal Pradesh	10	6,476	4	0
Jharkhand	81	113,801	10	1
Karnataka	325	399,244	547	333
Kerala	115	51,225	25	18
Kerala & Puducherry	9	426	0	0
Madhya Pradesh	248	216,797	387	469
Madhya Pradesh and Chhattisgrah	7	0	0	0
Madhya Pradesh and Rajasthan	32	578	0	0
Madhya Pradesh and Uttar Pradesh	16	0	0	2
Maharashtra	787	2,990,714	4,705	935
Maharashtra & Gujarat	60	179,889	8	26
Maharashtra and Madhya Pradesh	12	0	0	0
National Capital Territory of Delhi (UT)	481	1,465,791	3,700	1,854

State/UT (State/UTs are clubbed based on the GAs authorised by PNGRB)	CNG Stations	PNG connections		
		Domestic	Commercial	Industrial
Odisha	69	93,239	5	0
Puducherry	2	0	0	0
Puducherry & Tamil Nadu	8	224	1	0
Punjab	208	75,498	450	268
Punjab & Rajasthan	12	0	0	0
Rajasthan	259	234,595	139	1,572
Tamil Nadu	231	8,213	5	12
Telangana	161	194,438	94	109
Telangana and Karnataka	3	0	0	0
Tripura	18	59,967	506	62
UT of Jammu and Kashmir	0	0	0	0
Uttar Pradesh	827	1,438,444	2,404	2,905
Uttar Pradesh & Rajasthan	42	19,028	44	345
Uttar Pradesh and Uttarakhand	26	11,521	0	0
Uttarakhand	31	70,620	73	88
West Bengal	74	1,025	3	1
Total	**5,953**	**11,592,730**	**39,003**	**17,362**

Source: PNGRB

Note: 1. All the GAs where PNG connections/CNG Stations have been established are considered as Operational, 2. Under normal conditions. Operation of any particular GA commences within around one year of authorization. 3. State/UTs wherever clubbed are based on the GAs authorised by PNGRB.

23. Domestic natural gas price and gas price ceiling (GCV basis)

Period	Domestic Natural Gas price in	Gas price ceiling in US$/MMBTU
November 2014 - March 2015	5.05	-
April 2015 - September 2015	4.66	-
October 2015 - March 2016	3.82	-
April 2016 - September 2016	3.06	6.61
October 2016 - March 2017	2.5	5.3
April 2017 - September 2017	2.48	5.56
October 2017 - March 2018	2.89	6.3
April 2018 - September 2018	3.06	6.78
October 2018 - March 2019	3.36	7.67
April 2019 - September 2019	3.69	9.32
October 2019 - March 2020	3.23	8.43
April 2020 - September 2020	2.39	5.61
October 2020 - March 2021	1.79	4.06
April 2021 - September 2021	1.79	3.62
October 2021 - March 2022	2.9	6.13
April 2022 - September 2022	6.1	9.92
October 2022 - March 2023	8.57	12.46
1 April 2023 - 7 April 2023	9.16	12.12

Period	Domestic Gas calculated price in US$/MMBTU	Domestic Gas ceiling price for ONGC/OIL in US$/MMBTU	Period	HP-HT Gas price ceiling in US$/MMBTU
8 April 2023 - 30 April 2023	7.92	6.50	April 2023 - September 2023	12.12
1 May 2023 - 31May 2023	8.27	6.50		
1 June 2023 - 30 June 2023	7.58	6.50		
1 July 2023 - 31 July 2023	7.48	6.50		
1 Aug 2023 - 31 Aug 2023	7.85	6.50		
1 Aug 2023 - 31 Aug 2023	7.85	6.50		
1 Oct 2023 - 31 Oct 2023	9.20	6.50	October'2023 - March 2024	9.96

Natural Gas prices are on GCV basis

24. CNG/PNG prices

City	CNG (Rs/Kg)	PNG (Rs/SCM)	Source
Delhi	74.59	48.59	IGL website (16.10.2023)
Mumbai	76.00	47.00	MGL website (16.10.2023)

Indian Natural Gas Spot Price for Physical Delivery

IGX Price Index Month	Avg. Price		Volume (MMSCM)	Source
	INR/MMBtu	$/MMBtu		
`Sept 2023	939	11.30	121.80	As per IGX website: www.igxindia.com

*Prices are weighted average prices |$1=INR 83.04| 1 MMBtu=25.2 SCM (Data Excluding Ceiling Price Gas)

PART-F

Taxes & Duties on Petroleum Products

25. Information on Prices, Taxes and Under-recoveries/Subsidies

International FOB prices/ Exchange rates ($/bbl)

Particulars	2021-22	2022-23	Sept 2023
Crude oil (Indian Basket)	79.18	93.15	93.54
Petrol	89.66	107.00	104.54
Diesel	88.45	128.08	121.65
Kerosene	85.31	120.55	119.35
LPG ($/MT)	692.67	711.50	556.00
FO ($/MT)	445.25	452.66	514.15
Naphtha ($/MT)	698.25	666.53	652.62
Exchange (Rs./$)	74.51	80.39	83.05

Customs, excise duty & GST rates

Product	Basic customs duty #	Excise duty	GST rates
Petrol	2.50%	Rs 19.90/Ltr	**
Diesel	2.50%	Rs 15.80/Ltr	**
PDS SKO	5.00%	Not Applicable	5.00%
Non-PDS SKO	5.00%	Not Applicable	18.00%
Domestic LPG	Nil***	Not Applicable	5.00%
Non Domestic LPG	5.00%	Not Applicable	18.00%
Furnace Oil (Non-Fert)	2.50%	Not Applicable	18.00%
Naphtha (Non-Fert)	2.50%	Not Applicable	18.00%
ATF	5.00%	11% *	**
Crude Oil	Rs.1/MT+ Rs.50/-MT as NCCD	Rs.1/MT+ Cess@20% + Rs.50 /-MT NCCD + Rs.6700/ MT SAED ^^^	**

Social welfare surcharge @ 10% is levied on aggregate duties of Customs excluding CVD in lieu of IGST;

*2% for scheduled commuter airlines from regional connectivity scheme airports;

** GST Council shall recommend the date on which GST shall be levied on petroleum crude , HSD, MS, natural gas and ATF;

*** Basic Customs duty is Nil for import of domestic LPG sold to household consumers (including NDEC) by PSU OMCs. Basic Customs duty rate is 5% for other importers of domestic LPG;

^^^ Effective 30.09.2023 SAED on crude oil.

Price buildup of petroleum products (Rs./litre/Cylinder) *

Particulars	Petrol	Diesel
Price charged to dealers (excluding Excise Duty and VAT)	57.33	58.14
Excise Duty	19.90	15.80
Dealers' Commission (Average)	3.78	2.57
VAT (incl VAT on dealers' commission)	15.71	13.11
Retail Selling Price	**96.72**	**89.62**

Particulars	PDS SKO	Subsidised Domestic LPG
Price before taxes and dealers'/distributors' commission	71.25	786.91
Dealers'/distributors' commission	2.66	73.08
GST (incl GST on dealers'/distributors' commission)	3.70	43.01
Retail Selling Price	**77.61**	**903.00**

*Petrol and Diesel at Delhi as per IOCL are as on 1st Oct 2023. PDS SKO at Mumbai as on 1st Oct 2023 and Subsidised Domestic LPG at Delhi as on 4th Oct 2023.

25. Information on Prices, Taxes and Under-recoveries/Subsidies

DBTL/ PMUY Subsidy

Domestic LPG under DBTL (Direct benefit transfer for LPG)

Product	2020-21	2021-22	2022-23 (P)
	Rs./Crore		
DBTL subsidy	3,559	-	823
PME &IEC^	99	242	32
Total	**3,658**	**242**	**855**

^ On payment basis (PME & IEC - Project Management Expenditure & Information , Education and Communication)

Note: During FY 2022-23 Government of India has approved a one-time grant of Rs. 22,000 crores to PSU OMCs towards under-recoveries in Domestic LPG.

PMUY

Particulars	2020-21	2021-22	2022-23 (P)
	Rs./Crore		
PMUY	-34	1,569	6,110
PME &IEC^	110	-	-
Pradhan Mantri Gareeb Kalyan Yojana	8,162	-	-
Total	**8,238**	**1,569**	**6,110**

^ On payment basis (PME & IEC - Project Management Expenditure & Information , Education and Communication)

Sales & profit of petroleum sector (Rs. Crores)

Particulars	2022-23		Q1-2023-24 (P)	
	Turnover	PAT	Turnover	PAT
Upstream/midstream Companies (PSU)	321,099	50,941	70,340	13,040
Downstream Companies (PSU)	19,16,438	1,138	4,66,763	30,505
Standalone Refineries (PSU)	245,272	9,875	45,025	1,484
Private-RIL	566,805	44,205	125,715	9,726

Borrowings of OMCs (Rs. Crores), As on

Company	Mar'22	Mar'23	Jun'23
IOCL	110,799	132,495	101,012
BPCL	24,123	35,855	27,939
HPCL	43,193	64,517	51,698

Petroleum sector contribution to Central/State Govt.

Particulars	2020-21	2021-22	2022-23
Central Government	4,55,069	4,92,303	4,28,067
% of total revenue receipts	28%	23%	18%
State Governments	2,17,650	2,82,122	3,20,651
% of total revenue receipts	8%	8%	8%
Total (Rs. Crores)	**6,72,719**	**7,74,425**	**7,48,718**

Total Subsidy as a percentage of GDP (at current prices)

Particulars	2020-21	2021-22	2022-23 (P)
Petroleum subsidy	0.06	0.01	0.03

Note: GDP figure for 2020-21 & 2021-22 are Revised Estimates (RE) and 2022-23 are Second Advance Estimates (SAE).

**Totals may not tally due to roundoff.

PART-G

Miscellaneous

26. Capital expenditure of PSU oil companies

(Rs in crores)

Company	2020-21	2021-22	2022-23 (P)	2023-24 (P)	
				Target (Annual)	Apr-Sept'23 (P)
ONGC Ltd	26,441	26,621	29,209	30,125	14,626
ONGC Videsh Ltd (OVL)	5,351	4,836	2,723	3,229	1,246
Oil India Ltd (OIL)	12,802	4,239	5,057	4,896	2,355
GAIL (India) Ltd	5,560	6,970	8,313	7,750	4,492
Indian Oil Corp. Ltd. (IOCL)	27,195	29,604	35,205	30,395	16,212
Hindustan Petroleum Corp. Ltd (HPCL)	14,036	16,205	13,847	10,210	6,672
Bharat Petroleum Corp. Ltd (BPCL)	10,697	11,449	11,527	10,000	4,727
Mangalore Refinery & Petrochem Ltd (MRPL)	2,218	604	641	820	400
Chennai Petroleum Corp. Ltd (CPCL)	592	575	609	548	283
Numaligarh Refinery Ltd (NRL)	981	3,403	6,615	8,290	3,487
Balmer Lawrie Co. Ltd (BL)	42	23	46	40	21
Engineers India Ltd (EIL)	730	67	60	98	50
Total	**106,642**	**104,596**	**113,853**	**106,401**	**54,572**

Includes expenditure on investment in JV/subsidiaries.

(P) Provisional

Totals may not tally due to roundoff.

27. Conversion factors and volume conversion

Weight to volume conversion

Product	Weight (MT)	Volume (KL)	Barrel (bbl)
LPG	1	1.844	11.60
Petrol (MS)	1	1.411	8.88
Diesel (HSD)	1	1.210	7.61
Kerosene (SKO)	1	1.285	8.08
Aviation Turbine Fuel (ATF)	1	1.288	8.10
Light Diesel Oil (LDO)	1	1.172	7.37
Furnace Oil (FO)	1	1.0424	6.74
Crude Oil	1	1.170	7.33

Exclusive Economic Zone

200 Nautical Miles	370.4 Kilometers

Volume conversion

From	To
1 US Barrel (bbl)	159 litres
1 US Barrel (bbl)	42 US Gallons
1 US Gallon	3.78 litres
1 Kilo litre (KL)	6.29 bbl
1 Million barrels per day	49.8 MMTPA

Energy conversion

1 Kilocalorie (kcal)	4.187 kJ
1 Kilocalorie (kcal)	3.968 Btu
1 Kilowatt-hour (kWh)	860 kcal
1 Kilowatt-hour (kWh)	3,412 Btu

Natural gas conversions

1 Standard Cubic Metre (SCM)	35.31 Cubic Feet	1 MMBTU	25.2 SCM @10000 kcal/SCM
1 Billion Cubic Metres (BCM)/year of Gas	2.74 MMSCMD	GCV (Gross Calorific Value)	10,000 kcal/SCM
1 Trillion Cubic Feet (TCF) of Gas Reserve	3.88 MMSCMD	NCV (Net Calorific Value)	90% of GCV
1 Million Metric Tonne Per Annum (MMTPA) of LNG	3.60 MMSCMD	Gas required for 1 MW power generation	4,541 SCM/day
1 MT of LNG	1,325 SCM	Power generation from 1 MMSCMD of gas	220 MW

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